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Organizational identity design: A multimodal discourse analysis of Australian university homepages

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Organizational identity design: A multimodal discourse analysis of Australian university homepages

Nataliia Laba

A thesis in fulfillment of the requirements for the degree of Doctor of Philosophy

School of the Arts and Media

Faculty of Arts, Design and Architecture

University of New South Wales, Sydney

May 2023

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I acknowledge and pay my respect to the past, present, and future Traditional Custodians and Elders of the land where I worked on this thesis, the Gadigal people of the Eora Nation, and the continuation of cultural, spiritual, and educational practices of Aboriginal and Torres Strait Islander peoples.

Abstract

This thesis studies web homepages to understand the complex social practice of organizational identity communication on a digital medium. It examines how designs of web homepages realize discourses of identity through the mobilization and orchestration of various semiotic resources into multimodal ensembles, addressing critical organizational visual identity elements ('logo,' 'corporate name,' 'color,' 'typography,' 'graphic shapes,' and 'images'), communicative content of the page, and navigation structures. By examining these three 'strata' of organizational identity communication, it investigates how a homepage uses formal design elements and more abstract principles of composition, such as spatial positioning and content ordering, as resources for making meaning.

The data consists of three complementary sets drawn from thirty-nine web homepages of Australian university websites in 2020. Data set #1 includes four homepages for an in-depth study of organizational identity designs; data set #2 consists of 400 images from the 'above the fold' web area as the most strategic space on four homepages between the years 2015 and 2021; data set #3 is comprised of eight historical versions of a selected web homepage between the years 2000 and 2021, with three most representative designs for an in-depth investigation. Grounded in the discourse-analytic approach informed by multimodal social semiotics, the thesis adopts a mixed-method approach to data analysis. It applies *multimodal discourse analysis* combining the Genre and Multimodality model (Bateman, 2008; Bateman et al., 2017) to document the structural design patterns and *social semiotic (metafunctional) approach* to address the meaning potentials of the identified patterns; (Kress & van Leeuwen, 2021); *content analysis* (Bell, 2001; Rose, 2016) and *visual social actor framework* (van Leeuwen, 2008) to identify key representational tropes and visual personae.

The study reveals the role of design as a mediating tool between the participants of discourse – the rhetor-institution/designer and envisaged audiences – and offers systematic insights into the uses of semiotic resources, both material (e.g., formal design elements and navigation structures) and nonmaterial (e.g., spatial considerations and content structuring), all contributing to the production of *meanings* and fostering *identification* with such meanings in the form of association with the university's identity. Addressing the subtle differences and shifts in the form and function of key layout structures and strategies of viewer engagement, the study concludes that <organizational identity> is *plural* – each university constantly revises semiotic choices and their multimodal composition to achieve specific rhetorical purposes. Together with several visual design choices, five identified strategies of viewer engagement –

proximation, alignment, equalization, objectivation, and subjectivation – promote the university as a place of opportunity, achievement, sociality, and intellectual growth for a student as an individual and as a member of the community.

The current research contributes to the emerging collaboration between multimodality, organization studies, and branding, recognizing the complexities and importance of multimodal communication in web-mediated texts amidst the critically increased roles of marketization and social presence in the current higher education landscape.

Keywords: web homepages, organizational identity, semiotic technology, design, multimodal discourse analysis

Dedication

I dedicate this thesis to all Ukrainian people, for their courage and resilience.

Acknowledgments

Meaning making is at the heart of this thesis, and I could not imagine its materialization without *meaningful* connections with many individuals and organizations supporting me during my Ph.D. journey. First and foremost, my deepest gratitude goes to my primary supervisor, Professor Louise Ravelli, for her kindness, tireless encouragement, professionalism, and exceptional mentorship — I could not do it without her. She always inspired me to keep an open mind, pursue my ambitions, and grow as an academic and individual. Her constructive feedback kept challenging me to think about the bigger picture and communicate complex ideas more clearly. Over four years, our intellectually stimulating conversations on campus, online, in art galleries, and quaint coffee shops were always the occasions to look forward to. My sincere thanks also go to my secondary supervisor Dr. Peter White whose comments, questions, and feedback in my research progress reviews helped me to see the familiar issues in a new light.

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Sydney, February 2023

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Navigation

This document uses hyperlinks for easier traversals across the file and redirections to the cited web pages. The hyperlinks are signaled in two ways: (i) through subtle reference formatting in small caps and light gray (e.g., THIS IS AN IN-DOCUMENT LINK) which will redirect the reader to a corresponding section of the thesis and (ii) through hyperlinks beginning with https://, in Arial 11 font in black, not underlined (e.g. https://www.unsw.edu.au/), which, when activated (i.e., clicked on) will redirect the reader to a respective web page that opens in a web browser.

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List of Abbreviations

ANOVA	analysis of variance
CAQDA	computer-assisted qualitative data analysis
CDA	critical discourse analysis
CMYK	cyan, magenta, yellow, key (black)
CDA	critical discourse analysis
CSS	Cascading Style Sheets
CT	covert taxonomy
CX	customer experience
DXX	document deixis
GeM	Genre and Multimodality
HAM	Hypertext Abstract Machine
HEX	hexadecimal
HTML	Hypertext Mark-up Language
MSS	multimodal social semiotics
OVI	organizational visual identity
OT	overt taxonomy
PDI	power distance index
PNG	Portable Network Graphic
QS	Quacquarelli Symonds
RGB	red, green, blue
SCOT	social construction of technology
SFG	systemic functional grammar
SFL	systemic functional linguistics
SF-MDA	systemic functional multimodal discourse analysis
SFT	systemic functional theory
UI	user interface
UNSW	University of New South Wales
UTS	University of Technology Sydney

Introduction

This thesis studies university web homepages as technology for making a specific type of meaning – namely, communicating discourses of organizational identity. As a comparatively recent medium of communication that emerged in the past thirty years, web homepages have expeditiously established their strategic significance in the life of organizations, not least universities worldwide. Nevertheless, little is still known about how the designs of this digital medium carry the multimodal manifestation of organizational identities in the context of increasingly marketized discourses in the higher education landscape. For this reason, the current research proposes a new way to address the complexities of organizational identity communication by examining how designs of web homepages realize discourses of identity through the mobilization and orchestration of different meaning-making resources into multimodal ensembles (i.e., layout structures).

Such research is highly relevant given the long-standing importance of universities and the unique position they continue to hold in society. As an organization, a university is both a physical entity and a form of association which is deliberately and formally structured (i.e., organized), formally and hierarchically coordinated (i.e., managed), and unified by a common goal and what is frequently referred to as a common 'culture' (van Leeuwen, 2022). As such, a university is not too dissimilar to a corporate entity in the sense that, to produce discourses of identity and cultivate a form of association with such discourses, it necessarily engages in meaning-making practices and the production of sign-complexes. Under the strains of serving students and society in the age of unprecedented global flow of information, capital, commodities, and people, universities respond to the needs of the increasingly marketized environment they operate in by carefully curating multimodal messages across university communications among which web homepages are particularly significant.

Web homepages are selected as an object of study for two reasons. First, they are different from other pages of a website, communicating a bi-stratal set of rhetorical purposes that are often summarized by a metaphor of 'welcoming visitors to the site' and 'establishing the identity of the institution they represent (cf. Knox, 2007; Leavitt & Shneiderman, 2006; Zhang & O'Halloran, 2013). Alongside these and other rhetorical purposes, their structure is always constrained by the limitations of technology (i.e., the digital materiality of the medium) as well as broader social considerations of the 'attention economy' (cf. Vaidhyanathan, 2022: 82) (i.e., the shifting abundance of information

exacerbated by the advancement of technology and the resulting scarcity of sustained attention from the envisaged audiences), among others.

Whereas such broad considerations should not be reduced to technological determinism, increasingly, contemporary multimodal texts draw on the visual rather than verbal logic of representation and use design as 'an integration code' (van Leeuwen, 2014: 22) that "marshals meaningful elements into coherent texts […] in ways which themselves follow the requirements of mode-specific structures and themselves produce meanings" (Kress & van Leeuwen, 2006: 203). The increased importance of visuality and design of multimodal texts can be partly attributed to consumption considerations. Perceptually, the elements of visual composition, such as 'color,' are recognized by audiences before they process any other features of a given artifact[1] (Wheeler, 2017) and, as such, visual design elements have a higher potential to add to the recognizability of a brand, even on a perceptual level. As a result, there is an "increase in the visual and non-verbal orientation of culture at large" (Bateman, 2008: 2) and a shift from "the centrality of writing to the increasing significance of image" (Kress, 2005: 7) where design becomes a predominant logic of spatial and temporal organization of a given artifact.

As dominant semiotic principles underlying the composition of multimodal texts, design and visuality also serve as delimiting criteria for the current research design. In sum, this thesis examines organizational identity communication on the site of university web homepages through the foundational principles of design and visuality, zooming in to organizational identity designs and organizational visual identities in the context of marketization of higher education discourses, as discussed in more detail below and in the chapters that follow.

1.1 Marketization of university discourses

1.1.1 Brand *old* world – for sale!

Despite a common view that the commercialization of higher education and commodification of teaching and research is the product of the heady market booms of the 1980s and 1990s, the roots of the marketization of public discourses can be traced back to at least the beginning of the twentieth century. For example, in 1918, Veblen observed that American businesses had already placed commodifying university discourses on their agenda:

[1] This thesis uses American English spelling unless it directly quotes sources that use British English.

> It is one of the unwritten, and commonly unspoken commonplaces lying at the root of modern academic policy that the various universities are competitors for the traffic of merchantable instruction in much the same fashion as rival establishments in the retail trade compete for custom (89).

As early as 1993, Fairclough demonstrated the impact of the marketization of public discourses in academia by studying the prospectuses of British universities. Progressively, commercialization of knowledge has become a new norm that has risen from "restructuring of the order of discourse on the model of more central market organizations" (Fairclough, 1995: 140) where "management techniques have gradually displaced quaint academic rituals as departments mutate into cost centres often run by administrators recruited from the private and public sector" (Furedi, 2011: 1). Arguably, the recent intensification of the marketization of public discourses is impacted by the market-based logic of neo-liberal ideology (Featherstone, 1991; Slaughter & Rhoades, 2004).

The marketization of higher education has been noted by many scholars since (e.g., Naidoo & Jamieson, 2005, Askehave, 2007; Molesworth et al., 2011; Hall, 2018; Feng, 2019). Perspectives taken include, but are not limited to, higher education research (e.g., Gibbs, 2011), critical discourse studies (e.g., Mautner, 2005), and political science (e.g., Slaughter & Rhoades, 2004). A sizeable amount of literature has addressed the question of promotional discourses of higher education manifested through different "hybrid partly promotional genres" (Fairclough, 1992: 139), such as prospectuses (e.g., Askehave, 2007; Fairclough, 1993; Teo, 2007), mission statements (e.g., Gray, et al., 2003; Morris & Sauntson, 2013), and promotional videos (e.g., Gottschall & Saltmarsh, 2016), among others. These studies reveal how universities favorably present themselves across different marketing collateral, foregrounding the benefits that they, as institutions, can bring to educational consumers. To remain relative, it appears, universities must compete for, *inter alia*, customers (i.e., students) and resources (i.e., funding), developing and revising their capacity to offer knowledge as a saleable commodity.

Those who write about universities, however, often unequivocally comment on the divergence between the marketed "images and the lived experience [...] – the contrast between a specific place and the expectations of an ideal" (Davis, 2016: 3). Different areas of inquiry, such as higher education research (e.g., Molesworth et al., 2009; Gibbs, 2001; Lolich, 2011), critical discourse studies (e.g., Mautner, 2005; Zhang & O'Halloran, 2013), political science (e.g., Slaughter & Rhoades, 2004; Marginson & Considine, 2000), and public relations (e.g., Will & Callison, 2006; McAllister & Taylor, 2007) suggest

that universities brand themselves similarly to businesses, promoting an idyllic image of student life while construing professionally egalitarian relations with the envisaged audiences through concrete evidence (e.g., logos, images, rankings, testimonials) to enhance institutional attractiveness and build relationships with the brand. Some also lament the threat of education being reduced to performance indicators (i.e., data) and treatment of students as consumers (i.e., 'customers') (e.g., Furedi, 2011; Lažetić, 2019; Molesworth et al., 2009, 2011).

1.1.2 Promotion moves online

The trend of "selling higher education," to quote the book title by Anctil (2008), has been further accelerated by the possibilities brought by the digitization of the postmodern world *en masse*, and many of the university promotional practices have subsequently shifted online. Whereas there are several views on how hypertext – an underlying feature of the Web – came to be, most agree that the primary impetus for laying a cornerstone of the Web as we know it stems from British scientist Tim Berners-Lee's 'WorldWideWeb: Proposal for a HyperText Project' (<*https://www.w3.org/Proposal.html*>), from 12 November 1990, in which "a way to link and access information of various kinds as a web of nodes in which the user can browse at will" (n.p.) was established. This development provided a golden opportunity to enhance, among other things, the speed and reach of university marketing material. Universities worldwide established their Web presence in the mid-/late 1990s, with the first websites vastly reminiscent of information catalogs with a simple user interface that generally occupied a single screen, had a few embedded images, and offered some interactivity typographically signaled through underlined hyperlinks in blue.

As technology advanced, university websites have seen a gradual transformation from purely informational sources to highly promotional tools responsible for delivering a significant part of the organizational identity of university profiles (e.g., Lažetić, 2019; Svendsen & Svendsen, 2018; Zhang & O'Halloran, 2012, 2013). This convergence results from both technological advancements and a comparatively rapid transcendence of Western society towards what has been characterized as a 'promotional' or 'consumer' culture (Wernick, 1991). In the context of Australia, where this study is situated, research has investigated the construction of 'the good life' in university promotional videos (Gottschall & Saltmarsh, 2017), the institutional web identity representation through the use of language (Hoang & Rojas-Lizana, 2015), web representation of international students (Zhang et al., 2020; Zhang & Tu, 2019), and more.

Despite valuable insights from the body of scholarship discussed, studying marketized discourses that reduce the position of the university to that of a business poses a risk of delimiting the essence of higher education to an economic commodity – and may oversimplify the unique place that universities (still) hold in postmodern society. Approaching the university as a business and the student as a consumer has been contested, particularly in educational management (e.g., Naidoo & Jamieson, 2005; Rutter et al., 2017; Saunders, 2015). Although numerous studies applied this business parlance in higher education, the 'student as consumer' view poses a risk for the learning process to being delimited to an economic commodity, and as Calma and Dickson-Deane (2020: 1225) argue, a "customer-focused education is dissimilar to a student-focused education." Furthermore, such a theorization may fail to acknowledge student interaction with a university's identity and, for that matter, student agency.

On the other hand, constructing customers as active participants in brand communication is emphasized in brand management studies. American Marketing Association (2023) defines a brand as "a name, term, design, symbol or any other feature that identifies one seller's goods or service as distinct from those of other sellers" (n.p.). For universities, as other organizations, this identification inevitably links to a set of associations, as Clark Kerr (2001) puts it in the fifth edition of the widely cited 'Uses of the university':

> The name of the institution stands for a certain standard of performance, a certain degree of respect, a certain historical legacy, a characteristic quality of spirit. This is of utmost importance to faculty and to students, to the government agencies and the industries with which the institution deals. Protection and enhancement of the name are central to a multiversity (15).

As such, the brand meaning is not manufactured but is up for negotiation and interpretation (Batey, 2008: xiii), and "establishing and maintaining the relationships created by active, *engaged publics*" (Hutchins & Tindall, 2016: 3, italics in original) is crucial for cultivating online brand communities in modern participatory culture. Consumers are, then, as Allen et al. (2008) argue, "active meaning makers rather than passive recipients of marketing products and communications" (784). This position gains a new resonance in web-mediated texts, with the affordances of technology enhancing the agency and interactional possibilities for the envisaged audiences to construct trajectories, selectively engage with the content, share it on social media platforms, and so forth – i.e., interact with the brand meaning in new ways, leaving a pathway "in the act of reading" (Bolter, 1994: 11).

In addition to becoming a space for more exposure and interaction with a brand, organizational websites structure information in a way that invokes affective connections with the rhetor-institution (Klein, 2000; Ng, 2019) by communicating traditional values such as teaching and research (i.e., legitimizing the university as a higher education provider) or emotional values such as social responsibility and learning environment (i.e., adding distinctiveness to the brand). Ultimately, sharing an appealing brand image can foster a feeling of lifelong university membership and provide students with a sense of identification and affiliation with the brand (Curtis et al., 2009; Effah, 2020). In constructing a favorable image, corporate marketing has become the job of university brand labs and the university as an entity (Chapleo, 2005), and university websites have established their role as one of critical sites for communicating organizational identity.

1.2 Organizational identity communication

1.2.1 What is organizational identity?

Both practitioners and academics alike have dedicated increasing attention to the practice and nature of organizational identity communication. Whereas what is meant by such practice may include broader considerations, such as corporate culture, design, communication, behavior, structure, strategy, and industry identity (Melewar & Akel, 2005), the common element <identity> denotes the core meaning – "the articulation of a brand or group, including all pertinent design formats, such as the logo, letterhead, business card, and website, among others" (Landa, 2013: 245). Guided by the purpose of appealing to the envisaged audiences, brands must engage with the production of *meanings* and attempt to construct an *identification* between the envisaged audiences and such meanings (du Gay, 2013: 20). Articulation of meanings occurs through different types of *texts* – collections of communicative artifacts guided by how "rhetorical purposes, the designer's interest and semiotic resources, and the characteristics of the audience are all brought into coherence" (Bezemer & Kress, 2008: 174) through an assortment of visual and verbal cues by which different audiences can recognize the institution and distinguish it from others (Melewar et al., 2018).

Among such texts, an academic website has two broad types of audiences – the primary audience is academic (i.e., students and staff), and the secondary one is general (i.e., public and other educational institutions) (Raward, 2001: 124). Due to the foregrounded research questions across different disciplines, a myriad of terms is generated to refer to these audiences of a website – 'users' or 'visitors' in usability studies (cf., e.g., Nielsen & Loranger, 2006), 'readers' (e.g., Kress & van Leeuwen, 2001) or simply, 'audience'

(e.g., Bezemer & Kress, 2015) in social semiotics, and 'customers' or 'consumers' in marketing and brand management (cf. Aspara et al., 2014; Gray et al., 2003). At the same time, journalistic sources suggest, "it's not an audience, it's a community" (Levy, 2006: n.p.). Considerations of audiences are further reinforced by critical and cultural media studies, which, as Lievrouw (2014: 22) argues, "cast people as engaged, critical, "active audiences" rather than passive receivers or consumers of [...] messages and content". Throughout this study, the term 'envisaged audience' is preferred to acknowledge discursive engagement with websites and the rhetorical purposes of the designer/text producer that shape the form of a text. Because of stylistic reasons, to avoid repetitions, the term is often substituted by the terms mentioned above when used in relation to the foregrounded research inquiries of a specific discipline.

The considerations of the envisaged audience guide the rhetorical purposes of a website and the shape it takes, although ironically, the envisaged audiences are the actors "least likely to be present and involved when the site is designed and built" (Astani, 2013: 190). These purposes, often overtly communicated as university values across a variety of permanent and transient texts (e.g., 'About us' web pages, university profiles, strategic plans, graduation speeches), also translate into web designs, combining the semiotic material available in the culture at a given time and drawing on the technological affordances of the digital medium. The discourses of identity that the current research is interested in, therefore, are not simply a matter of abstract values, "but rather a form of representational and technological (i.e., cultural) practice that constitutes the spaces within which economic and organizational action is formatted and framed" (du Gay et al., 2013: xxiii).

It is then, designers, as 'cultural intermediaries' (Bourdieu, 1984; du Gay et al., 2013; Featherstone, 1991), who unify the rhetorical purposes of a website and align them with the envisaged interests of the target audience. Importantly, designers operate in the institutional and cultural context of the university missions and guidelines, and the social practice entailing organizational identity communication is guided by the normative discourses that legitimize the university and provide points of distinctiveness, resulting in organizational identities across a range of communicative artifacts that can be examined through what this thesis terms 'organizational identity design'.

1.2.2 Organizational identity design

Organizational identity design is a social practice that encompasses considerations of production, specific artifact, medium, and audience to provide a meeting point for

rhetorical purposes (i.e., its meanings of identity) and the interests and needs of the envisaged audience (i.e., a form of identification with the meanings produced). It is the means to realize discourses of identity which subsequently change "socially constructed knowledge into social (inter-)action" (Kress & van Leeuwen, 2001: 5). Organizational identity design is a kind of 'identity work' – arguably one of the most significant metaphors useful in the analyses of identities in organizations (cf. Brown, 2014: 20). Whereas largely invisible to laypersons, identity work manifests on the site of the 'communicative artifact' shaped by "rhetor's/designer's interest, purposes and intentions, given the semiotic resources available for realizing/materializing these purposes in the form of shaped sign complexes" (Bezemer & Kress, 2015: 130-131) as well as several 'constraints' associated with production and consumption of texts (Bateman, 2008: 16-19; Bateman et al., 2017: 99).

The current research is concerned with two types of communicative artifacts that result from organizational identity design work – web homepages as a particular type of web page and images on these homepages as a significant organizational visual identity marker. Here, the question is how organizational identity design produces discourses of identity, drawing on "repertoires of culturally and socially shaped semiotic resources" (Bezemer & Kress, 2015: 105) and how it mediates the relationship between the rhetor-institution/designer and the envisaged audience. Ultimately, identity work more broadly and organizational identity design more specifically contribute to the process of identification with the university, fostering individuals incorporating group characteristics – what Social Identity Theory (cf. Kuhn & Simpson, 2020) calls 'social identity.'

1.2.3 Why homepages and images?

Organizational web homepages are a valuable space for establishing and communicating organizational identity. Whereas there have been some criticisms on studying web homepages without an in-depth examination of the entire website (cf. Baym, 2006: 84), web homepages constitute a particular type of text that performs a distinctively different semiotic kind of work compared to that of other web pages. Moreover, usability studies report that many website visitors not only fail to engage with the whole site but rarely scroll down past the first visible screen of the 'below the fold' area' (Nebeling et al., 2011) – i.e., its viewport – which poses practical limitations on the inclusion of the most relevant content on web homepage, and especially its viewport.

As an entry point to a website, a web homepage is the first contact with the university. A homepage establishes the identity of the institution it represents through an assortment

of visual cues that distinguish it from other universities in the same category, communicates the site's purpose, provides a broad composition of the website, and promotes a positive attitude to the university (Djonov & Knox, 2014: 174). While these functions are often studied by different fields of research inquiry, prioritizing their disciplinary perspectives (e.g., aesthetics in graphic design, information architecture, and optimization in usability studies), homepages are different from all other website pages because they fulfill a specific range of communicative functions and draw on particular sets of semiotic material.

When homepages are of analytical interest as the medium for organizational identity communication, the pre-theoretical plausibility is that they "exhibit some usefully distinguishable set of properties that establishes them as privileged intertexts for comparison, with specifiable horizons of expectations and recognisable social purpose" (Bateman, 2014b: 240). For example, the form and placement of some critical elements for communicating corporate visual identity (CVI[2]) elements – i.e., 'business name,' 'logo,' 'motto,' 'color,' 'typography,' and 'graphic shapes' – have gradually become standardized on web homepages through official branding documentation, such as brand guidelines and visual brand style guides. As the most heavily regulated and least frequently updated organizational identity components, these elements provide visual identification of the institution, add authority to a web homepage, and ensure recognition of the university brand.

From the perspective of information design, web homepages are forms of media that are digital – i.e., their content is represented in "machine-readable form or [their] methods of production and dissemination involve information technologies of various kinds" (Bateman, 2021b: 1). From a communication perspective, web homepages are semiotic constructs, instantiations of semantic choices, bound up with the broader social context, shaped by the interests of the interactive participants (that is, interactive participants of discourse), and distributed through the digital medium of communication that offers distinct affordances or "distinct potentials and limitations for representation of the various modes" (Kress, 2005: 12). Falling under the umbrella term of 'new media,' the following considerations characterize web homepages:

[2] Corporate visual identity (CVI) is a term from marketing and brand management studies (cf. Melewar, 2003) that address identity communication of (predominantly) corporate world. In this thesis, organizational visual identity (OVI) is preferred to reflect that although increasingly marketized, universities are more accurately characterized as 'organizations' rather than 'corporations.'

1. As an object of analysis, web homepages are complex multimodal artifacts, combining different semiotic resources into meaningful units of communication (i.e., layout structures).
2. Web homepages foreground visuality through still and moving images, layout, color, and typography.
3. Design is a dominant semiotic principle underlying new media texts. It draws upon the paradigmatic logic of non-linearity, combining spatial and temporal patterns to structure multimodal ensembles and afford user navigation.
4. Web homepages are a relatively recent resource for communication; thus, they lack the long history of systematic thought, and more structured ways of describing their meaning potential are needed.

It is important to note that this list is not exhaustive, but the tenets above served as foundational points of departure for the current research design. One way to understand organizational identity communication on web homepages as new media texts is to examine how these multilayered semiotic artifacts contribute to *organizational identity design* by paying attention to the spatio-temporal organization of different design elements concerning three critical components: (1) organizational visual identity (OVI) elements, namely, 'business name,' 'logo,' 'motto,' 'color,' 'typography,' 'graphic shapes,' and 'photographic character of images,' (2) communicative content, and (3) navigation structures.

In relation to (1) OVI elements, the discussion of organizational visual identity elements proceeds through an examination of the brand guidelines which help to understand the logic behind the appearance of the brand and provide insights into the values that these visual identity elements aim to encode. Given that this study focuses on representation, it does not engage in digital ethnography or interviews with designers. Instead, it addresses the production site through 'textography' (Swales, 2013), examining several documents, such as brand guidelines, visual style guides, 'Strategies' (capitalized), and operating plans, studying the form, meanings, and placement of crucial OVI elements.

Concerning (2) communicative content, examining communicative content, from the minor perceptible units to larger layout structures and their meanings provides a detailed picture of how semiotic resources combine into design structures that shape organizational identity. The semiotic material and its shape are always constrained by the affordances of the medium or 'canvas constraints' (cf. Bateman, 2008: 16). Whereas quantitatively oriented analytical techniques provide the means for systematic description and understanding of the material used (cf. Bezemer & Kress, 2008: 171),

quantitative analysis of the material distribution across pages alone is insufficient for an insightful discussion of similarities/differences in organizational identity communication practices. To understand the form and function of 'meaningful' chunks of communicative content and the discourses of identity they realize, the current research draws on the concept of the semiotic mode by Bateman and colleagues (Bateman et al., 2017: 112-128) and integrates the metafunctional theory of meaning making (Kress & van Leeuwen, 2006, 2021; van Leeuwen, 2009). In this way, the study examines what Bezemer and Kress (2008: 166) refer to as 'multimodal ensembles' – i.e., the multisemiotic environments for the audience engagement.

In relation to (3) navigation structures, analyzing critical navigational pathways for major groups of envisaged audiences can tell us which pathways are possible and which are prioritized through the design elements. An examination of navigation structures leads to an argument about user agency concerning interacting with the organizational identity seen as an exchange of meaning between the rhetor-institution and the audience through design.

As critical sites for communicating institutional identity, modern web homepages can be extensive and complex, containing multiple design elements and cross-links and often spreading across several screens. However, the viewport of a web homepage (i.e., the first visible area of the web page) is the most strategic space for establishing the identity and purpose of the institution it represents (Djonov & Knox, 2014). As the entry point to the entire website (Knox, 2007) and the most salient part of the web homepage (Nielsen & Pernice, 2010), viewports of modern organizational homepages increasingly draw on the visual logic of organization, incorporating 'image-centric design strategies' (Stöckl et al., 2020) for content integration. Given their salience and strategic importance, viewports are addressed in detail in terms of both design structures (CHAPTER 5) and visual personae construed by images that occupy a substantial part of the 'above the fold' area (CHAPTER 6).

Despite the prominence of images on university web homepages, specifically in the viewports (i.e., the most strategic space of the page), images were not traditionally identified as a core organizational visual identity element in branding and corporate marketing studies. However, increased attention is now paid to image styles communicated through visuals, as outlined by university brand guidelines. The image style is often referred to as 'photographic character' of a university, aiming to realize a specific value or set thereof that the university wishes to communicate to the envisaged audience. The inclusion of such recommendations for images across official university

communications shows recognition of the strategic importance of this type of communicative resource for university organizational visual identity communication in the context of the higher education sector.

The current research studies web homepages of world-class universities in Australia and contributes to our understanding of organizational identity communication practices in those universities. Australian universities are uniquely positioned in the Australian economy and global talent flow. They perform well in education and research, contribute to the community, and are respected internationally. They are extensive, public, self-governing, and comprehensive institutions offering a relatively similar range of degrees, from bachelor to doctoral qualifications (Davis, 2017). Seven Australian universities hold the top 100 positions in Quacquarelli Symonds (QS) World University Ranking (2022), and the performance indicators tell us about what society values about universities: academic reputation (teaching and research quality), employer reputation (preparedness for successful careers), faculty/student ratio (meaningful access to lecturers and tutors), citations per faculty (research rigor), and international student ratio and international faculty ratio (global outlook).

In sum, this thesis is interested in the discourses of the identity of selected Australian universities as a meaning-making practice concerned with the organizational identity design across four 'sites' – production, communicative artifact, medium, and audiencing where design (as the logic of spatio-temporal content organization) and visuality (as the semiotic orientation of the page) are two foregrounded logics. In CHAPTER 5, the study examines how the homepage designs shape the university's organizational identity and how, in turn, organizational identity shapes the page designs. As organizational identity is often associated with visuals, CHAPTER 6 addresses visual personae, strategies for viewer engagement, and representational tropes in images. Since modern homepages are transient and continually build upon previous designs, CHAPTER 7 introduces a historical perspective and studies the evolution of organizational identity practices on a selected homepage. Because this analytical interest is related to the practice of production of meanings that have the potential to elicit identification with such meanings from the envisaged audience, multimodal social semiotics provides the theoretical foundation as a robust theory to studying meaning-making practices.

1.3 Multimodality and the screen

1.3.1 Multimodality

A multimodal social semiotic approach to studying meaning-making practices has received the critical impetus for its development from Halliday's (1978) view of language as a semiotic resource. The 'social' in social semiotics acknowledges that meaning is a supra-individual concept, realized and regulated in various cultural contexts, and 'semiotics' denotes the meaning potential of different resources (Höllerer et al., 2019: 25). Social semiotics understands the overall meaning potential as a *choice,* which means that where there is a possibility of choice, participants of discourse who engage in a meaning-making process include/exclude certain semiotic resources and use them in specific ways, depending on what Malinowski (1935) defines as the context of situation and context of culture (as cited in Martin, 2015: 50). 'Choice' here does not refer to a conscious choice, but to the selection of one communicative option from among others. In this way, expressive resources such as language, image, color, layout, and so on can be approached as systems of choices through which different communicative phenomena are interactively shaped and interpreted. The nature of choice – its variety and scope – is guided by what a meaning-making system has evolved to do, its metafunctional foundations:

1. the ideational metafunction to represent experience
2. the interpersonal metafunction to enact relationships
3. the textual metafunction to organize texts

Halliday (1978) and fellow multimodal social semioticians, particularly Kress and van Leeuwen (2001, 2006, 2021), propose that ideationally, as a theory of human experience, a meaning-making system presents material and semiotic environments as a discrete and finite number of choice points. Interpersonally, as a shaper of interactional relationships between discourse participants, a meaning-making system organizes social interaction through a set of choices, now less discrete. Lastly, textually, a meaning-making system coordinates different combinations of choices that cohere in conjugatable forms; that is, it functions as the organizational manager of the human experience and social interaction and weaves the ideational and interpersonal meanings into a textual whole. Notably, the social semiotic approach focuses on meaning-making resources in specific texts to develop systematic ways of describing these resources, how they combine, and how the interests of the text producers shape them. As Bezemer and Kress (2008) explain, the value of a (multimodal) social semiotic approach lies in drawing

attention to the potentials and constraints of the "stuff" that is being used, the agency of sign makers and the significance of all actions in the process of sign making (171).

Thus, as a communicative artifact, a web homepage has the capacity to represent the university and establish relations with it as a physical entity in the world outside the representational system (i.e., the natural reality), constitute and maintain relationships between the rhetor-institution and the envisaged audience of the page (i.e., the social reality), and integrate the representational and interactive elements into a coherent whole (i.e., the semiotic reality). The overall meaning potential comprises these three types of meaning – ideational, interpersonal, and textual. The metafunctional view of meaning-making from a social semiotic perspective has seen a substantial number of studies addressing different communicative modes and their affordances, speaking for its "high descriptive capability and adaptability to describe various types of data" (Hiippala, 2013: 33).

1.3.2 Semiotic technology

To understand the complex relationship between the rhetor-institution and the envisaged audience, I approach web homepages as *semiotic technology* (cf. Djonov & van Leeuwen, 2017; van Leeuwen et al., 2013; Zhao & van Leeuwen, 2014) – i.e., a technology for making meaning that realizes the discourses of identity in the institutional practice of organizational identity communication. A joint interest in multimodal communicative artifacts, digital technologies, and social practices is at the core of a semiotic technology perspective (Poulsen et al., 2018).

To delimit the risk of infinite detail that multimodal research often grapples with (Forceville, 2007; in Hiippala, 2015: 38) while respecting the complexity of multimodal communication (Hiippala, 2020: n.p.), the current research pays attention to two increasingly dominant principles underlying the composition of web homepages as semiotic technology – *design* and *visuality*. It approaches websites as semiotic artifacts structured by different non-linear patterns that connect image, text, video, and so on into multimodal wholes (Martinec & van Leeuwen, 2009), and treats the design of a web homepage as a 'communication design.' Design is transformative and agentive (Jewitt & Kress, 2003) because it assumes that culturally and socially available semiotic resources undergo a process of *choice* indicative of the designer's interests and the reader's intended uses in a specific context. Meaning making is transformative rather than acquisitional – the envisaged audience plays an active role in designing meaning from the resources available on homepages.

This study aims to develop a 'common language' between branding practitioners and web design experts on the one hand and multimodality as a field of inquiry on the other. Its broader goal is to contribute to the heritage of 'appliable multimodality,' to reference Halliday's (2008) 'appliable linguistics', comparable to an endeavor of the emerging synergy between multimodal research and organizational studies (e.g., edited volumes by Höllerer et al. (2019) and Ravelli et al. (2023) for emerging collaborations between multimodality and organization studies).

A user perspective, although undeniably insightful to the analysis, is outside the scope of the thesis. The identification of the composition of a page provides a basis for a comprehensive, in-depth contextual interpretation of structural patterns, which would not be feasible should the user perspective be integrated. Ultimately, the current project reveals both structural underpinnings of the modern university web brand identities through the question of multimodal design and a broader contextual meaning potential of the formal units that contribute to shaping discourses of organizational identity. It foregrounds representation instead of reception, based on a multimodal social semiotic approach to a given communicative practice.

1.4 Research questions and the structure of the thesis

1.4.1 Research questions

More broadly, the current research investigates how web homepages of Australian universities communicate their organizational identities to different educational consumers by incorporating various communicative resources. More specifically, (1) it maps configurations found within recurring design solutions to differentiate a university brand on the local/global market while also examining how these configurations change, and (2) it examines visual strategies for viewer engagement and representational tropes shaped by visual semiotic resources, such as 'logo,' 'typography,' 'color,' 'graphic shapes,' and 'images.' The study uses a mixed-method approach, combining textography, the Genre and Multimodality (GeM) model, visual content analysis, and 'Visual social actor network' (van Leeuwen, 2008) that draws on the metafunctional theory (Kress & van Leeuwen, 1996/2006/2021), as further explained in detail in CHAPTER 4. Textography (Swales, 1998, 2013) is applied as partial ethnography or an exploration of discursive practices culturally embedded in texts, through a study of university brand guidelines and visual style guides. The adapted (GeM) model – a multi-layered annotation schema to studying the structure of multimodal artifacts, developed during a research project during 1999-2002 at the University of Stirling and Bremen University; Bateman, 2008; Delin et al., 2002; Henschel, 2003) – is used to document

the design elements on the page across several annotation layers (CHAPTER 4.3). Visual content analysis (e.g., Bell, 2001) is incorporated to identify image types images across defined categories, particularly the inclusion of human represented participants, the number of represented participants in images, and their gender (CHAPTER 4.4.1). 'Visual social actor network' (van Leeuwen, 2008) is applied to examine representational structures and interactional strategies for viewer engagement (CHAPTER 4.4) to identify visual personae and representational tropes in images.

Combining a discourse-analytic approach informed by multimodal social semiotics and a structural-orientated perspective, the thesis focuses on (a) design as a foregrounded form of textual cohesion and (b) visuality as an underlying semiotic property of web homepages as semiotic technology. It aims to (1) identify and compare the structural configurations manifested through the design solutions to web homepages and investigate the meaning potential of these structures, (2) investigate the types of OVIs shaped by viewport images as prominent design elements in the 'above the fold' area of the page, and (3) examine how organizational identity design practices change over time.

More specifically, the current research seeks to answer the following questions:

1. How do different semiotic resources combine in web homepages to construe discourses of organizational identity?

Design is conceptualized as a semiotic principle that accommodates the heterogeneous readership of the homepage, provides audiences with a broad schema of a website, and guides them via interactivity cues that facilitate interaction with a university's identity. Identifying the structural patterns and their meanings will provide a systematic understanding of the recurring design solutions to differentiate a university brand.

2. What visual strategies are deployed in images in the viewports of web homepages, and how do these strategies contribute to organizational visual identity communication?

The increasingly ubiquitous constellation of 'image' and 'screen' amplifies the interactional possibilities for the envisaged audiences. Within the tapestry of visual communicative resources on the web pages, viewport images (i.e., images that typically stretch horizontally across the first visible screen 'above the fold' and are made salient by size, color, and placement) are foci because they occupy a considerable part of the most strategic part of the web homepage.

3. How have organizational identity practices changed over time?

A historical perspective on the design of web homepages will systematize how OVI elements such as 'name,' 'logo,' 'motto,' 'color,' 'typography,' and 'graphic shapes' and key design structures change over time. The question links to tracking the affordances of the Web as a medium and traces how technological advancements of the Web enable new combinations of different modes while limiting their meaning potential.

To answer these research questions, three complementary data sets are drawn from thirty-nine web homepages of Australian university websites in 2020. Data set #1 includes four homepages for a study of organizational identity designs (CHAPTER 5); data set #2 consists of 400 images from the viewport area of homepages of four universities between the years 2015 and 2021 (CHAPTER 6); data set #3 is comprised of eight historical versions of a selected web homepage between the years 2000 and 2021, with three most representative designs for an in-depth investigation (CHAPTER 7).

The author acknowledges the subjective positioning potentially stemming from her work experience across the four universities that this thesis particularly focuses on. During my work experience, I had an opportunity to glimpse into each university's organizational cultures and values through the most valuable resource any organization has – its people. These experiences contributed to my thinking about how to approach the data I was studying. While recognizing potential researcher biases, it is equally important to acknowledge the value of understanding the environment that this thesis studies. As Ravelli (personal communication) notes, being part of the research environment provides additional benefits to the depth of research as additional insights can be generated when a researcher has insider knowledge about the workings of organizational context.

1.4.2 Thesis structure

The thesis is organized into eight chapters. Chapter 1 has introduced the context of the study, theoretical underpinnings, and research questions.

CHAPTER 2 provides theoretical foundations for studying multimodal communication, outlining origins and critical developments in multimodal research, introducing/clarifying the main theoretical concepts (notably, 'mode' and 'metafunctions'), and connecting the theoretical foundations and analytical framework. It aims to develop 'appliable multimodality' (similar to Halliday's notion of 'appliable linguistics') by using 'common vocabulary' that can be understood by academics interested in multimodality studies and by branding practitioners, web designers, and marketing teams.

CHAPTER 3 further explores organizational identity communication as a complex semiotic practice and draws attention to the site of the communicative artifact (i.e., homepages and images) that can be studied as communicative phenomena that realize discourses of identity through organizational identity design practices. It explains two significant approaches to studying web-mediated texts as semiotic technology (i.e., the medium for organizational identity communication) and genre (i.e., recognizable groupings of similar texts) and how both form a foundation for the current research.

CHAPTER 4 explains the study's research design, including data collection, storage, annotation techniques, and methods of analysis of three complementary data sets. It describes the mixed-method approaches to studying web homepages as a genre and as a medium of communication for systematic documentation of the form and structure of digital communicative artifacts and the meaning-potentials concerning representation, interaction, and composition.

CHAPTER 5 delves into the meanings of (1) core OVI elements – 'name,' 'logo,' 'motto,' 'color,' 'typography' and 'graphic shapes,' (2) key layout structures of communicative content, particularly in the viewport, and (3) navigation/access structures that enable interaction with the university identity. It applies an adapted GeM schema to annotate the elements of four web homepages and a social semiotic approach to discuss the meaning potentials of the identified structural patterns.

CHAPTER 6 analyzes the images in the viewport of the web homepages, examining the visual strategies of viewer engagement and subtle differences in representation structures and interactional meanings to build rapport with the viewer. It identifies the 'visual personae' constructed by different types of visuals commensurate with the purposes envisaged by rhetor-institutions.

CHAPTER 7 approaches organizational identity historically, examining fundamental shifts in organizational identity design practices as exhibited by the subtle changes in the meaning-making resources on one homepage over twenty years. It examines three generations of designs – early Web presence (2000), carousel-informed design structures (2009), and modern design (2021).

CHAPTER 8 summarizes the findings, discusses the limitations of the current study, and outlines the future directions for research. It draws attention to the subtlety of design choices and affordances of the digital medium that contribute to construction of organizational identities. While there might be an expectation that each organization communicates a distinct and 'unique' brand or identity, the current research warrants

caution in distilling the essence of the identified design choices into a single ‘portrait.’ The analysis shows that, at least on homepages and in viewport images, universities ‘target’ similar groups of envisaged audiences, aiming to establish similar discourse communities, and incorporate similar rather than contrasting semiotic resources organized through a limited set of design strategies, all contributing to a construction of similar rather than ‘unique’ or contrasting organizational identities. It is hoped that in these ways, the current research thereby contributes to the development of multimodal and social semiotic scholarship around semiotic technologies and their role in shaping and being shaped by key organizations in our contemporary cultural context.

Chapter 2 Semiotic approaches to multimodality of digital texts

Orientation

For some time now, academic research has seen an increased shift from studying exclusively verbal texts to inquiring about the nature of discourses where the language is but one – still highly significant – component (Forceville & Urios-Aparisi, 2009: 3). Historically, scholarship from a logocentric perspective approached language as a central communication system and viewed communicative resources other than language as supportive to written or oral verbal texts. However, within broad areas of knowledge where "meaning is at issue" (Kress, 2010: 1), such a conception of language as a hegemon has been increasingly subjected to critical rethinking (Roderick, 2016: 29), and the attention to the orchestration of different semiotic resources in a multimodal text has received more resonance.

This chapter explains multimodality as an inherent feature of any text, drawing attention to communication as more than language, more broadly, and to different forms of meaning-making resources (e.g., images, color, temporal sequencing, spatial configurations, and so on), more precisely – all contributing to rhetorical purposes and envisaged uses of a homepage. It provides a brief history of multimodality as an approach to studying meaning situated in a particular social context, detailing how such an approach is beneficial for the purposes of investigating interactions between different constituents of the page and their meaning potentials in the context of organizational identity communication. While doing so, it foregrounds key tenets of web homepages as technology for making meaning, with attention to the situated choice of semiotic resources on the page.

Another aim of the current chapter is to clarify the key theoretical concepts of *mode* and *metafunction* to support an understanding of the data, data collection process, and methods discussed in CHAPTER 4. Fixing a formal definition of 'mode' is particularly relevant to studying complex digital phenomena such as homepages, fostering an understanding of the material and semiotic sides of a specific resource as well as how these sides are interwoven with other resources co-operating in multimodal ensembles. These co-orchestrations of meanings are attended to through the concept of 'metafunction' – i.e., what a specific mode does in terms of

three core functions – representing ideas and experiences, engaging the envisaged audiences, and organizing different elements into a coherent whole.

SECTION 2.1 discusses the origins of multimodality as a theoretical perspective arising from the shift in scholarly attention from studying the language to recognizing the multimodal nature of texts, focusing on the critical features of web-mediated texts and synthesizing the ways to address the complexities brought by the digital medium. SECTION 2.2 clarifies the key theoretical concepts relevant to multimodal discourse analysis, explaining the metafunctional view applied to studying web homepages as one of the 'sites' of identity work. SECTION 3 connects the theoretical and analytical frameworks, detailing epistemology that informs the theory and methodology and pointing to the need for a mixed-method approach, as further explained in CHAPTER 4.

2.1 Understanding multimodality

2.1.1 Origins

Simply put, "multimodality approaches representation, communication and interaction as something more than language" (Jewitt, 2009b: 1). This theoretical approach stems from the argument that all types of communication are inherently multi-semiotic (Kress, 1998) or multimodal (Kress & van Leeuwen, 2001; Norris, 2004; Ravelli, 2018). Written language, for example, uses typography to emphasize the areas more 'worthy' of the reader's attention than others. In contrast, spoken language achieves the same purpose through different prosodic features such as pauses, rising tones, accentuation, etc. Broadly, multimodality is understood as

i. An inherent feature of any instance of communication, as "not simply a matter of greater choice but a matter of the 'adequacy', of the 'fullness' of meanings to be made, overcoming the partiality of each mode in isolation" (Kress & van Leeuwen, 2021: xv); "the phenomenon in texts and communicative events whereby a variety of 'semiotic modes' (means of expression) are integrated into a unified whole" (van Leeuwen & Kress, 2011: 27).

ii. A theoretical approach to understanding communicative artifacts across a range of different media, attending to various meaning-making resources in specific contexts of use – that is, pushing beyond language and also accounting for the gesture, space, images, layout, color, typography, and more while challenging the dominance of one semiotic system and approaching any communicative

> artifact as an interaction of different semiotic modes working together towards a multiplicative effect to fulfill a particular communicative function in a specific social context (see, e.g., Jewitt, 2009a, 2014; Kress, 2010; van Leeuwen, 2008; Zhao et al., 2018).

To understand multimodality as a "theory, a perspective, a methodological application or a field of enquiry" (Jewitt, 2014: 127), examining how the term was first introduced is useful. Jewitt et al. (2016) reconstruct that the term first appeared in the late 1990s and was used more or less independently by researchers working on different methods within discourse analysis. Gunther Kress and Theo van Leeuwen's work, 'Multimodal discourse: The modes and media of contemporary communication' (2001), in the social semiotic tradition and Charles Goodwin's 'Action and embodiment within situated human interaction' (2000) in the tradition of conversation analysis are two prominent examples.

Kress and van Leeuwen's (2001) work is one of the most influential endeavors to move away from examining different modes separately as performing bounded specialist tasks towards "a view of multimodality in which common semiotic principles operate in and across different modes, and in which it is therefore quite possible for music to encode action, or images to encode emotion" (Kress & van Leeuwen, 2001: 2). They define multimodality "as the use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined" (2001: 20), foregrounding the *use* of "the variety of semiotic resources to make signs in concrete social contexts" (2001: vii). Such a view entails that meaning resides in both articulation and interpretation (i.e., in production and reception) – that is, producers and consumers of texts shape meaning in several ways, namely through (i) semiotic resources for communication via modes and media available in culture at a particular time and (ii) the communicative practices in which these resources are used.

To understand meaning making in a multimodal text, Kress and van Leeuwen (2001) propose four non-hierarchical strata of a given semiotic practice – discourse, design, production, and distribution, and explore how these contribute to the overall meaning shaped by production and discursive interpretative practices. Theoretically, this means that 'double articulation,' or the uniformity of expression of meaning in form, is *not* a feature of a multimodal text. Thus, one needs to study meaning as a multi-layered construct across the four strata participating in multimodal communication situated within particular social and cultural contexts.

Around the same time, Kay O'Halloran, then in Australia, started using the term 'multisemiotic' in research on symbolism in mathematics, primarily from a systemic

functional linguistics (SFL) perspective. Drawing on O'Toole's (1994) systemic model for studying painting, architecture, and sculpture and the first edition of Kress and van Leeuwen's (1996) 'visual grammar', O'Halloran (1999) argues that meanings realized by one semiotic system cannot be precisely replicated by another system. However, semiotic commonalities may occur through a 'semiotic metaphor' that arises because of translation between different semiotic codes via explicit discursive links (O'Halloran, 1999: 319). In this context, verbal language is treated as metadiscourse for each stage in deriving the solutions in mathematical texts. The mathematical language was found to address commonsense, scientific, and mathematical realities, whereas mathematical symbolism expressed exact relations between the parts of entities (O'Halloran, 1999: 319). O'Halloran's work also demonstrates that different semiotic modalities have limits in their meaning potential and that the change (or code switch) of semiotic modalities creates new semiotic entities that become accessible for the audience interpretation.

Whereas O'Halloran (1999) and Kress and van Leeuwen (2001) mostly drew on static representations, Goodwin (2000) examined temporal sequences that manifest interrelations between cognition, language, and action. Although the reference to 'multimodal action' is made only once throughout the paper, discussion around the multiplicity of signs in talk, gesture, body positioning, and how they impact one another is distinctly rendered as 'multimodal.' For example, the displays of postural orientation in a dataset of the recordings of young female participants playing hopscotch reveal the function of building conjoint participation frameworks through gesture and talk whereby moves between gestures, gaze, and body postures arguably signify features of professional practices (Bezemer & Kress, 2008). Thus, Goodwin's research demonstrates that different semiotic resources work together to reflect relevant contextual configurations for the unfolding (in time) situated social interactions.

Similarly, Norris (2002, 2004), then in the USA, examined the shifts in focus from language to human action, from a perspective of "multi-modal interaction" (Norris, 2002: 97). Norris draws on Scollon's (1998, 2001) mediated discourse analysis that shares a significant proportion of goals of Critical Discourse Analysis (CDA) but focuses on the social action through which discourse participants (social actors) produce meaning. Norris (2002) argues that the standard transcription analysis tools that primarily address language are no longer sufficient when analyzing interaction across different modalities. She proposes to include multimodal transcriptions beyond language to account for various semiotic resources from the point of view of meaningful actions. It is done by prioritizing bodily action and interaction rather than language or verbal thought through

an assemblage of modes in which, as Norris (2019) explains, “body, mind, and the world are not separated” (28).

These intellectual contexts have subsequently given rise to what has become known as different approaches to multimodality, summarized in Table 2.1 and briefly elaborated further below. Despite drawing on diverse datasets that address different objects of inquiry, different schools of multimodality aim to describe texts “built through the simultaneous deployment of a range of quite different kinds of semiotic resources” (Goodwin, 2000: 1489), recognizing the multimodal nature of communicative artifacts.

Table 2.1 Different approaches to multimodality

School of thought	**Foregrounded concepts**	**Major contributions**
multimodal social semiotic analysis (MSS)	sign-making as a social process; emphasis on the sign-maker modes and media connected to social and cultural contexts of use	Kress & van Leeuwen (2001), theoretical outline of multimodal discourse analysis as a composite of design, production, and distribution Kress & van Leeuwen (1996, 2006, 2021), images and in part, multimodal texts Jewitt (2005, 2008), technological literacy, digital technologies in museums
systemic functional multimodal discourse analysis (SF-MDA)	systemic functional grammar; metafunctional systems with emphasis on integration; an interplay of systemic semiotic choices in multimodal phenomena	O’Toole (1994), systemic functional grammar (SFG) for art O’Halloran (2008), mathematical symbolism Baldry & Thibault (2006), printed text, websites, and film phases analysis Djonov (2005, 2007) who coined a term SF-MDA, website analysis, hypermedia discourse analysis Painter et al. (2013), visual narratives in children picture books
empirical multimodality research	empirical approach to multimodal documents as multilayered artifacts;	Bateman (2008) and Hiippala (2015), framework for analysis of multimodal documents based on the foundational notion of genre

	genre: document types, range of possibilities, and materiality; separation of modes and media; emphasis on communicative situations	Bateman (2013), multimodal analysis of non-static semiotic artefacts Wildfeuer (2014), film discourse interpretation – extension of empirical multimodal research to spatio-temporal texts
multimodal interactional analysis	Meaning making approached through interaction of modes in the communicative context of use of semiotic resources through the concept of 'mediated action'	Norris (2004), Maier (2014) everyday interactions and technologically mediated communication through the Internet, video, and software; modal density and multimodal configurations

From Table 2.1, MSS draws on social semiotics that received its impetus from Halliday's (1978) work on 'language as social semiotic,' emphasizing the relationship between language and the social needs it is used to serve. Social semiotics is a "social theory of meaning making and communication in which modes or sign systems (e.g., language or image) are intertwined with their user and social context of use" (Jewitt et al., 2016: 60). MSS builds on this understanding of meaning making through language and extends it to other semiotic systems (e.g., image, color, design), foregrounding the agency of a sign-maker in the production of meaning, situating analyses in the social and cultural contexts of use, and describing inventories of resources as well as organizing principles of different modes. MSS focuses on "people's process of meaning making, a process in which people make choices from a network of alternatives: selecting one modal resource (meaning potential) over another" (Halliday, 1978, as cited in Bezemer & Jewitt, 2018: 184). It studies representations rather than the actual use of text(s), considering different semitic resources selected for a particular communicative artifact or event, how these resources are organized into wholes, and what communicative purposes these combinations fulfill in a specific context. The focus of MSS is not on use; instead, it provides "means for describing and understanding "what is being used" (Bezemer & Kress, 2008: 171). MSS provides a set of useful tools for the current study (particularly metafunctions – see SECTION 2.2.2), as further explained in detail in CHAPTER 4.

SF-MDA draws on systemic functional grammar (SFG) based on the work of Michael Halliday (1973, 1985), Ruquiya Hasan (1985), and Jim Martin (1984). One of the main distinctive features of SFG is its conception of language as a semiotic system across meaning-making strata – namely, "lexicogrammar, concerned with the semogenic potential of clauses, and semantics, focused on the semogenic potential of texts" (Martin,

2016: 37). Since MSS and SF-MDA are both based on Halliday's work, they share commonalities across theoretical foundations. The key difference is that SF-MDA adheres to SFT principles, such as 'system,' 'function,' 'register,' and 'genre' while developing 'multimodal grammatics' with interacting systems of meaning as a key motif (Jewitt et al., 2016: 33-39). SF-MDA has seen a growing number of studies of different communicative artifacts, from print advertisements (O'Halloran, 2008) to capital budgeting techniques and management reports (Alyousef & Alnasser, 2015) and virtual reality movies (Fawzy & El Shazly, 2023), to name a few.

The empirical approach to multimodality or 'empirical multimodality research' (Pflaeging et al., 2021) stems from the work of John Bateman and colleagues (e.g., Bateman, 2008; Bateman et al., 2017; Delin et al., 2002; Hiippala, 2013). It undertakes a problem-oriented approach to multimodality, foregrounding systematic and empirical analyses of different communicative modes and their interplay. Empirical multimodal analyses focus on situations that produce communicative artifacts of different kinds such as static page-based texts (e.g., Bateman, 2008; Hiippala, 2015), film (Wildfeuer, 2014), websites (Nekić, 2015), dance (Maiorani, 2021), and more. For effective multimodal analyses of these situations and artifacts, empirical multimodal analysis reinforces the necessity of distinguishing critical theoretical concepts in multimodal research, specifically, *modes* and *media*. Bateman et al. (2017) highlight that it is crucial to clarify the material involved in communicative situations and how this material is used to achieve specific rhetorical purposes, to go beyond observational descriptions:

> As communicative situations become more complex, perhaps drawing on new technological capabilities and combinations of meaning-making strategies, being able to pick apart the constitutive contributions of material and what is done with that material will prove crucial (110).

In sum, empirical multimodality research is driven by the motivations to account for meaning-making potentials of texts with different materialities by examining how various semiotic resources integrate in meaningful wholes. Research endeavors of this school of thought incorporate clear definitions of key theoretical concepts and systematically map meaning potentials by attending to the semiotic material and its interplay before commencing interpretative analyses. As a result, empirical multimodality continues to make significant methodological contributions to the development of multimodality – recent work in this direction includes Bateman (2022), Pflaeging et al. (2021), Thomas (2020), and Wildfeuer et al. (2020), aiming to establish appropriate pre-conditions for

scaling up through “the empirical ‘feedback loop’ from theory to data and back to theory” (Pflaeging et al., 2021: 5).

One of the essential preconditions for making appropriate and productive contact with data is to complete the empirical ‘feedback loop’ from theory to data and back to theory.

Empirical multimodality research provides a set of useful theoretical ideas for the current study, particularly separation of ‘modes’ and ‘media’ (SECTION 2.2.1) and ‘materiality of digital canvas’ (CHAPTER 3.2.3) so that key multimodal concepts are made explicit. It constitutes a foundational tool for the documentation of design elements (CHAPTER 4.3) as means of “isolating significant patterns against the mass of detail that multimodal documents naturally present” (Bateman, 2014a: 33).

The last major approach to multimodality outlined in Table 2.1 is multimodal interactional analysis or ‘multimodal mediated theory’ (Norris, 2019: 32). As previously noted, it draws on the pioneering work of Scollon’s (1998) about *the principle of social action* that situates everything that people do as social actors through mediational means or cultural tools. Norris (2019) extends this foremost principle of multimodal interactional approach to include two principles – the sub-principle of communication (i.e., all actions communicate in some way) and history (i.e., all actions embed history and have antecedent). Multimodal mediated theory emphasizes embodiment and perception, foregrounding ‘mediated action’ as the main unit of analysis, further developed into three units – the lower-level mediated action (experienced and perceived by the person producing it as well as others – e.g., pointing at something), the higher-level mediated action (as chains of lower-mediated actions – e.g., several ‘stages’ of taking part in an experiment, such as ethics sought, explaining the experiment, interviewing, and so on), and the frozen level mediated action (an action embedded in the object or the environment that tells social actors of the previously performed actions – e.g., the actions of builders who constructed a house) (Norris, 2019: 41-46). Multimodal interactional analysis has received a growing number of applications, particularly in education and technology research (e.g., Jocuns, 2021; Rachul & Varpio, 2020; Wingham & Satar, 2021; Querol-Julián, 2021).

Different approaches to multimodality discussed above provide solid foundations for understanding complex meaning-making processes due to the key premises as summarized by Jewitt et al. (2016: 4):

i. meaning is made with different semiotic resources, each offering distinct potentialities and limitations

ii. meaning making involves the production of multimodal wholes
iii. if we want to study meaning, we need to attend to all semiotic resources used to make a complete whole

The endeavor to move from linguistic to semiotic concepts was pioneered by social semioticians Kress and van Leeuwen (2021), who, in the third edition of their widely recognized 'Reading images: The grammar of visual design', state the following:

> We seek to be able to look at the whole page as an *integrated* text. Our insistence on drawing comparisons between language and visual communication stems from this objective. We seek to break down the disciplinary boundaries between the study of language and the study of images, and we seek, as much as possible, to use compatible language, and compatible terminology to speak about both, for in actual communication the two, and indeed many others, come together to form integrated texts (182; italics in original).

Such recognition offers a possibility to move from linguistic to semiotic concepts in analyzing various (and now predominantly visual) multimodal texts within multimodality as a field of inquiry. More recently, scholarship grounded in linguistic and semiotic approaches to multimodality suggests that multimodality as a field of inquiry "could, and perhaps even should, be seen as a discipline in its own right" (Wildfeuer et al., 2020: 4) where considerations of different communicative resources and meaning-making mechanisms are at stake.

2.1.2 Key tenets of digital multimodal texts

Although multimodality is and has arguably been a feature of all communicative texts, it is the technological advancements in tandem with other major societal trends of the post-industrial era that have increased the ease and speed with which multimodal texts are being designed, produced, and distributed. Such developments have subsequently brought what Kress (2005) refers to as a 'revolution in the media of dissemination' – a recognizable shift "from the centrality of the medium of the book to the medium of the screen" (7). These changes in the communication landscape impact the look of contemporary multimodal texts across different fields of knowledge and *contribute* to the ever-increasing complexity of new media texts over the texts of even the relatively recent past. Norman (2013) refers to this phenomenon as 'the paradox of technology' (32) – adding new features and expanding functionality inevitably adds complexity to communicative designs.

The complexity is brought not only by the proliferation of semiotic modes due to technological advancement but also as a cumulative effect of different communicative resources combining, interacting with, and impacting one another. To manage some of the complexities, designers of contemporary multimodal texts tend to draw on the visual logic of representation, contributing to an "increase in the visual and non-verbal orientation of culture at large" (Bateman, 2008: 2) and moving us from "the centrality of writing to the increasing significance of image" (Kress, 2005: 7). This increasing visuality of contemporary texts is ensured by *design* which realizes meaning (i.e., produces semiotic entities) in the process of "translating the rhetor's politically oriented assessment of the environment of communication into semiotically shaped material" (Kress, 2010: 132).

The fact that a visual image and screen often come in 'constellations' amplifies these forms of representation and warrants consideration of the meaning potential of such combinations across various social contexts. For the current research, several significant consequences follow. Since this project focuses on web homepages, it attends to the constellations of 'the visual' and 'the screen' in the context of organizational identity communication. 'The visual' is a feature of multimodal texts where non-verbal meaning-making resources such as color, typography, images, lines, icons, and shapes serve as principal means for multimodal content integration. 'The screen' is used as (a) a metaphor for web pages as semiotic technology (see CHAPTER 3.2.1) and (b) as a measure of spatial positioning of the communicative content presented for the audience to interact with at a time (e.g., the first 'screen' of the web page 'above the fold' referred to as 'viewport'[3] before the audience scrolls down to the next 'screen' or the stretch of text that follows).

The following fundamental characteristics of web homepages are being considered:

[3] Number of screens will vary depending on the device type that the pages are accessed from and its screen specifications. For this study, the data is accessed and discussed as displayed on a 24-inch (4480 × 2520) retina display, and the viewport is determined as the first screen or stretch of content visible at a time at the display with this size specification. The screen variation is the most significant when web pages are accessed from different types of devices – PC, tablet, or phone – also, three key devices considered for encoding and representation the spatial location when designing for the Web (Brosnan et al., 2017). The variation is less significant for the PC-based uses because regardless of the display size, the data in the corpus follow a fluid web design, which means they are designed to adjust to the display and approximately the same for commonly used 21/24/27-inch displays. Whereas the data on the desktop vs table vs mobile user access to the analyzed corpus is unavailable, statistics shows that 39.18% of users worldwide accessed web content via PCs in 2020 (StatCounter Global Stats, 2023).

i. web homepages are complex multimodal artifacts, combining different semiotic resources into meaningful communication units, and their materiality impacts what combinations are possible and what opportunities for interaction with these combinations are made available for envisaged audiences
ii. web homepages foreground visuality through still and moving images, layout, color, diagrammatic resources, typography, and more
iii. design is a dominant semiotic principle underlying the composition of web homepages

These considerations form the starting points for approaching web homepages as complex multimodal artifacts for organizational identity communication and point to design as one of the productive perspectives to understand the complexities of representation and embedded interaction with organizational identities, as discussed in detail in CHAPTER 3.

2.1.3 A webpage as a complex multimodal artifact

When the research intends to describe a specific semiotic entity such as a web homepage, one may look, among others, at its genre, ideation, style, or target audiences. A corpus of comparable texts needs to be situated in a similar institutional and cultural context and assumingly perform a similar communicative function (Bateman, 2014b). As Kress and Adami (2014: 233) emphasize, such a route takes a researcher beyond description alone, and into investigating relations between social contexts, users, and functions of different modes available to members of a certain social/cultural group. However, the task of moving "from beyond mere description of the text, to some more nuanced account of its social and cultural significance" (Ravelli, 2017: 19) is challenging and requires explicitness in linking methods, a methodology that governs the choice of methods, the theoretical perspective that lies behind the methodology in question, and epistemology that informs the theoretical perspective (Crotty, 1998: 2), as further explained in SECTION 2.3.

Furthermore, prior to a comprehensive analysis grounded in specific epistemology and theory, it is useful to gather initial observations about the meaning making material of a multimodal text without tying such a discussion to any framework or method. Recording initial observations and descriptions without delving into a specific analytical framework or technicalities of the object of analysis is a useful way of mobilizing first impressions and reactions to a text. Pauwels (2012) suggests an instant assessment of the website in terms of its communicative purpose, its web presentation, and features that stand out

through the first phase of the ‘look and feel’ analysis. Below, such initial observations are recorded for a sample multimodal semiotic entity – on one of the UNSW Sydney web homepage designs in early 2020 (Figure 2.1).

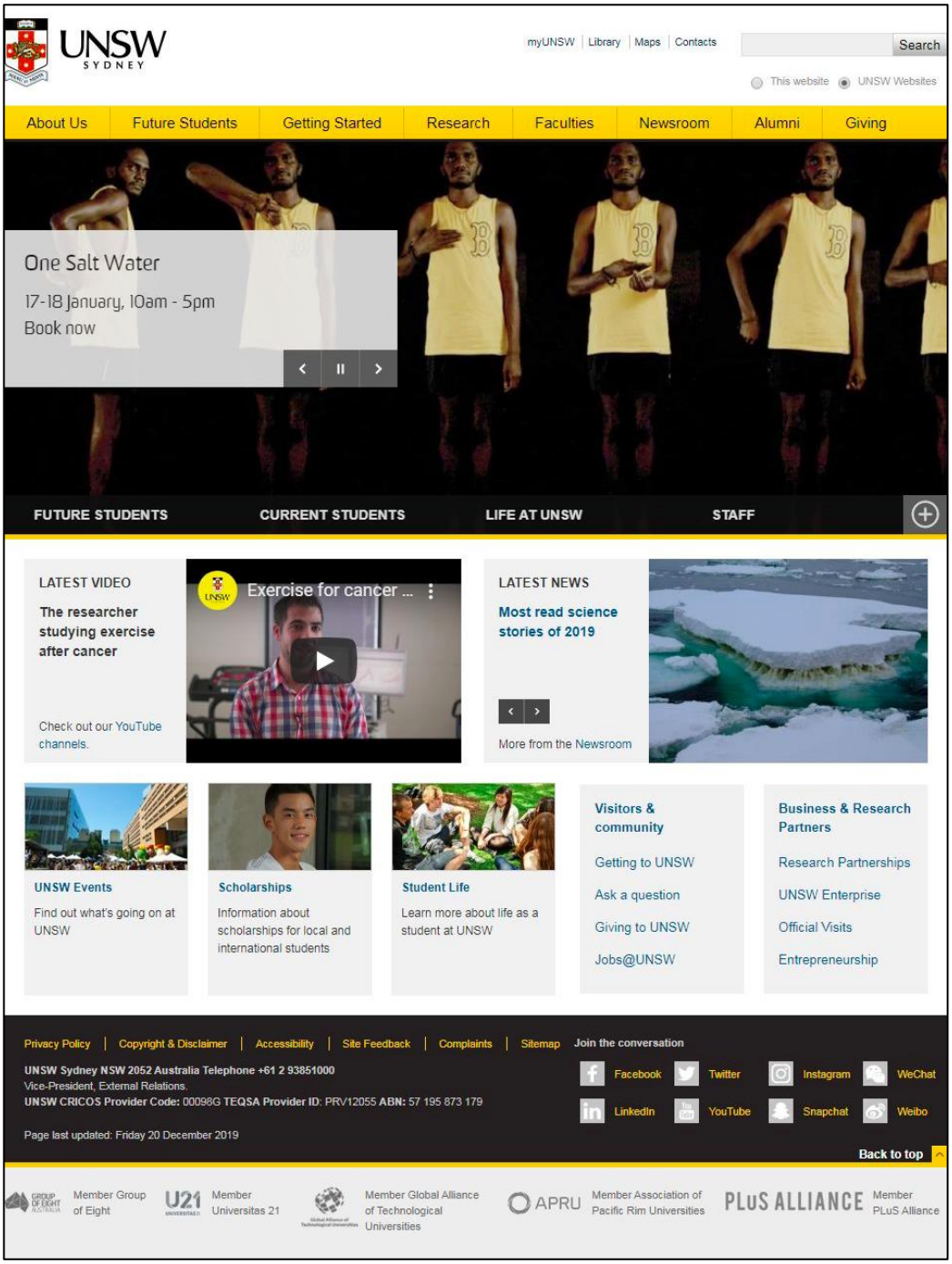


Figure 2.1 The UNSW web homepage on 3 January 2020 (https://web.archive.org/web/20200103083244/https://www.unsw.edu.au/)

From the first glance at the web page in Figure 2.1, it is possible to record several observations. First and foremost, the webpage is perceptibly visual – it does not build upon the linear logic of a traditional written page (cf. Kress, 2005: 9) and relies on distinct

graphic zones and “hierarchies [sic] of differently sized headings that supply the discourse cohesion that in a purely linear text would be signaled in words” (Waller, 2012: 237). Compared to other web pages on the website, the homepage is populated by more images, making it image- rather than text-centric. The most salient image stretches across the whole page at the top and depicts a person performing a particular and seemingly culturally specific action; thus, the general audience may not necessarily fully grasp the meaning communicated. The three images at the bottom of the screen relate to the category of studentship and university life (i.e., <*UNSW Events*>, <*Scholarships*>, <*Student Life*>). The center of the screen features two design plates – <*Latest video*> and <*Latest news*>, structured similarly. Both begin with naming the category of the design unit, followed by a headline, and featuring a salient multimedia element – video and image, respectively. The verbal text is minimal across the whole page and primarily uses words, phrases, and limited clauses signifying interactivity of the design elements either explicitly (i.e., without any user action taken upon them – such as light blue color that denotes a hyperlink) or implicitly (i.e., requiring the user input, such as pointing a mouse at a menu item, which brings a change in its prominence through color and size). Repetition of yellow is notable: the color is used to frame the main horizontal menu panel at the top of the page, provide contrast to the design elements in the footer, and demarcate design arrangements through diagrammatic-like elements such as lines. Because the page layout changes rather infrequently, the main design elements (e.g, ‘menu items’ and ‘news’) are ‘locked in place’, and the relationships between elements can be assumed to reflect the envisaged rhetorical purposes. The page design realizes designer’s ‘graphic relationships’ that will reach the digital audience (cf. Waller, 2012: 245). The page also encodes hierarchical structures (Djonov, 2007) and organizes the elements according to the principle of importance placing the elements of the most immediate relevance at the top of the page.

Therefore, design is the main semiotic principle that welds image and verbal text together. The structuring of what Kress (2010: 145) refers to as ‘ensembles’ reflects the interests of the envisaged audience. In this sense, the design attempts to accommodate the heterogeneous readership of the homepage and provides a broad schema of a website as a whole. In doing so, a homepage draws upon two logics – the logic of space that combines different elements and the logic of time across two levels: at the rank of a web page and a website as a whole. To view a whole page, an action of ‘scrolling down’ needs to be undertaken, and to build the pathways to other pages via immediate and overt or less obvious and more covert ‘interactivity cues’ or ‘sites’ (Adami, 2015), a user needs to click on or point a mouse at items in different layout units. The following value

judgment is that a webpage is a spatially and temporally organized multimodal text composed of different meaning-making resources, combining the logic of space and time. It bridges different elements via a multimodal design that structures and organizes different design resources into a coherent whole. The meaning potentials of these elements can be subsequently addressed more systematically by establishing distinctions between the key theoretical concepts in multimodal research – those of a semiotic mode and a medium.

2.2 Key theoretical concepts

2.2.1 Mode

Mode is one of the core concepts for multimodal discourse analysis (MDA) studies (Hiippala & Bateman, 2020; Kress, 2009). This term encompasses how semiotic resources, such as verbal language, images, gestures, and many more, combine into 'multimodal ensembles' (Kress, 2010). However, despite its centrality in MDA, it is not devoid of ambiguity, partly because many research endeavors in the field "still proceed without an explicit consideration of just what the 'mode' of multimodality is referring to" (Bateman, 2011: 17). This study addresses this concern by responding to a need to establish clear theoretical definitions that research of complex multimodal artifacts, such as homepages, entails.

All definitions of a mode that aim to account for both material and meaning potentials agree on a two-faceted structure. On the one hand, a mode appears to have a *material dimension* originating from biological sensory channels engaged in perceiving them, and, on the other hand, a mode encompasses a *semiotic dimension* – i.e., it realizes meaning shaped by interests of producers and consumers of a multimodal text (Bateman et al., 2017: 113) via the deployment of semiotic resources, or "semiotically charged organisations of material that can be employed for sign-construction" (Bateman, 2011: 20). In relation to the current research, it is essential to address the material for representation on a 'virtual canvas' or the medium "adopted as substrate for the artefact at issue" (Bateman, 2008: 16) as digital technologies evolve and enhance the possibilities for multimodal combinations (CHAPTER 3.2.3).

A clear way to theorize and visualize a semiotic mode is put forward by Bateman (2011) and further extended by Bateman et al. (2017). The model is a result of revisiting the work of some of the key figures in linguistics and communication theory: Saussure's (1916/1998) distinction between signifier (i.e., physical form in the real world) and signified (i.e., perception of the physical form) as two planes of a sign in a system of

communication; Hjelmslev's (1961) distinction between content and expression planes; Halliday's (2005) hierarchy of axis for the English clause (i.e., the distinction between choice and chain); Kress and van Leeuwen's (2001) theorization of grammatical and lexical patterns of representation of semiotic resources, guided by the task to integrate both material and semiotic dimensions into a working definition of a mode (Figure 2.2).

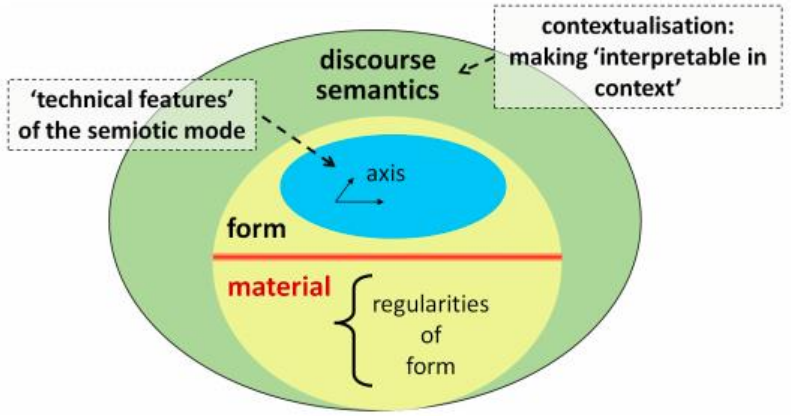


Figure 2.2 Abstract definition of a semiotic mode
(Bateman et al., 2017: 116)

Mode is conceptualized across three abstract semiotic levels accounting for "doubly stratified configurations of semiotic resources *together* with the materialities that those resources engage" (Bateman, 2017: 167, italics in original) and making these configurations interpretable in a specific context:

i. the material substrate that may involve multiple sensory channels
ii. axis, or "classification (paradigmatic) of formal units and structures (syntagmatic), which defines the material deformations that are pertinent for a semiotic mode" (Bateman et al., 2020: 318)
iii. discourse semantics, or contextual interpretations of the regularities of form embedded in a specific material

In Figure 2.2, the inner circle shows that material is an inherent component of multimodal meaning-making. A particular mode is anchored in the material deployed, which will demonstrate the regularities in form when examined as a shared semiotic practice within a specific community. These regularities or 'transition probabilities' are understood as technical features of a semiotic mode (i.e., grammar dependent on the material). They are shown in the diagram's top part of the inner circle. Lastly, discourse semantics is represented in the outer circle to include the level of abstraction for making the regularities of form interpretable in the research context. Together, these strata

contribute to the material and semiotic sides of a mode that becomes interpretable in context.

Concerning web-based texts that the current research addresses, although the 'new materialism' (Coole & Frost, 2010) is not as tangible compared to the printed text, it should be considered an integral part of meaning-making. As Levy (2016) aptly puts it:

> Digital documents are not immaterial. The marks produced on screens and on paper, the sounds generated in the airwaves, are as material as anything in our world. And the ones and zeros of our digital representations [...] are embedded in a material substrate no less than are calligraphic letterforms on a piece of vellum (155).

Part of the materiality of web-mediated texts includes hypertextuality as a 'new' form of textuality, which involves a different logic of information architecture, as discussed in CHAPTER 3.2.1. For users who traverse web texts, hypertextuality manifests through hyperlinks which are often (rather simplistically) understood as references that automatically bring users to a particular point of a web page or a particular place in the same digital document (as for example, the in-text navigation of this thesis is doing). One way to approach navigational possibilities of hyperlinks is to approach them as 'deictic expressions', as proposed by Paraboni and van Deemter (2002) and further integrated into a definition of 'modal adjuncts' by Bateman (2008: 114). As deictic expressions, hyperlinks not only explicitly support navigation of the page but also transport attention from one place to another (cf. Halavais, 2008: 51), enabling interaction with multimodal messages on the page. This web of hyperlink networks invites active participation from the envisaged audiences, providing a platform for multiple social voices in the Bakhtinian sense of heteroglossia (Lam, 2013: 14) and challenging an understanding of conventional reading path (Kress, 2005).

Whereas hyperlinks exhibit a materiality with certain properties – i.e., they draw on covert computational structures that manifest on the page through 'interactivity cues' (Adami, 2015) – they are just one part of the material substrate. Other considerations highlighted by Bateman (2021a) include the dimensions of space (e.g., two-dimensional rendering of content on the screen), the permanence of some material (e.g., the logo and its positioning in the top left corner of the page) and the transience of other (e.g., updates of the visual content that occupies the center of the page), and the role that a specific material supports (e.g., participatory role for the audiences to leave the digital traces in the process of building traversals across a website. The material substrate is, therefore, one essential component of the mode because it impacts the look of the text and possible

interactions. This thesis accounts for the material nature of web-based texts through the annotation schema explained in CHAPTER 4.3.

The notation 'regularities of form' in the inner circle of Figure 2.2. signifies that the material displays regularities of form manifested as a result of recurrent manipulations of the materiality by different communities of practice (Bateman et al., 2017: 116). The regularities of form may be then associated with particular semiotic resources and their use – for example, their spatial or temporal arrangements, depending on the nature of the text. An understanding of the nature of the text necessarily links to the human perceptual system, and in Gestalt psychology, regularities of form can be identified through principles of spatial proximity (placement at seemingly equal intervals of space), similarity, continuity, symmetry, closure, figure-ground, and size (Koffka, 1935, cited in Bateman, 2008: 59). In this context, "the appearance of any element depends on its place and function in the overall pattern" (Arnheim, 1974: 5). Furthermore, signs tend to come together in predictable combinations, and these combinations themselves have meaning. Regarding the system of language, Halliday (1985) and Hasan (1987) draw scholarly attention to these two poles of a single continuum through the notion of lexicogrammar. They argue that meaning resides in both lexis and grammar. This view is applied to visual images by Kress and van Leeuwen (2021), who offer distinctions of grammatical and lexical patterns based on the inventories of choice of semiotic material and principles that govern these choices. Similarly, Machin (2007, as cited in Bateman et al., 2017: 115) differentiates between two approaches: simple (lexis approach) and complex (multimodal approach), through the following:

> simple (lexis): sign >[4] meaning
> complex (multimodality): sign > lexicogrammar > meaning

The lexical organization lists possible forms and offers a clear connection between form and meaning. In contrast, complex grammatically organized multimodal signs are placed within the system of the meaning potential providing users with the power to relate these signs to their life-worlds. As Kress (2005: 19) stresses, new media brings about several changes to the communities of practice: the aptness of mode now allows messages to be communicated via various sources, and the agency of the envisaged audience is more foregrounded, providing flexibility to build different pathways.

[4] '>' means 'associates' – i.e., lexical approach views signs as having associated meanings with little internal organization whereas grammatical approach associates signs with the internal structure (or lexicogrammar) which impacts the production of associated meanings.

The notation ‘form’ in the inner circle of Figure 2.2 stands for semiotic resources, or “semiotically-charged organisations of material that can be employed for sign-construction” (Bateman, 2011: 20), produced in the course of social, cultural, and political histories (Kress & van Leeuwen, 2001). Any non-material semiotic resource that contributes to a mode can be approached through ‘axis’ (inner circle of the diagram, marked in cyan) – i.e., paradigmatic and syntagmatic systems of organization or choice and chain, in simpler terms. The relationship between the two is hierarchically ordered in abstraction, with paradigmatic organization being ‘above’ syntagmatic organization. The two strata are related by ‘realization’ (Matthiessen et al., 2010: 61). Bateman et al. (2017) emphasize that to avoid superfluous descriptions, researchers need to address the grammatical organization (syntagm) that provides tools to address complex signs with their rich internal structures. Similarly, for Kress and van Leeuwen (2001), lexical and grammatical dimensions are constantly co-present, and “no semiotic resource is by ‘nature’ either ‘lexically’ or ‘grammatically’ organised” (113). Even though a specific mode is simultaneously a collection of individual experiences for the envisaged audience and a rule-government system for a text producer, decomposing the two is not meaningful since they are embedded in one communicative practice. In this context, more recent work by van Leeuwen (e.g., 2021b) addresses parametrics of meaning-making systems based on provenance (i.e., experiential meaning potential). It offers insights into distinctive features of materiality of different artifacts (e.g., regularity, consistency, rigidity, and so forth) and contributes to multimodal approaches to understanding the material meaning potentials in different communicative artifacts.

Lastly, the outer circle of Figure 2.2 encompasses discourse semantics as the stratum of a mode that contextualizes deployments of semiotic resources. The semiotic stratum of discourse semantics lies ‘above’ semiotic strata of form and material (Bateman, 2020: 39), and operates at a higher level of abstraction. It encompasses Martin’s (1992) theorization of natural language ‘above the clause’ to account for “certain texts [...] that have a global rhetorical organisation” (166) and, therefore, require a different analytical perspective. Martin’s (1992) framework is helpful for mapping commonalities found across different modes. However, given that this thesis is interested in identity communication that occurs through different semiotic resources and their combinations (see CHAPTER 1.4.1), contextual interpretations of different modes are approached by examining their metafunctionally diversified organization, as proposed by Kress and van Leeuwen (2021), as further explained in SECTION 2.2.2 and CHAPTER 4.3.4:

> For a semiotic resource to function as a mode, it needs to be able to account for the ‘goings on’ in the social world of its users (the *ideational function*); it has to be capable of

> dealing with and documenting the social actions, interactions and relations of members of the community in question (the *interpersonal function*); and it needs to have the capacity to form complex semiotic entities, which are coherent internally and which cohere with the social world in which they were made and are used (the *textual function*) (xiv, italics in original).

Interpretations of mode in terms of what it can *do*, i. e., its communicative function, are beneficial for this study because it is primarily concerned with meaning-making practices on web homepages in the content of organizational identity communication.

One challenge for a precise conception of mode is the common pre-theoretical assumption that semiotic modes align with sensory channels (Hiippala & Bateman, 2022). However, it may be problematic to identify modes based on perceptual characteristics, such as classifying sound (e.g., music) or visual resources (e.g., image) as modes since they are used in fundamentally different ways in various forms of expression (Bateman et al., 2017; Hiippala, 2015; Stöckl, 2004). To illustrate, although written language and image are perceived through the same sensory channel (i.e., sight), they use different resources to fulfill communicative goals of a text. In this context, Stöckl (2004) refers to 'medial variants' (e.g., speech and writing as medial variants of the linguistic mode). Bateman et al. (2017) further elaborate that "medial variants describe situations where there appears to be the same or a similar 'semiotic' organisation being used with different materialities" (125). Therefore, the materiality of a mode and its semiotic capacity (i.e., the capacity of the material to fulfill communicative functions) need to be accounted for in the definition of a mode. Relevant to this study, increased reliance on visual resources (e.g., image, color, graphic shapes) for content organization on homepages contributes to their salience compared to verbal resources, which arguably impacts the envisaged reading path and increases the emotional appeal of the page.

Another challenge to theorization of mode lies in establishing formal and semantic models to interpret how modes combine and interact. Since modes typically come in complex 'constellations' with a given medium, more research is required into how different modes do the same kind of communicative work and the extent to which they differ in their semiotic potential across different media (van Leeuwen, 2005b). One way to respond to these challenges is to turn towards grammar or internal structure to examine combinatorial patterns of different modes in multimodal texts and establish clear distinctions between modes and media (Bateman, 2017). For a robust empirical investigation, the specific materiality of a mode, as well as what can be done with the material, should be considered in relation to a particular community of practice (Kress &

van Leeuwen, 2021) so that the alignment of the material and communicative purpose can be traced. Accordingly, it is more beneficial to approach modes in terms of the communicative functions they fulfill in each social practice – an approach taken up by MSS.

In MSS, a mode is viewed as a "socially shaped and culturally given resource for making meaning" (Kress, 2009: 54). Rather than describing modes as phenomena that have intrinsic systematicity, multimodal social semiotics is interested in how people regulate the uses of semiotic resources in specific communities of practice and cultural contexts (van Leeuwen, 2005a) that can be judged from modal realizations through different media available at a given time. The first step to understanding a mode in this way is considering specific communities of practice, contexts of use, and technological advancements facilitating the realization of meanings. Arrangements of semiotic resources come to display regularities through the ways in which people use them (Jewitt, 2009a: 21). Kress et al. (2014: 52-53) clarify that whereas a layperson may view a visual as a mode, this may not be the case for a professional photographer because digital manipulation uses significantly different sets of rules and canvases compared with, for example, a painting created through brush strokes. Therefore, for practitioners, a digitally produced 'image' and 'analogue painting' may be regarded as two distinct 'modes' comprised of specific expressive resources across two materialities – physical and digital, and considerations of particular contexts of use from a MSS perspective are instrumental in addressing the meanings of these two 'modes' in Kress et. al.'s conceptualization.

This thesis incorporates the notion of the context of use from a MSS perspective to account for organizational identity communication on homepages as multimodal artifacts which draw on the material substrate of different modes as theorized by Bateman (2011) and Bateman et al. (2017). The interpretative work is done through the adapted layer of 'the discourse semantics' (Bateman, 2011) extended to include metafunctional foundations from social semiotics, particularly, Kress and van Leeuwen (2021).

2.2.2 Metafunctions

Firmly grounded in the functional and social perspectives to communication, metafunctional theory builds upon decades of work on language, child development, and cognition, regarding meaning-meaning as *choice*. Where there is a possibility of choice, participants of a discourse engage in a meaning-making process (Eggins, 2004) where the choice to exclude specific semiotic resources is viewed as a part of the overall

meaning potential of a text. The nature of choice – its variety and scope – is guided by what language has evolved to do or its metafunctional foundations. Halliday (e.g., 1973, 1978) argues that language performs three broad functions referred to as 'metafunctions':

i. the ideational metafunction to represent ideas and experiences
ii. the interpersonal metafunction to enact relationships
iii. the textual metafunction to organize texts

Halliday (1970) proposes that *ideationally,* as the theory of the human experience, language presents material and semiotic environments (i.e., experiences and ideas) as a discrete number of choice points, such as, what is depicted about the participants of discourse and different happenings and actions, and what details of these happenings are provided (see e.g., Eggins, 2004). For example, on the clause level, identification of the discursive elements in language occurs through addressing functions of three kinds: Process (i.e., happenings and states), Participants (i.e., who is involved in the interaction), and Circumstances (i.e., attributes of the surrounding activity). These functions are linked to forms (e.g., Processes are realized by verbs and verb groups, Participants are usually nouns and noun groups, and Circumstances normally take the form of adverbials). In further work (e.g., Martin, 1984, Halliday, 1985, Hasan, 1985; Halliday & Matthiessen, 1999; Martin, 2002), a subdivision is made between logical and experiential meanings. Experiential meanings are concerned with experiences through grammatical and lexical patterns. Logical meanings connect messages (Martin, 1992: 176) in several ways, for example, through addition (e.g., 'besides'), comparison (of similarity, e.g., 'like' and contrast: e.g., 'whereas'), consequential connectors (concession: e.g., although'; cause: e.g., 'because') and temporal markers (e.g., 'after').

Interpersonally, as the shaper of interactional relationships between people, language organizes social interaction through lexicogrammatical choices, which are now less discrete. Some examples of these choices include evaluative resources (e.g., evaluative vocabulary), modality (e.g., modal verbs and modal adjectives to temper the position in terms of probability, frequency, obligation, and inclination, and speech functions (i.e., commands, statements, and questions). The choice of interpersonal resources depends on the relationship between participants, such as power, social distance, and frequency of contact as well as their attitudes and feelings (cf. Humphrey et al., 2012). In the discourse semantics stratum, the resources for the expression of positive and negative evaluation are developed into the system of APPRAISAL by Martin and White (2007), who comprehensively describe the systems of judgment (i.e., resources for assessing

behavior), appreciation (i.e., construing the value of natural phenomena and semiosis), and affect (i.e., resources for construing emotive reaction).

Lastly, *textually*, language organizes the flow of information in a communicative instance and does so on several levels, such as text, paragraph, and sentence levels, as well as punctuation, all realizing cohesion and structure of a given text. For example, on the text level, a text opener 'announces' the theme of the text that will follow. On the paragraph level, paragraph openers reveal the unified topic or event of a paragraph as a logical 'bundle.' On the sentence level, a sentence opener (or Theme) begins the clause and invites attention to how the topic is developed (Derewianka, 2011). Thus, textually, language functions as the organizational manager of different elements into a coherent whole, weaving the ideational and interpersonal meanings together. Multimodal research applies the three metafunctions to different modes "to better understand their meaning potential – 'what can be meant' or 'what can be done' with a particular set of semiotic resources – and to explore how these three interconnected kinds of meaning potentials are actualized through the grammar and elements of their different modal systems" (Jewitt, 2015: 10, para. 2).

Thus, a given communicative mode represents objects/ideas and their relations in the world outside the representational system, constitutes and maintains relationships between the producers and consumers of a given artifact, and integrates the representational and interactional elements into a coherent whole. Therefore, the overall meaning potential is made up of these three types of meaning – ideational, interpersonal, and textual. However, to allow for a structured analysis, the communicative phenomena of study are usually decomposed to address the three realities separately first and integrate the overall meaning potential thereafter. As Ravelli and McMurtrie (2016) state, every text can be analyzed when we "pull these meanings apart and identify them individually" (7).

In the metafunctional theory, the sets of choices are often formalized in *system networks* understood as networks of relationships between possible choices. System networks are technical diagrams representing a set of choices to form structural patterns that model structure relations in any semiotic system (McMurtrie, 2015). First 'built' for language, system networks have been subsequently re-conceptualized to account for other communicative modes and map choices to "construct meaning in the context of their instantiation" (O'Halloran & Fei, 2009: 140). Such diagrammatic representations help to (a) formalize the affordances of different text elements and (b) visualize semiotic possibilities in a specific system.

A system network is read from left to right, signifying that choices become more delicate, moving toward the right. The technical term for paradigmatic options within system networks is 'feature,' also commonly called 'valeur' (Knox, 2009). To illustrate, Figure 2.3 presents a simple system of POLARITY (after Halliday, 2009) with two features of positivity/negativity as an adjacency pair for grammatical systems. The name of the system is presented in SMALL CAPS, and the arrow symbolizes the process-like reading aspect.

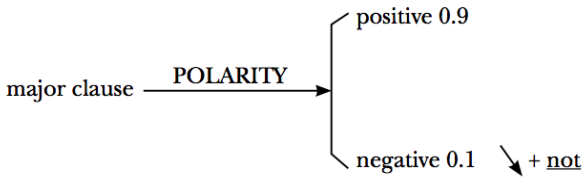


Figure 2.3 The system of POLARITY
(Halliday, 2009: 66)

In Figure 2.3, Before the name of the system, 'major clause' is an entry condition that signifies that the system of POLARITY applies to this specific type of clause. Subsequently, the first feature ('positive' or 'negative') can be represented with one or more elements: (1) valeur – i.e., the probability profile, or "the number in superscript next to selection indicating the frequency that a valeur is selected" (McMurtrie, 2015: 100) – 0.9 for positive valeur or 0.1 for negative valeur and the realization statement ('↘' followed by '+not' for negative polarity). Notably, invariable choices are represented as symbols – arrows, brackets, and operands such as '+' (meaning 'realized by'), '^' (meaning 'followed by'), or 'Ø' ('none'). In contrast, the variable choices are represented as letters, numbers, and words or phrases (McMurtrie, 2015). When the system is gradable, embedded double-headed arrows indicate gradeability.

While 'building' system networks, it is important to keep the paradigmatic principle in mind, which means that the choices must be explained in relation to their systemic context. As Halliday (2009) emphasizes:

> features are not explained in isolation from their systemic context. We do not describe "negative" or "negation"; the object of description is the system – we describe POLARITY (66).

Systems networks are used throughout this thesis to visualize semiotic choices across metafunctions.

As scholarly attention has shifted to other systems of communication and social practices, the metafunctional foundations have expanded beyond language. The first

significant work that extended the metafunctional foundations to images is 'Reading images: The grammar of visual design' by Kress and van Leeuwen (1996/2006/2021). Other resources include color (Kress & van Leeuwen, 2002), hypermodal systems (e.g., Lemke, 2002; Djonov, 2007; Zammit, 2011), built environment and museums (e.g., Ravelli & McMurtrie, 2016), typography (van Leeuwen, 2006), hair (McMurtrie, 2010), and more. These and numerous other studies present a substantial contribution to understanding various semiotic constructs and ways of making meaning. Although research applied to different semiotic systems adapts terminology for metafunctions and incorporates interdisciplinary reach from other fields, it largely follows Halliday's work on language and communication and Kress and van Leeuwen's 'Reading images: The grammar of visual design' on children's drawings, school textbook illustrations, diagrams, maps, charts, advertisements, visual arts, and some instances of three-dimensional communication. As Djonov (2005: 77) points out, multimodal systemic functional and social semiotic studies all employ the three metafunctions as a conceptual framework for studying semiosis. These differences in labeling are presented in Table 2.2.

Table 2.2 Variations in labeling the three metafunctions

Area of inquiry	**Key scholars**	**Types of meaning**		
Language	Halliday (1978), Martin (1992)	Ideational	Interpersonal	Textual
Art	O'Toole (1994)	Representational	Modal	Compositional
Image and multimodal text	Kress & van Leeuwen (2021)	Representational	Interaction and modality /validity	Composition
Hypermodal systems	Lemke (2002)	Presentational	Orientational	Organizational
Built environment[5]	Ravelli & McMurtrie (2016)	Representational and relational	Interactional	Organizational

Kress and van Leeuwen's (1996/2006/2021) visual grammar developed for images and, in part, for multimodal texts, provides a robust framework for visual-based communicative phenomena from a social semiotic perspective (Laba, 2022), and is

[5] For built environment and spatial discourse analysis, Ravelli and McMurtrie (2016) make a distinction between the representational and relational strands of meaning. Representational meanings derive from an understanding of the world and space around the participants of discourse and how they might engage with it. Relational meanings are close to logical ones in Halliday's SFL framework and is about the arrangement of the elements in a sequence because such an arrangement impacts how the text is presented and what elements are dependent on or subservient to one another.

discussed in detail in SECTION 2.2.2.1 (the ideational metafunction or 'representation'), SECTION 2.2.2.2 (the interpersonal metafunction or 'interaction), and SECTION 2.2.2.3 (the textual metafunction or 'composition'). The discussion in the subsequent sections is complemented by the theoretical insights from van Leeuwen's (2008) 'Discourse and practice: New tools for critical discourse analysis', identified as relevant to the research queries of the current study.

2.2.2.1 Depicting experiences: Representation

Representation is about the ability of the semiotic system to establish a representation of reality, real or imagined. Firstly, there are interactive participants (i.e., the text producer and envisaged audience) and secondly, represented participants (i.e., what is depicted) (Kress & van Leeuwen, 2021: 113). Representations are depicted either as dynamic (i.e., engaged in some action) or static (i.e., 'being', presented as objects for scrutiny). Formal characteristics of visual representations, such as the presence or absence of 'vectors' or oblique lines that can be abstract (e.g., arrows) or formed by part or all of a depicted object (e.g., an outstretched arm) (cf. Boeriis & van Leeuwen, 2017: 17) realize these two types of representation referred to as NARRATIVE and CONCEPTUAL (Kress & van Leeuwen, 2021: 55). NARRATIVE STRUCTURES depict the represented participants as doing something and engaged in action, whereas participants of CONCEPTUAL STRUCTURES are represented as static, engaged in whole/part relationships, overt and covert taxonomies, or symbolic structures. To establish the semiotic function rather than forms of the elements, Kress and van Leeuwen (2021) use 'Actor/Goal' and 'Reacter/Phenomena' drawing on Arnheim's (1974) work in art theory, where represented participants "are 'visual objects', defined on formal grounds as 'volumes' or 'masses', with a distinct 'weight' or 'gravitational pull' – metaphors used as attempts to capture effects of their size, shape and contrast to surrounding objects" (48). Another term is 'focus groups' introduced by Painter et al. (2013: 13-14), with the analogy to tone groups, to consider how different elements of visual composition are constituted by the overall layout to organize information and manage the reader's attention.

When a visible, dynamic vector is identified, a represented participant is referred to as an Actor understood to be doing something. An Actor can perform a specific action toward a Goal, engaging in a *transactional narrative process*, or be represented in a *non-transactional narrative process* (i.e., the action has no Goal)[6]. Figure 2.4 exemplifies a

[6] The approach is inspired by the transitivity system in English (see, e.g., Eggins, 2004).

transactional action – a represented participant (i.e., Actor) is doing something with a syringe and a tube (i.e., Goal). This action is unidirectional because it is not reciprocated.

Figure 2.4 Narrative structure: Unidirectional transactional action (https://web.archive.org/web/20201012050322/https://www.uts.edu.au/)

When there are no visible vectors emanating from the represented participant, but an invisible eyeline vector can be drawn from one or more represented participants, such element of a visual text is referred to as a Reacter, and objects the glance is directed toward as Phenomena. This type of process only applies to represented human participants or anthropomorphized entities. Similar to the narrative processes, 'reactions' may be transactional (when a Reacter and Phenomena are depicted) or non-transactional (i.e., Reacter only, no Phenomenon). The transactional reaction can be subcategorized into unidirectional (Reactor's glance realized by invisible eye vectors toward a Phenomenon) or bidirectional, as shown in Figure 2.5.

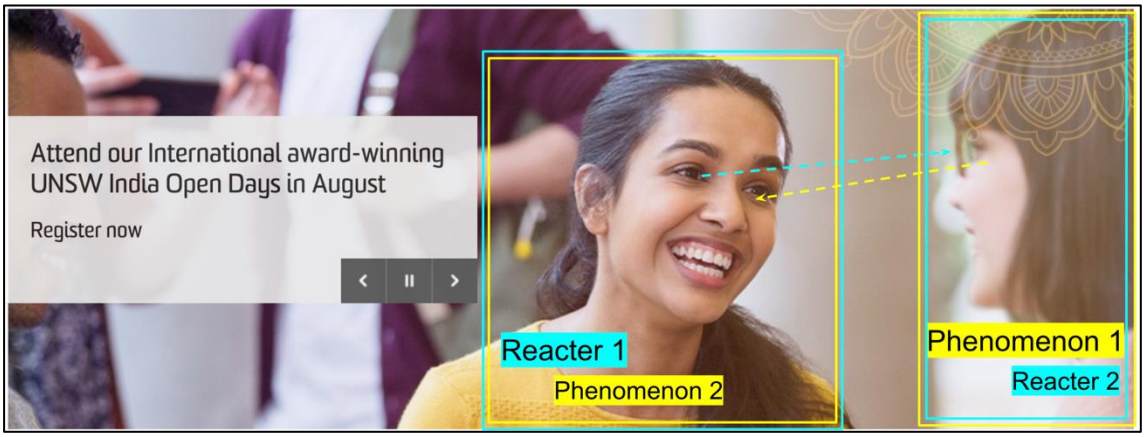


Figure 2.5 Narrative structure: Bidirectional transactional reaction

(https://web.archive.org/web/20190801014151/https://www.unsw.edu.au/)

Kress and van Leeuwen (2021) argue that non-transactional reactional processes may be used as the means of representational manipulation when Reacters are presented in different emotional dispositions (e.g., bored, puzzled, or happy) to achieve a specific communicative purpose of a text. Bell and Milic (2002) observe this interplay of non-transactional narrative structures and behavioral processes and note that such depictions often aim to portray represented participants as 'expressors' or 'behavers'. Two more narrative processes identified in the extensive dataset analyzed by Kress and van Leeuwen (2021) are verbal (e.g., diagrammatic speech bubbles in comic stripes) and mental processes (i.e., speech-like bubbles emanating from the head of represented human participants).

Conceptual representational structures reflect social constructs, "representing participants in terms of their more generalized and more or less stable and timeless essence, in terms of class, or structure or meaning" (Kress & van Leeuwen, 2021: 76). Within conceptual structures, a distinction is made between classificational, symbolic, and analytical processes. Classificational processes relate 'Subordinates' (i.e., visual elements of the same kind in some sense – e.g., spatial positioning and size) to at least one 'Superordinate' as an overarching category that can either be shown (overt taxonomy) or not (covert taxonomy) (e.g., Figure 2.6). Overt taxonomies may be chained, i.e., presented in a way where Subordinates of one level will be Superordinates to the next level. The term to describe such conceptual classificational structures is 'Interordinates'.

Figure 2.6 Conceptual structure: Overt taxonomy
(https://web.archive.org/web/20180530145840/https://www.mq.edu.au/)

Analytical structures exhibit a 'part of' in contrast to 'kind of' relations between represented participants. Two participants involved in analytical processes are 'Carrier',

or the whole, and any number of ‘Possessive Attributes’, the parts. To illustrate, Figure 2.7 shows four represented participants in a structured analytical conceptual process foregrounding diversity through two types of attributes. First, different outfits and props signal different interests or engagement in extracurricular activities available at the university. Second, depicted participants represent different ethnicities, gender, and (apparent) abilities. They are placed together in the center of the image as a unified community[7].

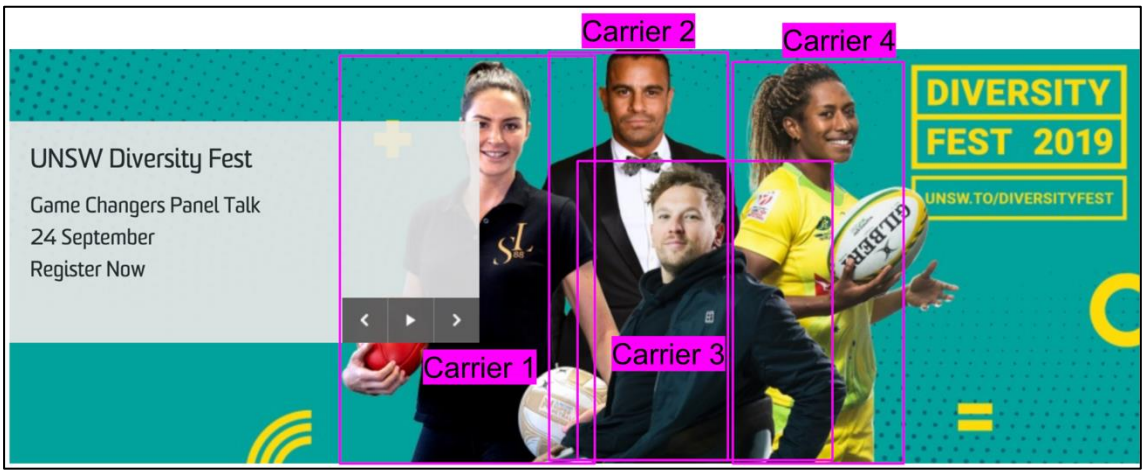


Figure 2.7 Conceptual structure: Structured analytical process (https://web.archive.org/web/20190901004646/https://www.unsw.edu.au/)

Lastly, symbolic processes are the structures that indicate what a participant means or is (Kress & van Leeuwen, 2021). The participant’s meaning or identity can be depicted in two ways – through ‘the Symbolic Attribute’ (symbolic attributive process) or several visual cues establishing the generalized essence of the ‘Carrier’ (symbolic suggestive process). In *symbolic suggestive processes*, depictions represent ‘genericity’, “meaning and identity as coming from within, as deriving from qualities of the Carrier” (Kress & van Leeuwen, 2021: 105), which may include blurring and softness of detail, reduced contrast or sharpness that produces a specific effect (e.g., retro filters in beautification apps to convey the feeling of nostalgia).

In *symbolic attributive processes*, Symbolic Attributes include: (a) salient elements (e.g., relative size, foreground, color, etc.), (b) gesture which cannot be interpreted as action other than “the action of ‘pointing out the symbolic attribute to the viewer’” (Kress & van Leeuwen, 2021: 102), (c) placement in the visual composition that appears unnatural or unsuitable, and (d) conventional association with symbolic values. For example, in Figure

[7] Carrier 3 is a well-known Australian former wheelchair tennis player Dylan Alcott.

2.8, the Carrier (globe) is represented as out of place. The heading elaborates the essence of the features story – UNSW Sydney's endeavors to contribute to tackling climate change. The process is symbolic attributive and urges the viewer to pay attention to the issue.

Figure 2.8 Conceptual structure: Symbolic attributive process
(https://web.archive.org/web/20200408081331/https://www.unsw.edu.au/)

Therefore, the system of REPRESENTATIONAL STRUCTURES in visual-based texts includes several types of narrative and conceptual structures summarized in Figure 2.9.

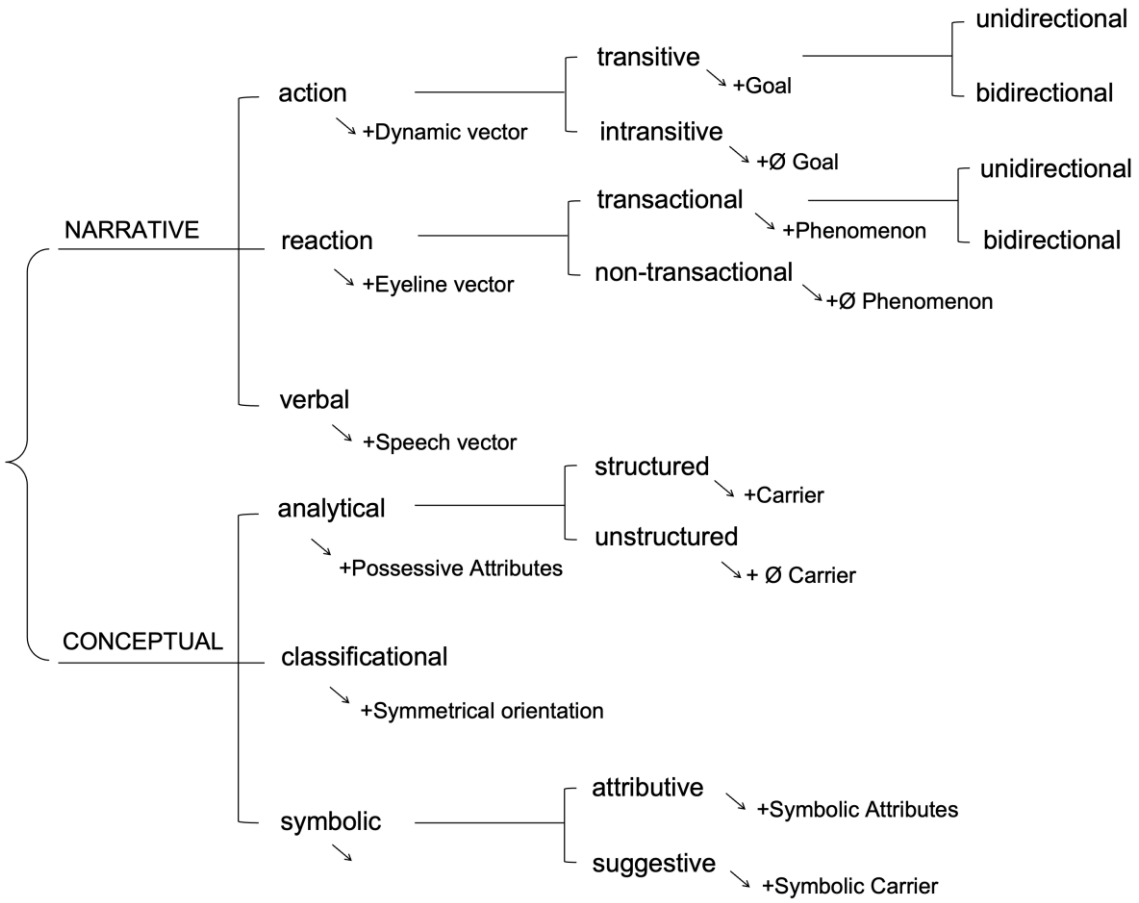


Figure 2.9 The system of REPRESENTATIONAL STRUCTURES
Based on Kress and van Leeuwen (2021: 44-109)

Representation of human participants and inanimate objects is further developed into the Visual Social Actor network (van Leeuwen, 2008). The current research adapts the discussed REPRESENTATIONAL STRUCTURES to study OVIs communicated by images, as further explained in CHAPTER 4.4.2.

2.2.2.2 Negotiating attitudes: Interaction

Interaction in images enacts relationships between represented and interactive participants through several visual choices. Kress and van Leeuwen (2021) explain that producers of visual texts (similarly to writers) are not physically present when the viewer/reader interacts with the image, which causes a lack of reciprocity. However, the context of production and reception have elements in common – the visual text itself, and "a knowledge of the communicative resources that allow its articulation and understanding, a knowledge of the way social interactions and social relations can be encoded in [visual texts]" (Kress & van Leeuwen, 2021: 113). The four interrelated systems through which interaction can be unpacked are CONTACT (or FOCALIZATION, cf. Painter et al., 2013: 18-29), SOCIAL DISTANCE, INVOLVEMENT, and POWER. These systems

are concerned with how represented participants are related to the viewer through the size of the shot, angle of depiction, and gaze, shaping three dimensions of interaction between represented participants and the viewer. 'The representation and viewer network' proposed by van Leeuwen (2008: 138-141) groups these systems under three strategies for negotiating attitudes: SOCIAL DISTANCE, SOCIAL RELATION, and SOCIAL INTERACTION.

SOCIAL DISTANCE relates to the size of the frame and varies from intimate to public. Drawing on film production studies and Hall's (1964) discussion of spatial proxemics (use of space and its effect on interpersonal relations and cross-cultural interactions), Kress and van Leeuwen (2021) argue that the choice of a specific length of shot impacts (imaginary) rapport between interactive participants (i.e., the text producer and, hence, the viewer) and represented participants. Four key types of social distance in visual texts are: intimate (+Extreme close-up shot, where only face and head visible), personal (+Medium close-up shot: head and shoulders), social (+Medium shot), and public (+Long shot: torso and at least four to five more people). The choices are gradable and may represent how voices are framed (e.g., interchangeable close-ups allow for an emotive appeal, whereas medium shots present participants more objectively). These are summarized in Figure 2.10.

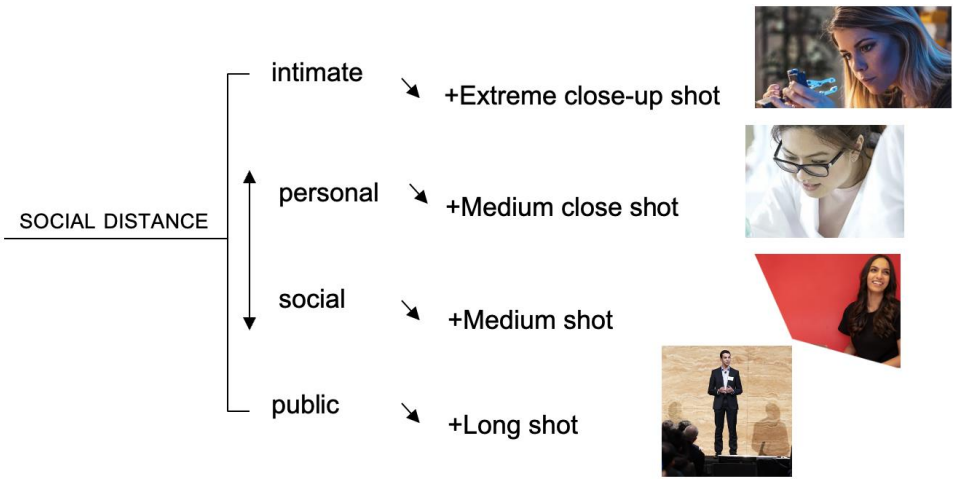


Figure 2.10 The system of SOCIAL DISTANCE
Based on Kress and van Leeuwen (2021: 123-128)

Point of view or perspective also defines the system of SOCIAL RELATION and realizes socially determined attitudes toward the represented participants, demonstrating "a shift from the dominance of nature to the dominance of signification, and from the dominance of the perceptual to the dominance of the conceptual" (Kress & van Leeuwen, 2021: 131). It is examined through realization statements across horizontal and vertical axes

of a visual composition. INVOLVEMENT is analyzed through the horizontal angle, which may be frontal or oblique. The frontal angle encodes engagement between the represented participant(s) and the viewer and invites the viewer to 'enter' the life-world of the represented participants, particularly when they are turned toward the viewer. The oblique angle projects detachment. POWER is enacted through the vertical angle, and maps out three choices: viewer power, equality, and representation power. A high camera angle encodes viewer power in static images where the viewer is positioned to 'look down' at the represented participant(s), although high angle can also be deployed to show the spread of the visual content (e.g., bird's eye view shots of campus grounds where the viewer is positioned to examine the campus from above). An eye-level angle lays out equality of representation where the represented and interactive participants are on the same level, equal in some sense, and a low angle promotes representational power where representational participants are presented as having more power over the viewer, and the viewer as looking up to them). Figure 2.11 summarizes.

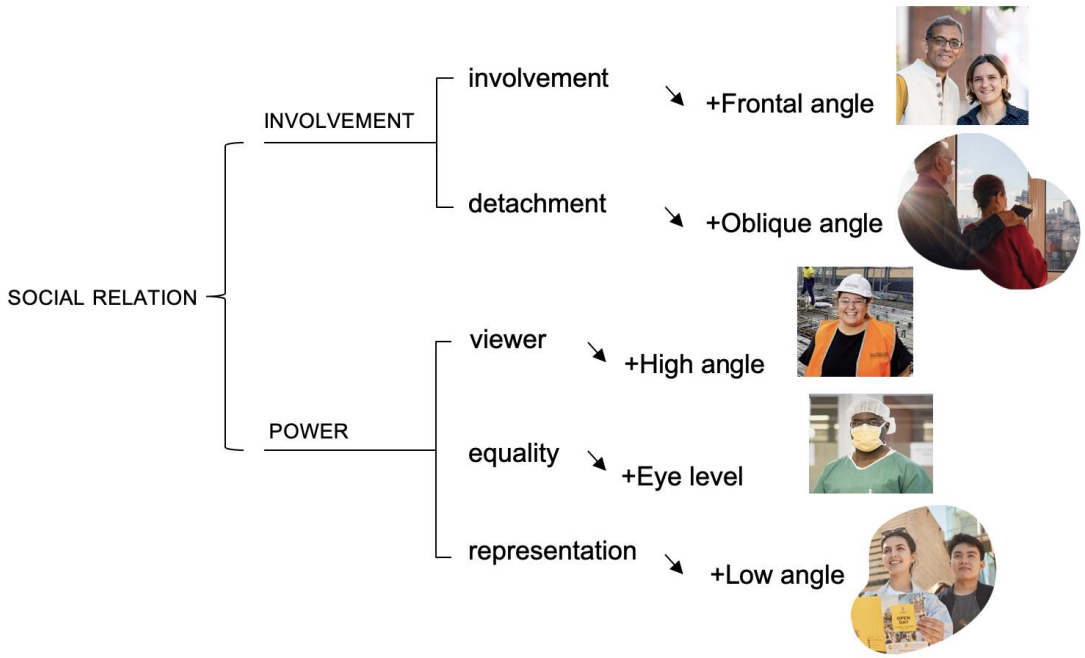


Figure 2.11 The system of SOCIAL RELATION
Based on Kress and van Leeuwen (2021: 133-139)

SOCIAL INTERACTION has to do with the gaze of represented participants – direct eye contact tends to 'demand' something from the viewer through a direct address, asking them to align with the world-life of the represented participant and constitutes an image-act. As Kress and van Leeuwen (2021) argue:

> When represented participants look at the viewer, vectors, formed by participants' eyelines, connect the participants with each other. Contact is established, even if it is only on an imaginary level (116).

When there is no direct address, a representation is offered for contemplation, and the image is an offer whereby the viewer assumes a role of a passive onlooker. Figure 2.12 shows these choices.

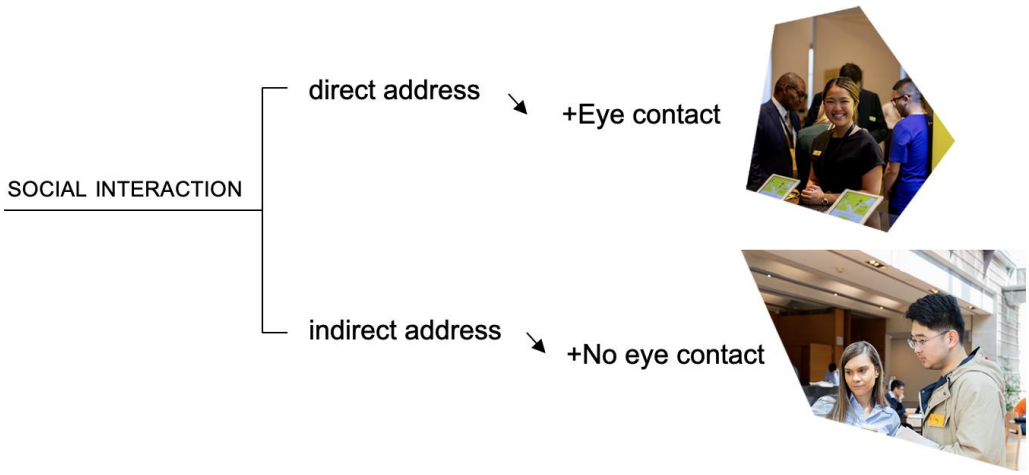


Figure 2.12 The system of SOCIAL INTERACTION
Based on van Leeuwen (2008: 140-141)

An examination of SOCIAL DISTANCE, SOCIAL RELATION (INVOLVEMENT and POWER), and SOCIAL INTERACTION between the represented participants and the envisaged audience is beneficial for understanding how university web homepages attempt to yield favorable attitudes toward the university product in images (i.e., its OVI) alongside other OVI elements. CHAPTER 4.4 further explains how the afore-discussed systems are integrated into the analysis.

Importantly, the articulation and understanding of social meanings in images uncovers how the interaction between the envisaged audience and rhetor-institution is construed rather than enacted. Although the image design process encompasses several stages from production to publication (as further explained in CHAPTER 3.1.2), with multiple social actors involved in the process, "most viewers will have only a hazy, and perhaps distorted and glamorized, idea of the production processes behind the images they see" (Kress & van Leeuwen, 2021: 113). Therefore, images are *mediating* the interaction between the envisaged audience (as the 'implied reader') and the university (as the 'implied author' and simultaneously, the authority that initiates such a mediation).

2.2.2.3 Positioning elements of discourse: Composition

Composition refers to "the way in which the representational and interactive elements are made to relate to each other, the way they are integrated into a meaningful whole" (Kress & van Leeuwen, 2021: 179). It brings seemingly disparate elements together and organizes a text as a meaningful unit of information, and may be examined through INFORMATION VALUE, FRAMING, SALIENCE, and READING PATH.

Drawing on Arnheim (1974, 1982), Kress and van Leeuwen (2021) apply the grid principle to identify the placement of elements in page-based media, arguing that "the placement of elements endows them with the specific information values 'attached' to various zones [of a text]" (Kress & van Leeuwen, 2021: 181). Thus, INFORMATION VALUE relates to understanding the ideological implications of positioning design elements at the top and bottom (the Ideal-Real structures), left and right (the Given-New structures), or in the center and at the margins of a page (the Center-Margin structures). Polarized layouts (Ideal-Real and Given-New) differentiate or contrast different zones of visual composition. The top-bottom placement endows compositional zones with the meaning of Ideal and Real (placement at the top and bottom with the meaning potential of a promise, being more general or essential at the top and more concrete or specific at the bottom) and applies to a vertical axis. In contrast, the left-right opposition of Given and New (from familiar, known, or more accepted to unfamiliar, different, or in question) brings horizontal symmetry into the visual space. Such structures "can integrate different semiotic modes such as text and image into a single, unified multimodal design as well as integrate elements belonging to a single semiotic mode" (van Leeuwen, 2005a: 295).

Integrated (Center-Margins) layouts position design elements in such a way that center mediates the overall composition and, as a result, contributes to the overall perceptual balance of a page, with the margins often presented as ancillary, interdependent, and resembling each other in some way. The Center-Margin layout is often utilized in composite texts – newspapers, for instance, by placing an important political figure in the center of the page to draw the immediate attention of readers to the "symbolic kernel of the issues of the day" (Kress & van Leeuwen, 2006: 195). Additionally, Center may enter Given-New and Ideal-Real structures to assume the role of mediator between the two polarized elements. This modification gives rise to what Kress and van Leeuwen (2021: 202) name 'triptych'.

Therefore, the system of information values differentiates between three major types of structures: Given-New, Ideal-Real, and Center-Margin. It should be emphasized that Kress and van Leeuwen's (2021: 185-210) arguments about the visual structuring and

meanings of these compositional zones draw on cultural provenance (e.g., for Given-New – Western tradition to read texts from left to right) and 'orientational metaphors' (e.g., for Ideal-Real – associations with top vs bottom; cf. Johnson & Lakoff, 2003: 14-20), and the content in various compositional zones is presented "as though it had [a particular] status or value for the reader and that readers have to read it within that structure, even if that valuation may then be rejected by particular readers" (186).

At this point, it is useful to turn to a concrete example. Figure 2.13 illustrates the multimodal composition of a sample layout structure '`image-complex`' (see CHAPTER 5.3.2.3) that appears in the viewport of the UNSW web homepage. Several compositional layers referred to as 'ranks' are considered. Ranks are not subdivided according to levels of abstraction but draw on the structural principle of constituency, where parts are built up into wholes, which then are formed into larger wholes. These structural values foreground "part-whole relationships which hold between constituents and the 'whole' of which they are a part" (Knox, 2009: 114).

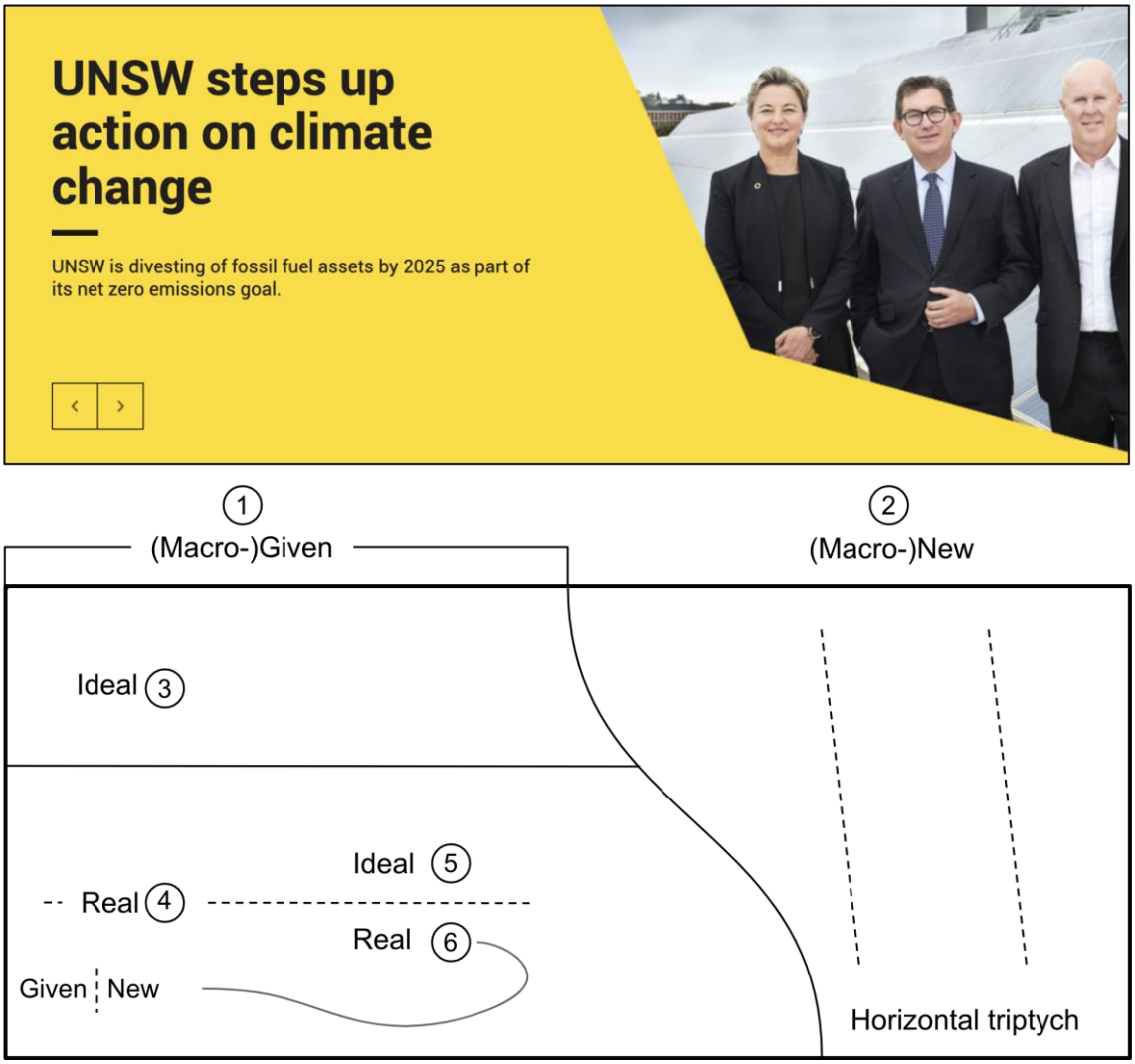


Figure 2.13 INFORMATION VALUES of a sample layout structure on the UNSW homepage (https://web.archive.org/web/20200629054617/https://www.unsw.edu.au/)

In Figure 2.13, INFORMATION VALUES of a sample layout unit from the UNSW viewport are considered. Although the full discussion of this kind of image-complex structures proceeds only in CHAPTER 5.3.2.3, the multimodal composition is judged from the spatial organization of the involved semiotic resources – namely, verbal (headline and a sentence), diagrammatic (horizontal line or separator, left and right arrows framed by a box, and a shape that integrates the verbal text and the rest of the diagrammatic resources), and visual (the image of three represented participants and the yellow color that fills the shape separating the verbal and diagrammatic content from the image). The shape in yellow is accordingly labeled (Macro-)Given and (Macro-)New, endowing the verbal text integrated into the yellow background (1) with the ideological import of the point of departure, with the image (2) depicting three represented participants to be 'read' next. In (Macro-)New (2) the then-Vice Chancellor is positioned in the center of the image

as a higher authority in relation to the university governance, with the CEO of the Energy Institute (left Margin) and Deputy Director UNSW Climate Change Research Centre (right Margin). (Macro-)Given (1) further applies the Ideal-Real structure (3 and 4), with the headline in bold presented as Ideal (a generalized theme or topic of the text) and the title ('UNSW is divesting of fossil fuels by 2025 as part of its net zero emission goal') as Real (4) that provides more concrete details about the topic). Real (4) further applies the Ideal-Real structure, with the verbal text as Ideal (5) and the navigational button as Real (6) presenting possibilities to interact with the remaining stories 'hidden' in a carousel through two diagrammatic arrows in another Given-New structure.

Another system of composition includes SALIENCE which considers hierarchies of importance among represented elements on the page, 'requiring' immediate attention to some elements rather than others. It contributes to the 'visual weight' (van Leeuwen, 2005a: 198) resulting from the interaction of several cues: relative size, sharpness of focus, foreground/background, representation of detail, tonal contrast, placement in the visual field as well as cultural factors, such as represented human participants or cultural symbols (Kress & van Leeuwen, 2021: 210). Salience of different elements of visual composition is gradable and varies from maximum to minimum.

Related to the discussion of compositional meanings in Figure 2.13, the system of SALIENCE can yield additional insights into compositional meanings of the image-complex presented in Figure 2.13. The visual appeal is made through the image that addresses the viewer through gaze, 'demanding' the viewer attention. The larger bold font of the headline encourages the viewer to engage with this part of composition next before proceeding to reading the sentence below the headline and, lastly, clicking on the right or left arrow that will change the 'slide' to a new image-complex. In this way, the nature of each semiotic resource (e.g., visual, verbal, or diagrammatic) as well as its size, font, or color impacts the sequence of the envisaged interaction with the presented content.

Thus, the system of INFORMATION VALUES is one (but not the only) way to uncover compositional meanings, without claiming that it addresses all possible meanings. Attention should be paid to the specific rank that the analysis aims to address as well as the materiality of the medium impacting sequencing and structuring of a given multimodal text (see CHAPTER 3.2.3). The current research applies a selective reading strategy in relation to the compositional zones on the rank of key layout structures identified through two layers of the GeM model (see CHAPTER 4.3) which form the basis for such identification. It considers information values of such structures in relation to spatial sequencing of elements, to uncover how the layout elements comprising layout

structures are positioned to engage the reader, as further explained in CHAPTER 5.3.2. Additionally, overall compositional meaning of a given text is also impacted by how design elements are (dis-)connected and which of the elements are made salient (i.e., more prominent for the audience).

Connection and disconnection of elements of visual composition can be accounted for through the system of FRAMING (Kress & van Leeuwen, 2021:204-209). The more elements are grouped as belonging together, the more they are presented as one unit of information (Painter et al., 2013). The semiotic inventories for identifying focus groups of visual composition can produce strong or weak framing. Strong framing is realized by framelines, empty space, and contrasting colors, and weak framing is realized by color rhyme or discontinuities of color (Figure 2.14). The system of FRAMING is incorporated as a helpful framework to detect the demarcation of layout structures on web homepages, as further explained in CHAPTER 4.3.2.

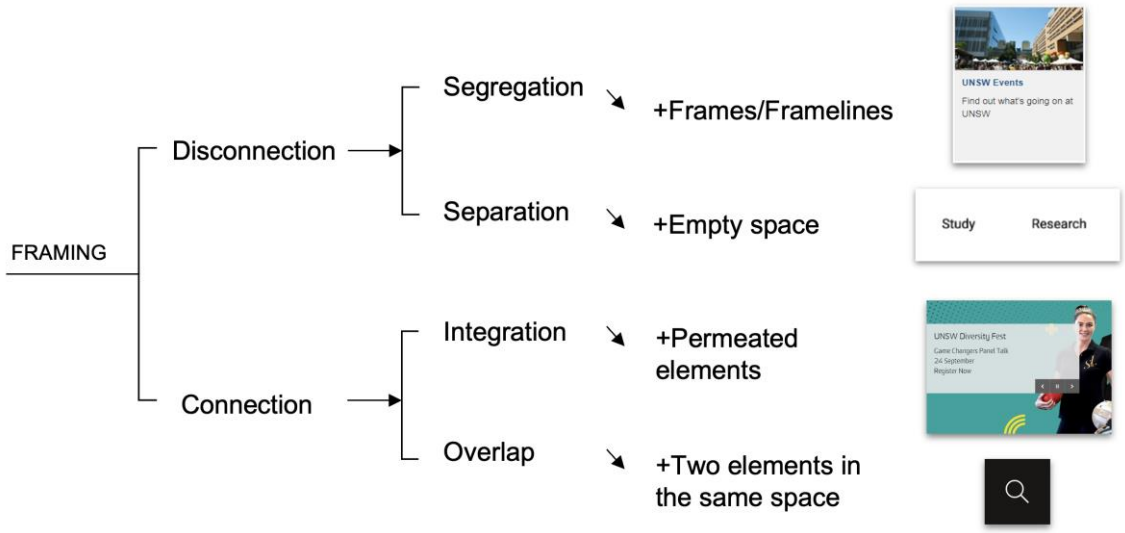


Figure 2.14 The system of FRAMING
Based on Kress and van Leeuwen (2021: 217)

Systems of FRAMING and SALIENCE play an important role in establishing *intended* reading paths[8] (Bateman, 2008: 65) guiding the reader's interaction with the page in a preferred (from a designer's view) way. Unlike traditionally coded reading paths in verbal texts, contemporary reading paths are more flexible and open (Kress & van Leeuwen, 2021: 213). Web-based texts, such as websites, are specifically designed to allow multiple

[8] A body of research examines 'actual' readings paths in different texts by means of eye-tracking technology – in web usability studies (e.g., Nielsen & Pernice, 2010) and multimodal research (e.g., Boeriis & Holsanova, 2012; Holsanova, 2012; Sivle & Uppstad, 2018).

reading paths (Kress & van Leeuwen, 2021: 183), facilitating both redundancy of options (i.e., similar choices may appear in different places – e.g., search functionality in the top right and in the lower part of the viewport, shifted to center) and the diversity of the reader interests, allowing for multiple options for different groups (e.g., prospective students and public). Research on reading paths also discusses the potential collaborations between the empirically oriented studies of multimodal semiosis and visual perception studies through an integration of "the low-, intermediate and high-level factors that affect perception" (Hiippala, 2012: 320).

Kress and van Leeuwen's (2021) metafunctional foundations for studying visual communicative artifacts discussed in this section have been widely applied by scholars studying various multimodal phenomena, providing new ways of understanding art (e.g., Kress & van Leeuwen, 2021; O'Toole, 1994), organizational communication (Höllerer et al., 2017; Höllerer et al., 2019; Ravelli et al., 2023), architecture and space (e.g., McMurtrie, 2017; Ravelli & McMurtrie, 2016), film and television (van Leeuwen, 1991), sound (e.g., van Leeuwen, 1999), and more, producing new methods, new opportunities, and new challenges for understanding the semiotic landscape of communication. However, there have also been several concerns about the nuances of some of the theoretical considerations, as discussed in detail in the subsequent section.

2.2.2.4 Critique of the metafunctional theory

There have been some criticisms of Kress and van Leeuwen's system of composition, particularly INFORMATION VALUE concerning its empirical validity (cf. Bateman, 2008: 44-52) and its wider applicability to all visual layouts (cf. Thomas, 2009: 40-44). For example, Bateman (2008) problematizes that Kress and van Leeuwen's characterization of INFORMATION VALUE "has not received the same kind of empirical evaluation that would normally be expected of a linguistic account" (46), and Thomas (2014: 169) raises the concern about the conflation of visual and rhetorical phenomena – i.e., the assumed function of the layout structure before the annotation is executed. In this regard, it should be noted that images – the primary studied data type that provided the basis for the system of INFORMATION VALUE – are semiotic artifacts with a materiality rather different to that of language, prominently relying on connotation as a second-order system of signification (i.e., ideological import; cf. Barthes, 1973). Concerning ideological imports of compositional zones in images, Kress and van Leeuwen's framework draws on visuals from various contexts and different periods and 'validates' the values of visual layouts in two ways. These include:

i. (cultural) provenance – i.e., where the signs[9] come from or how they are 'imported' from one context, culture, or period to another context
ii. experiential meaning potential – i.e., meaning potential deriving from the extension of the practical experience metaphorically and the ability to grasp similar extensions made by others (Kress & van Leeuwen, 2001: 10)

Notably, Kress and van Leeuwen's reading of compositional zones is strongly informed by the MSS approach to multimodal artifacts as 'objects for interpretation' (cf. Bateman, 2008: 27-28) in specific contexts of culture and situation. It provides several techniques to address how elements of discourse are integrated in visuals and how the envisaged audiences are *positioned* to interact with the text. Whereas the placement of the visual elements is likely to be informed by the considerations of graphic design principles (e.g., balance, unity, etc.), the system of INFORMATION VALUES should be seen as one of the frameworks to 'reading' image composition in specific contexts of use rather than as a template applicable to the visual layouts of *all* texts.

Another concern in relation to the Ideal-Real structure is raised about its applicability to dynamic texts such as web pages (Knox, 2007: 39). Studying newspaper homepages, Knox (2007) suggests that new media texts that do not display the content fully on a single screen do not necessarily draw on Ideal-Real polarization, but on that of initiality. This concern arguably points to the materiality of the digital medium that supports temporally unfolding discourse with the expected participatory input from the audience to scroll down in order to interact with the full page (see CHAPTER 3.2.2). Knox (2007) considers the first visible screen of the page (i.e., the viewport) as 'the Head of the content' that initiates such interaction with the communicative content 'above the fold' "valued as of the most immediate relevance and importance" (38). The remaining content positioned in the 'below the fold' (i.e., the content – arguably of lesser importance – that becomes visible after the audience scrolls down) is referred to as 'Tail.' Although websites are page-based digital texts, temporality is also at play in a sense that the content is spatially structured in a way that presupposes the investment of 'time' to be fully displayed for the audience. McMurtrie (2017: 60) observes a similar phenomenon in architectonic texts that can perceived as static artifacts giving the audience a synoptic overview or as phenomena experienced dynamically by providing the temporal unfolding of the building as the audience moves through space. Similarly, a web page can be interacted with one screen at a time (synoptically) as well as dynamically, through

[9] In this context, the 'sign' is a compositional zone of top/bottom, left/right, and center/margin.

scrolling from the top to the bottom of the page, as well as clicking on links, exploring subsequent pages, and so on.

Approached this way, Knox's (2007) reading of the contrasting meanings 'above the fold' and 'below the fold' is complementary (rather than opposing) to Kress and van Leeuwen's Ideal-Real structure. For example, approached synoptically, the 'above the fold' (i.e., viewport) is a guaranteed viewing area, the 'promise of attention', 'Ideal' for Kress and van Leeuwen's (2021) or the 'Head of content' for Knox (2007). The 'below the fold' area (or 'Tail' in Knox's terms), the length of which varies across organizational homepages, places information of lesser importance, vastly dependent on organizational decisions as to what such information should be, all the way down to the footer. The footer of the homepages that this thesis studies arguably comprises 'Real', presenting practical information that legitimizes an organization, including business address, contact details, ABN (Australian Business Number), and recognized memberships, among others. It also comes with the rhetorical assumption of dynamic engagement – to view the remaining content, the viewer needs to scroll all the way down from 'Ideal' as "it is often the viewer who must bridge the two" (Kress & van Leeuwen, 2021: 183).

Other alternative frameworks to approach complex multimodal composition include Baldry and Thibault's (2006) multimodal transcription of film texts and the 'Balance network' advanced by Caple (2013) for image analysis in photojournalism. Drawing on Gibson (1979), Baldry and Thibault (2006: 189) propose that when a temporal dimension is brought into semiosis, motion becomes a distinct semiotic resource distinguishing a progressive image from a still image. They suggest approaching variations between the two through 'dynamic transformation' instead of Given-New polarization. Caple (2013) considers image frame, elements, and visual units of information with the potential to create endocentric balance in composition (i.e., transactional narrative structures in Kress and van Leeuwen's terms) or exocentric (i.e., non-transactional narrative action), identifying compositional configurations based on the system of BALANCE – *isolating* an element of a visual composition as the focus of attention (e.g., a portrait) and *iterating* (i.e., repeating patterns between design elements and showing them as relating to each other in some way) (Caple, 2013: 98).

Whereas these frameworks propose alternative ways to address the composition of different texts, they do not necessarily 'reject' the system of INFORMATION VALUE, as has been suggested elsewhere. The developed models for analyzing multimodal composition foreground different organizational logics brought into semiosis – e.g., the temporal dimension on web pages in Knox's (2007) research, motion in Baldry and

Thibault's (2006) study of videos, and balance in Caple's (2013) framework. The current research acknowledges that the system of INFORMATION VALUE is one of the useful ways to address the composition of design structures. However, analytical clarification is required as to what rank is called to attention – a whole page (i.e., both a viewport and the 'below the fold' area are considered), a screen presented for interaction (i.e., a single visible stretch of text, which varies depending on the size of display), or a specific component within these (e.g., a single image). In this way, by specifying the analytical focus, a higher degree of granularity of detail can be achieved.

2.3 Connecting theoretical and analytical frameworks

One of the most common criticisms of discourse-analytic approaches to communication is the validity of studying representation without incorporating ethnographic methods, such as participant observation, focus groups, interviews, and so forth. Reconciling production and reception as two inseparable parts of a specific communicative event is a complex issue for many disciplines and methodologies[10]. In its essence, such a concern relates to the issue of epistemology that informs a specific theoretical perspective. This pertinent question is arguably not about the 'rightness' of a theory or method but about the *alignment* of the analytical choices that govern the selection of methods, theoretical perspectives that guide such selection, and epistemology concerned with the theory of knowledge that informs a chosen theoretical perspective. Figure 2.15 makes these connections more explicit, as relevant to the current research.

[10] For example, in narratology, "the role of someone viewing the narrative is quite different from that of someone forming the narrative – and this is partly what the 'who tells?' vs. 'who sees?' distinction is already capturing" (Bateman, 2014c: 72). Multimodal social semiotics, like most visual methodologies (e.g., Rose, 2016), replaces 'who tells?' with 'who represents?', recognizing the social production of signs as a foundational issue for discourse analysis.

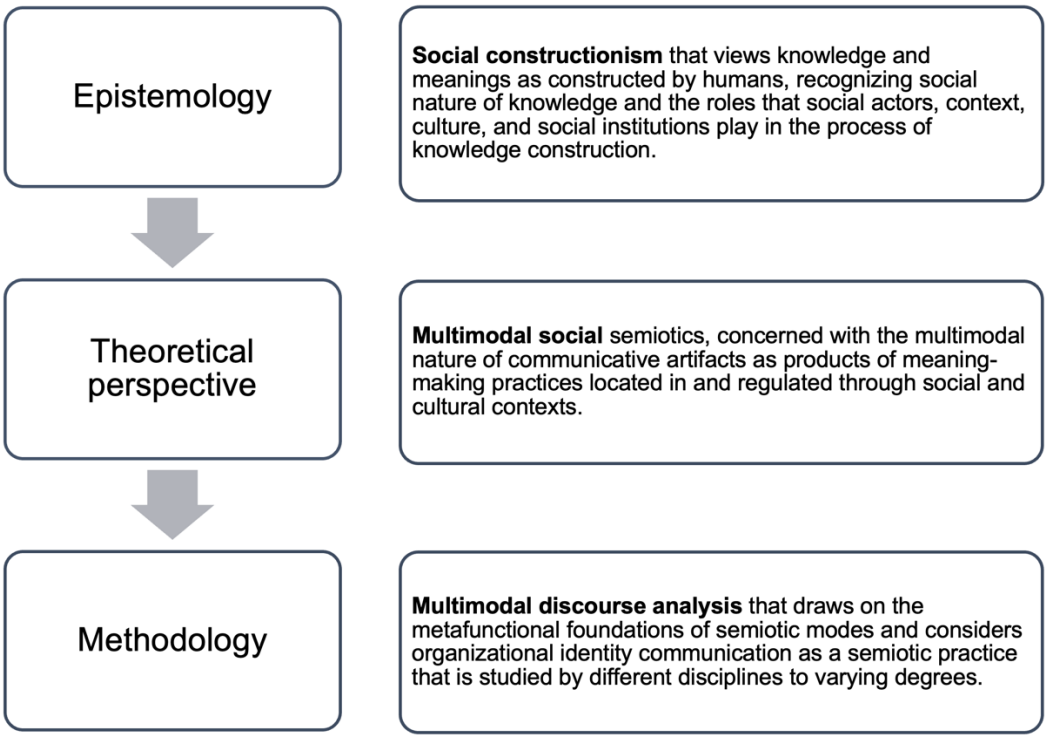


Figure 2.15 Connecting theoretical and analytical frameworks
After Crotty (1998, ch1) and Serafini (2022, ch2)

As captured in Figure 2.15, the response to the fitness of a specific method and its alignment with the chosen theory is three-fold. Firstly, epistemologically, the current study is grounded in social constructionism (also referred to as social constructivism) – a philosophical theory that views knowledge as *constructed* by people in various contexts in contrast to *discovered* in the world as viewed by objectivism. Researchers working from this epistemological stance acknowledge that human understanding of the world is mediated by contexts, institutions, and cultures (Serafini, 2022). Secondly, social constructionism informs a multimodal social semiotic theoretical perspective – which has been the focus of this chapter. Multimodal social semiotics provides a theoretical framework to account for various semiotic systems. Thirdly, multimodal social semiotics informs the current research design – its methodology or "the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes" (Crotty, 1998: 3). Multimodal discourse analysis is an appropriate choice given that the metafunctional view of meaning-making has a "high descriptive capability and adaptability [of the metafunctional principle] to describe various types of data" (Hiippala, 2013: 33), and has seen a substantial number of studies revealing fundamental connections between semiosis and social contexts. Epistemological, theoretical, and methodological considerations inform the choice of methods, as explained in detail in CHAPTER 4.

2.4 Concluding remarks

This chapter has established theoretical foundations for studying web homepages as multimodal digital artifacts communicating organizational identity to the envisaged audiences. It situated the current project in the multimodal approach to meaning making that continues to reinforce the idea of "step[ping] away from the notion that language always plays the central role in interaction, without denying that it often does" (Norris, 2004: 2). In this context, the main goals for this chapter included highlighting the major developments in multimodal research, clarifying the key theoretical concepts central to this study, and outlining the connection between the discussed theoretical foundations, social constructionist epistemology that underlies the theoretical perspective, and the analytical choices that inform the selection of methods.

The review of intellectual contexts that gave rise to the main approaches to multimodality (i.e., MSS, SF-MDA, problem-oriented empirical approach, and multimodal interactional analysis) points to an understanding of multimodality as "a field of application rather than a theory" (Bezemer & Jewitt, 2018: 180) as well as "a stage of development within a field" (Bateman, 2022: 49). The multimodal approach (particularly MSS and an empirical approach to multimodality) provides resources to support the analysis of web homepages as communicative artifacts in which meanings of organizational identity are understood as being realized through an interaction between the organization and envisaged audiences. Such an interaction occurs on the site of a web homepage impacted by distinct potentials and limitations of the semiotic material it draws on, the nature of which is increasingly visual- rather than verbal-oriented. Whereas language continues to be understood as important, other semiotic resources, such as images, color, temporal sequencing, and diagrammatic resources, among others, gain prominence. In this regard, design moves into the foreground as the main semiotic principle underlying the composition of web homepages as a key site for the current investigation.

The concepts of 'mode' and 'metafunctions' are central to the current research as it aims to consider both multimodal configurations and their semiotic function in the context of organizational identity communication on a specific kind of meaning-making technology (i.e., web homepages). Therefore, there is a foregrounded need to address both the material and semantic sides of communicative resources to (a) reveal patterns in the formal structuring of web homepages and (b) explain the meaning potential of the identified structures. The abstract definition of a 'mode' as theorized by Bateman et al. (2017, 2020) allows accounting for both material and semiotic sides of different parts of

the page, contributing to different meaning potentials. The meaning potentials are considered across three 'bundles' (i.e., metafunctions) – how a university is represented (i.e., representation), how it engages the envisaged audiences (i.e., interaction), and how these elements are organized into a coherent whole (i.e., composition). Ultimately, the current research is concerned with web homepages as semiotic technology – the technology for making meaning in the social context of organizational identity communication, through a specific set of affordances that differ from those for navigating texts in traditional paper-based media, as CHAPTER 3 discusses in detail. Whereas this study does not include ethnographic methods, identifying design elements and their meaning potential enables a comprehensive, in-depth contextual interpretation from a metafunctional point of view, which would not be feasible within the scope of this study should the user perspective be integrated.

Chapter 3 Web homepages as semiotic technology

Orientation

This chapter reviews relevant scholarship on web homepages, giving a general panorama of past-to-present literature across three critical areas of scientific inquiry – web homepages as (1) a medium for organizational identity communication, (2) a web-mediated genre, and (3) a digital communication technology. The chapter establishes theoretical and empirical foundations, and proposes that a multimodal discourse-analytic approach to web homepages as complex digital communicative artifacts will reveal organizational identities manifested on university web homepages and how these identities change over time.

Two considerations are central to the organizational logic of this chapter. Firstly, a homepage is a type of *semiotic technology* (van Leeuwen et al., 2013; Zhao & van Leeuwen, 2014) – i.e., a technology for making meaning, which provides envisaged audiences with specific options to build navigational "traversals", to quote Lemke (2002: 300), through a limited system of interactivity cues on the page. The canvas constraints (discussed in detail in CHAPTER 4.3) limit these options, as do institutionally regulated preselected action potentials emerging from regulative discourse, "creating specialized order, relation and identity" (Bernstein, 2003: 158). Identification of the dynamic structural projections and predetermined pathways for diverse audiences is the concern of web and graphic design studies and schools of practice. These focus on the functionality and aesthetics of communicative artifacts but do not necessarily address organizational identity communication.

Secondly, as semiotic technology, organizational homepages are embedded in the context of organizational identity communication alongside other promotional material, such as advertisements, annual reports, handbooks, and so on. Characterized by promotional and persuasive rhetoric, the brand management practices of a modern university aim to provide institutional identification, differentiate one brand from another, and enhance the university's position and reputation (Lowrie, 2018). Identification of favorable promotional practices concerning the presentation of a homepage – what scholars in brand management refer to as brand personality (Aaker, 1997; Carpentier et al., 2019; Rutter et al., 2017) – is the concern of branding and marketing which, in

addition to defining the public face of an organization, focus on the suite of corporate visual identity elements for corporate homepages.

Conceptualizing a web homepage as semiotic technology is beneficial for this study, given that it examines the meaning-making nature of multimodal artifacts presented for the envisaged audiences and not the technical features of the software on which it builds. It is practical, particularly for the purposes of a discourse-analytic approach to digital communication technologies, to distinguish between the meaning potentials arising at the level of presentation (i.e., what the audience sees on a page) in contrast to computational architectural components of a given technology (i.e., the structures that determine the level of presentation), as discussed in SECTION 3.2. As Djonov and van Leeuwen (2017) note, although software draws on templates set up through "a particular spatio-temporal structure (i.e., syntagm), it is not a text, not an act of communication that is internally cohesive and coherent" (572). Although these covert structures are not particularly meaningful for the audience, they comprise the core of the communicative content presented for interaction.

The chapter is comprised of four sections. SECTION 3.1 reviews scholarship on web homepages as brand communication. SECTION 3.2 outlines the model for addressing organizational identity communication on homepages. SECTION 3.3 addresses the features of web homepages as a semiotic technology, and SECTION 3.4 discusses the genre approaches to web homepages, and explains how the multimodal genre theory is useful for the current study. The perspectives on organizational branding, semiotic technology, and genre inform the current study that addresses web homepages as a medium for organizational identity communication.

In this context, 'medium' is synonymous with the 'channel of communication.' In a more technical sense, 'medium' is referred to the material substrate and canvas specifications throughout CHAPTER 2.2.1 and SECTION 3.3.4. As a principal aim of this thesis is to address the semiotic practice of organizational identity communication, it views a web homepage as a medium that affords co-deployments of different modes, while also incorporating the genre approach for annotating the material deployed, as further explained in CHAPTER 4.3.

3.1 Web homepages as brand communication

One of the critical functions of university homepages is to establish organizational identity through an assortment of expressive resources and visual cues that distinguish one

university from others. As a channel for organizational identity communication, homepages address plural and diversified audiences (Belcher, 2021), and have been studied from various perspectives in relation to what is generally termed *brand communication*. A growing body of literature has examined the marketization of university discourses across a range of media (e.g., Aspara et al., 2014; Feng, 2019; Furedi, 2011; Wedlin, 2008) and particularly on institutional websites (e.g., Zhang, 2017; Zhang & O'Halloran, 2012, 2013; Zhang & Tu, 2019), investigating discursive responses to the ongoing and recently intensified exchange between universities and a commercial milieu. Marketing features of the business environment reportedly permeate higher education settings more evidently than ever (Durazzi, 2021; Knight, 2019).

Several studies have examined how the commercialization of university discursive practices manifests on university websites from a discourse-analytic perspective (e.g., Chapleo et al., 2011; Estera & Shahjahan, 2019; Hoang and Rojas-Lizana, 2015; Michelson & Álvarez Valencia, 2016; Tomášková, 2017; Zhang & O'Halloran, 2012, 2013). A few studies complement this body of research by critically approaching dominant governance regimes within national higher education systems (Kang & Hwang, 2022; Lažetić, 2019). Zhang and O'Halloran (2013) reveal the evolving functions of the website of the National University of Singapore (NUS) and how the website structuring reflects the changing policies and practices of the university. The positioning of the university website as the source of resources available for students in the 1998 and 2000 versions shifts towards globalization of the institution realized through semiotic resources, images, color, and hyperlinks. This study reports a change from a more factual and straightforward representation of the content to a focus on enhancing interpersonal relationships with the students, especially prospective students, in the later versions of the website.

An increase in the marketing strategies of university websites is also reported by Hoang and Rojas-Lizana (2015), who compared the websites of the University of Melbourne and the younger Macquarie University located in Sydney, predominantly focusing on linguistic strategies on their websites. The websites of the two universities each construe a discourse of promoting prestige to the intended audience. In another study, Gottschall and Saltmarsh (2017) reveal that student life is about 'leisure and pleasure', devoid of worries associated with studying through their analysis of promotional videos on Australian university websites. From a critical perspective on corporate branding in higher education, Ng (2014) highlights the multimodal nature of promotional practices and how it endorses semiotically construed neoliberal values of individualism, flexibility, and entrepreneurship.

More recent evidence (e.g., Lažetić, 2019; Svendsen & Svendsen, 2018) focuses on inducement on university websites, paying attention to how students are discursively constructed as a particular customer group. Universities are found to adapt different marketization practices depending on the institutional modes of operation and cultural considerations. Students are positioned differently across different countries through a range of representational patterns, and no construction of a generic target group of educational consumers is observed (Lažetić, 2019). Zhang and Tu's (2019) inquiry into the representation of international students on three university websites in Australia concludes that international students are portrayed as being in a somewhat egalitarian relationship with the university, studying and growing together on campus.

Across all these studies, it is evident that universities aim to appeal to various audiences. Such appeals are often made through legitimation and distinctiveness (Oberg et al., 2018) as two strategies of brand communication. For example, some university websites prominently display the established membership in the category 'legitimate educational provider' through mission and vision statements and rankings, expressing "more corporate styles of narratives about self-identity" (Lažetić, 2019: 1006). Simultaneously, websites display elements of visual identification to communicate corporate philosophy and personality (Balmer, 1995), often appealing to the perceptual psychology of the potential customers, which may result in an embellished and often hyperbolized reality of what it means to be a student (Svendsen & Svendsen, 2018). The convergence of legitimacy and distinctiveness is arguably impacted by rapid technological advancements and a broader societal trend of promotional culture as a form of social, economic, and political exchange (Fairclough, 1992, 1993; Wernick, 1991).

In new media texts, the role of the envisaged audiences gains new resonance, and is generally addressed through the affordances of design elements. Discourses of identity do not arise from texts as static constructs but rather through users' engagement the engagement with such texts. These (possibly competing) roles can also be considered in terms of what Bakhtin (1981) views as opposing forces of centralization and diversification. Centripetal forces produce authoritative, more fixed, and somewhat inflexible discourses (i.e., centralized), such as the organizational identity as if presented for passive consumption. In contrast, centrifugal forces result in diversification of meaning through reflections on the experience of interaction with such an identity, which are more open because of their potential to produce different meanings through 'inwardly persuasive discourse' (Maybin, 2001). While examining organizational identity communication, it is, therefore, essential to acknowledge that the envisaged audience is

actively involved in the process of signification – the production of meaning (Barthes, 1970/1990).

Whereas approaching customers as active participants in brand communication is well-established in corporate branding, literature on the role of audiences in university identity communication is scarce. Several studies have examined brand management reputation in higher education by applying brand personality scales advanced by Aaker (1997) that have arguably become one of the key measurements of brand performance (Grohmann, 2009) concerning the "anthropomorphized university marketing communications" (Rutter et al., 2017: 19). Opoku et al. (2006, 2008) extend the brand personality theory to university websites and conclude that sophistication, competence, ruggedness, and sincerity are the most frequent brand personality clusters for a successful corporate image. O'Halloran et al. (2015) approach online university branding from a multimodal social semiotic perspective, examining homepages as a brand identity site. Their study identifies a shift in the 'selling offer' on the homepage of the Curtin University of Technology in Western Australia, from listing study opportunities to enhancing agency for some of the future students.

Therefore, current marketing dynamics, considerations of the audience engagement, and diversification of branding practices impacts discourses of organizational identity. The term <identity> denotes the core meaning of "the articulation of a brand or group, including all pertinent design formats, such as the logo, letterhead, business card, and website, among others" (Landa, 2013: 245) through an assortment of visual and verbal cues by which different audiences can recognize the institution and distinguish it from others (Melewar et al., 2018). As one of the critical sites for establishing and communicating organizational identity, a web homepage is a valuable digital space for user engagement. To substantiate how university identity is multimodally orchestrated on web homepages, it is important to clarify where these communicative artifacts are positioned in the social practice of organizational identity communication.

3.2 Organizational identity communication framework

As a social practice, organizational identity communication can be addressed across four interrelated dimensions referred to as 'sites' (across which meanings are made) in the work by Gillian Rose (2016) summarizing different visual methodologies. These 'sites' include 'the site of production', 'the site of the communicative artifact', 'the site of the medium', and 'the site of audiencing'. Such an approach draws on Kress and van Leeuwen's (2001) stratified model of domains of practice in which meanings are made

(CHAPTER 2.1.1), combined with insights on design and visuality from web and graphic design studies (Landa, 2013) and the empirical multimodality research (Bateman, 2008; Bateman et al., 2017). It applies a diagrammatic representation proposed by Rose (2016) for visual images. The organizational identity communication framework is presented in Figure 3.1 and is explained further below.

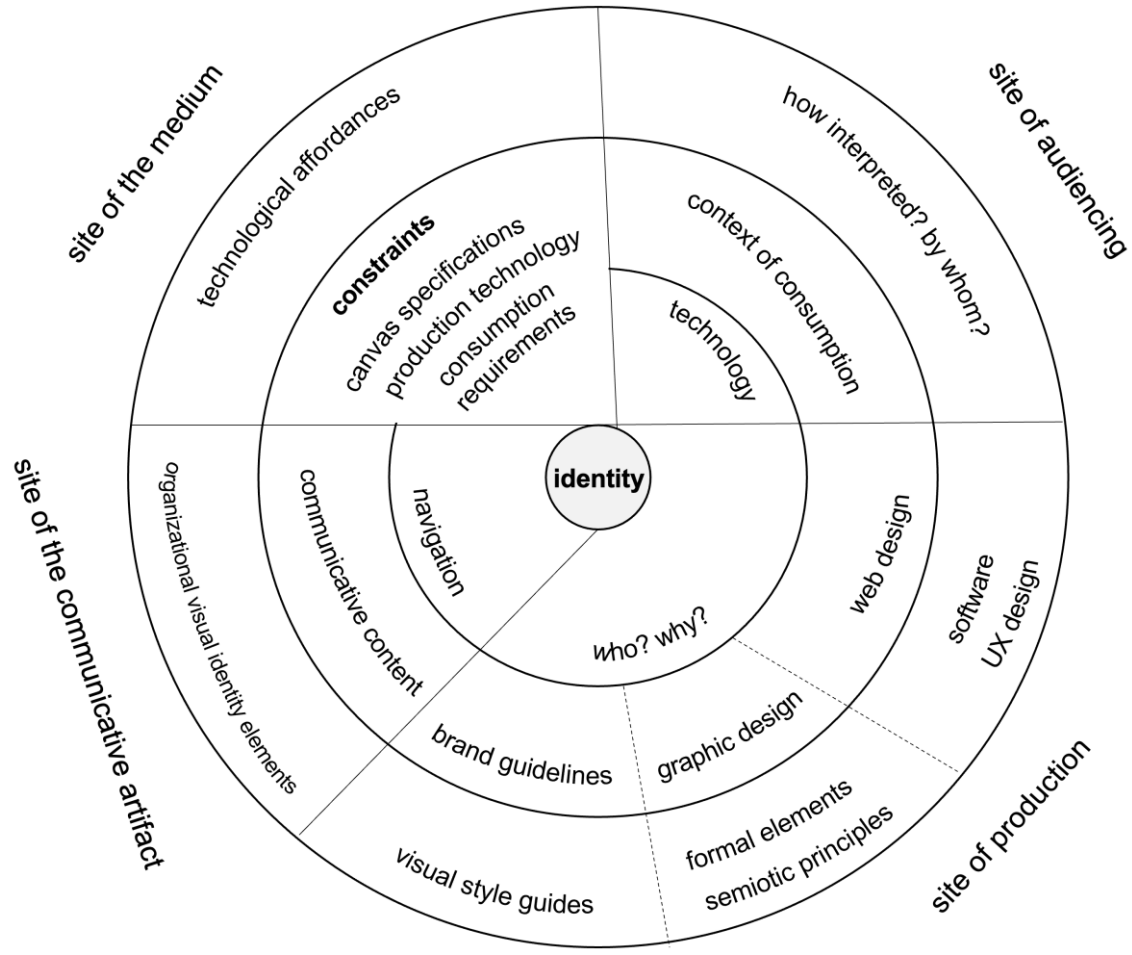


Figure 3.1 Organizational identity communication framework

As captured in Figure 3.1, *the site of production* includes graphic design considerations outlined in brand guidelines and visual style guides and web design practices, largely invisible to laypersons. It is the space where the intended audience and communicative goals of the resulting artifact are considered, and formal structures are identified. For example, web design considerations include the front-end design (i.e., the client site): software used for production, user interface (UX) design, and search engine optimization (SEO). For web homepages, hypertextuality as a distinctive feature of the Web is also at stake, enabling and facilitating non-linear information exchange through the network of nodes (units of information) and links (pointers to other nodes), although it is not necessarily considered by the same team of designers, and often receives due attention

at the site of the medium. The graphic design side of production involves the identification of formal elements and their organization according to several semiotic principles, such as format, balance, visual hierarchies, rhythm, and unity (Landa, 2013). Brand guidelines and visual style guides model values that formal structures are expected to communicate, and in essence, they are closely related to graphic design. Whereas these three production domains used to be allocated to different professionals, they can often be performed by one or only a few experts (Kress & van Leeuwen, 2001).

The site of the multimodal artifact embeds institutionally specific values and enables interaction with them across three layers: (1) OVI elements, (2) communicative content, and (3) navigation/access structures, as briefly discussed in CHAPTER 1.2.3. In line with the social semiotic perspective on meaning-making, these layers are understood as "mediating social interaction between the 'makers', the represented materials, and the (imagined) 'readers'" (Bezemer & Mavers, 2011: 204). The site of the communicative artifact is approached as an instantiation of the designer's rhetorical purposes in the form of shaped sign-complexes (Bezemer & Kress, 2015: 130) that emerge as formal semiotic choices instantiated in a text. The site of the multimodal artifact is understood as an intersection of the production and reception sides, which can be examined for the properties of formal structures and the representational, interactional, and compositional meaning potentials of these structures, as CHAPTER 4.3 details.

The site of the medium considers the material (physical) properties of the medium, the affordances of the technology, and its limitations at a given time. In a sense, it is an intermediary between production and audiencing because it has implications for understanding the technological sides of the communicative artifact and the limitations of its consumption. The material aspect of the medium is the 'canvas' through which the meaning is instantiated – the term refers to a particular medium involved in the production of the artifact at issue (Bateman, 2014b; Bateman et al., 2017: 102). Multimodal research recognizes that materiality of the medium as an important aspect of communication since the materiality of the canvas impacts what forms the material can and cannot take. In addition, the selections of visual signs to appear on a given medium are always motivated – the motivations are those of a "particular culture in a particular period and those of the maker of the sign" (Kress & van Leeuwen, 2021: 226). Considering three developments – the intrinsic non-linearity of the hypertextual nature of the medium that this research focuses on and the non-arbitrariness of visual design signs, the possibilities to account for both the production and consumption sides of the organizational identity construal emerge. Medium has also been conceptualized as "a historically stabilised site for the deployment and distribution of some selection of semiotic modes for the achievement of

varied communicative purposes" (Bateman et al., 2017: 123). However, in the context of the organizational identity framework presented above, the discussion of the site of the medium is limited to the physical properties of the material substrate of the canvas. This is because the application of the framework aims to address the discourses of identities in the communicative artifact *participating* in the medium rather than studying these artifacts as a multimodal genre (as, for example, often addressed in empirical multimodality research).

Lastly, *the site of audiencing* (the term by Fiske, 1994, as cited in Rose, 2016: 38) considers the target audience or by whom the communicative artifact is interpreted. It considers the context of consumption (i.e., the 'where' of interaction with the organizational identity), social identities of the target audience (i.e., their background), purpose of the interaction, and display (whether the target audience interacts with the communicative artifact through a web browser on a personal computer, phone, etc.). Methodologically, it involves the compositionality of messages and has to do with the perceptual qualities of the visual organization. Presumably, contextual facts of consumption, social identities of the audience, the purpose of the interaction, and the compositionality of messages can elicit different responses.

In the context of the model in Figure 3.1, design is viewed as both a social practice that encompasses considerations across the four sites and as a mediating tool that demonstrates how these considerations translate into the formal structures on the site of the communicative artifact. It is accordingly termed *organizational identity design*.

Concerning multimodal texts, several scholars have explored the question of design through different synonymous terms: 'design as a communicative practice (Kress & van Leeuwen, 2001), 'composition' (Kress & van Leeuwen, 2006); 'multimodal cohesion' (van Leeuwen, 2005a), "the "multi" of multimodality [or] interaction and combination of multiple modes within single artefacts" (Bateman, 2008: 1), and 'hypertextual distance' (Djonov, 2005). Multimodal social semiotics approaches design as uses of semiotic resources that "realise discourses in the context of a given communication situation" (Kress & van Leeuwen, 2001: 5). It is separate from the actual material production of the communicative artifact and can be approached from two different levels of abstraction: (i) functionality – as the main semiotic principle that welds different semiotic resources into 'multimodal ensembles' (i.e., 'what it does') and (ii) identity – as institutional self-expression to produce affinity between the existing and prospective members of the organizational community (i.e., 'what it means') (van Leeuwen, 2021b: 24).

Functional design is often the focus of information design studies concerned with how information can be presented effectively (i.e., the questions of a 'good design') so that "the rhetorical purposes, the designer's interest and semiotic resources, and the characteristics of the audience are all brought into coherence" (Bezemer & Kress, 2015: 130). On the other hand, identity design focuses on characteristics that distinguish one organization from another, usually through means of visual identification or how visual and verbal cues are used to communicate corporate philosophy (Balmer, 1995: 26). Convergence of functional and identity designs manifested on a university web homepage calls for a review of the rhetoric of design, not as a "look and feel imposed on top of content but as a rhetorical melding of form and function" (Clark, 2007: 36). This complexity presents a methodological challenge, particularly to studying complex digital multimodal artifacts such as web homepages. This thesis addresses this challenge by considering all four sites of organizational identity communication but focusing on the site of production, the site of the communicative artifact, and the site of the medium.

The site of production is attended to through an examination of the brand guidelines and visual style guides – official organizational documentation specifying a set of requirements and recommendations for the main organizational visual identity (OVI) elements, including 'logo', 'business name', 'motto', 'color', 'typography', and 'graphic shapes.' As briefly discussed in Chapter 1, brand communication literature (e.g., Melewar et al., 2018) refers to these as corporate visual identity (CVI) markers. To emphasize that university branding endeavors are not identical (although synonymous) with the corporate world, this thesis refers to these elements as OVI elements, and considers 'images' as part of them, as further explained in CHAPTER 4.4.

The site of the medium is considered in terms of digital materiality (SECTION 3.2.2 and SECTION 3.2.3) and is addressed through the navigation/access structures of different design elements of the web page (CHAPTER 4.3.3). This site is usually the focus of information design studies (navigation/access structures as examined in information design studies (e.g., Astani, 2013; Dewan et al., 2002). The site of the communicative artifact is the core focus of this thesis, and is examined for 'communicative content' understood as an assortment of multimodal ensembles that represent an organization and invite interaction with its identity through organizational identity design (CHAPTER 4.3 and CHAPTER 4.4). CHAPTER 4 specifies the data sets and explains these methodological considerations in detail.

3.3 Web homepages as digital communicative artifacts

3.3.1 Why study web homepages as semiotic technology

As the range of media and semiotic resources expands, research questions arise concerning new and reconfigured semiotic practices enabled by digital technologies – the process referred to as 'resemiotization' (Iedema, 2003: 40-41). Recognizing the need to understand how these technologies are both shaped by and shape "more abstract and durable **social structures** and **social practices**" (Fairclough, 2003: 16; bold in original), social semiotics has developed the subfield of *semiotic technology* interrogating "how social and semiotic assumptions and norms are inscribed in software and other kinds of technology, and realized in social practices that use the technology" (Poulsen et al., 2018: 594). It examines discourses as socially constructed knowledges of a certain aspect of reality (Kress & van Leeuwen, 2001: 63) – how discourses have been developed in specific social contexts and in the ways that are appropriate to the rhetorical interests of the social actors in these contexts. Therefore, like language, technology is "in a dialectical relationship with other facets of 'the social' (its 'social context') – it is socially shaped, but it is also socially shaping, or *constitutive*" (Fairclough, 1993: 134; italics in original).

The semiotic technology approach is in line with the media studies scholarship continuing to challenge the previously accustomed way of conceptualizing technology as a neutral tool. This view provides an antidote to technological determinism – a reductionist theory that technology unidirectionally molds society into a specific form. It is often the design features of a given technology that reveal established institutionalized patterns of power and authority in a given social context, from the designs of deliberately low bridges on Long Island of mid-20th century New York, cutting access to luxurious resorts for the working class commuting by public transport, as discussed by Winner (1980), to algorithmic bias and environmental power aggregated and operationalized through the design of the Big Tech platforms (Rettberg, 2020). Designs realize discourses in a given communicative situation (Kress & van Leeuwen, 2001). However, the rules of semiotic systems are not objectively located in the design features, as a kind of natural law, but are made by people, manifest in different kinds, and change over time (van Leeuwen, 2005: 53). Social semiotics, critical discourse studies, and the social construction of technology (SCOT) approach (e.g., Bijker & Law, 1992) have successfully encouraged technology researchers to reject technological determinism in favor of the view of technology as socially constructed (Lievrouw, 2014: 22).

Semiotic technology studies addressed PowerPoint software as a semiotic resource and semiotic regime, highlighting the normative discourses operating in the setting of technology production (Djonov & van Leeuwen, 2014, 2017; Zhao et al., 2014), website hierarchy and interaction between the content organization and navigation design (Djonov, 2007), the ways new technologies reshape knowledge as curriculum (Jewitt, 2005), the uses of semiotic technologies in university classrooms (Zhao & van Leeuwen, 2014), organization management styles through the integration of Microsoft Word and SmartArt into education (Kvåle, 2016), and more. These studies signal interest in digital technologies as meaning-making tools incorporated in various socially regulated practices, impacting the composition of multimodal texts. They pay close attention to the architecture of semiotic technologies and design features to understand how affordances of specific technologies change the familiar practices of individual, professional, and societal significance, from ambient affiliation in microblogging (Zappavigna, 2014) to digital innovations in visual news reporting (Caple & Knox, 2015).

As complex digital artifacts studied from the perspective of discourse analysis, organizational homepages were analyzed as a cybergenre (e.g., Nekić, 2015; Tomášková, 2015; Zhang, 2017) and as a medium for the participation of different semiotic modes (e.g., Michelson & Valencia, 2016; Svendsen & Svendsen, 2017; Zhang et al., 2020). The digital nature of web communication, more generally, and the material production as a semiotic resource, more specifically, has received increasing attention in multimodality (e.g., Bateman, 2008, 2022; Kress & van Leeuwen, 2001, 2021) and digital humanities (e.g., Coole & Frost, 2010; Gries, 2015). The value of addressing web homepages as semiotic technology lies in the foregrounded notion of meaning making at the heart of organizational identity communication as a semiotic practice in contrast to bottom-up approaches to multimodality that emphasize the importance of addressing the cohesion and interplay of different modes in communicative artifacts. While investigating the organizational identity of a web homepage, it is important to pay attention to the medium and its materiality (i.e., the site of the medium) to clarify the features of the material production of web homepages before proceeding to the identification of the main theoretical framework relevant to this study. Physical (i.e., material) properties of homepages are discussed in the subsequent section that outlines the main features of homepages as dynamic web-mediated texts in contrast to static page-based media.

3.3.2 Homepages as web-mediated texts

A homepage is a gateway for envisaged audiences to access the rest of the site (Nielsen, 2000, Knox, 2007; Zhang & O'Halloran, 2012). It is a web-mediated text drawing on a

digital medium – a dynamic structural projection defined by information architecture and reliant on computers and portable digital devices for dissemination (Bateman, 2021). Early web page designs (such as Figure 7.1) drew on a particular tripartite architecture outlined in Figure 3.2 – the Database and Hypertext Abstract Machine (HAM) of nodes and links determining the 'look' or Presentation of a homepage presented for interaction.

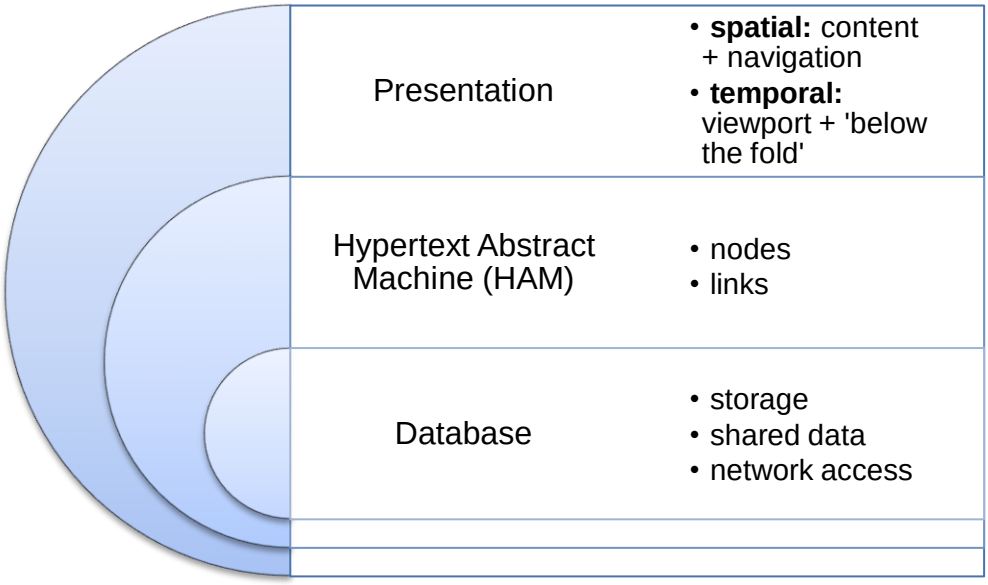


Figure 3.2 Architecture of a web page
Based on Campbell and Goodman (1988: 857)

The Database and HAM comprise the nucleus of the page (inner circles of the diagram), determining Presentation (outer circle in the diagram) composed of spatial syntagms (i.e., communicative content and navigation/access structures) and temporal sequencing (i.e., viewport – the first screen immediately visible when the page opens – and 'the below the fold' – the rest of the content that requires scrolling down to be revealed). Although the front-end of modern homepages designs draw on a wide range of web technologies, such as HTML, CSS, and JavaScript and third-party libraries and frameworks like jQuery or Bootstrap and a back-end programming language such as Python, Ruby, or Java, their architecture remains largely similar to that presented in Figure 3.2. The level of the Database considers the server-side and the level of Presentation is determined by web design technologies that determine the front-end as do graphic design considerations guided by the official documentation (i.e., brand guidelines and visual style guides) as outlined in SECTION 3.2. Programming language is concerned with the front-end considerations addressed in information studies in terms of web usability and user experience (e.g., Astani, 2013; Yerlikaya & Durdu, 2017). Presentation level, particularly organizational logics of spatial (i.e., content and

navigation) and temporal sequencing of the content are addressed from a discourse-analytic perspective (e.g., Chapleo et al., 2011, Zhang & O'Halloran, 2013). Research on web pages as digital communication technologies is interested in the functionality of pages (e.g., Krug, 2006; Nielsen & Pernice, 2010), their aesthetics (e.g., Landa, 2013), and a wide range of discursive questions arising around which technological choices are being implemented and what it tells us about the complex relationship between digital technology and different social actors.

Web pages are accordingly displayed for interaction after an HTML (Hypertext Markup Language) document is rendered by a web browser. This file is what determines the architecture of a web page at the level of presentation, although HTML files are of little interest to those who visit a page to achieve a specific goal (which, in the case of a university homepage, is arguably to locate a specific piece of communicative content). Simply put, an HTML file is a set of instructions describing what the 'above the screen' page will look like. Figure 3.3 demonstrates the HTML template on the left-hand side, and, on the right-hand side, a partial rendition of how this template is adopted for the UNSW web homepage to be displayed in a Google Chrome web browser. '`<!DOCTYPE`' defines the whole page, whereas '`html>`' brings functionality to it. A snippet of the presentation level of the viewport of the page for everyday users is displayed at the bottom of Figure 3.3.

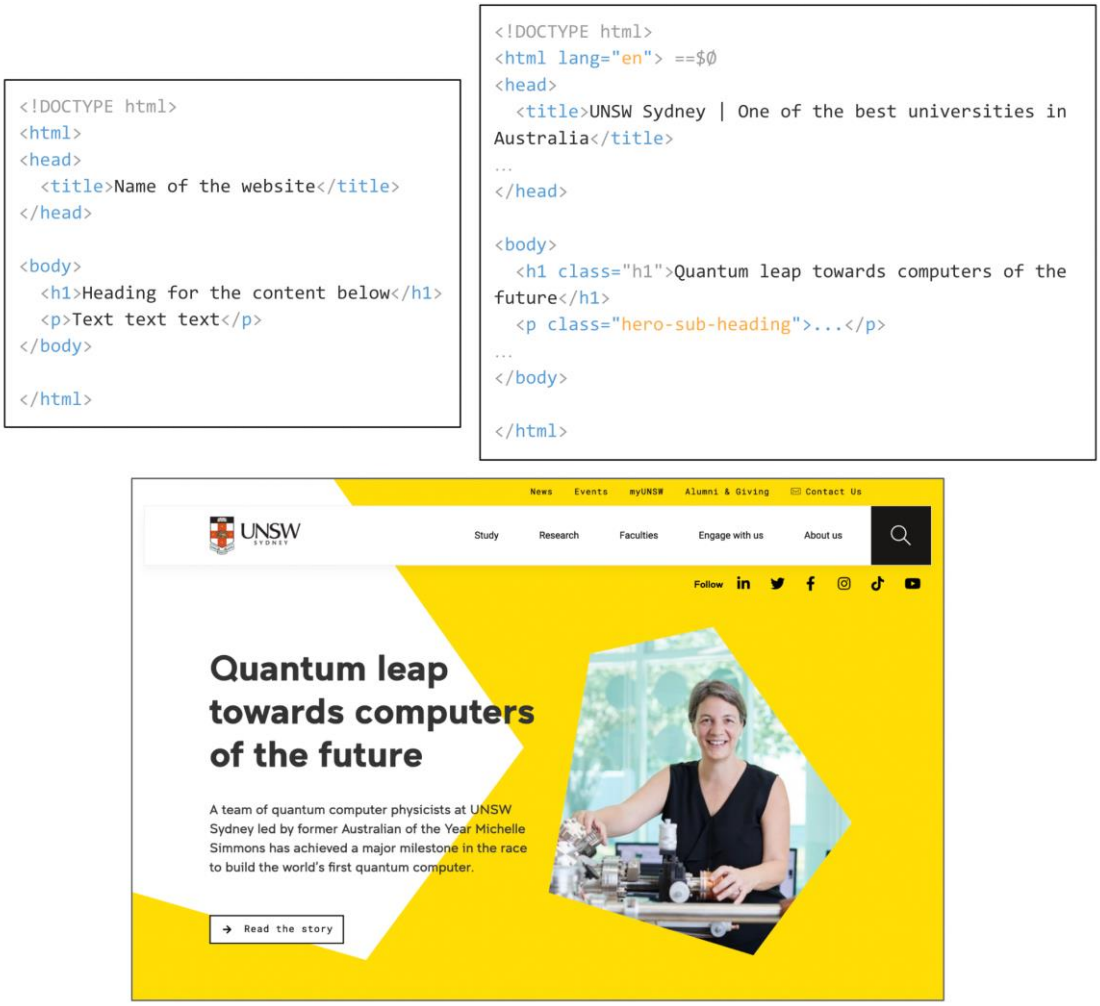


Figure 3.3 HTML template (top left), its adaptation (top right), and its rendering in a web browser (bottom)

HTML structures hypertext documents that constitute the core of the current Web so that the text is displayed in a non-linear fashion and functions as a network to be actively composed (Sandbothe, 2000). Hypertextuality, or the ability to link pages and documents, thus, stands out as one of the most fundamental features of web pages, opening navigation possibilities for the envisaged audience. Referred to as 'the heart of the Web' (Napoli, 2008: 62), hypertext has been described as a "computer-based medium for thinking and communication" (Conklin, 1987: 32) and an unconstrained way to synthesize human-readable information (Berners-Lee, 1989). It has been thought of as a shifting paradigm that signaled a transcendence from old (print) to new (digital) media, which has subsequently prompted a body of research on cybergenres (SECTION 3.3). In contrast to the traditional way of gathering information, hyperlinks serve as electronic bridges connecting related information scattered across the Internet. By doing so, hypertext facilitates non-linear information exchange through the network of *nodes*

(i.e., units of information) and *links* (i.e., pointers to other nodes). The links form the glue that holds nodes together, but the emphasis is on the content of the links (Conklin, 1987).

A simplified version of a small hypertext structure with six nodes and nine links is presented in Figure 3.4. A hyperlink connects two nodes and directs the user from one node (the anchor node) to another (the destination node). For example, node A in Figure 3.4 is a pure departure node, whereas nodes B, C, D, E, and F are destination nodes.

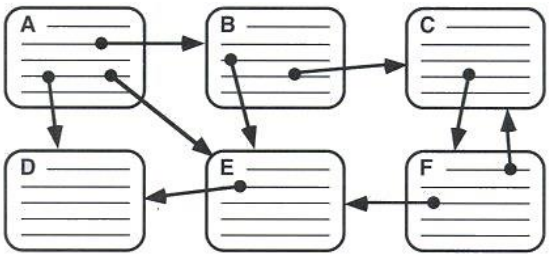


Figure 3.4 Simple hypertext structure with six nodes and nine links
From Nielsen (1990: 127)

Compared to print media, hypertext technology has a different impact on how audiences read and interact with web-mediated texts (Kress, 2005; Landow, 1992, 1997; Nielsen, 2000). Traditional linear texts impose syntagmatics on the reader and highlight the connection between elements, making the sequences strictly coded (e.g., a series of shots in a documentary film). In contrast, non-linear texts draw on paradigmatics, where the underlying design patterns and visual hierarchies encode a certain paradigmatic logic. Still, it is left for the viewer to sequence and connect the patterns. In this sense, new media reverse the relationship between the writer and the reader, where the database (paradigm) adopts material existence and narrative (syntagm) is dematerialized (Manovich, 2001: 229).

Similarly, Kress (2005) observes that reading websites is not enforced: there is neither a pre-given entry point nor a clearly defined reading path for navigation. Instead, the envisaged audiences are given the flexibility to construct pathways based on the needs that arise from their life-worlds. This position is also strongly established in hypermedia studies, although with the predominant focus on human-computer interaction (Nielsen, 1990: 1):

> All traditional text, whether in printed form or in computer files, is sequential, meaning that there is a single linear sequence defining the order in which the text is to be read [...] Hypertext is non-sequential; there is no single order that determines the sequence in which the text is to be read.

Therefore, hypertext offers a more fluid and interactive approach to both 'readers' and 'writers', which Bolter (1992: 23) compares to "an encompassing hypertextual book in which everyone can read and everyone can add his or her own writing". This capacity for a dynamic display of a non-linear text is semantic in nature – the texts are built on the 'structures of meaning' (Martinec & van Leeuwen, 2009) that consist of increasingly visual semiotic resources combined in 'multimodal ensembles' (Kress, 2010). Whereas the first generation of the Web, known as the Read-only Web, was built on temporal structuring, it is the rise of the Social Web with its shifting function from information consumption (Anderson, 2007) towards active engagement with the content in contrast that simultaneously foregrounds non-linear patterns of content articulation and reception.

From the production perspective, the non-linearity of digital texts, which are also frequently referred to as 'new media' (CHAPTER 2.1.3), can be discussed in terms of a reading path signposted for the reader, usually through visual hierarchies. Nevertheless, it is important to separate discussions of a reading path that can be confirmed using eye-tracking technology in contrast to the *intended* reading path encoded by a compositional prominence of design elements that encourage readers to follow along (Bateman, 2008: 65). Salient semiotic inventories such as the size of specific design elements, color contrast, frame lines, placement in specific compositional zones, and so forth intend to guide the reader through the page while drawing attention to the areas of higher importance. However, as Kress and van Leeuwen (2021: 186) emphasize, a reader may reject valuation regardless of the information being presented in a way that projects a particular value for the envisaged audience.

In addition to the new patterns of interaction, hypertext brings about implications for knowledge construal – information is now 'material' to be transformed into knowledge (Kress, 2005), inviting collaboration between the designer (but more so, the rhetor-institution) and the envisaged audiences engaging with the content with a great deal of flexibility and in ways that meets their needs. The audience is offered multiple opportunities to assume the role of a 'writer'. Instead of a rigid hierarchy of the print media with clearly identified authorship, hypertext thus invites collaboration. The line between the producer and consumer of a text is more blurred, although the discussion of the 'real' and 'implied' (i.e., hypothetical, model) author and reader has long been established in narratology and literary scholarship[11].

[11] For comprehensive reviews of 'real' and 'implied' authorship, see, e.g., Chatman (1990), Richardson (2007), Schmid (2009).

The availability of multiple traversals also results in enhanced agency of the envisaged audience, thereby playing a more determining part in constructing meaning. Nevertheless, it is equally important to acknowledge continuities in media practices irrespective of the materiality of the medium. For example, a recognized 'visual turn' is observable through the Internet (Oeldorf-Hirsch & Sundar, 2016) and across traditional media that increasingly emphasize image-centric practices (Triggs, 2020; Stöckl et al., 2020) reliant on visuals as an essential semiotic resource. This shift affects the status of representational resources and the development of different multimodal genres irrespective of the materiality of the medium, reflecting a broader shift in the communication landscape from "the centrality of writing to the increasing significance of image" (Kress, 2005: 7).

3.3.3 Materiality of the digital canvas

As SECTION 3.2.2 established, considerations of materiality are a significant aspect of organizational identity communication because the canvas impacts what shape a communicative artifact can take, as further discussed in SECTION 3.4.3. The question of the medium can be considered in terms of material and social aspects (Kress & Bezemer, 2008). In social semiotics, equal emphasis is placed on the material side of the text and the work of culture, often over considerable periods, with that material (Kress, 2009). First, the *material aspect* of the medium is the 'canvas' through which the meaning is instantiated – the term refers to a particular medium involved in the production of the artifact at issue (see, e.g., Delin et al., 2002; Bateman, 2008; Bateman, 2014b). In addition to such distinctive material features of the digital medium as numerical representation and programmability (Manovich, 2001), the materiality of a web homepage impacts what structural configurations are possible, how resources are distributed across the page, and how they impact the achievement of communicative purposes. Importantly, as Bateman et al. (2017) note, a material medium does not realize meanings but 'carries' them, whereas communicative modes realize the meaning.

The *social aspect* of a medium involves considerations of sociological, semiotic, and technological practices (e.g., the Web pushing the medium of paper textbooks to secondary sources of learning). As one of the most recent resources for communication, university web homepages lack a long history of systematic analysis. As a result, there are few structured ways of describing the social aspects of this medium. At the same time, although the mode of production is relatively recent, expanding the possibilities for new combinations of multimodal combinations, these combinations draw on familiar semiotic resources, such as language, image, layout, typography, and so on.

It is helpful to consider the new communicative possibilities of both material and social aspects of web homepages as a medium through the concept of *affordances*, or "distinct potentials and limitations for representation of the various modes" (Kress, 2005: 12). The term 'affordances' originates from the field of cognitive perception (Gibson, 1977), and has been extended to the studies of computer-mediated technologies to indicate "a relationship between the properties of an object and the capabilities of the agent that determine just how the object could possibly be used" (Norman, 2013: 25). For Kress (1993), affordances are the potentials of a specific mode, located firmly in the social and cultural histories of a text producer. In other words, the term encompasses the possibilities arising during the production of signs, where the sign-maker reconciles the tension between existing signs in a semiotic system and the interest to make new signs to encode the perceived rhetorical interests of the envisaged audience. Affordance, thus, allows action, and to be acted upon, its potential to fulfill specific goals needs to be recognized by the envisaged audience.

Affordances of design elements can be comprehensively addressed by documenting the formal design elements and recording their interactivity potential to examine the predetermined interactional possibilities for envisaged audiences. As discussed in SECTION 3.2.2, a web homepage draws on spatio-temporal organization with an emphasis on spatial sequencing enabled through the layout and dynamism realized by the temporal sequencing of a web page (e.g., the affordance of a scroll bar indicating the action potential of scrolling down). As an unpublished work by Kress and van Leeuwen (as cited in van Leeuwen, 2014: 22) states, the spatial organization functions as an 'integration code' or logic of combining information units into coherent wholes. Such a conceptualization resembles 'the page-flow' concerned with the "temporal sequentiality of text" (Bateman, 2008: 175). The 2D spatial dimensionality further impacts the non-linear information structuring logic, with distinct possibilities for this type of canvas, in contrast, for example, to 3D. Forms are also constrained by the intended uses arising from the interests of the rhetor-institution and the life-worlds of the intended audience (Kress, 2010). For example, a shopping website will exhibit fundamental differences in foregrounded functionalities (e.g., a shopping cart, groupings of items, etc.) to those of a university website (e.g., an integrated learning platform). At the same time, because of the similarities of the material medium, different homepages will show regularities of certain features, such as a search field, social media icons, and so forth.

Bateman et al. (2017: 101-110) outline several other features of the digital canvas that impact the form of the design elements and their combinations into multimodal ensembles. In terms of transience, a homepage may be permanent for periods of time

in contrast to, for example, signs that disappear immediately, such as with a spoken language. At the same time, sub-canvases with different layout units may be fleeting (e.g., news content or embedded videos). Even when designs change quite dramatically (e.g., early 2000s versions of a specific web homepage to a modern design), there are digital tools (e.g., the Internet Archive's Wayback Machine) that help to retrieve such designs, although with some limitations (CHAPTER 4.2).

Agency is another important aspect that should be considered for web-mediated texts. Participation is presupposed since there is a recognized expected engagement with the web content. In this regard, interactivity, or "the affordance of a text being acted upon, thus including hypertextuality" (Adami, 2015: 133), is useful concerning the social aspects of the material medium. Despite being a fundamental part of new media texts, the semiotic resources of interactivity have been overlooked (Poulsen, 2022), predominantly because interactivity was beyond the scope of textual analyses of traditional print media (Bateman et al., 2017). A limited number of studies in social semiotics have examined action potentials of formal design elements (Adami, 2015; Baldry & Thibault, 2006; Lemke, 2002) and how interactivity as discourse transforms the actions of social practices (Poulsen, 2022) in the context of web-mediated communication. The affordance of interactivity bears value for this study, particularly for addressing the agency of the envisaged audience through navigation/access structures, and is discussed through Adami's (2015) notion of interactive signs/cues, as further explained in CHAPTER 4.3.1.

The non-linear structuring of information requires significant input from the envisaged audience engaging in the *ergodic*[12] processes of *exploration*. In the process of building the trajectories, the audience, however, can only choose from the predetermined pathways presented through action potentials that the medium affords (Baldry & Thibault, 2006: 104). The presented content and the text is thus *immutable* (i.e., cannot be changed), although there are some possibilities for personalization and customization. Some options allow adaptations based on the manual input received through a set of clicks and type-ins, for example, a search for degrees and courses. Engagement is, thus, of the type 'micro-ergodic semiotic work of composition': while traversing between pages, the audience composes their navigational trajectories while making sense of the elements on the page (Bateman et al., 2017: 107).

[12] Drawing on Aarseth (1997), Bateman et al. (2017) incorporate the term 'ergodic' to signify "the kind of activity or engagement required of the reader, viewer, player, etc. [that] 'extends' the medium and so impinges on the kinds of communicative situations possible" (105).

Therefore, affordances impact the *form* of the text and the degree of *agency* – what shape a particular text can take, who has control over what it will look like, and what role the audience plays in interacting with the text. Although invisibly, those who create digital communicative artifacts often engage in negotiating meanings with the software designer, making semiotic choices from a set of options available in the interface (Zhao & van Leeuwen, 2014). As Kress and van Leeuwen (2021) emphasize, the material production of design is not just an execution of a readily available template but an integral part of meaning making, "the material substance drawn into culture and worked over time" (Kress & van Leeuwen, 2001: 6). Considerations of the materiality of the medium and the communicative goals of the page has given rise to several approaches to studying homepages as a genre. These form an important foundation for the current study and are reviewed in the next section.

3.4 Web homepages as digital genres

3.4.1 Genre and discourses

Web homepages represent a collection of artifacts that exhibit a certain degree of homogeneity and are, therefore, comparable. This assumption for comparison draws on a 'pre-theoretical plausibility' (Bateman, 2014b) – that is, albeit somewhat different in form, university web homepages serve a recognizable social purpose, such as welcoming visitors to the site, establishing the identity of an organization, providing a broader schema of a website, among others (Djonov & Knox, 2014). A genre approach is one of the ways to investigate unity between the structure of communicative artifacts and their function.

Broadly, genre refers to text types characterized on the basis of their content, usually based on the ideas of convention and purpose in text groupings. In systemic functional linguistics and social semiotics, genres are understood in terms of their *function* in social interactions or, to quote Martin (1985: 250), "how things get done, when language is used to accomplish them." The proposition builds on the extended Hallidayan notion of register (Martin, 1992; Eggins, 1994; Martin & Rose, 2008) to encompass (linguistically) realized 'activity types' which comprise certain aspects of a culture. Genres are approached in terms of what they do, "as more or less unavoidable templates for communicative action" (van Leeuwen, 2005b: 74) in compared with a more Bakhtinian tradition that views genres as culturally and historically situated resources. The overall text type, or "recognisable groupings of individual texts, based on shared characteristics"

(Ravelli & McMurtrie, 2016: 15), may include considerations of content, form, and function, as explained below.

A *form-oriented approach* to characterizing genres is media-based. It considers forms of expression when the concept of a medium is not made prominent, for example, music (van Leeuwen, 2009). A *content-oriented approach* to genres generally examines time, place, characters, typical plots, or the 'what' of a text and is predominantly used in literary and film studies (van Leeuwen, 2005a). In social semiotics, content is usually approached through the notion of discourse. In this sense, discourses signify "socially constructed ways of knowing some aspect of reality" (van Leeuwen, 2016: 138). As socially constructed, discourses are always shaped in a specific social context and in ways that are congruent with the discursive relationships of social actors or interactive participants who shape these discourses. The scale and number of participants plays a role in shaping the discourses appropriate to the interests of social actors. For this study, university identity communication on web homepages is viewed as institutionalized (i.e., regulated by normative discourses), involving multiple stakeholders (i.e., it appeals to various envisaged audiences), and occurring on a large scale (i.e., it reaches vast audiences).

A *function-oriented* approach views genre in the contexts of situation and culture as a staged, goal-oriented, purposeful activity in which speakers engage as members of culture (Martin, 2000). This context of *culture* shapes the generic structure of a text. The context of situation (Malinowski, 1935), or *register* in systemic functional tradition (Halliday, 1989), can be interpreted by analyzing the main social activity taking place (the field of discourse), the participants involved (the tenor of discourse), and roles and functions of the text nature within this social activity (the mode of discourse). It is a theoretical construct for explaining how a text relates to the social processes within which it is located (Figure 3.5).

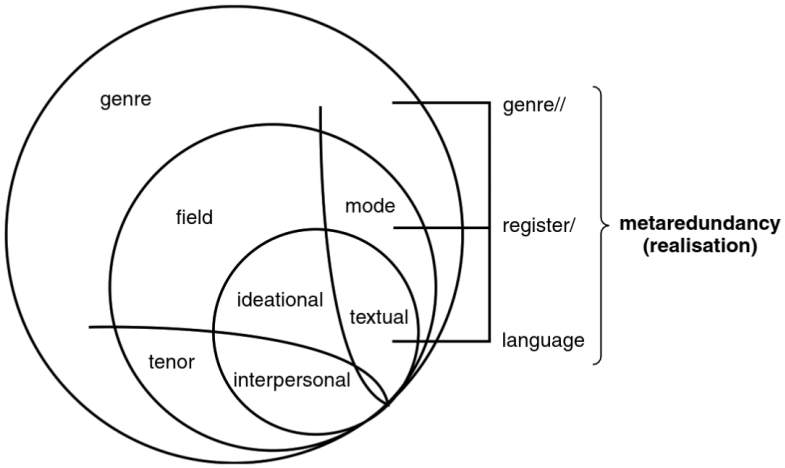


Figure 3.5 Schematic representation of genre, register, and metafunctions
From Martin (2009: 160)

In the model in Figure 3.5, genres are culture-specific and get activated by the "features of the field, interpersonal meanings of the tenor, and textual meanings and features of the mode" (Halliday, 1985: 29). Similar to Martin and Rose (2008), for Bateman et al. (2017), genres are "ways of characterising patterns of conventions that some society or culture develops to get particular kinds of 'communicative work' done (Bateman et al., 2017: 129). To move beyond the impressionistic view of genre, attention should be paid to the functions and contribution of expressive resources found in a specific communicative text (Bateman, 2014b).

Defining genres as culturally distinctive text types from a social semiotic perspective (Ravelli, 2006) may be beneficial for text analysis in several ways. First, a systematic description of multimodal combinations across homepages has the potential to reveal the *similarity of form*, or shared conventions. Put in another way, genres can be characterized as "sets of conventions that transcend individual texts, and create frames governing document production, recognition and use (Santini et al., 2011: 4). Similarly, Bateman et al. (2013) discuss occurrences of particular combinations of semiotic features of a text as a persuasive indicator of a 'genre membership'. Thus, a genre's potential to function predictively about the type of information in a text allows the identification of formal structures, purposes, and contexts underlying a text.

The second advantage of a genre approach is considering the discourse semantics of a text or making texts interpretable in specific contexts, which allows approaching genre as a bearer of meaning for the culture in which the texts are circulated. The researcher's task in such explorations is "specifying as accurately as possible mutual expectancy relationships between features of the social situation and identifiable linguistic features

of the language occurring in that situation" (Bateman, 2008: 185). This position serves as a bridge for identifying links between regularities of form, meaning potential, and social context through documenting the expressive elements across multiple layers (SECTION 3.3.4).

3.4.2 Cybergenres

Selecting the genre of university web homepages for analysis is motivated, on the one hand, by the pre-theoretical plausibility of social relevance and, on the other hand, by the assumption that the artifacts will display a degree of homogeneity of their internal structure and formal properties (Bateman, 2014b: 239). One of the influential positions in the literature on cybergenres – novel genres given rise by combinations of the computer and the Internet – is taken up by Shepherd and Watters (1998). The scholars propose to account for the interactivity of web-mediated texts through an added facet 'functionality' in contrast to non-digital genres comprising two planes – content and form. Using the proposed formula <content, form, functionality>, Shepherd and Watters' (1998) research reveals that corporate homepages are novel and spontaneous cybergenre – they are not like any other existing genre in any medium, presenting information about a company to different types of audiences through content as a general introduction structured in chunks of information and subtopics presented via interactive signs. The information in early 1990s designs of corporate pages is structured hierarchically and allows for browsing and email communication. However, the web landscape on how companies present themselves via homepages has changed dramatically since this study was first published, primarily due to technological advancements affording new combinations of semiotic resources, which were impossible earlier. Bateman (2014b) argues that such changes can be related back to the changes in medium that have occurred over time. Tracking the consequences of this change is crucial for making valid claims on the generic properties of any (web-based) multimodal artifact.

As one of the first contributions towards considering medium for genre analysis, the <content, form, functionality> model fails to consider the materiality of traditional or more tangible media[13]. Drawing on Kress and van Leeuwen (2001), Bateman (2008) argues that ignoring the materiality of the medium is problematic because any medium carries its own meaning potential. For example, the experience of leafing through a glossy magazine is very different from examining an old manuscript, and materiality will play a

[13] Examples include brush strokes, quality of paper, etc., and are considered to have an impact on the overall meaning potential. This line of enquiry is persuasively pursued in many works by social semioticians, particularly Theo van Leeuwen and Gunther Kress.

significant role in shaping this experience. In the context of digital media, Djonov and van Leeuwen (2011) discuss digitally manipulated texture of images and how specific configurations of lines, shape, and color are used to create an illusion of tactility in some cases of graphic design.

Another attempt to consider the shape of new texts, primarily through the prism of web navigation, includes Finnemann's (1999) distinction between the reading and navigation 'modes' supported by the tradition of hyper-reading in cognitive science (Horton, 1994). Finnemann (1999) proposes that the reading mode includes reading as such. It is the reader's positioning in the traditional sense of reading (i.e., the activity of getting information from texts). The navigation mode involves navigation style and means the process of 'surfing' or 'browsing' through the Web. Similarly, Askehave and Nielsen (2005) propose to include the notion of the medium into digital genres to account for characteristics of Web mediation.

Drawing on the influential multi-stratal Swalesian model (Swales, 1990) – (1) communicative purpose realized by (2) move structures realized by (3) rhetorical strategies – Askehave and Nielsen (2005) extend the traditional genre model to include reading (zooming in) and navigation (zooming out) dimensions and consider perspectives of both text producer and receiver. Zhang and O'Halloran (2012, 2013) expand this model to include various multimodal resources that participate in constructing discourses (Figure 3.6).

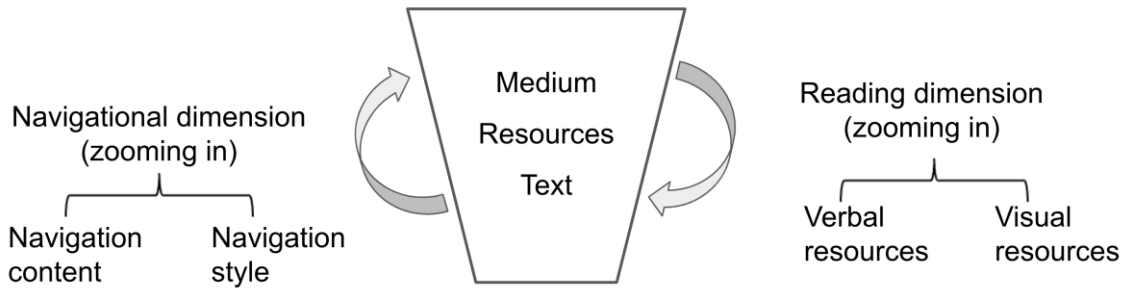


Figure 3.6 Two-dimensional model of genre by Zhang and O'Halloran (2013: 476)

The reading dimension of the model presented in Figure 3.6 makes a distinction between verbal (language) and visual semiotic resources (e.g., color, image, typography, and layout). Verbal resources are discussed in relation to the navigational dimension – navigation content, particularly tab marks and links, and navigation styles governing interactivity potentials signposted for the audience. In the current study, these two dimensions are addressed at the site of the communicative artifact (SECTION 3.2) through

the analysis of the communicative content and navigation which requires engagement with different semiotic modes for the envisaged audience.

From these theoretical endeavors, the notion of digital genres has received increased scholarly attention in the past twenty years. However, a significant number of studies available to date "anchor themselves insufficiently in semiotics and computation and the essential combination of these that is necessary when discussing digital media as an object of study" (Bateman, 2021b: 1). Similarly, Belcher (2023) problematizes the notion of digital genres, questioning "whether genre itself is still a useful concept" (36). Several features of what one might mean by 'digital genre', such as volatility, plural and diversified audience, the lack of spatial or temporal boundaries, polytextuality, and flattening of the discourse audiences complicate them as an object of study (Belcher, 2021). In addition, the research questions are centered around not only what is being compared but also under what conditions, for whom, and within what degrees of acceptable variation.

3.4.3 The Genre and Multimodality model

The Genre and Multimodality (GeM) model is one of the approaches to multimodal research reported to be a strong candidate for providing the tools needed to systematically address complex multimodal semiotic artifacts (Hiippala, 2016). It provides a multi-layered schema for addressing different levels of multimodal texts whilst accounting for the materiality of the medium. The GeM annotation schema defines several layers for description, which include, but are not limited to, the following, as summarized by Hiippala (2017: 277):

i. base layer, identifying the minimal units of analysis
ii. layout layer, identifying the layout properties and structures
iii. rhetorical layer, accounting for the meaning potential of the content and its communicative purpose
iv. navigation layer, describing structures that support navigation and access within the page

The current thesis adapts the GeM model to address the questions of organizational identity communication, as detailed in CHAPTER 4.3.

The GeM model takes some of its foundational underpinnings from Waller's (1987, as cited in Bateman, 2014b: 245) study on genre and document language, typography, and layout and insights from Kress and van Leeuwen's (2001) work on the materiality of different semiotic systems with "correspondingly differing physical properties, mobilized

together in the service of meaning making" (Bateman, 2019: 236). The development of the model that empirically addresses motivated characterizations of generic properties predisposes understanding essential 'parts' of a multimodal text. As O'Toole (1994: 213) stressed it for art:

> [...] the first priority of any description which is intended to contribute to a shared discourse is what can actually be perceived as present in the 'text' of the work itself.

The original model developed for static page-based documents is presented in Figure 3.7. The center of the diagram presents configurations of (any) social practice that results in the production of a communicative artifact, demonstrating that a social practice of analytical concern draws on the forms and tools (e.g., production technologies for specific forms), developed modes of expression (e.g., image, verbal text, layout), and considers established uses of the artifact (e.g., present/locate information about a course on a university website). A particular canvas (e.g., the size and resolution of a screen display) is addressed through canvas affordances and constraints. An example of a canvas constraint is the early versions of the Instagram design, wherein it was not possible to adapt the size of the photos uploaded to the platform – a limitation that was soon eliminated, offering more choices for audiences to navigate their digital experiences, expanding options for different photo sizes (although presented as a system of finite choices). Canvas constraints also include the other material properties of the artifact as well as the tools that may be used for manipulating the materiality, such as different web technologies (e.g., HTML, JavaScript) and third-party libraries and frameworks as discussed in SECTION 3.3.3.

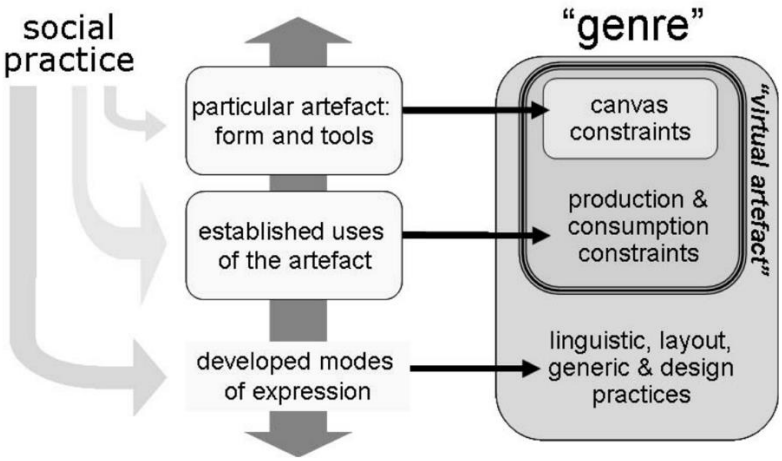


Figure 3.7 The GeM model for page-based documents
From Bateman (2008: 16)

In addition to canvas constraints, the limitations of technology (i.e., the tools used for production) impact the *form* of a particular artifact. In this sense, design can be described as "a compromise between many competing and sometimes conflicting constraints and these need to be brought into any discussion of the functional motivation of the resulting artefacts" (Bateman, 2008: 17). The current research considers canvas, production, and consumption constraints on the site of the medium (refer to Figure 3.1), and the form of the resulting text (i.e., the site of the communicative artifact) is viewed as "how the artefact is brought to life on the canvas" (Bateman, 2008: 16). Table 3.1 summarizes main constraints that the study of web homepages needs to consider. Conceptually, these constraints relate to the material side of production and consumption, although broader conceptual limitations (e.g., centralized, normative discourses surrounding the production) are equally important, albeit less overt.

Table 3.1 Sources of constraints for production of and interaction with web homepages

Canvas constraints	constraints arising out of the material nature of the digital artifact, resulting from considerations of different canvas specifications, e.g., the size of the display and resolution and the material properties of the artifact as well as web technologies involved in production of the artifacts
Production constraints	constraints arising out of the production technology (i.e., web technologies involved in production) that have to do with developments of the medium (e.g., programming languages, third-party libraries plugins, drop-down widgets), resulting in a specific size of images and different visual effects (e.g., underlined text when a mouse is pointed at a layout unit)
Consumption constraints	constraints arising out of the context of consumption and the ways the audience interacts with the digital artifact (i.e., the site of audiencing), such as time, place, and manner of interacting with the text

After Bateman (2008: 18)

The GeM model has been adapted to the analysis of page-based texts with different materialities as well as their change over time. For example, from a cross-cultural perspective, Kong (2013) applies the GeM model to the genres of Chinese- and English-language tabloid newspapers and Thomas (2014) studies the visual genres of product packaging in Taiwan and the UK, both providing nuanced accounts of the design patterns of the visual layouts of different communicative phenomena. Bateman (2013) extends the GeM to film as a spatio-temporal text, whereas Hiippala et al. (2021) adapts the framework to diagrams while simultaneously scaling up the volume of the data. In relation to digital texts, Nekić (2015) uses GeM to study the structure of Croatian and Scottish

tourism websites resulting in a description of a range of design strategies to target relevant types of users. Despite these productive applications with clear practical implications, GeM has not been used as a framework more widely, arguably because the multi-layered annotation already requires a substantial investment of time and resources (Hiippala, 2016: 84), and the need to account for different, often very complex materialities of the medium further complicates this pursuit.

3.4.4 Limitations of the genre approach to studying homepages

Despite increased scholarship on digital genres, several challenges to a genre approach to digital artifacts, particularly in relation to materiality, remain to be addressed. Bateman et al. (2017) draw attention to the following limitation:

> [...] it is still often unclear just how many of the properties of those pages are due to some genre of 'homepages', or to the properties of webpages as such, or to conventions that have arisen in the use of web pages [sic] that are totally independent of the functions of 'homepages' [...] or are consequences of limitations arising from the technology used (348).

Several elements, such as search bars and social media tags, seem to be independent of the functionality of homepages (Bateman et al., 2017) confirmed by previous studies (such as a 'welcoming portal', representation of the structure of the whole website, and organizational identification). Methodological issues of addressing and properly classifying such elements can be resolved through empirical analyses of homepages across similar contexts of use across a given period. Generic structures and context must be considered as "varying continuously and simultaneously along a variety of dimensions of description" (Bateman et al., 2013: 147-148). In this context, Schryer's (1993) thesis on the genre adherence to continuity and change is notable. Genres can be approached as "stabilized-for-now or stabilized enough sites of social and ideological action" (204). This definition bridges the complex relationships between the past texts (e.g., past versions of a single web homepage) with other present texts (e.g., more recent versions of the same web homepage), building a sense of genre as "a simultaneously diachronic and synchronic structure" (Schryer, 1993: 208). Similarly, Hiippala (2015) discusses tourism brochures in terms of 'genre dynamics' (76) or how structural changes of multimodal documents cut through the different semiotic strata, from language to genre. Therefore, from a genre perspective, different versions of the same homepage can be seen as records of organizational self-representation, always impacted by the sources of constraints discussed in SECTION 3.2.3 and constantly evolving practices of identity communication, as demonstrated in CHAPTER 7.2.

With spontaneous novel genres such as homepages, the point of initial comparison with the old texts may be vague, which is further complicated by the instances of embedded genres or, as Bateman (2014b) explains, portions of web pages that are "best assigned to genres that are distinct from any genre classification that we might consider for the whole (if any genre assignment for the whole can be recognised)" (260). Search tabs, for example, can be attributed to facilitating an interactional experience whereby users are invited to type their query as an alternative to 'browsing' the content. Still, they are found not only on web homepages but also on search engines, Google Documents, etc. It is also becoming a rule to display social media icons on personal and corporate homepages. Such considerations may need to be addressed as developments of the medium rather than those of a genre carried in that medium (Bateman et al., 2017; Zhang et al., 2020). Some elements may also undergo the generic integration process with (any) homepage rather than a university homepage.

Since the foci are the 'communication questions' of organizational identity design, this thesis approaches a web homepage as a medium for organizational identity communication. It recognizes the value of the multi-layered annotation schema of the GeM model, particularly for documenting design elements and addressing their affordances, and subsequently adapts it to the purposes and research questions of the study (CHAPTER 4.3.5). It also argues that whereas the properties of the digital medium are essential because they offer specific affordances rather than others, these properties are only one part of how discourses of identity are shaped. In this context, as Bateman et al. (2017) emphasize, it is imperative to enforce the separation of media and modes, as CHAPTER 2.2.1 has clarified.

3.5 Concluding remarks

This chapter has reviewed major approaches to studying web homepages, introducing relevant insights from web and graphic design studies, branding, multimodal social semiotics, and information and genre studies. It specified that the current research views a web homepage as semiotic technology because this approach documents the form and function of web-mediated artifacts, pays attention to specific affordances of the materiality of the medium, and recognizes the technology as a communication tool between different social actors in a specific social context.

The organizational identity communication framework proposed in this study approaches organizational identity communication as a social practice across four sites: the site of production, the site of the communicative artifact, the site of the medium, and the site of

audiencing, each with distinct potentials and limitations. While the focus of the current study is primarily on the site of the communicative artifact, this framework can be adapted to study any multimodal artifact or a compilation thereof as a product of identity work (of any organization) carried out by a designer, whereby a text (i.e., the site of the communicative artifact) is a mediation of the interaction between an organization and the envisaged audience. Notably, the organizational identity manifested in such a text is presented not for passive consumption but for active engagement. However, the frames of engagement are surrounded by normative discourses and are largely predetermined (e.g., click on a link, type in, and so on). CHAPTER 4 provides a detailed description of research questions, data, methods, and modes of analysis, emphasizing organizational identity design as a social practice of institutional self-representation presented for interaction.

Chapter 4 Data and methods

Orientation

As established in CHAPTER 1, this thesis addresses three research questions about organizational identity communication on university web homepages. It examines (1) the organizational identity design practices of selected universities at a particular time, (2) the organizational visual identity of selected universities, as manifested through images in the viewports of web homepages, and (3) the evolution of the organizational identity of a selected university, as observed through changes in organizational visual identity elements, communicative content, and navigational structures. Since the current research is centered around three studies focusing on different objects of analysis, a selection of complementary methods is deemed appropriate.

This chapter describes the three datasets used in the thesis and explains the annotation techniques and methods of analysis. A range of different methods has been chosen because, as demonstrated in CHAPTER 3.1.2, organizational identity communication on the site of the communicative artifact is a complex semiotic practice, and the digital materiality of web homepages posits further challenges for their study. In the following sections, an overview of all methods is provided. SECTION 4.1 outlines the alignment of research questions, methods, data, and modes of analysis. SECTION 4.2 describes the data collection process and how it yielded three complementary data sets, characterizes the data, and outlines data storage considerations. SECTION 4.3 explains the GeM schema, and SECTION 4.4 summarizes visual content analysis and visual social actor network.

4.1 Representation and situated use

The methods for examining organizational identity communication on web homepages are grounded in the social constructionist approach to making meaning (e.g., Crotty, 1998; Hall, 1997). This approach distinguishes between, on the one hand, a material world where people and objects exist and, on the other hand, the symbolic processes through which representation is articulated and meanings are produced and exchanged. While recognizing the material dimension of meaning-making resources, the constructionist approach focuses on the active production of meaning by the discourse participants. Using this epistemological perspective allows the organizational identity of a web homepage to be approached as a product that emerges from a social practice of

organizational identity communication through the process of signification – the active production of meaning by the participants of discourses, i. e., "socially constructed knowledges of (some aspect of) reality" (Kress & van Leeuwen, 2001: 4), encompassing negotiation and interpretation of meanings.

Representation is the discursive process in which the makers of signs "seek to make a representation of some object or entity, whether material or non-material, in which their interest in the object, at the point of making the representation, is a complex one, arising out of the cultural, social and psychological history of the sign-maker, and framed and focused by the specific environment in which the sign-maker produces the sign" (Kress & van Leeuwen, 2021: 7). As such, meaning is neither static nor inherent in representation, but is socially constructed. It cannot be delimited to the properties of either producers or consumers of signs and arises from a shared cultural space (Curtin & Gaither, 2005; du Gay et al., 2013) based on communication as a relational process.

A frequent objection to this approach is that analysis of representation without studying actual uses of texts provides insufficient discussion of a communicative event. From a design perspective, this complex issue points to the challenge of reconciling production and consumption, which is often addressed through 'situated use'. Prominent design theorists (e.g., Greenbaum & Kyng, 2020; Norman, 2013) propose that a design process needs to start with the identification of expected uses of an object before ascribing any affordances to such an object, that is, "fundamental properties that determine just how the thing could possibly be used" (Norman, 1988: 9). Similarly, while acknowledging the significance of studies addressing situated use of communicative artifacts, this project does not study the uses of texts, but systematically examines *what is being used*. Therefore, the focus is not on the actual uses of semiotic material but on the meaning potentials of the studied representations that "allow an unlimited (in number) yet constrained (in semantic scope) number of readings" (Bezemer & Kress, 2008: 171). In relation to organizational identity communication, these potentials arise from the 'text-as-complex-sign' that fits the purposes of the rhetor-institution and the designer and their sense of envisaged audience, "given the semiotic resources available for realizing/materializing these purposes in the form of shaped sign complexes" (Bezemer & Kress, 2015: 130-131).

As discussed in CHAPTER 3.1.3, this project addresses organizational identity at the site of the communicative artifact viewed as mediating two 'sides' of a communicative event – production and consumption through the notion of organizational identity design. It considers different semiotic resources selected for a particular text, how they come

together through design, and what communicative purposes these combinations fulfill. Instead of looking at the patterns as encoding the intention of the text, the study explores the relationship between choices across different semiotic systems and the communicative purposes of these choices, examining three complementary data sets – web homepages of different universities, images across selected university homepages, and historical versions of a selected homepage. The alignment of research questions, main methods, data, and modes of analysis is outlined in Table 4.1 and explained in detail in the subsequent sections.

Table 4.1 Research questions, methods, data, and modes of analysis

Research question	**Data**	**Mode of analysis**
1. How do different semiotic resources combine in web homepages to construe discourses of organizational identity?	2020 versions of web homepages of three top-tier universities in Sydney, Australia. Entire data set #1 (N=39; item N=153); data set #1 (N=4)	Textography + the GeM annotation schema + metafunctional foundations
2. What visual strategies are deployed in images in the viewports of web homepages, and how do these strategies contribute to organizational visual identity communication?	Images on four university web homepages between 2015-2021. Data set #2 (N=400)	Textography + visual content analysis + visual social actor network
3. How have organizational identity design changed overtime?	Historical versions of a selected university's web homepage between 2000-2021. Entire data set #3 (N=8); data set #3 (N=3)	Textography + metafunctional foundations

The project pays attention to both material and semantic sides of representation to (a) identify formal structures of key layout structures and visual images and (b) determine the links between the identified structures and their meaning potentials. It argues for an integrated view of the spatial organization of web pages – that is, it looks at texts as multimodal communicative artifacts from the point of view of representation. It focuses on what we, as analysts, can see, the patterns we can identify, and the interpretations we arrive at from examining the structures and purposes of communicative artifacts in the context of organizational identity communication. Such identification, documentation, and analysis will enable a comprehensive contextual interpretation of the structural patterns. Whereas undeniably insightful, the study of situated use (i.e., the site of audiencing) is outside the scope of this thesis.

4.2 Data and data collection process

The primary sources of data were (1) the Internet Archive's Wayback Machine (2020) – the most extensive non-profit library that amasses publicly accessible web-based multimedia (Bowyer, 2020) and (2) Universities Australia (2019) – the official website of one of the main bodies that advocates for the advancement of higher education in Australia. The Wayback Machine (<*https://web.archive.org/*>) was used to access (1) different versions of a selected web homepage featuring the most significant changes in design elements over twenty years and (2) images across four selected web homepages over six years. The official Australian university web homepages were identified through Universities Australia (<*https://www.universitiesaustralia.edu.au/*>), collected on the same day in January 2020, and recaptured on the same day in October 2020 to ensure the availability of the most recent data. Thus, the data for the project is divided into three parts, as explained in the sections that follow:

- data set #1: homepages of selected university websites for a comparative study of organizational identity designs at a particular point in time, with 156 items comprising entire data set #1, and four web homepages comprising data set #1 for an in-depth analysis (provided in APPENDIX A)
- data set #2: 400 images from the homepages of the same university websites for a comparative study of the visual strategies of viewer engagement and types of OVIs
- data set #3: three versions of a selected homepage for an inquiry into the design changes, with eight versions comprising entire data set #3 (APPENDIX B)

Due to the ephemeral nature of web data, several data collection tools were employed to preserve the data in its original form without the loss of interactivity. The data collection process followed three main steps, as outlined below.

As the first step of data collection, in January 2020, 39 web homepages of Australian university websites were identified through Universities Australia (2019). The homepages were first saved from the Google Chrome browser as HTML files which, as CHAPTER 3 explained, is a standard web page file type on the Internet. This was done to ensure the reproducibility of the datasets, particularly for standardizing annotations. The full-length homepages were also collected to preserve multimedia resources and interactive design elements since HTML files are text-only files (like the current page of this thesis). Among a limited number of tools that support web data collection and multimodal annotations – e.g., the software developed by O'Halloran et al. (2012) and

UAM corpus tool (O'Donnell, 2008) – MAXQDA Analytics Pro 2020 software was selected for performing annotations. The software by O'Halloran et al. (2012) provides a comprehensive set of tools for analyzing different media files such as text, video, and image but does not support the analysis of hypertext to be included (although this capability is reported to be included in the next software development phase) (365). The UAM Corpus Tool <*http://www.corpustool.com/*> (O'Donnell, 2008) is another useful application with annotation capabilities that offers annotations at multiple layers, but its focus is on verbal text analysis (e.g., semantic-pragmatic layers, syntactic units, and lexis) which comprises a limitation for the data sets studied in this thesis. Another software for advanced multimodal analysis is Multimodal Annotation Software Tool (MAST) introduced by Cardoso and Cohn in 2022 – this appeared after the annotations of the data sets for this thesis were performed. MAST (the interface of which resembles MAXQDA) shows a strong capability for the analysis of visual and multimodal documents by selecting and annotating visual areas and establishing relations between multi-layered annotations. Thus, MAXQDA was selected as the most suitable software that supports both web data collection and multimodal annotations, as explained further below.

MAXQDA Analytics Pro 2022 (<*https://www.maxqda.com/*>) is software for qualitative and mixed-method research that supports in-text annotations (from websites to texts and images), basic and advanced statistical analyses, and different visualization techniques. It falls under the umbrella of computer-assisted qualitative data analysis (CAQDA) software (Kuckartz & Rädiker, 2019), and several of its analytical functions were found helpful for this project. These include data import and analysis, data management and usability, qualitative data analysis, mixed methods, visualization, quantitative text analysis, and statistical data analysis. Coding and a hierarchical category system were essential MAXQDA functions for recording annotations, including systems with subcategories, coding with colors and symbols, and memos for recording observations and notes (Figure 4.1).

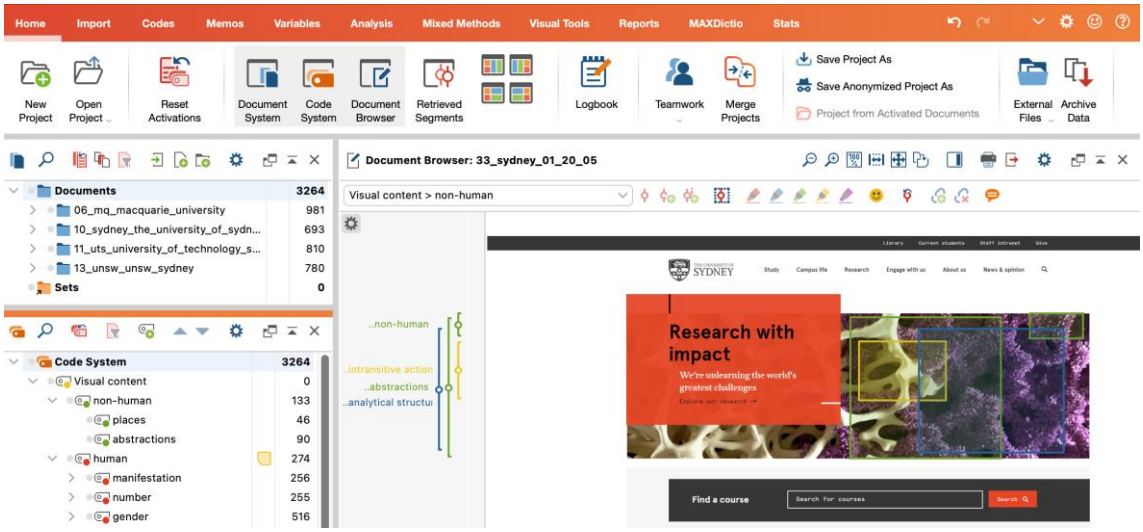


Figure 4.1 A snapshot of the MAXQDA user interface for the data set project #2

Quantitative data analysis tools embedded in the software were used to generate frequency charts, analyze code frequencies across different data groups, and discover code co-occurrences (or which codes occur in the same document group). While the software supports key statistical capabilities (e.g., correlations through Pearson's r, reliability with Cronbach's alpha, and one-way analysis of variance or ANOVA), the execution of the algorithm is not made visible to the analyst, which may impact the accuracy of result interpretation. Due to this limitation, these tools were not used in this study. Nevertheless, MAXQDA was particularly beneficial for this project because it does not impose any built-in methodology, and instead, it is the task of the analyst to apply the designed methodology and use the tools available in the program in a way that is consistent with the project methodology.

Screenshots of each page were captured through MAXQDA Web Collector (Figure 4.2) – a Google Chrome browser add-on that collects web pages and preserves page layouts and graphics for import and analysis in MAXQDA. To ensure that an archived copy of each page is easily accessed, the data collection process spanned three weeks because not every homepage had a backup copy in the Wayback Machine.

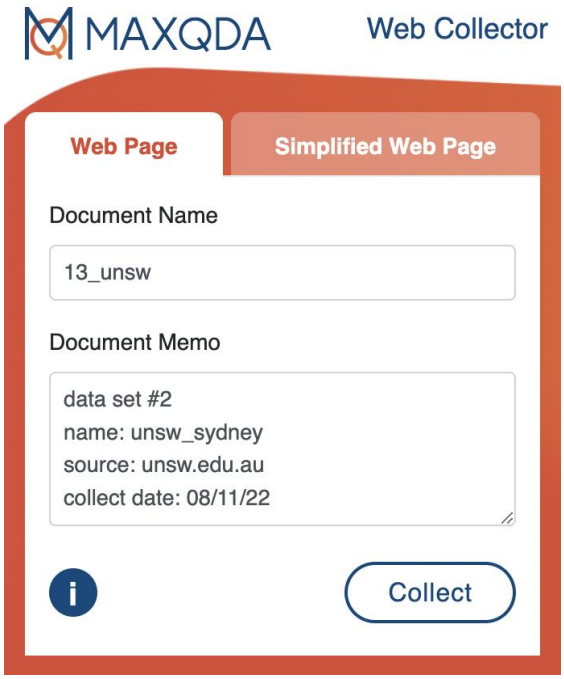


Figure 4.2 MAXQDA Web Collector for capturing the data and importing it to MAXQDA Analytics Pro

This way, a generated set of 39 HTML files expanded to include full versions of each page in the .pdf and .png formats[14] and viewports in .png. The full versions in .pdf and .png were required for annotations and analyses as they show the presentation level of pages as displayed for envisaged audiences. Viewports are of particular interest as they package information that requires the most immediate attention when a web homepage first opens. Four files – (1) a full page in .html, (2) a full page in .pdf, (3) a full page in .png, and (4) a viewport in .png – were imported to Mendeley Data (<*https://data.mendeley.com/*>) – a cloud-based data repository. This suite of different formats further strengthened analytical possibilities, from ensuring that interactivity of different elements is preserved (.html files) to recording annotations in MAXQDA (.pdf files) and presenting data in the thesis in a compatible with Microsoft Word format (.png files). Having backup copies of each file in the Wayback Machine helped to safeguard access to the archived web versions that open in any web browser.

These four files for each university web homepage comprise *entire data set #1* (N=156). Figure 4.3 demonstrates how it is displayed in the Mendeley Data repository, with the root folder <Entire data set #1> and a sample file folder of the Macquarie University web

[14] Portable Network Graphic (.png) is an image file that preserves visual quality without data loss. According to Adobe (2022), this file format is particularly popular with web designers because it handles graphics with transparent or semi-transparent backgrounds and can be opened on any image editing software without the need for licensing.

homepage. The folders and files were assigned arbitrary numbers from the Universities Australia's (2019) ordering of university profiles, followed by a university code (e.g., mq_) and the full name of the university (e.g., macquarie_university). The standardized numbering was then preserved across both annotations in MAXQDA and the data storage repository. Entire data set #1 is outlined in APPENDIX A.

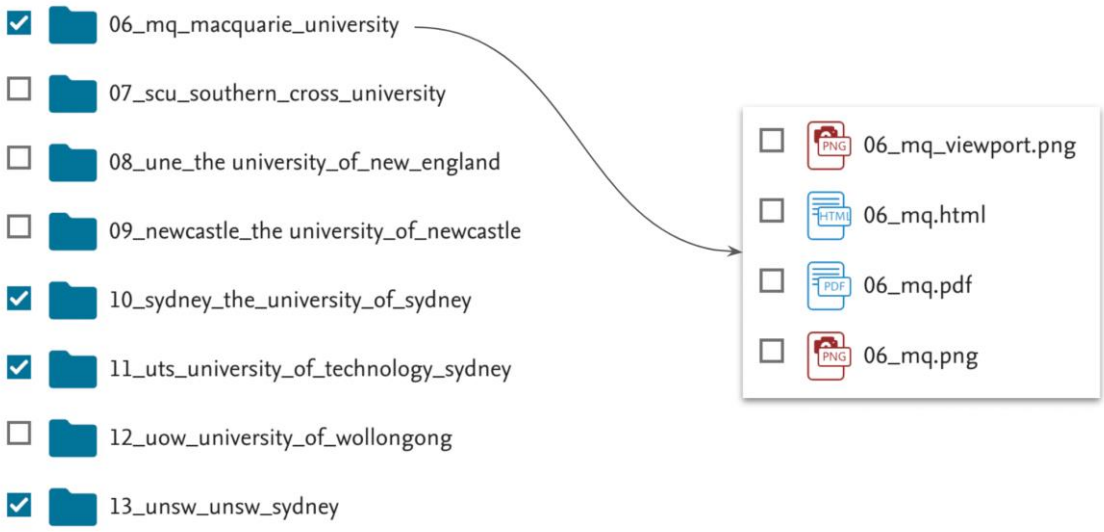


Figure 4.3 A snapshot of data set #1 stored on Mendeley Data

Left – folders in entire data set #1, with data set #1 folders checked; right – four files from the Macquarie University web homepage)

The collected pages were then imported into MAXQDA for analysis as .pdf documents. There were several instances when the original layout of the page could not be preserved due to the canvas constraints, primarily because of the innovative design features such as alternating animations and embedded videos. To alleviate this issue, I used a built-in Google Chrome plug-in FireShot Pro Screen Capture that saves web pages as .pdf and .png files. Although both content and layout are preserved with the FireShot tool, its downside is the unavailability of automatic character recognition – a feature that automatically detects verbal text. Due to these technological constraints, some coded elements were manually imported into the coding sheets.

As shown in Figure 4.3 above, four university web homepages were selected for a detailed comparative analysis, comprising *data set #1*. This decision was motivated by project management considerations. Applying a multi-layered GeM annotation schema – the main mode of analysis for data set #1 (SECTION 4.3) – requires ample time and resources as the annotations co-occur across several layers, and the tools for automated processing of documents are still under development (see, e.g., Hiippala, 2016). Despite

offering a robust approach to identifying formal structures, automated tools require specialist knowledge, and they may miss more subtle interplays of meanings of the identified structures comprising the focus of this study.

University rankings and location served as additional delimiting criteria. The four selected universities are top-tier universities with the following positions in the 2022 QS World University Rankings: #38 (The University of Sydney), #43 (UNSW), #113 (University of Technology Sydney), and #200 (Macquarie University). Located in iconic Sydney that attracts thousands of international students every year, the universities were hypothesized to include some elements of localized narratives in their identity communication (Drori et al., 2015), and the focus on the same destination provides an opportunity to examine localization as one of the university branding strategies.

Because UNSW rebranded its homepage in October 2020 to change the previous design from one to just short of eight screens, *data set #1* was refreshed to study the most recent designs. The analytical challenge of the ephemeral web data was reconciled to provide insights into the most recent rendition of the selected homepages captured on the same day – 8 October 2020. Table 4.2 provides the details.

Table 4.2 Data set #1: Homepages of four selected university websites

University	**Code**[15]	**Web homepage**	**Archived version**
Macquarie University	06_mq	mq.edu.au	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/
The University of Sydney	10_sydney	sydney.edu.au	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/
University of Technology Sydney	11_uts	uts.edu.au	https://web.archive.org/web/20201008080715/https:/www.uts.edu.au/
UNSW Sydney	13_unsw	unsw.edu.au	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/

The second step of data collection included surveying all versions of the selected university web homepage – UNSW Sydney – from the first available iteration of the page in February 2000 until May 2021 and identifying the most notable changes in the page designs. The homepage of this specific university was selected because its designs showed the highest degree of variation compared with the University of Technology

[15] This column reflects a code assigned to each university homepage in Entire data set #1. The reader is invited to refer to Appendix A that provides the details of all thirty-nine university designs comprising Entire data set #1.

Sydney, University of Sydney, and Macquarie University. The versions of the UNSW web homepage selected for analysis were based on three indicators of homepage variation identified by Ryan et al. (2003) – information density (a concept from usability studies that reflects the amount of information available on the page), layout (i.e., how information is structured), and navigation support (i.e., what access structures are imbedded). Although UNSW established its web presence in 1997, only the 2000 version became crawlable with the least content disruption. Overall, there were eight web page versions from 2000 to the time of writing (*entire data set #3*). Three of these that manifest notable changes were selected (*data set #3*): 2000, 2009, and 2021, hereafter referred to as Version 1, 2, and 3 (V1, V2, V3), respectively (see also Laba, 2023). Table 4.3 presents the hyperlinks for all versions, with the selected versions in bold, and APPENDIX B shows the visual copies of all versions.

Table 4.3 Entire data set #3: Historical versions of the UNSW Sydney homepage, with data set #3 in bold

	Date	Permalink
V1	**02 Dec 2000**	https://web.archive.org/web/20001202165400/unsw.edu.au/
	24 Mar 2004	https://web.archive.org/web/20040324154035/http://www.unsw.edu.au/
	31 Oct 2008	https://web.archive.org/web/20081031005852/http://www.unsw.edu.au/
V2	**24 Oct 2009**	https://web.archive.org/web/20091024040212/http://www.unsw.edu.au/
	17 Jul 2012	https://web.archive.org/web/20120717042139/http://www.unsw.edu.au/
	14 Jun 2015	https://web.archive.org/web/20150614095543/http://www.unsw.edu.au/
	08 Oct 2020	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
V3	**22 May 2021**	https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/

As the third step of data collection, 400 images from the viewports of the same university web homepages in the data set #1 were collected, specifically hero images, carousel images, and static images from loop videos. The data was collected in January 2021 through the Wayback Machine and focused on the period between August 2015 and January 2021. Although this data set is the result of the last step of data collection to have the most recent visuals, it is referred to as data set #2 mainly because it is the focus of the second analysis chapter after images are identified to play an important role as recent OVI markers. The goal was to collect a representative sample (approximate N=100) per university over approximately the same period. Although sample sizes in qualitatively oriented studies vary depending on a range of methodological considerations, including the purpose of the research and the epistemological stance

underpinning it (Sim et al., 2018), most statisticians agree that a sample of N=100 is representative in thematic analyses (Johanson & Brooks, 2010), albeit mostly in reference to the recruitment of human subjects.

Upon examination of the viewport designs of different university homepages, the timeline for the visuals on the University of Sydney homepage had to extend back to 2015 to yield 100 images because the viewport of some versions of this homepage uses loop videos which are infrequently updated. The timeframe is, therefore, based on the update frequencies that were different across the four web homepages. For example, in 2020, the University of Technology Sydney updated its viewport 55 times. In contrast, the University of Sydney opted for a less transient design solution with only 12 updates. Table 4.4 outlines the timeline for data collection and provides the numbers of collected images across the four homepages.

Table 4.4 Data set #2: Images across four selected university web homepages

Name	**Website**	**Timeline**	**Number**
Macquarie University	mq.edu.au	1 Jan 2017 - 1 Jan 2021	99
The University of Sydney	sydney.edu.au	26 Aug 2015 - 1 Jan 2021	95
UTS	uts.edu.au	1 Jan 2019 - 1 Jan 2021	99
UNSW	unsw.edu.au	1 Jan 2017 - 1 Jan 2021	107
		Total	**400**

Therefore, the above-described steps of data collection provided three complementary data sets, as summarized in Table 4.5. The data sets were imported to MAXQDA Analytics Pro 2022 for annotation and analysis based on the methodological considerations explained in the subsequent sections. As the data is classified as public, it is stored on the Mendeley Data management platform (<*https://data.mendeley.com/*>) and backed up to the UNSW OneDrive. The data collection, storage, organization, copyright, and intellectual property are recorded in the Research Data Management Plan at <*https://resdata.unsw.edu.au/*> as per requirements of managing Ph.D. candidature at University of New South Wales.

Table 4.5 Summary of the data collection process

Steps	Data set	Data characterization	Method
1	entire data set #1 (N=39; total item N=156)	Web homepages of 39 university websites: 1) a full page in .html (2) a full page in .jpg (3) a viewport in .jpg (4) a viewport displayed in a web browser in jpg	Textography + the GeM annotation schema + metafunctional analysis
	data set #1 (N=4)	Web homepages of three university websites (in jpg): 06_mq (Macquarie University) 10_sydney (The University of Sydney) 11_uts (The University of Technology Sydney) 13_unsw (UNSW)	
2	entire data set #3 (N=8)	Historical versions of the UNSW web homepage	Textography + metafunctional analysis
	data set #3 (N=3)	Selected historical versions of the UNSW web homepage (2000, 2009, and 2021)	
3	data set #2 (N=400)	Images across four selected university websites: 06_mq (Macquarie University), N=99 10_sydney (The University of Sydney), N=95 11_uts (The University of Technology Sydney), N=107 13_unsw (UNSW), N=99	Textography + visual content analysis + Visual social actor network

4.3 The Genre and Multimodality model and metafunctional analysis

Organizational identity design – as introduced in CHAPTER 3.2 – contextualizes the data sets approached through two complementary analytical techniques: comparison of the designs of four selected university web homepages and images in the viewports of the same homepages (data set #1 and #2) and historical analysis of the design changes of a selected homepage (data set #3). In this context, organizational identity designs are understood as more or less conventionalized templates that "contextualize discourses by embedding them in structures which have particular communicative purposes and signify particular relationships between the participants [and] can be realized in different material forms" (van Leeuwen & Kress, 2011: 135). The questions of 'assembling' the familiar semiotic resources such as text, image, color, and so on through a new technology (i.e., the Web) are 'the same old communication questions' (van der Geest, 2001) that organizations are asking, addressing envisaged uses of communicative

artifacts and appealing to the envisaged audiences at the site of the communicative artifact.

It is important to note that, from the perspective taken in this study (i.e., web homepages as a semiotic technology), a web communication technology itself (i.e., the medium) does not realize meanings because it does not present a coherent communicative act (Djonov & van Leeuwen, 2017) albeit it provides a means for integration of the templated spatio-temporal design structures[16]. Instead, designs realize discourses (Kress & van Leeuwen, 2001; van Leeuwen & Kress, 2011). Yet what is lacking so far is an account of the relation between the communicative content that designs of homepages and images realize and the organizational identity meanings they communicate.

Since this study approaches designs as multimodal combinations of semiotic resources used to contextualize discourse of organizational identity communication, the questions it is interested in relate to formal design elements and structures that make messages that the envisaged audiences are expected to identify with. For this task, a mixed-method approach was selected: (1) the annotation layers of the GeM model (Bateman, 2008; Henschel, 2003; Hiippala, 2013) are applied to document formal web design structures, and (2) a metafunctional analysis of semiotic resources (Halliday, 1973, 1978; Kress & van Leeuwen, 2021) is performed to examine meaning-making potentials of the identified design structures that realize discourses. This method is used to study data sets #1 and #2.

The suitability of an integrated methodological toolkit – the GeM model combined with a metafunctional approach – is justified by two assumptions of coherence and social relevance of an object of analysis, as explained below:

(a) The homogeneity of particular sets of text types will reflect their formal properties and internal organization (Bateman et al., 2017: 348).
(b) Meaning making on websites arises from an interplay between design, content, and navigation (Djonov, 2005: 131).

The assumption of the homogeneity of formal characteristics and internal structure of web homepages is empirically tested through a multi-layered annotation GeM schema which has proven to be one of the strongest candidates for articulating an account of multimodal designs that is both sufficiently well-defined and reproducible (Hiippala,

[16] Similarly, for Bateman et al. (2017), the material and semiotic sides of a mode participating in a medium realize meaning through their material or 'virtual canvas', and the medium itself does not realize meanings.

2016), which is particularly relevant for empirical multimodality research. The GeM model provides several annotation layers, allowing for multiple sufficiently fine-grained details to be approached as neutrally as possible to make interpretations supportive of an empirical investigation. Documenting all perceptible design elements of the web homepage provides an opportunity to "overcome the selective blindness that applying a pre-theoretical interpretation of what we *think* is happening on the page can bring" (Bateman, 2008: 22, italics in original). Such an approach allows for a systematic identification of the design elements and criteria according to which they are grouped at a more fundamental level without making any intuitive and arbitrary segmentation (Hiippala, 2015: 38). In sum, the GeM model provides a robust toolkit to address designs of the web homepages and provide "reproducible, and therefore evaluable, analyses of *what is involved* in the multiplication of the meanings discovered" (Bateman, 2008: 2, my emphasis) before interpretative work is carried out.

In addition to documenting formal design elements and their organizational logic, an integration of a robust theory of meaning-making is equally important for the aims of this thesis. Such integration enables interactions between the formal web design elements, content, and navigation to be examined. As 'a theory of meaning,' multimodal social semiotics provides systematic tools to examine multimodal discourses of identity in the context of organizational identity communication. Rather than describing design features as though they have intrinsic systematicity, multimodal social semiotics provides a strong foundation for examining the uses of multimodal ensembles (i.e., the identified layout units through the GeM annotation schema), each offering distinct potentials and limitations as regulated by different institutions to varying degrees (see, e.g., van Leeuwen, 2005a). Metafunctions are selected as an interpretative model for addressing the meaning potentials of design elements recorded through the GeM annotation schema. As discussed throughout CHAPTER 2, a metafunctional approach has seen a substantial number of studies addressing different semiotic modes and their affordances, which speaks of a "high descriptive capability and adaptability [of the metafunctional principle] to describe various types of data" (Hiippala, 2013: 33), particularly for eliciting fundamental connections between the formal design elements and their contexts of use. Since this study is concerned with how web pages of a particular kind — homepages – present and organize information to communicate organizational identity to envisaged audiences, the focus is on the meaning potentials of key multimodal ensembles (i.e., layout structures). This leaves mapping organization within the website beyond the scope of this thesis.

The analysis of organizational identity designs proceeds in four analytical layers adapted for the purposes of this study – the base layer, layout layer, navigation layer, and discourse structure layer (which is called 'a rhetorical layer' in the original GeM), as summarized in Table 4.6 and explained in further detail in subsequent sections.

Table 4.6 A multi-layered approach to analyzing organizational identity designs

1 – The base layer
Identify all perceptible elements present on a page Assign all identified elements to a base unit Code base units for interactivity potential
2 – The layout layer
Group base units into layout structures Build area models for the identified multimodal ensembles
3 – The navigation layer
Examine the interactivity potential of layout units and structures Determine interactional possibilities for building pathways across the web homepage and the same website (endophoric) and to other websites (exophoric)
4 – The discourse structure layer
Investigate the meaning potentials of the identified layout structures through a metafunctional analysis of representation and interaction

Based on Bateman (2008) and Hiippala (2013)

The base layer encompasses the identification of all elements available on a page for an analysis of their meanings at a later stage "independently of how that discussion subsequently proceeds" (Bateman, 2008: 110). As a foundational layer of analysis, the base layer identifies the 'vocabulary' of the page (Bateman, 2008: 108) before interpretative work is carried out. Annotation schema for identification of the base unit elements is explained in detail in SECTION 4.3.1. The base level units are then picked up for categorization in *the layout layer*, and the system of SALIENCE and perceptual Gestalt psychology principles are deployed for this task before area models visualize the layouts. The area models are based on the baseline grid which, according to Djonov and van Leeuwen (2013) is a well-established tool in graphic design, as further detailed in SECTION 4.3.2. *The navigation layer* examines the interactivity potential of multimodal ensembles identified in the layout layer, looking at the navigational possibilities for envisaged audiences (SECTION 4.3.3). Lastly, the layout units are analyzed for meaning-making potentials (or *discourse semiotics*) using metafunctional foundations, as outlined

in SECTION 4.3.4. This study makes several adaptations to the original GeM schema to align the coding categories with the possibilities for understanding the meanings of design elements. These adaptations are explained throughout the sections that follow and are summarized in SECTION 4.3.5.

4.3.1 Base layer

As the first analytical layer, the base annotation involves documenting all visually perceptible units with no components left out, even when they intuitively appear less significant or relevant (Henschel, 2003; Bateman, 2008). In the original GeM model for static page-based artifacts, recognized base units include, among others, icons, sentences, running heads, and footnote tables (Table 4.7).

Table 4.7 Recognized Base Units in the original GeM annotation schema (Bateman, 2008: 111)

sentences	headings	titles	headlines
icons	table cells	list items	list labels
footnote label	items in a menu	page numbers	running heads
emphasized text	floating text		

- sentence fragments initiating a list
- footnotes *(without footnote label)*
- photos, drawings, diagrams, figures *(without caption)*
- captions of photos, drawings, diagrams, tables
- text in photos, drawings, diagrams
- horizontal or vertical lines which function as delimiter between columns or rows
- lines, arrows, polylines which connect other units

Although recording Recognized Base Units (RBUs) is to proceed without semantics to avoid pre-theoretical generalizations (Bateman, 2008), from Table 4.7, we can see that to make meaningful distinctions between some base units, limited functional labeling is unavoidable. For example, in addition to naming the unit (i.e., the ideational metafunction), two RBUs `<horizontal or vertical lines which function as delimiter between columns or rows>` and `<lines, arrows, polylines which connect other units>` describe visual evidence (i.e., the textual metafunction) that helps to differentiate the purpose of the unit (i.e., connection/disconnection) which, in multimodal social semiotics, is addressed through the system of FRAMING (see also CHAPTER 2.2.2.3).

Given that the GeM annotation schema was developed for static page-based media, when applied to complex digital media texts such as web homepages, it requires several adaptations to account for the elements that are not in the list of RBUs proposed by Bateman (2008). An open architecture of the GeM model allows such adaptations to be

made through either introducing new units or including finer distinctions to the existing units, as suitable for particular research purposes (Bateman, 2008). Taking a viewport of the UNSW web homepage as an illustration (Figure 4.4), several such adaptations are outlined in Table 4.8. Each unit is assigned a code <u + identifier>, where '13' is the code of the homepage in the date set #1, and the numbers that follow refer to an arbitrary number of the unit (see also APPENDIX E).

Table 4.8 Representative adaptations to the base layer (in bold)

Unit code	RBU in the original GeM model	Base unit in this study
u-13.001	–	**logo**
u-13.002	–	**business name**
u-13.003	item in a menu	**horizontal** menu item
u-13.004	icon	icon
u-13.005	icon	**social media** icon
u-13.006	headline	headline
u-13.007	sentence	sentence
u-13.008	–	**box**
u-13.010	sentence	sentence
u-13.011	icon	icon

From Table 4.8, <logo>, <business name>, and <box> are introduced as these labels accurately describe the perceptible elements in Figure 4.4, and from a compositional perspective, they cannot be broken down into further sub-elements. To differentiate the types of menus on web homepages, a distinction is made between <horizontal menu items> and <vertical menu items>. Such a distinction provides opportunities to explore differences in navigational possibilities offered for the key audiences of the page.

Figure 4.4 Sample base units on the UNSW web homepage

Moreover, a diagrammatic resource <box> is introduced to account for rectangular shapes that usually embed verbal text. Lastly, it is also useful to distinguish <social media icons> as a separate base unit as it has become common, almost the rule, to see such elements on organizational homepages. Although their presence is often attributed to genre structures, they are better described as a feature of the medium (Bateman, 2014b: 106), as further explained in CHAPTER 5.3.3.2.

As a foundational level of analysis, the base layer annotation was adapted after Bateman (2008) and Hiippala (2013) to contain 22 base units from similar ad libitum observations of data set #1 (i.e., pre-interpretative examination of all available page design elements), as explained in Table 4.9. Each unit is assigned a code that begins with a letter: 'T' for text-typographic resources (e.g., sentences, menu items), 'P' for pictorial resources (e.g., images, icons), and 'D' for diagrammatic resources (e.g., box, line). The letter codes reflect the material aspect of each unit, serving as a pointer to the multimodal nature of combinations of the identified units in the layout layer. A discussion of the material and semiotic nature of layout units (i.e., multimodal ensembles) follow in the discourse semiotics layer. Whereas some elements have an established terminology in web design studies (e.g., search, navigational words such as 'top' and 'bottom'), attributing them to the properties of the Web in the base layer may be problematic because, like social media icons, these elements may have a broader meaning potential that can be best accounted for from a genre perspective. Given that this study addresses web homepages as media for organizational identity communication, such distinctions are outside the analysis.

Table 4.9 Adapted annotation framework for the base layer

Code	Base unit	Description
T1	sentence	verbal unit that contains a Process (i.e., action or happening) realized by a verb
T2	deictic expression	explicit reference to other web pages of the same website (internal document deixis) or external sources (cross-platform document dexis), which is usually realized by (1) an adverb 'more' + noun (e.g., 'More information') or imperative and adverb more (e.g., 'Find out more')
T3	**horizontal** menu item	menu item displayed along a horizontal axis
T4	**vertical** menu item	menu item displayed along a vertical axis
T5	headline	title of a story/piece of news
T6	sentence fragment	incomplete sentence (other than a menu item or headline) that omits a verb
T7	**motto**	short phrase that expresses a core belief

T8	title	title of a layout unit, usually larger in size or emphasized by typographic means
T9	**date**	date including day/month/year or only a year
T10	**address**	business address
T11	**other business details**	business details, such as Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) Provider Code, Australian Business Number (ABN), Tertiary Education Quality and Standards Agency (TEQSA) Provider ID
T12	**phone number**	contact phone number
T13	captions of images **and videos**	recognizable text embedded in an image or video and not demarcated from it by framelines or color
T14	**name**	business name
P1	image	visual representations such as abstractions and photos of people and places
P2	**video**	dynamic visual media
P3	**logo**	symbol comprised of coat of arms and/or wordmark
D1	icon	visual symbol of a specific concept
D2	**separator**	vertical or horizontal lines that serve as delimiters between elements
D3	**box**	box (distinguished by frame or color) that usually has embedded text
D4	**line**	decorative line that serves no apparent functional purpose
D5	**social media icon**	official logos of social media platforms

Based on Bateman (2008), with additions and changes in bold

Another significant adaptation made to the base layer stems from the digital materiality of the medium – some base layer units offer the navigational potential for envisaged audiences, whereas others are presented for observation only and do not produce any textual changes when clicked on or pointed at. To account for the meaning potential brought by hypertext as a critical component of the new materiality of digital texts, the identified units are coded for action potential in terms of *interactivity* which, following Adami (2015), is differentiated from 'interaction'. Digital interactivity is an active human-to-system interaction regarding what textual changes are brought when users do something to the text. Since interactivity was beyond the scope of textual analyses of traditional print media (e.g., print books), as a digitally afforded form of intertextuality, it should be considered in studies involving web-mediated communication (Bateman et al., 2017).

Following Adami (2015), the interactivity potential of base elements is accounted for by recording whether each unit is haptically accessible (i.e., it will produce textual changes onto the text) or haptically inaccessible (i.e., it bears no interactivity potential). Haptically accessible units are further differentiated for activity potentials proposed by Baldry and

Thibault's (2006) – interactivity cues of a mouse click, hover, and type-in. Thus, haptically accessible units can (i) respond to click, (ii) respond to hover, or (iii) respond to type-in and click. Considerations of interactivity potential are important for discussions in the navigation layer (SECTION 4.3.3), addressing the possibilities for interaction with the organizational identity. Since the meaning potential of interactive sites is not the focus of this thesis, the action potential of elements is recorded *in praesentia;* that is, additional interactive elements, such as drop-down menus that appear when a mouse is pointed at the parent menu, does not occur in the base layer.

Similarly, given that a comprehensive mapping of all navigation pathways is not the focus of this project, document deixis (DDX) for the base unit `<deictic expression>` (see Table 4.10) is only deployed for marking the interactivity potential of the base units. The discussion is then picked up in the discourse semiotics layer in terms of referential cohesion (Halliday, 1977). It is understood that the reference may be 'exophoric', i.e., point to some phenomenon outside the text and in the context of the situation (e.g., social media platforms), or 'endophoric', to an element within the text, ('cataphoric'). Cataphotic expressions enable on-page navigation (e.g., changing the featured story in a carousel) or within the same website (e.g., redirecting to a respective page when a specific menu item is activated). Menu items are mapped as separate base units rather than imbedded units to aid appropriate layout segmentation.

Figure 4.5 presents a sample of the base layer coding in MAXQDA, displayed in the way these base units are positioned on the UNSW homepage. The sample does not show every unit but illustrates how annotation is performed in the software. All base units are manually checked for interactivity potential. From MAXQDA, the coded segments and associated information are retrieved to Microsoft Excel, as shown in Table 4.10. The software automatically identifies the segment's location on a page and its size in relation to the whole page (see columns 'Beginning' and 'End''). For ease of reference, the layout units are presented in from top to bottom and from left to right.

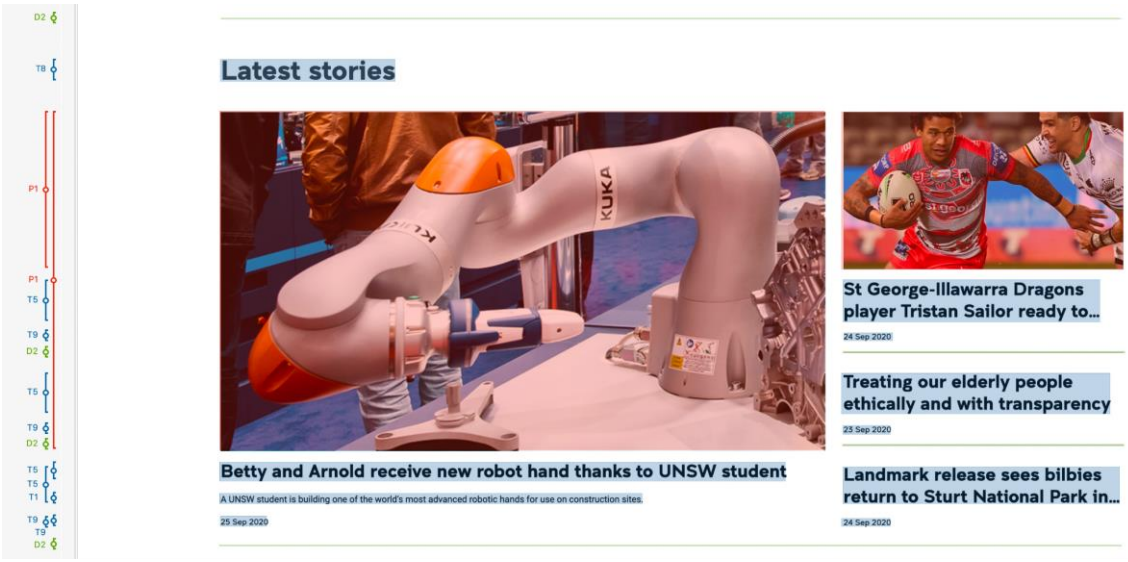


Figure 4.5 A sample of base layer coding of the UNSW web homepage from data set #2 in MAXQDA

(https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/)

Table 4.10 A sample of coded segments and recorded annotations from Figure 4.7

Color	Document name	Identifier	Code	Base unit	Beginning	End	Segment	Interactivity	Redirection to
●	13_unsw	u.13.014	D2	separator	1: 378|7667	1: 2775|7669	horizontal line	haptically inaccessible	
●	13_unsw	u.13.020	T8	headline	1: 380|8904	1: 844|8963	**Latest stories**	haptically inaccessible	
●	13_unsw	u.13.017	P1	image	1: 378|7922	1: 1985|8825		click	https://web.archive.org/
●	13_unsw	u.13.016	T5	headline	1: 378|7839	1: 1882|7889	**Betty and Arnold receive new robot hand thanks to UNSW student**	click	https://web.archive.org/
●	13_unsw	u.13.015	T1	sentence	1: 378|7778	1: 1500|7806	A UNSW student building one of the world's most advanced robotic hands for use on construction sites.	click	https://web.archive.org/
●	13_unsw	u.13.019	T9	date	1: 380|7719	1: 503|7745	25 Sept 2020	click	https://web.archive.org/
●	13_unsw	u.13.128	P1	image	1: 2032|8404	1: 2780|8823		click	https://web.archive.org/
●	13_unsw	u.13.134	T5	headline	1: 2036|8263	1: 2718|8375	**St George-Illawarra Dragons player Tristan Sailor ready to...**	click	https://web.archive.org/
●	13_unsw	u.13.135	T9	date	1: 2038|8214	1: 2166|8234	24 September 2020	click	https://web.archive.org/
●	13_unsw	u.13.021	D2	separator	1: 381|9070	1: 2773|9074	horizontal line	click	https://web.archive.org/
●	13_unsw	u.13.127	T5	headline	1: 2032|8017	1: 2745|8126	**Treating our elderly people ethically and with transparency**	click	https://web.archive.org/
●	13_unsw	u.13.132	T9	date	1: 2035|7965	1: 2161|7987	23 September 2020	click	https://web.archive.org/
●	13_unsw	u.13.130	D2	separator	1: 2034|7933	1: 2783|7937	horizontal line	click	https://web.archive.org/
●	13_unsw	u.13.131	T5	headline	1: 2035|7778	1: 2769|7877	**Landmark release sees bilbies return to Sturt National Park in...**	click	https://web.archive.org/
●	13_unsw	u.13.126	T9	date	1: 2032|7717	1: 2161|7738	24 September 2020	click	https://web.archive.org/
●	13_unsw	u.13.133	D2	separator	1: 2035|8180	1: 2784|8184	horizontal line	haptically inaccessible	

Note. All coded segments of data set #1 are provided in APPENDIX E

In sum, the base layer annotation allows identification and documentation of the design elements in systematic and reproducible ways before their relation to the overall page composition is examined in the layout layer.

4.3.2 Layout layer

The layout layer is the second analytical layer, where the elements stored in the base layer are grouped into larger structural units. The layout layer seeks to capture the spatial and logical organization of discourse, while simultaneously describing its appearance (Hiippala, personal communication). In this layer, the structural patterns of the page referred to as layout structures are identified (Hiippala, 2013). The original GeM model proposes two ways of visual clustering that form the basis for area models: (a) progressive decrease of image resolution followed by the functional reading of what belongs together and (b) examination of the realization information (graphic and typological features of layout units) (Bateman, 2008: 122). The preference is given to the second method since it offers a more vigorous analytical account of the 'insets' or instances of layout elements intruding into the space of other elements – a design technique increasingly found across current versions of homepages, as further discussed in the subsequent section.

The analysis of the layout layer proceeds in two steps. Firstly, the spatial positioning of base units is recorded on a page, and secondly, the hierarchical organization of layout structures is identified (Bateman, 2008: 122; Hiippala, 2013: 111-112). Figure 4.8 visualizes the process through a sample layout structure `<latest stories>` and demonstrates the spatial positioning through a diagrammatic representation referred to as an area model (see SECTION 4.3.2.2). The area model is built by grouping base units into layout units, based on the relationships between the identified base units based on the system of FRAMING (Kress & van Leeuwen, 2021) discussed in CHAPTER 2 and the principles of Gestalt psychology. The main principles of Gestalt include spatial proximity (placement at seemingly equal intervals of space), similarity, continuity, symmetry, closure, figure-ground, and size, which leads to an argument that "the appearance of any element depends on its place and function in the overall pattern" (Arnheim, 1974: 5).

After identification of the layout structures, a hierarchical organization of the layout structures is recorded. In Figure 4.6, the layout structure '`<latest stories>` is composed of five layout units labeled '**lay-**' **+ identifier** where first number is the code for a page in the data set followed by an arbitrary number assigned to a layout unit.

Layout unit <lay-13.002> is shown as an example of how layout units are cross-referenced with the base units (that is, what base units they are made of).

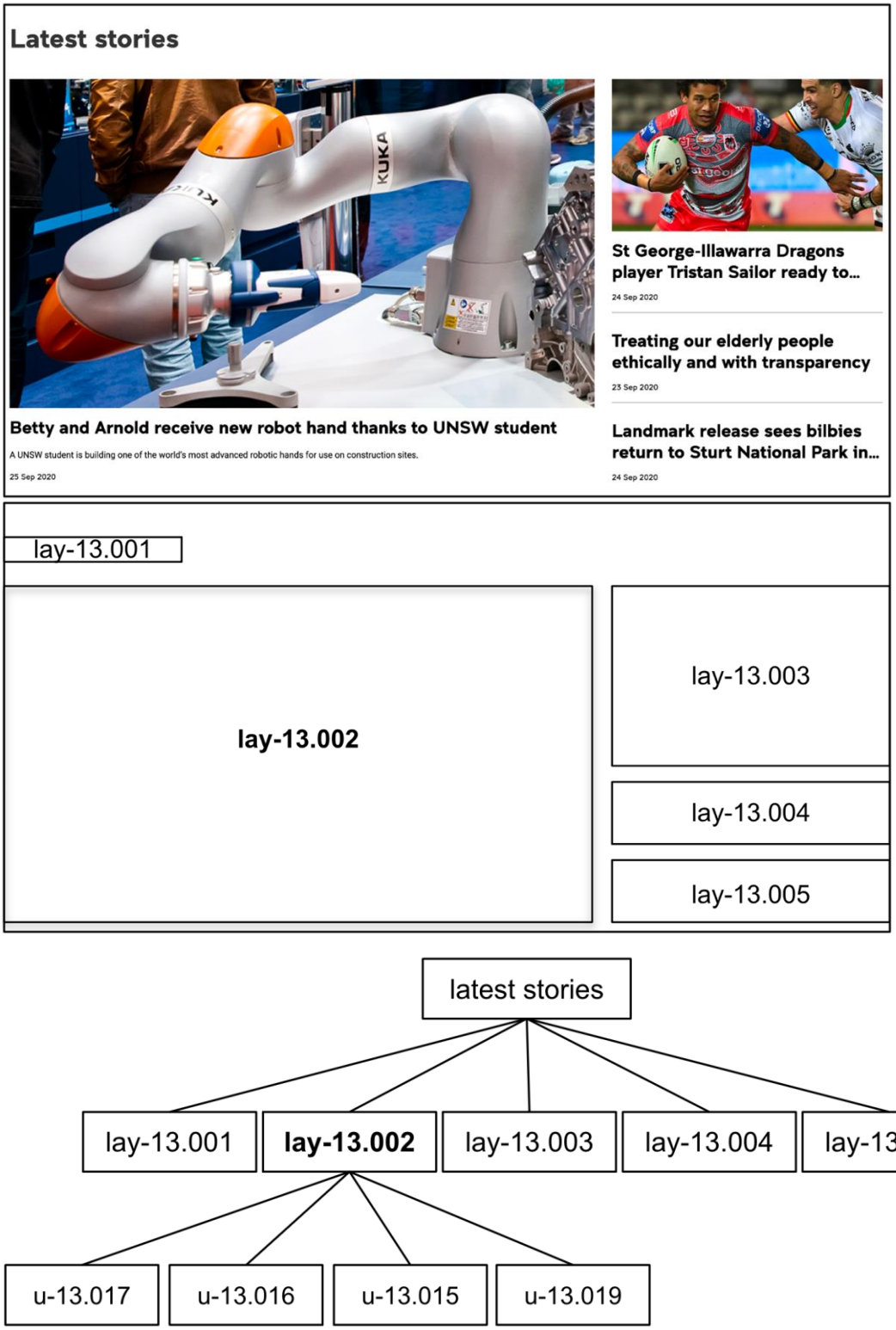


Figure 4.6 An example of a hierarchical layout structure <latest stories>

Top: Layout structure presented on the UNSW web homepage

Center: Schematic positioning in an area model
Bottom: Hierarchical layout structure with a representative sub-unit *lay.13.002* cross-referenced with the base layer.

Therefore, mapping the layout layer involves two parts: (1) identification of minimal layout units and grouping them into layout structures and (2) building an area model of layout structures of each page and recording their hierarchical organization.

4.3.2.1 Identification of layout units

In contrast to typography, with the minimal layout element as a glyph, the identification of the layout units draws on macro-typographical features on a rank of a page. The basic level of description in the layout layer is a typographical paragraph as the recognized basis of textual homogeneity (Bateman, 2008: 116). I accordingly consider the paragraph as a basic layout unit combining textual and visual properties identified via realization information. Visual realization is judged based on the differences of what Bateman (2008: 117) labels the verbal, graphical, and/or pictorial modes. The notion of a paragraph in the layout layer, thus, differs from a common understanding of a verbal paragraph (e.g., in academic writing). However, sequences of sentences with the same realization information are infrequent (if present at all) on web homepages, which is reflective of 'the new visuality of writing' (van Leeuwen, 2020).

As an illustration, the identification of a layout unit 'horizontal menu' on the UTS web homepage (Figure 4.7) is explained below. First, a layout structure 'horizontal menu' is identified based on the spatial proximity of the layout units and the similarity of their typographic features (i.e., same font size and color). Additionally, weak framing between the base units and their integration via a diagrammatic resource – a box in solid black color – signals connection between the layout units that form this layout structure.

Figure 4.7 Layout structure 'Horizontal menu' on the UTS web homepage from data set #1

Next, the identified layout structure is cross-referenced with the base layer units:

u-11.001-... u-13.004 (T3\horizontal menu item, responds to a click):
<unit id="u-11.001">Future students</unit>
<unit id="u-11.002">Current students</unit>
<unit id="u-11.003">Research and teaching</unit>
<unit id="u-13.004">Partners and community</unit>

This provides a record of the identified layout structure, visual realization of the layout units that form it, and the interactivity potential of the units before an area model is built. The layout structure and its hierarchical organization are picked up for a discourse semiotic analysis (SECTION 4.3.4) that addresses meaning potentials through examining representational meanings on the page and interaction with the identity through haptically accessible structures. The interactivity potential of layout structures is addressed in the navigation layer (SECTION 4.3.3) that provides the space to examine navigational possibilities for the envisaged audiences.

In the layout layer, analytical consideration of what Bateman (2008) names 'insets', or instances of layout units 'trespassing' the space of other layout units, should be made. Coding for this type of interactions between the layout units is relevant for the analysis of sophisticated web page designs where semiotic software and digital manipulation tools allow layering of different elements in the same space (Figure 4.8). Insets are further distinguished in terms of layer permeability in Kress and van Leeuwen's (2021) system of FRAMING, where permeated elements overlap, signaling connection of the layout units in a specific layout structure. In relation to the permeability of framing, van Leeuwen (2006) argues that just as the boundaries between formerly distinct specialties in design are shifting (e.g., between illustration, photography, or typography), different semiotic means of expression rarely occupy distinct territories in new writing. Instead, design elements are often superimposed, forming multimodal ensembles as meaningful units that position the elements of discourse.

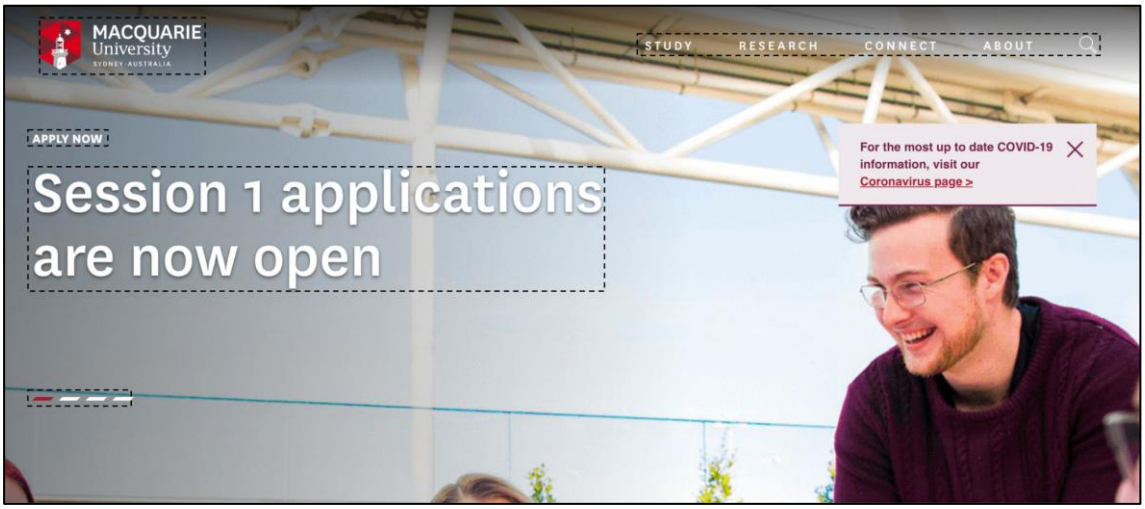


Figure 4.8 Insets in the viewport of the Macquarie University web homepage

Note. Insets are marked with a dotted line.

Following the workings of the original GeM model, I label elements that overlay with one another depending on their spatial configurations. When elements are placed adjacently

and have the same background color, they are treated as “siblings in the layout structure” (Bateman, 2008: 127), and they have their own placement in the sub-area associated with their parent layout unit. When elements overlay, generally when a verbal text occupies the same territory as the image, as in Figure 4.8, such a design choice realizes a semiotic connection between layout units. In this way, the system of FRAMING helps to account for different visual realizations of multimodal ensembles in the layout layer.

4.3.2.2 Area model

Area models are used to visualize layout structures given that the layout layer annotations only provide verbal descriptions. Similar to the base layer, an area model does not assign any meanings to the identified layout structures, providing visual information on the spatial organization of page content, based on the principle of a baseline grid (Hiippala, 2013, 2015). In web design, a baseline grid or ‘wireframe’ reflects a particular layout approach that translates the competing interests of envisaged audiences into the requirements of the wireframe (Vinh, 2010). For this study, this concept is useful for its schematic capabilities but is applied from a neutral standpoint. The designs of each page are visualized without any pre-defined meaning potential of the spatial areas because, as discussed throughout SECTION 4.3, meanings are the focus of the discourse semiotics layer.

The primary role of the area model is, thus, to generalize layout structures partitioned on a page. This partition is defined in the area-root which structures the page in rectangular sub-areas, as demonstrated in Figure 4.9.

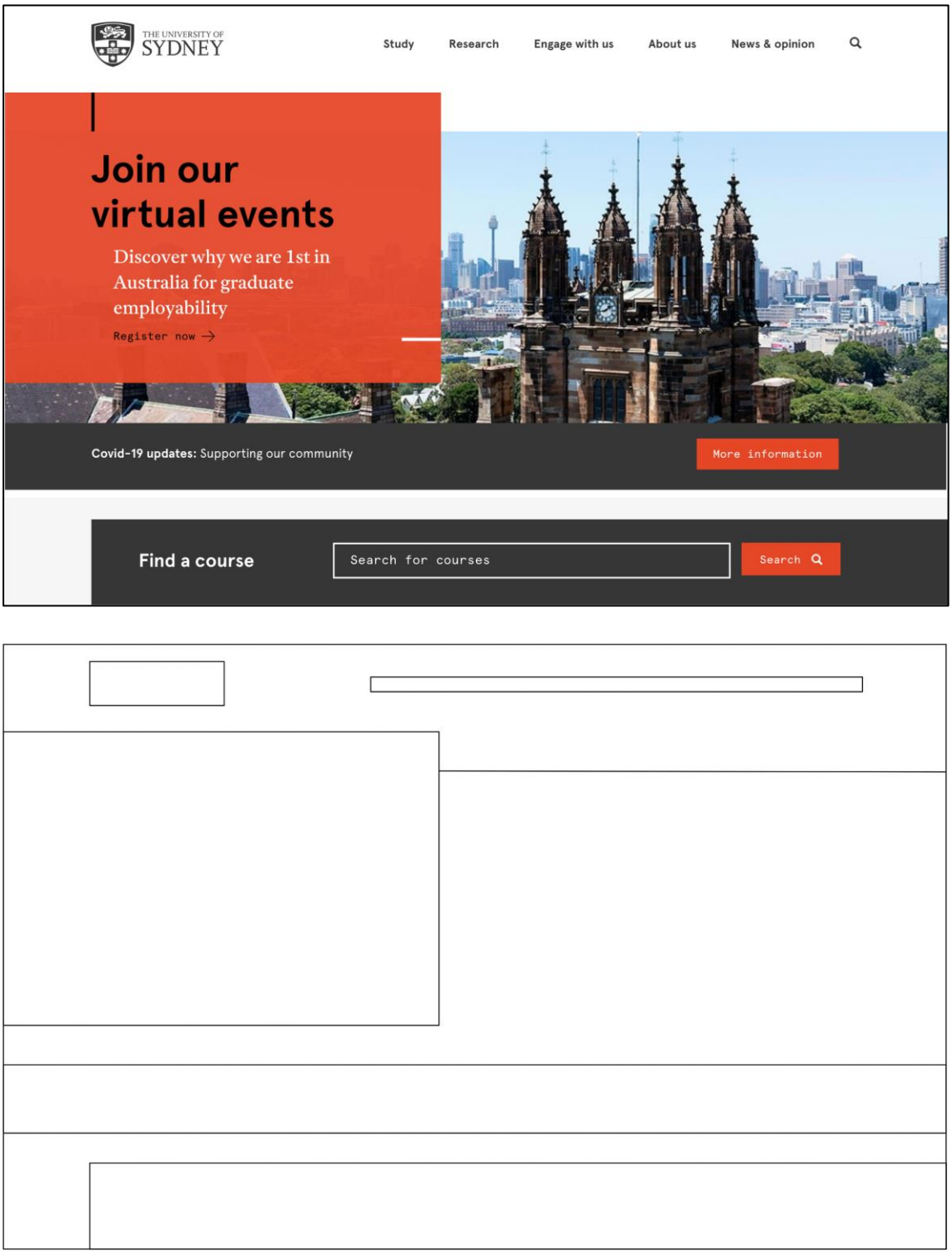


Figure 4.9 The viewport of the University of Sydney web homepage (top) and the area model of the viewport (bottom)

For illustration, the hierarchical representation of the visual integration of the layout structure <course search> on the University of Sydney homepage is shown against the area model in Figure 4.10. The layout structure <course search> is composed of three layout units lay-10.001 <Find a course>, lay-10.002 <Search for courses>, and lay-

10.003 <Search>. When cross-referenced with the base layer, lay-10.001 is realized by u-10.012 <title>, lay-10.002 is composed of u-10.013 <box> and u-10.014 <sentence>, and lay-10.003 is made of u-10.015 <box>, u-10.016 <sentence>, and u-10.017 <icon>. In this way, the layout layer documents multimodal ensembles, records their hierarchical structure, and visualizes their positioning in the overall layout of the page.

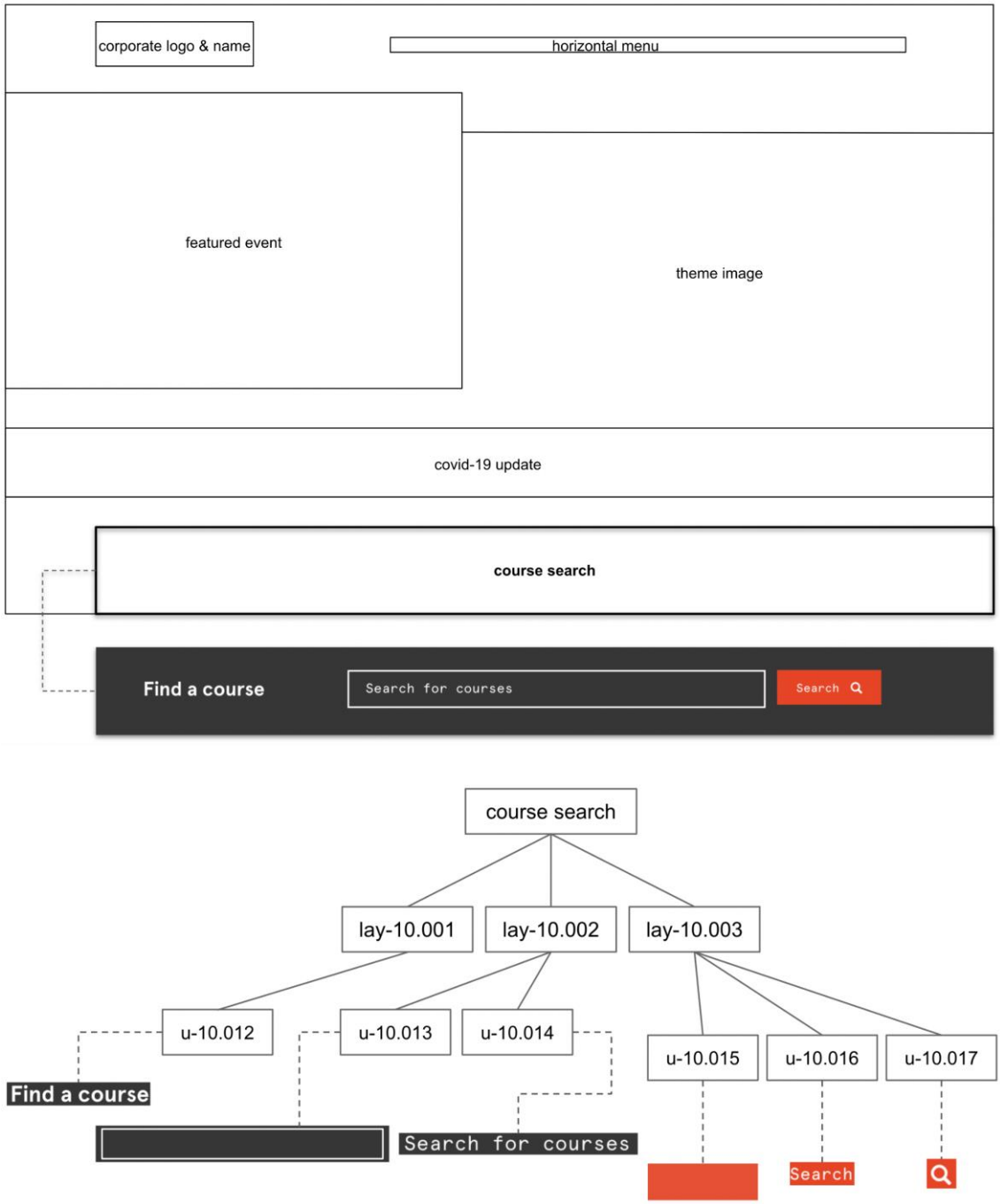


Figure 4.10 Correspondence between layout structure <course search> from the viewport of the University of Sydney homepage and the area model

4.3.3 Navigation layer

The navigation layer considers interactional possibilities with different layout structures signaled for the audience in a number of ways identified in SECTION 4.3.1. This layer identifies interactivity potentials of different layout units and the ways various audiences are given opportunities to interact with the organizational identity of the page. An examination of interactivity potential in web-mediated texts is essential as it will show what design elements can be interacted with and what pathways and trajectories are possible. In their essence, interactivity signs identified in the base layer and picked up for discussion in the navigation layer can be understood in relation to the concept of perceived affordance in computer-human interaction studies – i.e., "the perceived and the actual properties of a thing, primarily those fundamental properties that determine just how the thing could possibly be used" (Norman, 1988: 9). Mapping traversals across the whole site as for example, was done by Djonov (2005, 2007) is not the focus for this study. Instead, the navigation layer addresses critical navigational possibilities for interaction with organizational identity of homepages. An examination of what elements are presented for observation (e.g., hero images) and what elements are to be interacted with and in what ways are of particular interest as it helps to provide insights into interactional possibilities with the organizational identity of the page.

4.3.4 Discourse structure layer

In *the discourse structure layer*, the interpretative work of the identified layout structures is carried out. As CHAPTER 2 has established, constellations of multimodal combinations should be interpreted in context since the identified configurations of physical articulations, that is, layout structure patterns, are both shaping and shaped by the context of the situation (Bezemer & Kress, 2008). Similarly, Bateman (2011) holds that "the semiotic code only becomes interpretable in context by virtue of being embedded within an unfolding discourse" (21). Importantly, contextual interpretations of the discourse patterns rely on the structural evidence from the layout layer. In this way, the layout layer provides information on the division as well as integration of layout structures, whereas the discourse semantics stratum of a semiotic mode (CHAPTER 2.2.1) provides the basis for interpretation of such divisions. In this way, the discourse structure layer addresses the material resources on the page and the ways these resources co-operate for the purposes of organizational identity communication. Importantly, the overarching goal of the discourse structure layer in the current thesis differs from the that of the rhetorical layer in the original GeM (cf. Bateman, 2008: 151-176; Hiippala, 2013: 62-65) concerned with multimodal coherence or relations between

different analytical units. For the purposes of this study, the discourse structure layer addresses the inferences about individual units of analysis, particularly the meaning potentials that the key layout structures have for organizational identity communication. Similar to Wildfeuer (2019, cf.: 221), the interaction of inferences (or the encoded meanings through organizational identity design for the audience reception) and material units (from smallest perceptible units on the page identified in the base layer to layout and navigation structures) are considered.

Meanings of these material units are approached through a metafunctional lens, as explained in CHAPTER 2.2.2. Layout units are examined for two main types of meaning: representational (portraying experience and representing the world) and interactional (relating texts to the context of the participants and building relationships with them). Importantly, such an approach provides the means to discover meaning potentials without claiming to uncover all possible meanings.

4.3.5 Project adaptations to the GeM annotation schema

The adaptations made to the original GeM model for static page-flow documents (which means it does not account for hypertextuality and temporal sequencing in digital texts) allow us to address the research questions in this thesis and account for the digital materiality of the medium, the structure of the design elements, their positioning on the page, and the meanings that follow. To summarize, the analytical schema used in this thesis differs from the original GeM in several ways.

One of the key differences is conceptual – as explained in CHAPTER 3, this thesis treats homepages as a medium rather than a genre because it is interested in the social practice of organizational identity communication. This task, therefore, requires more focus on the structures of meaning (without compromising on documenting the form). The metafunctional foundations from MSS integrated in the discourse semiotics layer provide a robust toolkit to address meaning-making potentials of layout structures.

Moreover, despite the commonly agreed upon functionality of homepages (i.e., welcoming visitors, showcasing "what the company is, the value the site offers, … and the products and services offered" (Nielsen & Tahir, 2002: 2)), homepages are too complex to be readily assigned the label of the genre (Bateman, 2014b). Identifying whether properties of some elements (e.g., search box/icon, social media icons) are "due to some genre of 'homepages', or to the properties of webpages as such, or to conventions that have arisen in the use of webpages" (Bateman et al., 2017: 348) remains open to an empirical investigation. Therefore, the proposed model is used to

understand the structure of a homepage as a medium for communicating organizational identity.

Another change to the original GeM model is the introduction of Adami's (2015) interactive signs. The dynamism of certain elements is accounted for through documenting visual cues for interactivity (such as highlighted areas, change of color signaling hypertext, etc.), as SECTION 4.3.1 explained. The adapted annotation schema also records navigation possibilities of design elements (i.e., their interactivity potential) in the base layer. Such a decision was motivated by the adaptability of the GeM model, which otherwise requires more technical computational knowledge and ample resources. One helpful solution – the prototype annotator or the auto-GeM – is developed by Hiippala (2016) for the programming shell Ipython in Jupyter Notebooks and GraphViz. The auto-GeM is a valuable tool for describing the content and design of static multimodal texts and has the potential to be more time- and resources-friendly but requires specialist knowledge of computational tools as well as the extension of the available annotator to digital texts. Thus, by introducing several adaptations, this study applies a schema that enhances opportunities for manual coding or analyses through available software packages for qualitative and mixed methods research, such as Nvivo or MAXQDA.

4.4 Visual content analysis and visual social actor network

To address organizational visual identities communicated by images as one of the prominent visual resources in viewports, data set #2 is analyzed across two sites of organizational identity design – the site of production and the site of the communicative artifact. The site of production is addressed by examining the most recent brand guidelines and visual style guides which outline recommendations for a specific 'photographic character' that different visuals are expected to communicate. The site of the communicative artifact is 'the site of the image itself' (Rose, 2016: 32-34) as a common denominator of the production and reception sides of the social practice of organizational identity communication. The site of the image is seen as semiotic material with specific design configurations guided by the purposes outlined by a rhetor-institution and realized through visual identity design work.

The model to study the site of the communicative artifact (i.e., data set #2) is *organizational visual identity communication framework* that draws on visual content analysis (Bell, 2001) and van Leeuwen's (2008: 132-148) visual social actor network complemented with the metafunctional foundations (Kress & van Leeuwen, 2021). The

process involves analyzing representation and interaction as two key 'realities' of images and proceeds in four analytical steps outlined in Figure 4.11 and explained in further detail below.

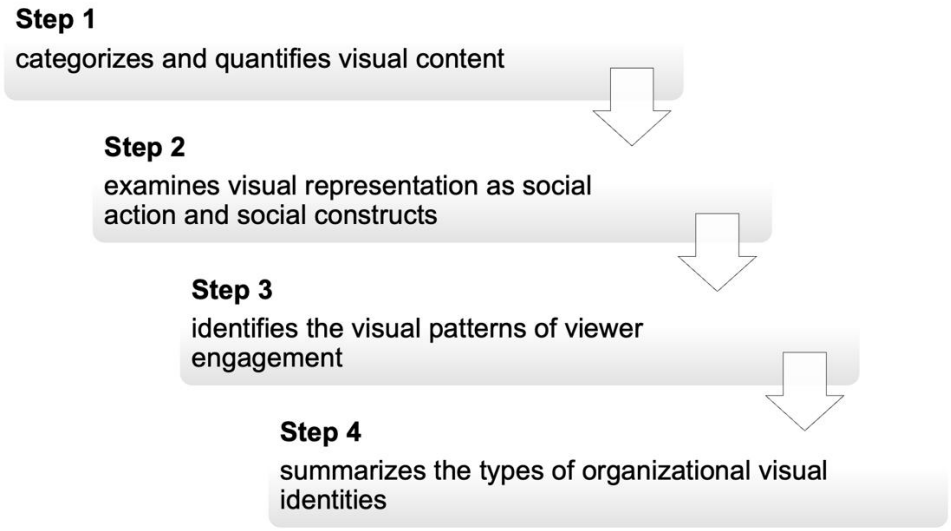


Figure 4.11 Organizational *visual* identity communication framework

Given that meaning taken by the viewer is never exactly the meaning intended by the image producer (see e.g., Kress & van Leeuwen, 2021: 187; Bateman, 2008: 65), addressing the site of the image helps to identify key representational tropes drawing on visual evidence and not impressionistic interpretations.

The categories for the coding scheme are provided in APPENDIX D, and the analysis follows image analysis and the visual content analysis procedures developed by Serafini and Reid (2019). The process includes developing and testing the analytical template, applying the analytical template to the corpus, and constructing emerging themes. Since images are complex visual phenomena that can contain intricate levels of delicate visual choices, it is important to establish the delimiting criteria as to how far the coding of the image goes. The system of SALIENCE – a hierarchy of importance among represented elements on the page – served as a delimiting criterion. SALIENCE creates 'visual weight' (van Leeuwen, 2005a) resulting from an interplay of several cues such as relative size, sharpness of focus, foreground/background, representation of detail, tonal contrast, placement in the visual field as well as cultural factors (such as a human represented participant or a cultural symbol). Based on these cues, only major visual structures are identified (i.e., the most salient process types are recorded and analyzed). Since the purpose of annotations is to examine the visual personae communicated by images, the

system of SALIENCE helps to identify the most prominent material elements that the audience are ‘asked’ to engage with.

4.4.1 Visual content analysis

As the first step of the OVI communication framework, visual content analysis helps to identify categorical evidence about the ways in which images depict represented participants. It is a systematic way of quantifying representations by grouping them into clearly defined categories (Seyidoglu et al., 2022) according to well-defined variables (Bell, 2001). For this study, the variables include categories of ‘human’ and ‘non-human’ representation (Cyr et al., 2009). ‘Human images’ include represented human participants (Figure 4.12) and are examined through the following variables: number (i.e., individual or group) and gender (i.e., female or male).

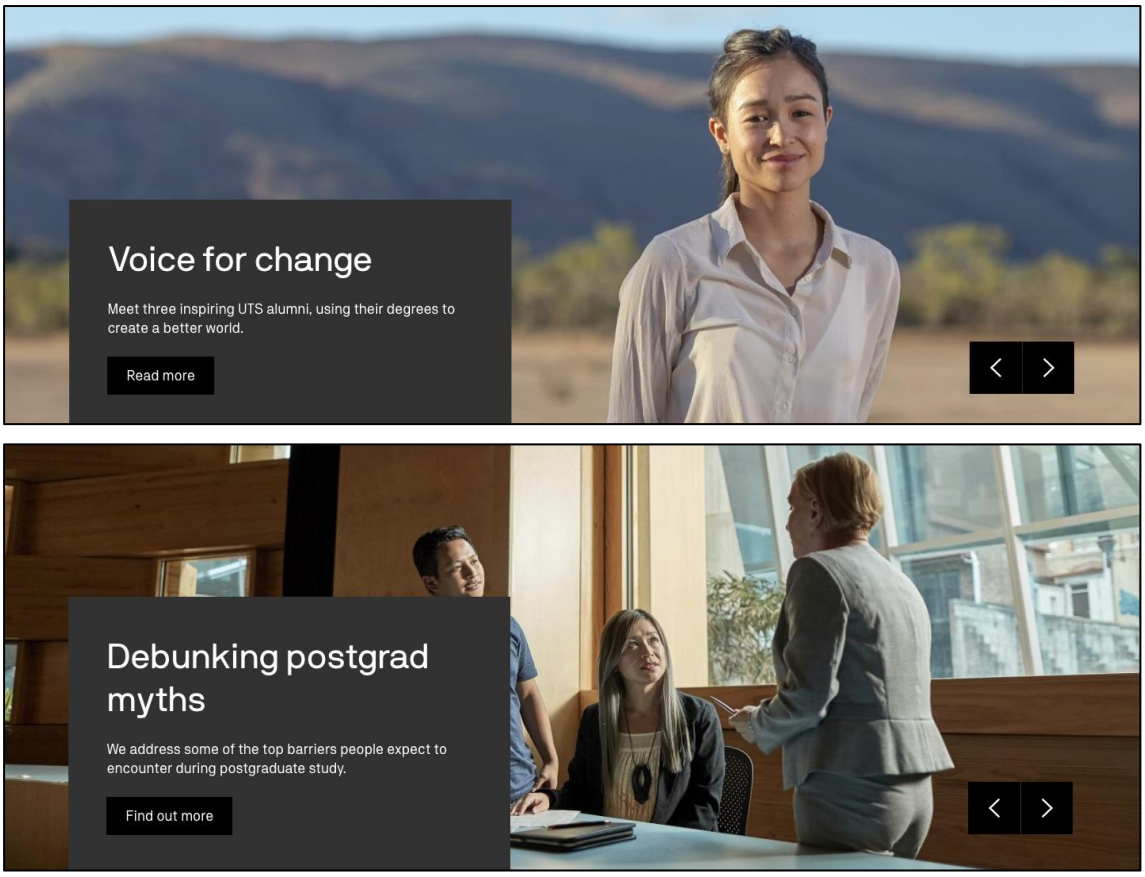


Figure 4.12 ‘Human’ images on the UTS web homepage

Top: individual, female
Bottom: group, a male and two female participants.

Images were coded for gender only for individual and small group (two to five participants) representation because in long shots, gender is not foregrounded through

the means of SALIENCE. This kind of image constructs the trope of 'visual indetermination' whereby 'human' and non-human content are distributed more or less equally (e.g., Figure 4.13).

Figure 4.13 'Visual indetermination' as means of representational balance on the Macquarie web homepage
(https://web.archive.org/web/20170106194135/http://www.mq.edu.au/)

'Non-human images' do not feature represented human participants (Figure 4.14) and are categorized in relation to the following variables: places (e.g., campus, auditorium, unspecified location – on the street, anywhere, etc.) and abstractions (e.g., figures, diagrammatic resources, etc.). APPENDIX F provides details on all coded segments in data set #2.

Figure 4.14 ‘Non-human’ images on the University of Sydney web homepage

Top: places. Bottom: abstractions.

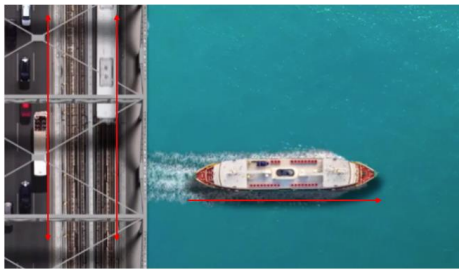
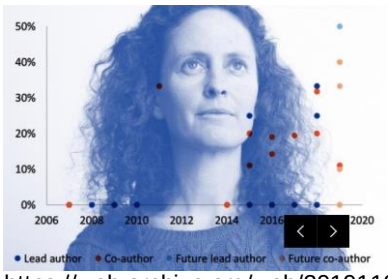
The afore-discussed variables serve as means for identifying and categorizing representation of visual social actors and symbolic objects before evaluative comparisons can be made to determine differences in representational structures and visual strategies for viewer engagement in data set #2.

4.4.2 Visual representation

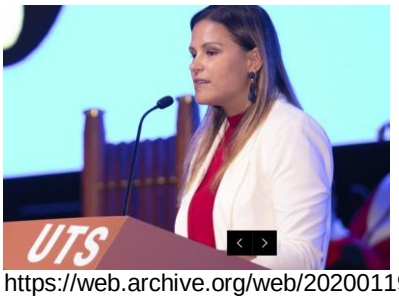
As this study is interested not only in the differences in visual content but also in how representation of the university’s identity occurs through visual design, the second step of analyzing data set #2 examines representational structures. It records different types of structures based on the visual evidence that helps to determine the types of these structures (Table 4.11; also, CHAPTER 2.2.2). Coding for implied verbal processes – a representational choice not identified by Kress and van Leeuwen (2021) – was deemed

necessary as several images foreground represented participants as Sayers often depicted as presenters speaking to an audience[17].

Table 4.11 Visual structures identified in data set #2

	Type of visual structure	Sample image from the data set #2
1	Action \intransitive: single represented participant, visible vectors emanate from human or non-human representation	 https://web.archive.org/web/20200101040831/https://sydney.edu.au/
2	Action \transitive: two represented participants; visible vectors emanate from the represented participant toward Goal	 https://web.archive.org/web/20190330214641/https://www.uts.edu.au/
3	Mental \cognition: single represented participant (human), the gaze is directed at something/someone outside the frame	 https://web.archive.org/web/20191128053912/https://www.uts.edu.au/
4	Reaction \ transactional: the represented participant directs their gaze at Phenomenon (visible in the frame)	 https://web.archive.org/web/20190626091926/https://www.unsw.edu.au/

[17] For Kress and van Leeuwen (2021), a Sayer is a participant of a speech process realized by a "vector formed by the tail of a 'dialogue balloon' or similar device connects two participants – Sayer and Utterance (i.e., the verbal message contained in the dialogue balloon" (74)). Such visual structures were not present in data set #2.

5	Verbal implied: judged from the visual context; the participant is depicted as Sayer (e.g., speaking to an audience)	 https://web.archive.org/web/20200119123658/ https://www.uts.edu.au/
6	Analytical process: a 'part of' relationship: Carrier as a whole and Attributes as parts of the whole	 https://web.archive.org/web/20210505043848/ https://www.unsw.edu.au/
7	Classification: a 'kind of' relation: a visual taxonomy, either overt (the category or Superordinate is explicitly stated) or covert (Superordinate is to be inferred)	 https://web.archive.org/web/20170525213929/ http://www.mq.edu.au/
8	Symbolic process: the identity is established through salience or conventional association with symbolic values	 https://web.archive.org/web/20200211093242/ https://www.unsw.edu.au/

Based on Kress and van Leeuwen (2021; chs2 and 3)

Addressing the formal properties and meaning potentials of different representational structures provides opportunities to explore the types of visual identities that foreground institutionally specific representational content and tropes. Such an analysis can show "what representations include and exclude, what they prioritize and make salient, and what differences they construct between different people, places, and things" (van

Leeuwen & Jewitt, 2004: 9) – i.e., represented human participants, places, and abstractions – the categories identified for the visual content analysis.

4.4.3 Visual interaction

The third analytical step of organizational visual identity communication seeks to address visual interaction or the 'social reality' construal. By adapting van Leeuwen's (2008: 138-148) 'Visual social actor network' (also cf. Kress & van Leeuwen, 2021, Chapter 4), this part of the analysis considers how represented participants are related to the viewer, accounting for three factors of visual design – the size of shot, angle of depiction, and gaze of represented participants (human images only). These factors shape three dimensions of interaction between the depicted people and the viewer: social distance, social relation, and social interaction, respectively, as explained in CHAPTER 2.2.2. SOCIAL DISTANCE relates to how much of a human body is visible in a frame, and can be intimate, personal, socio-consultative, and public. SOCIAL RELATION includes coding for the perspective of representation across horizontal and vertical axes. It is explored through two systems – involvement and power. SOCIAL INTERACTION has to do with the gaze of represented participants – direct or indirect address through eye contact or its absence. In addition to the viewer-represented participants' interaction, in some instances, it is useful to pay attention to internal interactions, i.e., the interaction between the represented participants in relation to one another. Figure 4.15 maps the systems of SOCIAL DISTANCE, SOCIAL RELATION, and SOCIAL INTERACTION, choices across these systems, and visual realization of these choices.

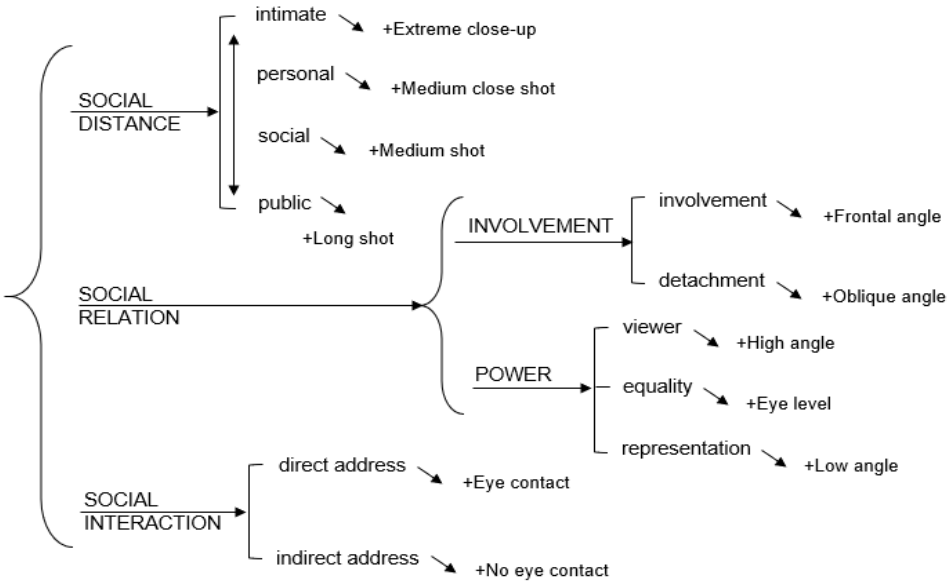


Figure 4.15 System of VISUAL INTERACTION
Based on van Leeuwen (2008: 140-141)

Analysis of visual interaction is beneficial for identifying the viewer engagement strategies manifested through different visual resources in images to communicate information from a rhetor-institution to the envisaged audiences. Recording visual engagement strategies will foster an understanding of how various visual design choices position the key audiences to relate to the represented participants in images, on the one hand, and the university as a body that authorizes such representational choices, on the other.

The last step for analyzing data set #2 synthesizes findings from the visual content, visual representation, and visual interaction analyses to understand the patterns of organizational visual identity construal across different homepages. It looks at the intersections of the identified visual choices that construe different values. In a metafunctional sense, the features interpreted as interactional (i.e., social distance, social relation, and social interaction) are always *representations of interpersonal relationships* since "the interpersonal in images has to piggy-back [on representation]" (van Leeuwen, 2015a: 106).

While another important aspect of visual interaction is image validity across different coding orientations (i.e, naturalistic, technological, sensory, and abstract) that can be addressed through validity markers (cf. Kress & van Leeuwen: 149-165), the analysis is limited to the discussed systems due to the project limitation constraints. Thus, only the categories introduced in SECTION 4.4.1 in relation to human and non-human images (places and abstractions) are explored.

The analysis of representational and interactional choices will construct organizational visual 'maps' across four analyzed web homepages. Since representation and interaction are inseparable parts of organizational visual identity communication, the framework presented in this section provides a useful toolkit for addressing the semiotic practice of organizational identity communication, zooming in to images "realized by [different] stylistic signifiers" (van Leeuwen, 2020: 78) as important, yet infrequently addressed markers of organizational visual identity.

4.5 Concluding remarks

The overarching goal of this chapter was to contextualize and explain the data studied in this thesis, describe the data collection process, and clarify the methods used to address the research questions of this project. Given the tripartite focus of the thesis – organizational identity designs and their change over time and organizational visual identity communication – a mixed-method approach is appropriate. To situate the mixed-method approach in the theoretical and analytical framework summarized in CHAPTER 2.3, Figure 4.16 demonstrates the connections between epistemology, theory, and methods in this study. To briefly reiterate, MSS grounded in social constructionism comprises theoretical foundations for studying organizational identity practices. Multimodal discourse analysis that recognizes multisemiotic nature of communicative resources informs the selection of the methods discussed in this chapter.

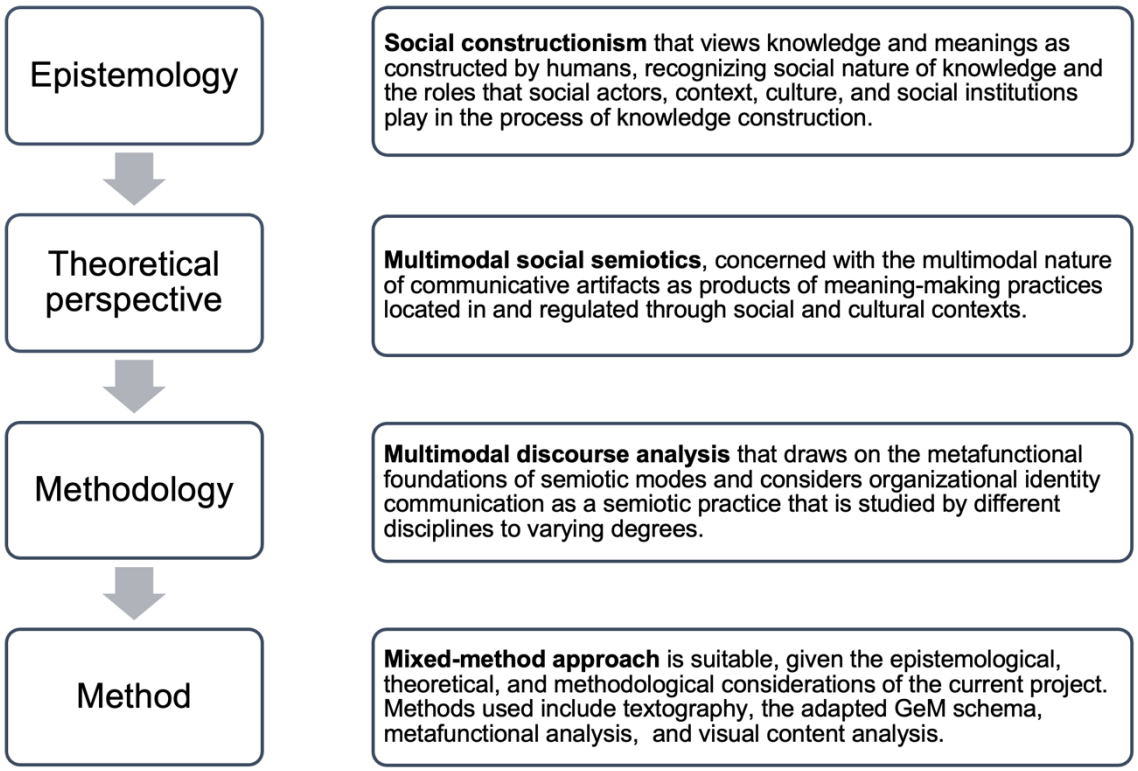


Figure 4.16 Connecting epistemology, theory, methodology, and method

As an empirically oriented analytical tool, the GeM model provides an appropriate point of departure for studying the structure of web homepages. On the one hand, it enables a systematic identification of design elements through a multi-layered schema, with detailed documentation of the structure of page designs. On the other hand, its open architecture provides possibilities for finer distinctions across different layers, as necessary for this study. Since this study is interested in how universities represent their identity on homepages, how it changes over time, and what interactions with the identity are possible, as a theory of meaning that has a strong record of addressing discourses of identity as well as normative discourses that surround them, multimodal social semiotics complements the GeM model in the discourse semiotics layer.

Visual content analysis complemented with a metafunctional lens to image analysis provides an integrated method to address organizational visual identity communication on university web homepages. A proposed framework focuses not only on the content of images but also addresses how key social actors are depicted and what viewer engagement strategies the rhetor-institution deploys through specific combinations of visual choices. With these methodological considerations in mind, the subsequent chapters proceed with an in-depth analysis of organizational identity designs (CHAPTER 5; data set #1) OVI constructed by images (CHAPTER 6; data set #3) and changes in organizational identity communication practices (CHAPTER 7; data set #2).

Each analysis chapter opens with a brief analysis of university brand guidelines and visual style guides [18]that describe recommendations for critical OVI elements – 'name,' 'logo,' 'motto,' 'color,' 'typography,' 'graphic shapes,' and 'photographic character in images.' These documents include:

- Macquarie University, *Brand Identity Guidelines*, on staff intranet 2018
- University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020
- University of Sydney, *The University of Sydney Brand*, on staff intranet 2019[19]
- University of NSW, *Visual Style Guide*, on staff intranet 2021

Such a mode of analysis is referred to as (partial) 'textography' (Swales, 1998, 2013) and involves a partial ethnography but not in the usual sense of engaging in a dialogue with social actors involved in a social practice of interest but as the means to "elucidate the form and formation of the written texts themselves as produced by such members, via an exploration of their contextually embedded discursive practices" (Swales, 1998: 112). An examination of the brand guidelines and visual style guides provides an opportunity to identify what values the core OVI elements are expected to embody as envisaged by university brand and marketing teams and 'endorsed' by the university. These values are then examined on the site of homepages in CHAPTER 5, on the site of homepages and images in CHAPTER 6, and are analyzed historically on a selected homepage in CHAPTER 7.

[18] These documents are only accessible for staff members through the staff intranet apart from Macquarie University's 'Brand Identity Guidelines' available for the general public from the university's website.
[19] As of date of publication, the 2019 guidelines have been superseded as a new document 'Visual Identity Guidelines' was introduced in February 2023.

Chapter 5 Organizational identity designs

Orientation

As established in CHAPTER 3, designs of communicative artifacts realize discourses, and in the context of organizational identity communication, designs of university web homepages realize the discourses of university representation and identity. Presumably, each organization has something distinct to communicate about itself to different audiences to legitimize and differentiate the brand. On web homepages, similar to other university communications, this purpose is arguably achieved through three distinct 'strata' – core OVI elements, communicative content, and navigation/access structures. These strata are influenced by how a rhetor-institution imagines its web brand in accordance with the values that a university as an organization identifies. More recently, such values are singled out in brand guides on which *designers as cultural intermediaries* (see Bourdieu, 1984; du Gay et al., 2013) draw on the production site while also always considering the potential uses of organizational web homepages. In addition, the web homepage content and structure are impacted by the 'canvas constraints' (Bateman et al., 2017) or affordances (Kress, 2005; Norman, 2013), which can be examined through design as a social practice of tackling unique challenges of potentials and limitations for representation through different semiotic modes. Discourses of identity – the locus of this discussion – do not simply arise from a web homepage but from the way each university represents itself through design, always impacted by the materiality of the medium and its affordances. Therefore, the concepts of representation and design are the starting points for this chapter, and the site of the communicative artifact (i.e., web homepages in data set #1) is its key focus.

It is difficult, if at all possible, to conceive of 'identity' without considering representation (CHAPTER 4.1) enabled through what this study terms *organizational identity design* (CHAPTER 3.1.3). Underpinning organizational identity design is the functionally-oriented social semiotic perspective that views rhetor-institutions as interacting with envisaged audiences through web homepages for the purposes of organizational identity communication. Organizational identity design does not only structure content into coherent wholes but also mediates interactions between the organization and envisaged audiences. This concept is introduced to highlight the dialogic role of design in organizational identity communication when examining the interaction between the university and envisaged audiences through the content and navigation of web homepages.

To understand these design interactions, I take a discourse analytic approach and examine three key strata of organizational identity communication on the site of the homepage as a communicative artifact (SECTION 3.2):

1. core OVI elements: ‘name’, ‘logo’, ‘typography’, ‘color’, ‘motto’, and ‘graphic shapes’
2. communicative content
3. navigation/access structures

More specifically, I focus on the following questions: (1) how the core visual identity elements are deployed across different homepages and what meanings they communicate, (2) what content is represented on homepages, how it is structured, and what discourses of identity different structures realize, and (3) what navigational pathways are offered for key envisaged audiences as means to interact with the organizational identity of the university. For these purposes, I use the concept of a semiotic mode and medium. *Semiotic mode* (CHAPTER 2.2.1) is useful for clarifying the material deployed, its form, and structure (i.e., axis) which determines “the material deformations that are pertinent for a semiotic mode” (Bateman et al., 2020: 318). Considerations of the *medium* (CHAPTER 3.2.3), particularly its hypertextual nature and the navigational possibilities it affords, are helpful for a guided discussion of the form and function of the key layout structures. The main data sources for this task are the analytical layers from the GeM-annotated corpus, with a particular focus on the layout layer for the identification of multimodal ensembles and visualization of their hierarchical structure in the most strategic part of the homepage – its viewport.

An empirical inquiry into structural and functional layers of organizational identity design will reveal key semiotic design practices shared across pages, addressing a melange of social and technological factors in which the relations of representation, identity, agency, power, and knowledge are embedded in the web page design. By approaching web pages as a semiotic technology, on the one hand, and a medium for organizational identity communication, on the other hand, I first provide an initial characterization of the web homepages for analysis (SECTION 5.1). Next, I examine the core visual identity elements (SECTION 5.2) before discussing the semiotic material and main (dis)similarity patterns of its distribution. Thirdly, I characterize semiotic resources that contribute to the integration of layout structures into multimodal ensembles and visualize their positioning in the viewport of each page through hierarchical wireframes, describing their form and realization and indicating the reasons for these structures to be insightful in terms of communicative functions (SECTION 5.3). I also note key findings concerning the user

agency across the data set, identifying design units for building navigational pathways and discussing the implications of web design interactivity for user experience with each site (SECTION 5.4). Lastly, I summarize the functions of layout structures for organizational identity communication, particularly from the metafunctional lens of representation and interaction (SECTION 5.5).

5.1 Initial characterization of the web homepages

In discourse studies, recording initial observations and descriptions without delving into a specific analytical framework or technicalities of an object of analysis is a useful way of gathering first impressions and reactions to a text (Pauwels, 2012; Ravelli, 2017). The 'look and feel' analysis can provide an instant assessment of the website's communicative purpose, envisaged audiences, content presentation, and salient features and functionalities. Such a task is valuable for the development of a reflexive attitude, whereby the reception of a text becomes "a meeting of cultures between producers, intended audiences, and researchers" (Pauwels, 2012: 253). Similarly, in relation to organizational practices, cultural studies engage in recording the initial observations of digital objects of analysis by looking at organizational discourses as "a form of representational and technological (i.e., cultural) practice that constitutes the spaces within which economic and organizational action is formatted and framed" (du Gay et al., 2013: xxiii). The initial characterization of all four pages for analysis (data set #1) is presented below, highlighting several key observations about formal layout structures, interactivity of design elements, and implications for organizational identity construal. For ease of reference, Table 5.1 summarizes the pages for analysis (CHAPTER 4.2), and Figures 5.1-5.4 show the pages in full.

Table 5.1 Data set #1: Homepages of four selected university websites

Code	University	Web homepage	Archived version
06_mq	Macquarie University	mq.edu.au	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/
10_sydney	The University of Sydney	sydney.edu.au	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/
11_uts	University of Technology Sydney	uts.edu.au	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/
13_unsw	UNSW	unsw.edu.au	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/

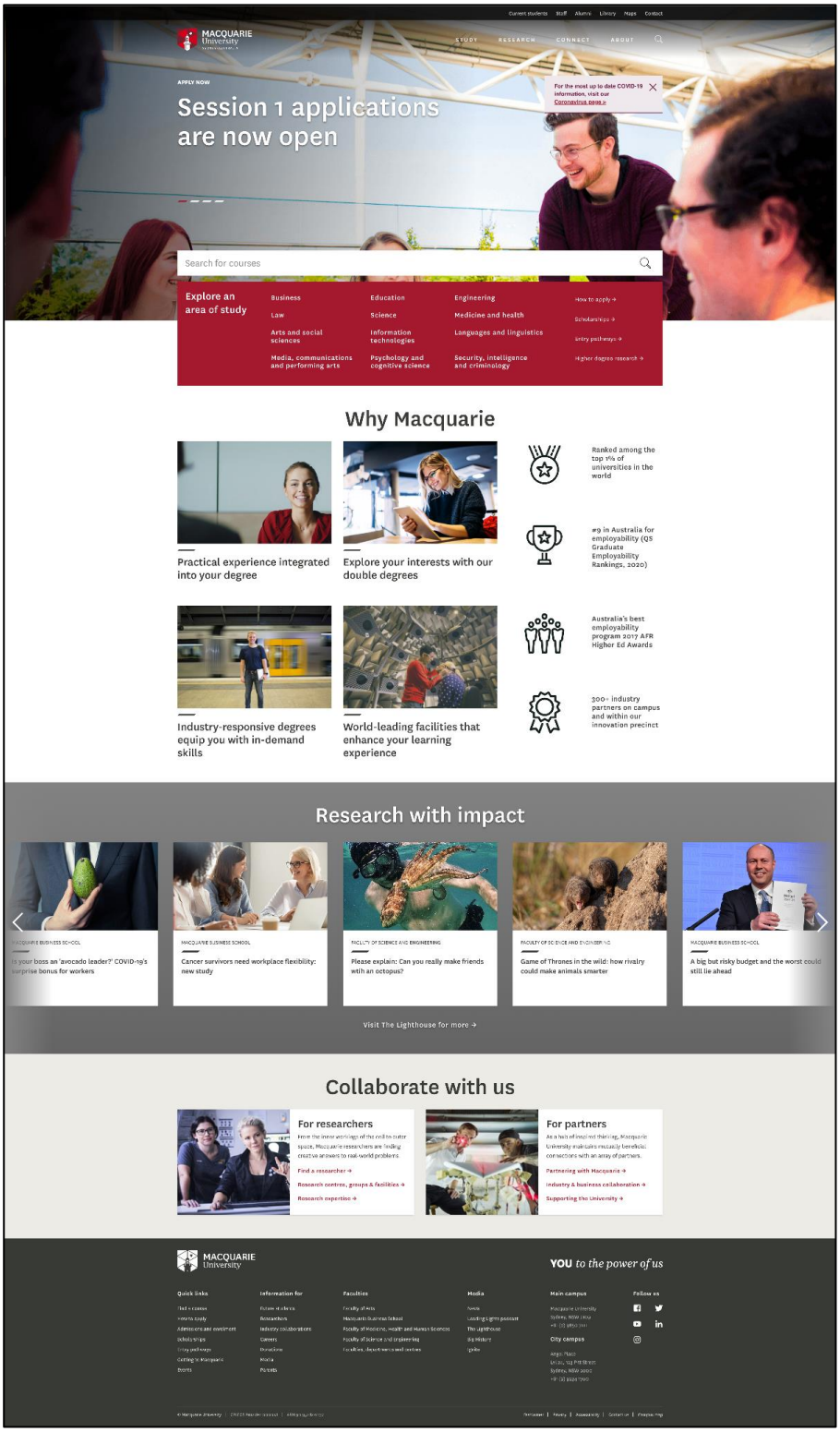


Figure 5.1 Homepage of Macquarie University website <https://www.mq.edu.au/> (https://web.archive.org/web/20201008063548/https://www.mq.edu.au/)

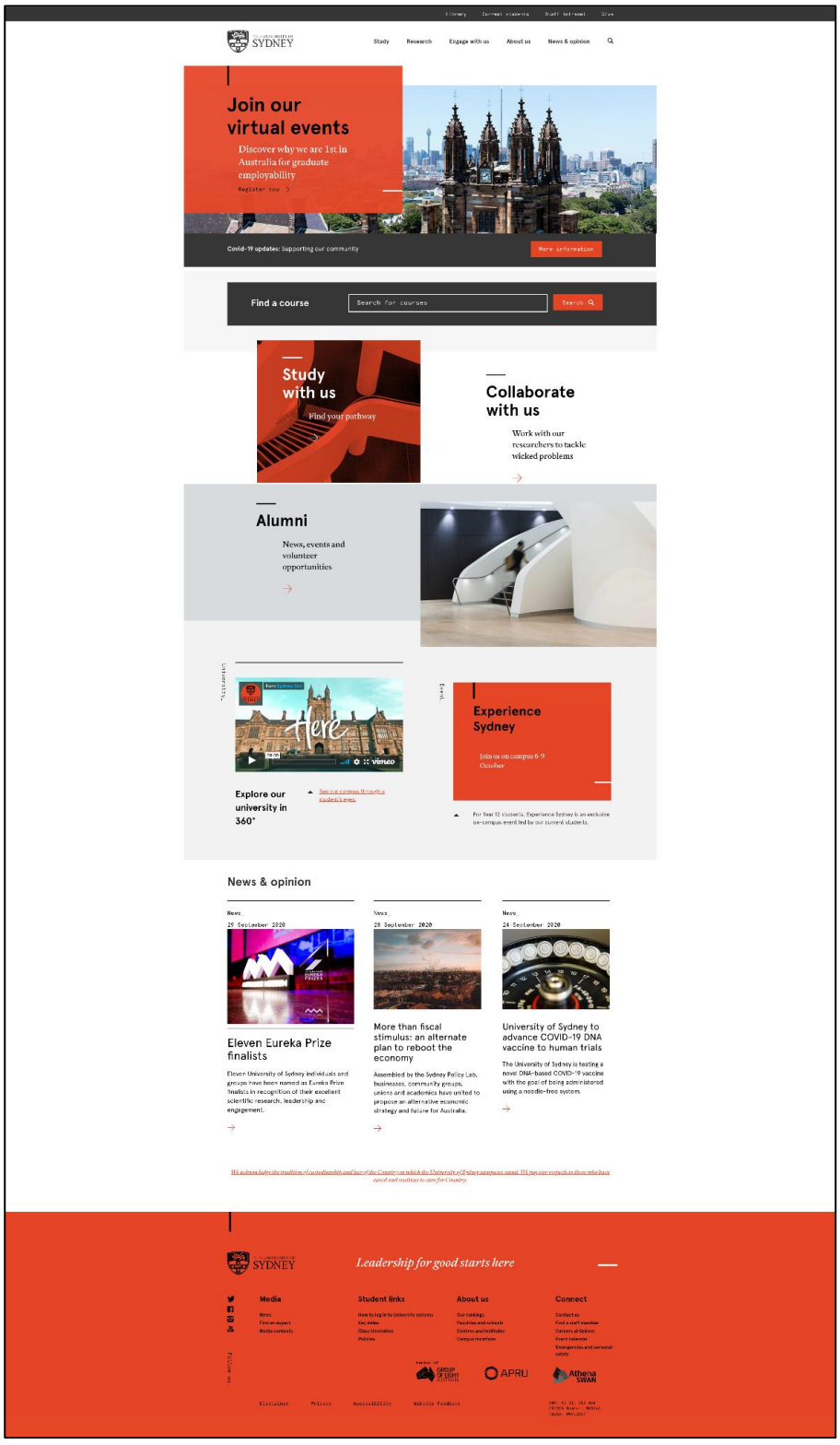


Figure 5.2 Homepage of the University of Sydney website <https://www.sydney.edu.au/> (https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/)

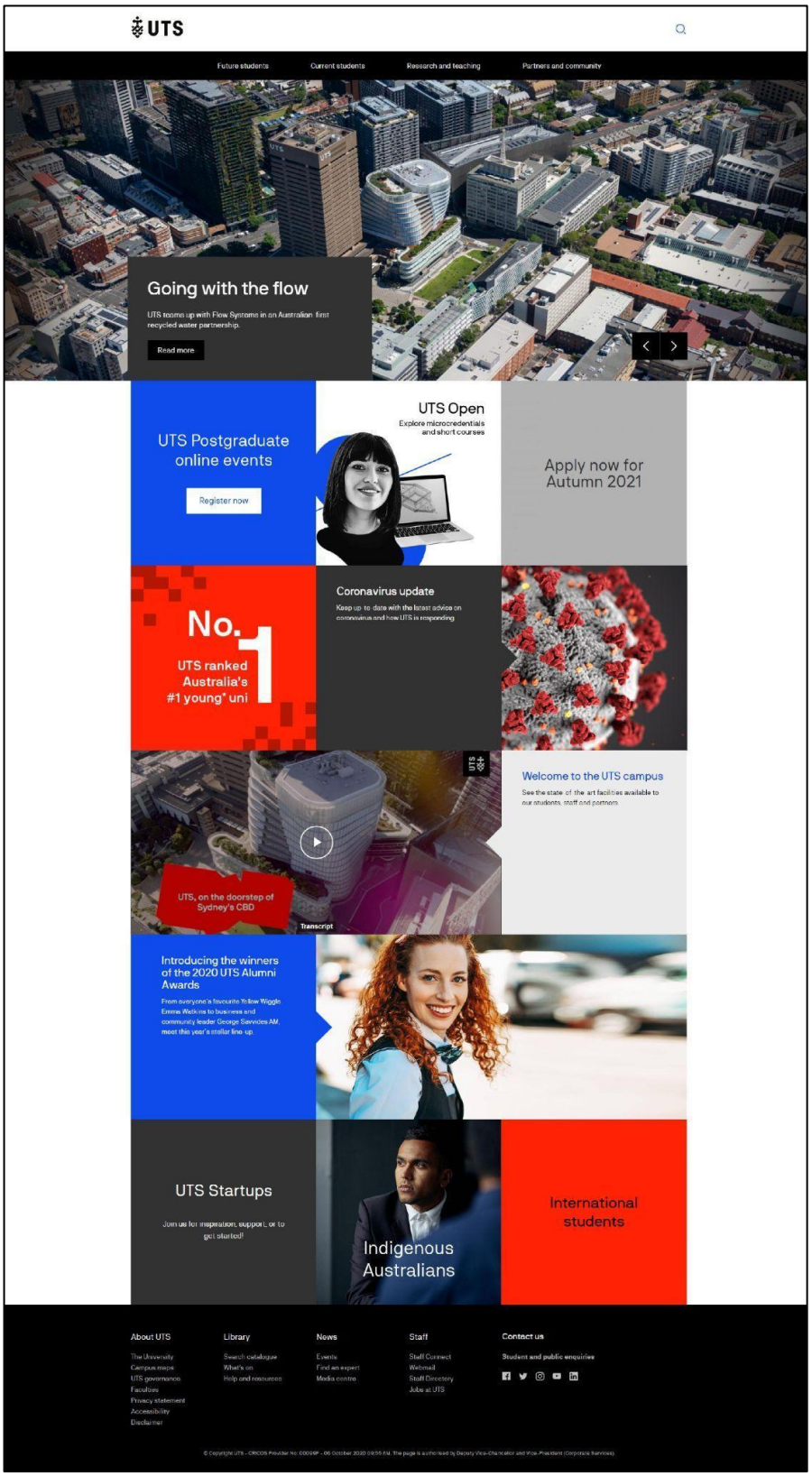
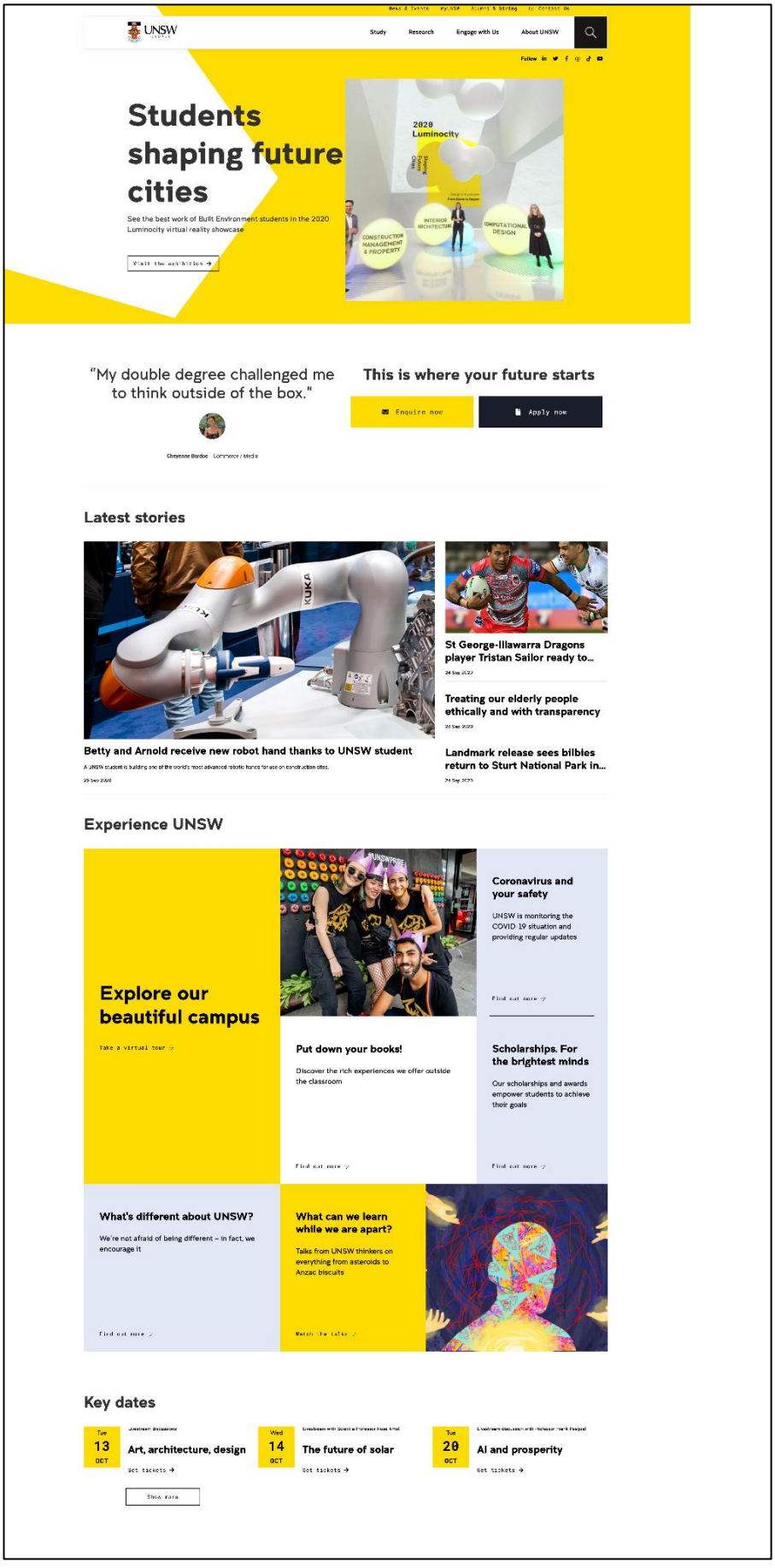


Figure 5.3 Homepage of the University of Technology website <https://www.uts.edu.au/> (https://web.archive.org/web/20201008080715/https://www.uts.edu.au/)


UNSW
Study
Research
Engage with Us
About UNSW
Students shaping future cities
See the best work of Built Environment students in the 2020 Luminocity virtual reality showcase
Visit the exhibition
2020 Luminocity
CONSTRUCTION MANAGEMENT & PROPERTY
INTERIOR ARCHITECTURE
COMPUTATIONAL DESIGN
"My double degree challenged me to think outside of the box."
Cheyenne Bardos · Commerce / Media
This is where your future starts
Enquire now
Apply now
Latest stories
Betty and Arnold receive new robot hand thanks to UNSW student
St George-Illawarra Dragons player Tristan Sailor ready to...
Treating our elderly people ethically and with transparency
Landmark release sees bilbies return to Sturt National Park in...
Experience UNSW
Explore our beautiful campus
Take a virtual tour
Coronavirus and your safety
UNSW is monitoring the COVID-19 situation and providing regular updates
Find out more
Put down your books!
Discover the rich experiences we offer outside the classroom
Find out more
Scholarships. For the brightest minds
Our scholarships and awards empower students to achieve their goals
Find out more
What's different about UNSW?
We're not afraid of being different – in fact, we encourage it
Find out more
What can we learn while we are apart?
Talks from UNSW thinkers on everything from asteroids to Anzac biscuits
Watch the talks
Key dates
Tue 13 OCT
Art, architecture, design
Get tickets
Wed 14 OCT
The future of solar
Get tickets
Tue 20 OCT
AI and prosperity
Get tickets
Show more

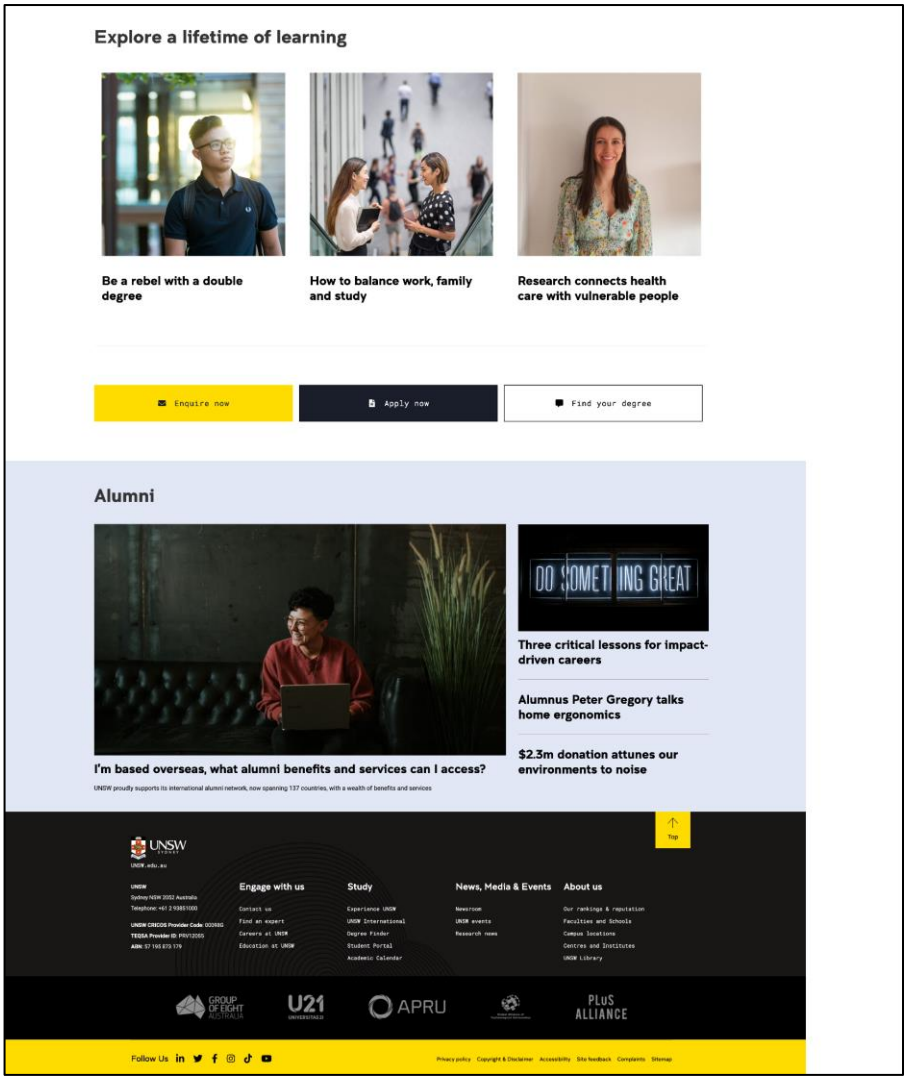


Figure 5.4 Homepage of the UNSW website <https://www.unsw.edu.au/> (https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/)

A first glance at the four web homepages reveals that they incorporate different design units that reflect envisaged uses of the page and communicate the website purpose. Whereas the content below the fold varies more significantly, each page shares similarities in relation to several organizational identity markers across more conventionalized parts – viewports and footers.

In the top left corner of each viewport are 'business names' and 'logos' establishing the university's identity as a point of departure for interacting with the page. 'business name' and 'logo', adjacently placed next to each other, also open footers of all but the UTS homepage, mirroring the left-hand side positioning in the viewport and reaffirming the visual identity identification (Figure 5.5). Footers also incorporate the 'About us' menu item that includes the university's governance (faculties, schools, centers, and institutes),

rankings, and campus locations – information that legitimizes the university. Consistency in brand color and typographic choices of layout units across each page facilitates visual brand identification, simultaneously contributing to the overall aesthetics of web pages.

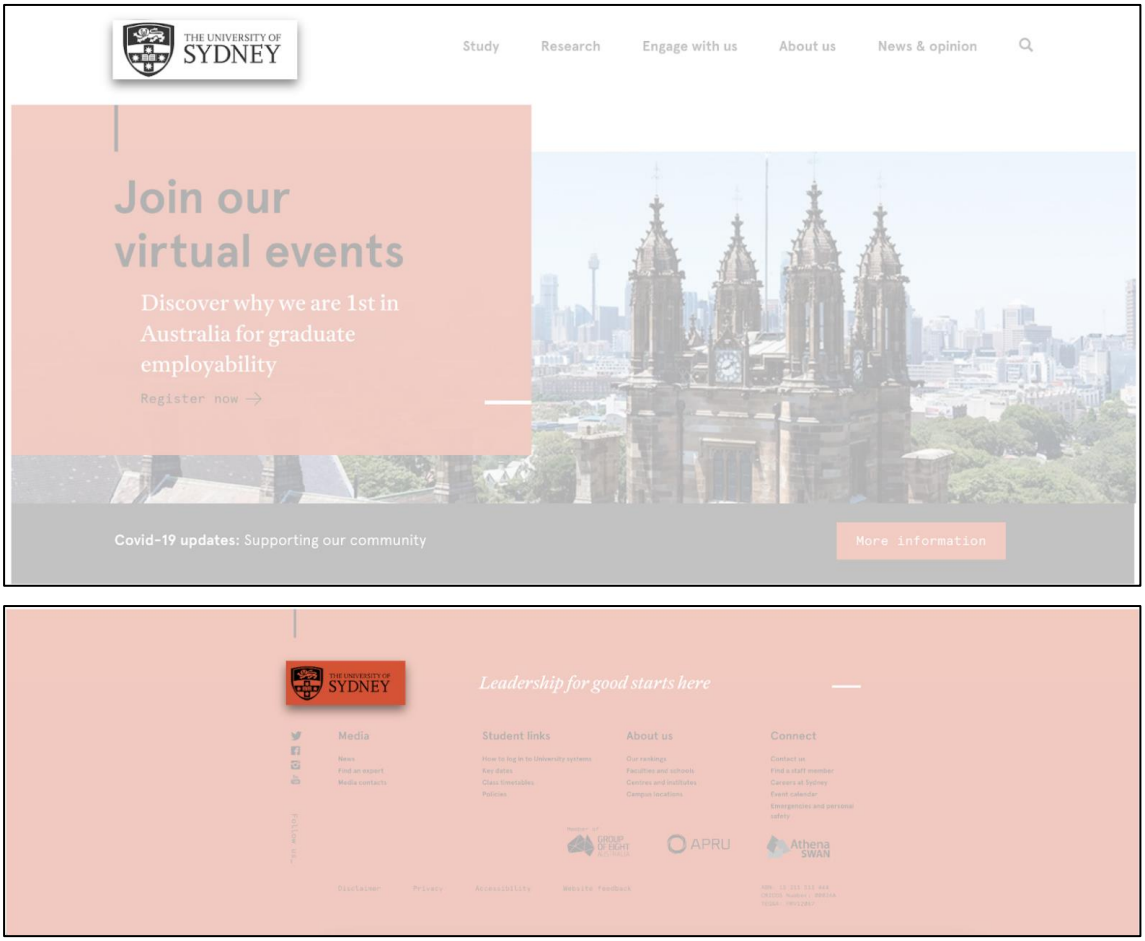


Figure 5.5 Typical logo positioning in the data set

An example from the University of Sydney homepage: in the viewport (top) and in the footer (bottom)

Beyond the visual identification, the significant expense that goes into the maintenance of institutional websites demands that universities strategically employ well-crafted messages responding to the needs of different audiences (Schneider & Bruton, 2004). On web homepages, these audiences are represented through a set of horizontal menu items in the viewport of each page that also offer more covert navigational possibilities displayed in drop-down menus when a menu item of the horizontal menu panel is activated. Menu items target three groups of envisaged audiences: students (primarily prospective), staff, and the general community. Still in the viewport, each page presents a large image either integrated in a *carousel* or as a stand-alone *hero*. A *carousel* is a spatial configuration that embeds an image, headline, sentence, a deictic expression,

navigational arrows, and, in some cases, a box to integrate the verbal and diagrammatic resources, comprising a dynamic layout structure that alternates in an automated succession and switches to the next ‘plate’ of with the identical positioning of the material element but different content (e.g., Figure 5.6). A *hero* is a single static image in the viewport, placed adjacently to a headline, sentence, and deictic expression (e.g., Figure 5.7). On commercial homepages, a hero image is expected to give the audience the first glimpse into the company selling product, whereas on university homepages, such an image is aimed at representing the university, detailing the news and events, and outlining recent accomplishments of the community.

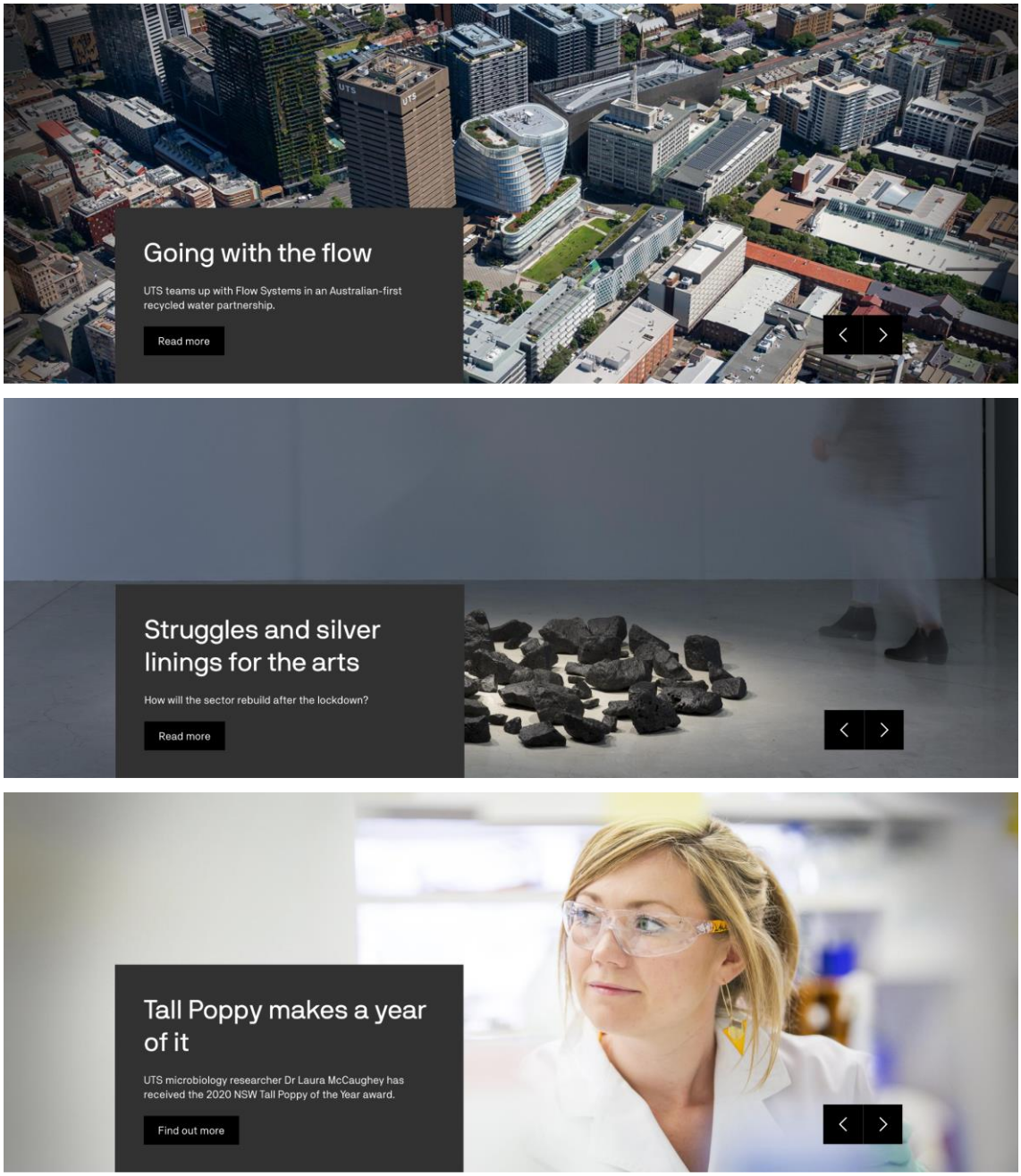


Figure 5.6 Three carousel images in the viewport of the UTS homepage (https://web.archive.org/web/20201008080715/https://www.uts.edu.au/)

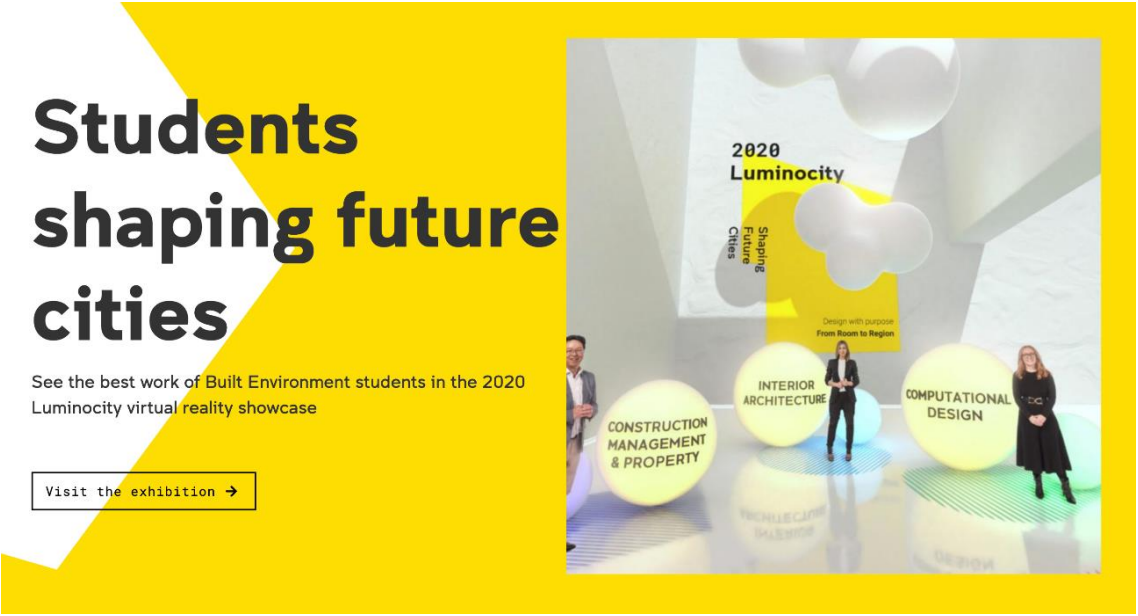


Figure 5.7 A ‘hero’ image in the viewport of the UNSW homepage (https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/)

‘Logos’, menu items, images, and limited verbal text point to the visual-centric design strategy where most information is presented through pictorial and diagrammatic resources, making viewports visual- rather than verbal-oriented.

Footers are another important part of the homepage that, similar to viewports, show a higher degree of standardization in contrast to the rest of the page in the annotated corpus. However, a larger corpus is needed to determine whether footers are part of the generic structure of a university homepage or a feature of the medium (i.e., any homepage). Footers are framed (i.e., demarcated) from other layout structures with rectangular shapes filled with solid brand color and provide business details, such as ABN, CRICOS number, address, contact number, membership affiliations, and social media icons activated with a click that directs audiences to official university social media accounts (Figure 5.8).

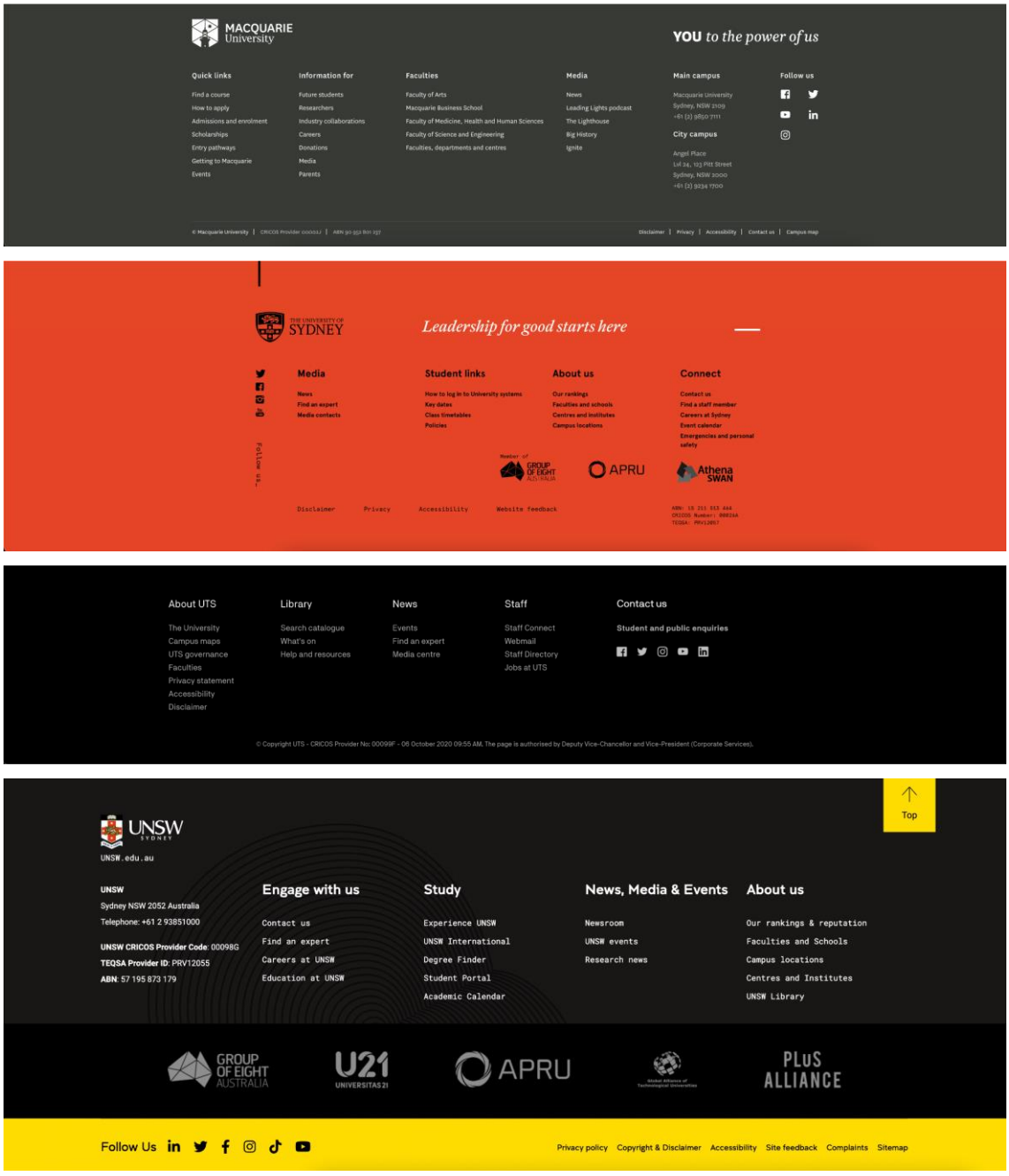


Figure 5.8 Footers of the homepages in the data set

Several columns in each footer summarize the layout units that the envisaged audiences can engage with after examining the content of the previous screens. As practical information that about each university (i.e., ABN, CRICOS, business address, memberships, etc.) is placed in each footer, it is reasonable to infer that these units legitimize the university as an educational provider. The second set of design elements such as social media, contact forms, events, and so forth are arguably aimed at initiating interaction with the university. The last set of design elements, particularly, vertical menu

items, contributes to communicating the structure of the whole website. Therefore, the options presented options appear to be oriented at (1) legitimizing the university as an educational provider, (2) initiating interaction with the university, and (3) summarizing the website architecture in a form of a site map (Table 5.2).

Table 5.2 Design elements and options presented in the footers of web homepages

Function / Homepage		**06_mq**	**10_sydney**	**11_uts**	**13_unsw**
Legitimizing the university	'logo'	X	X	–	X
	'business name'	X	X	–	X
	'About us'	–	X	X	X
	rankings	–	X	–	X
	business address	X	X	–	X
	other business details	X	X	X	X
	governance	X	X	X	X
	partnerships	X	X	X	X
	privacy policy	X	X	X	X
	copyright	–	–	X	X
	disclaimer	X	X	X	X
Initiating interaction	social media	X	X	X	X
	'Contact us'	X	X	X	X
	media engagement	–	X	X	–
	news	X	X	X	X
	events	X	X	X	X
	website feedback	–	X	–	X
Summarizing the website architecture	vertical menu items relevant to the architecture of the website	X	X	X	X

The most notable differences in communicative content include information density and the 'below the fold' content structuring across each page. The UNSW homepage differs from other pages in terms of length, with approximately 8 screens in contrast to 3-4 screens that the rest data set uses. UNSW, thus, appears to present more content for exploration (Figure 5.4), whereas other pages package different options under menu items activated by pointing a mouse (Figure 5.2 and Figure 5.3) or clicking (Figure 5.1). Below the fold and down to the footer, UNSW offers its envisaged audiences a range of options organized in visually distinct yet diversified content options, such as university news, campus events, scholarships, key dates, and a layout structure designated for alumni. Macquarie University highlights key reasons for choosing this educational institution, from university rankings to major accomplishments of the community, and the University of Sydney highlights news and offers options for prospective students and alumni. UTS applies a grid principle to package options for prospective students,

international students, and indigenous Australians, combining this information with a 'Welcome to the UTS campus' video, a snapshot of the university ranking, and information about the UTS startups.

The initial characterization of the four web homepages reveals that the information below the fold varies quite significantly across the four pages, which points to a less conventionalized practice of content ordering/inclusion for this part of university web homepages. Drawing on similar design templates, especially for the viewport and footer, each web homepage makes salient some layout elements rather than others. In subsequent sections, a focused examination of these similarities and differences through the prism of organizational design will uncover meanings about organizational identity communication on university homepages, starting with a discussion of the core OVI elements of each page.

5.2 Core organizational visual identity elements

The main OVI elements – 'name', 'logo', 'motto', 'color', 'typography', and 'graphic shapes' – are an assortment of visual cues by which consumers can recognize an organizational brand and distinguish it from others (Melewar, 2003; van den Bosch, 2005). The format, usage, and styles of the identity components are outlined in visual style guides and brand guidelines to support the visibility and distinctiveness of the university brand (Macquarie University, *Brand Identity Guidelines*, on staff intranet 2018; University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020; University of Sydney, *The University of Sydney Brand*, on staff intranet 2019; University of NSW, *Visual Style Guide*, on staff intranet 2021). Prior to identifying the formal structures of the core OVI elements, it is useful to briefly examine the histories of each university and the main values communicated in the dedicated spaces of each website, usually in the 'About us' section as well as publicly available documents known as 'strategies' or 'operating plans' – *Sydney in 2032* (University of Sydney, 2022), *UNSW 2025 Strategy Update* (University of NSW, 2020b), *UTS 2027 Strategy* (University of Technology Sydney, 2022b), and *Macquarie University Operating Plan 2020-2024* (Macquarie University, 2020).

5.2.1 Overview of the universities

As outlined in SECTION 5.1, this chapter focuses on organizational identity communication on web homepages of four public universities located in Sydney, Australia. The University of Sydney (also informally known as Usyd or Sydney Uni) is

Australia's oldest university which remains one of its most prestigious, ranking 41st in the highly regarded *QS World University Rankings 2023* (QS, 2022) and educating more than 70,000 students (Universities Australia, 2019). The main campus spreads across two inner-city suburbs and is attended by most of the university's students, many of whom are doing postgraduate courses. The University of Sydney reflects what Davis (2017) calls 'the Australian idea of a university' – a metropolitan commuter institution with large enrolments and comprehensive course offerings. On the dedicated page 'Vision and values' <*https://www.sydney.edu.au/about-us/vision-and-values.html*>, the University of Sydney communicates four clusters of its organizational values: courage and creativity, respect and integrity, diversity and inclusion, and openness and engagement. In its 2032 Strategy (University of Sydney, 2022), the university's core focus is described to be on contributing to a better world, building on the past decade of significant changes and challenges.

The University of New South Wales (rebranded in 2020 to UNSW Sydney – the focus of this study – and UNSW Canberra) was founded in 1949 during the second wave of higher educational institutions in Australia. Its establishment was motivated by the rising attention toward science and technology and the envisaged transformation of Australian society from agricultural to industrial (O'Farrell, 1999). UNSW ranks 45th in the QS World University Rankings 2023 and has more than 63,000 students from 132 countries (<*https://www.unsw.edu.au/about-us/our-story*>). In the *2025 Strategy*, UNSW specifies its core vision "to improve lives globally, through innovative research, transformative education and commitment to a just society" (University of NSW, 2020b: 3) with priorities of academic excellence, innovation and engagement, and social impact.

Macquarie University was founded by the New South Wales Government as the third university in the metropolitan area of Sydney in 1964 during the times of student activism that fostered cultural, political, and social change (Davis, 2017). The ambitious mission to challenge the similarity of Australian universities and establish itself as a diverse institution underlaid the initial structure of the university: instead of different programs, Macquarie first offered a single undergraduate degree to encourage a breadth of study, but subsequently followed the model of a comprehensive institution, offering a full range of courses across different disciplines. It ranks 195th in the world (QS, 2022) and had over 46,000 enrolled students in 2021 (Macquarie University, 2021b), including more than 9,000 international students from 118 countries, and has campuses in North Rhyde (main campus) and Sydney Central Business District (CBD). Macquarie's vision is outlined on the '*Vision and strategy'* page *<https://www.mq.edu.au/about/about-the-university/vision-strategy>,* and includes scholarship (learning, inquiry and discovery to

improve lives), integrity (ethical and equitable conduct), and empowerment (community as a source of strength and creativity). In *University Operating Plan 2020-2024*, Macquarie communicates commitment to "explicitly focus on [the] current and future students – their education and their success" (Macquarie University, 2020: 7).

The University of Technology Sydney (UTS) is Australia's highest performing university in Australia under 50 years of age and 8th in the world in the same category (Times Higher Education, 2022) and had 45,221 students enrolled in 2021, including 11,944 international students (University of Technology Sydney, 2022a). It ranks 137th in the QS World University Rankings 2023 (QS, 2022), and three of its campuses are located at the southern gateway to Sydney's cosmopolitan CBD. It emerged in 1988 from the former New South Wales Institute of Technology, and maintains a strong technological orientation, offering 564 courses and 2345 subjects with enrolled students (University of Technology Sydney, 2022a). The *UTS 2027 Strategy* (University of Technology Sydney, 2022b) outlines the university's vision to be "a leading public university of technology and recognised for our global impact" (University of Technology Sydney, 2022b, n.p.). The university also has a dedicated page 'Our distinctive identity' <*https://www.uts.edu.au/about/uts-2027-strategy/our-distinctive-identity*> outlining technology and innovation as weaving through the established excellence and education.

5.2.2 Business name

As outlined above, each university has a unique story to tell its envisaged audiences, and on a web homepage, 'business name' is a critical element that provides legitimation and visual identification of the brand. 'Business name' in a landscape format is placed on the right of the logo and in the top left of the viewport (Figure 5.9).

Figure 5.9 'Logo' and 'business name' in the annotated corpus

The ‘geographical’ names of the University of Sydney, University of Technology Sydney, and UNSW Sydney reinforce a destination narrative (Hansen, 2010; Hanna et al., 2021) to communicate and cultivate engagement with the destination and reinforce the universities’ location. The University of Sydney additionally emphasizes destination in its 2032 Strategy, as “Australia’s first university, Sydney’s university and a great global university” (University of Sydney, 2022: 11). Macquarie University is named after Governor Lachlan Macquarie who was a British career military officer recognized for his contributions to Australian society (Macquarie University, 2021a). In addition to the official name, the logotype and name on the Macquarie homepage includes ‘Sydney, Australia’ telling the envisaged audiences the location of the organization.

5.2.3 Logo

The ‘logo’ is a key OVI element for brand association and a symbol of a shared identity (Erjansola et al., 2021), contributing to recognizability (Baker & Balmer, 1997; Henderson & Cote, 1998) and organizational philosophy and personality (Balmer, 1995). The logos of all four universities are positioned in the top left corner or Given (Kress & van Leeuwen, 2021), presented as a recognizable starting point for interaction. Given appears in a compositional contrast with New (i.e., ‘business name’ to the right), endowing the whole page with the ideological import of the point of departure. As a key OVI element, ‘logo’ aims to ensure two pre-conditions – recognition and familiarity (van Riel & van den Ban, 2001). It is an antecedent, something known or familiar that the envisaged audience will recognize and identify with. The standardized logo placement in the top left of the page is shared across 84.6% of entire data set #1 (or all thirty-nine university homepages, as explained in CHAPTER 4.2), with only four university websites positioning their logos to the left and below a top horizontal menu item plate in 2020 (the University of Notre Dame and RMIT University, which subsequently changed this placement to the top left corner, and Victoria University and the University of Divinity, which preserved the same logo layout in 2022), and one university (Deakin) places the logo in the top center. In addition to brand identification, ‘logo’ together with ‘business name’ serves an important navigational purpose – when clicked on, it redirects users to the homepage from any corner of the website, thus serving as a Macro-Theme for the entire site (see Djonov, 2007: 86), signaling that the all the pages are connected and regulated by a single institution represented though the logo and business name.

The logo of each university consists of two elements: the crest and the wordmark (also called logomark), appearing together on a web homepage in a landscape format. Since ‘logo’ legitimizes the university as an educational institution and embodies the personality

of the brand, it needs to be relevant and consistent over a period of years – the same applies to the trustworthiness of a brand (Burmann & Zeplin, 2005). Several cultural themes identified by Drori et al. (2017) are observed through deconstructing visual and aesthetic cues present in the crest and wordmark of each university. Visual cues help to identify abstractions (i.e., symbols each logo aims to communicate), and the aesthetic cues include graphic elements and textual cues that unify the visual elements into a coherent whole.

The crest of the University of Sydney and UNSW share similarities in visual cues of the crest, including abstractions around knowledge, erudition, and history. Macquarie University's crest symbolizes the first Australian lighthouse whereas UTS uses an abstract symbol that does not appear to be explained to the general public on the university website. The business names of the universities are of borderless forms in either sans serif (Macquarie, UTS, and UNSW) or serif type (University of Sydney), and appear in a modern graphical style in black font, arguably for legibility purposes across all university communications.

The visual cues of the University of Sydney logo (Figure 5.10) include a shield, an open book with four stars around it and no verbal text in it, and a lion represented in a narrative structure (action).

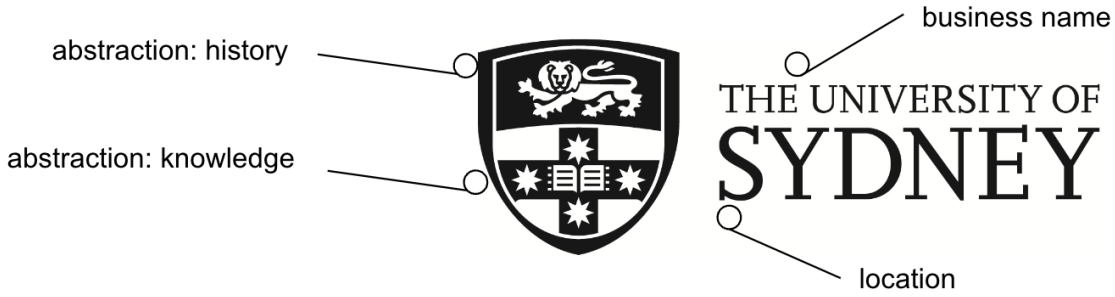


Figure 5.10 Identity icons of the University of Sydney logo

Similar to the crest of the University of Sydney, the visual cues of the UNSW logo (Figure 5.11) include a shield, an open book with the word 'Scientia' written in, a red cross and four stars, a lion that appears to be moving (narrative dynamic action), and a motto 'Corde manu et mente' written in a ribbon of a light blue hue), followed by the university's business name.

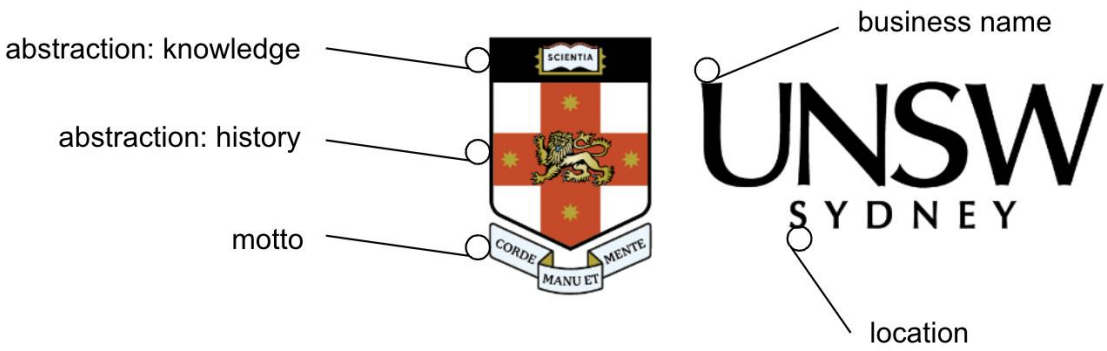


Figure 5.11 Identity icons of the UNSW Sydney logo

The shield in both logos is reminiscent of the historical narrative that inspires prestige and tradition and is used by some of the world's most prestigious universities, such as Harvard, The University of Hong Kong, The National University of Singapore, and others. As a symbol of learning, the open book signifies the purpose of the institution and is commonly associated with education and erudition (Drori et al., 2018). The golden lion represents courage and symbolizes England and Cambridge, and the cross with stars likely originates from the popular yet unofficial 19th century symbol for New South Wales (The University of Sydney, n.d., <*https://www.sydney.edu.au/about-us/our-story/our-motto-and-coat-of-arms.html*>), the state where the two universities are located.

As a vital marker of organizational identity, the University of Sydney and UNSW's logos embed historically significant symbolism through visual elements (both logos) and wordings in Latin (UNSW). Approached as an 'epochal category of visual identity narrative' (Oberg et al., 2018), this type of logo demonstrates the visual identity narrative associated with a cohort preceding the founding era of the university, thus indicating historicization. The use of the coat of arms with heraldic symbols traditionally conveys not only historic pride, but also "adherence to and validation of strict rules, the authenticity of right, and rigorously authoritative, if not royal, oversight" (Idris & Whitfield, 2014: 53). Given that UNSW is a relatively young university with no medieval lineage, the use of heraldry may be somewhat unanticipated. Such a choice appears to adhere to the founding characteristics of older world-class universities (like Cambridge, Harvard, Princeton as well as the University of Sydney) that all deploy coats of arms, thus conveying epistemological tradition, eliciting familiarity, and reinforcing positive associations with the brand.

The visual cues of the Macquarie University coat of arms (Figure 5.12) include a lighthouse, a single star in white color, and two diamond shapes in red and deep red – the primary brand colors serving as a background. The lighthouse represents the first

lighthouse built in Australia, becoming Australia's first marine light (Macquarie University, 2021a), as a metaphor for the university's ambitions to support students and staff.

Figure 5.12 Identity icons of the Macquarie University logo

The visual cues of the UTS logo (Figure 5.13) include an abstract symbol in black which only becomes interpretable for the university staff who have the opportunity to access the visual brand guidelines. These guidelines explain that the logo is the symbol that represents the university history and tradition and includes three parts: (1) the anchor from the City of Sydney coat of arms (the local council where the university campuses are located), representing discovery and exploration and reinforcing collaboration with the local government, (2) the double helix inspired by the DNA molecule, symbolizing innovative, technological and collaborative character, and (3) three waves representing Sydney's maritime location and "equality and strength in unity" (University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020: 8).

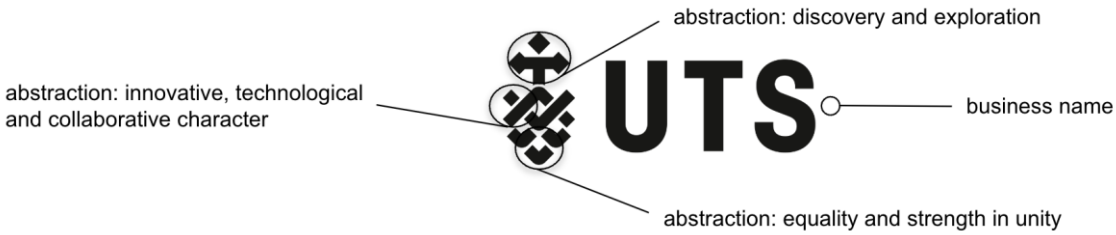


Figure 5.13 Identity icons of the UTS logo

Therefore, logos of each university embed abstract values through concrete material visual resources, such as symbols, pictograms, or mottos. Additional insights about meaning potentials in logos can be gained by addressing their color, typography, and shape (e.g., Johannessen et al., 2021) as well as style and texture (e.g., Aiello, 2017).

5.2.4 Motto

UNSW is the only university that incorporates 'motto' in the logo, integrating these two OVI elements in a single representation. In the 2021 brand refresh, UNSW updated its motto to "Scientia corde mente et manu" ("Knowledge by heart, mind, and hand") adding 'corde' ('heart') to the previous motto and capturing the aspiration to "serve higher purpose" and the commitment to "serving society through knowledge sharing and new discovery" (University of NSW, 2020a n.p). This update is reflective of the university's continuous social commitment – "to contribute positively to the community through research, education and practice" (<*https://www.unsw.edu.au/about-us/innovation-impact/social-impact*>). The motto update coincides with 113% increase in fees for the law and humanities students of Australian universities after Center Alliance – a centrist political party in Australia – showed supported Coalition's university funding changes in 2020, ensuring it will pass to the Senate (Karp, 2020).

The University of Sydney's motto "Sidere mens eadem mutato" has several translations from Latin, such as "The stars change, the mind remains the same", "The constellation is changed, the disposition is the same" or "The same learning under new stars" (<*https://www.sydney.edu.au/about-us/our-story/our-motto-and-coat-of-arms.html*>). It emphasizes the university's purpose and long history. Another strategy of brand recognition and preference, a tagline (i.e., a succinct phrase that visually encodes a brand) "Leadership for good starts here" is provided in the footer and appears across other university promotional material, such as advertisements on public transport across Sydney.

Macquarie's motto "And Gladly Teche" comes from Chaucer's The Canterbury Tales, (circa 1400) as outlined on the 'About us' page (<*https://www.mq.edu.au/about/about-the-university/mq-story/history*>). Similar to the University of Sydney, Macquarie's homepage has a tagline 'YOU to the power of us' in the footer, also found across different digital promotional material as well as in the form of printed posters on the university main walkway on campus in North Rhyde. The tagline signifies the 'empowerment' by the collective and the aspiration to "multiply [student] potential to go beyond the classroom theory and on to achieve truly remarkable things" (<*https://www.mq.edu.au/study/you-to-the-power-of-us*>). As a marketing tool, taglines are reported to increase awareness of the university (Dholakia & Acciardo, 2014; Joseph et al., 2012).

The UTS motto "Think. Change. Do." is not featured either on the website or in the brand guidelines. This succinct phrasing and imperative mood of the motto found across earlier

course guides (e.g., UTS information technology undergraduate courses guide 2013) and other promotional collateral (e.g., bus stop advertising) may signify the university's progressive character, emphasizing the value of action and erudition. This discussion could be elaborated in future research addressing organizational identity communication across a range of different media.

In addition to 'motto,' important elements of OVI communication include 'color' and 'typography,' as discussed in the subsequent sections. The discussion draws on a textographic approach (CHAPTER 3.5), and reports the findings from the visual style guides. It emphasizes that brand colors and typography are standardized elements communicating specific values prescribed by the official documentation and contributing to color rhyme (i.e., the textual cohesion of the page) and salience of certain design elements (e.g., headlines, navigational arrows). They also contribute to layout integration through diagrammatic means (e.g., boxes filled with brand color framing different layout structures).

5.2.5 Color

Each university has a brand color palette to reinforce the visual cohesion of the brand across all university communications. Alternation between primary brand colors for different design units creates harmony on the homepage that can be thought of in terms of 'color rhyme' (van Leeuwen, 2005a) or design balance and unity (Landa, 2013). As a 'colligation device' (Hasan, 1985), 'color' is a cohesion tool on the rank of the page (i.e., between different elements of the page), across the whole website (i.e., between different web pages), and at the level of abstraction of the brand (i.e., across different communications used by the university, from email signatures to digital handbooks). Table 5.3 summarizes primary brand color palettes that vary from three to seven colors. Brand guidelines define exact color values for a set of standardized color systems, such as the Pantone® (i.e., the international standard for producing colors), CMYK (Cyan, Magenta, Yellow, Key/Black) for print, RGB (Red, Green, Blue) for screen and hexadecimal values (HEX) for websites.

Table 5.3 Primary brand color palette for four university brands

Macquarie	**Sydney**	**UTS**	**UNSW**
Red Deep Red Bright Red Magenta Purple Charcoal Sand	Masterbrand Red (Ochre) Masterbrand Charcoal Masterbrand Sand	UTS Blue UTS Red Dark Grey Mid Grey Light Grey Black White	Yellow Black White

Ultimately, 'color' adds to the recognizability of a brand, even on a perceptual level, since color is usually recognized prior to processing any other features of a given artifact (Wheeler, 2017), enhancing the positive associations with the brand personality (Aaker et al., 2004). As a metafunctionally-diversified resource, 'color' then not only 'means' (ideationally) but is also used in certain 'color acts' (Kress & van Leeuwen, 2002), as language expresses speech acts, initiating people act in a certain way – to affiliate with the institution a specific color represents.

5.2.6 Typography

Typefaces also represent a closed system of several choices with the specified purposes as outlined in visual style guidelines. As an OVI element, 'typography' adds visual meaning to the recognizability of organizational identity. Types are shapes that can be rectilinear, curvilinear, geometric, or organic (Landa, 2013: 22), and hold the potential for eliciting specific associations in the audience's mind. Combinations of fonts with different 'typographic texture' contribute to 'visual textuality' (van Leeuwen, 2020) and balance of the overall composition of the page. Careful consideration of the compatibility of the embedded material texture of letters, or what van Leeuwen (2006) discusses as 'distinctive features' of the typography semiotics, creates contrast and visual interest on the page, segments it into meaningful clusters and adds to the multimodal organization of the brand. To enhance typographic distinctiveness, the universities use a set of licensed typefaces alongside more typical fonts such as Arial (Table 5.4).

Table 5.4 Brand fonts of four universities

Macquarie	Sydney	UTS	UNSW
Licensed by external bodies: National – to convey clarity and warmth and projects confidence and approachability. Newzald – to convey elegance and allow optimum word count without compromising legibility. **Internal use:** Arial (headings) Georgia (body copy)	**Masterbrand type:** Aperçu Pro (primary) – to communicate the university as a contemporary institution Aperçu Pro Mono (primary) – to illustrate the process-driven design Antwerp (secondary) – used to reference the heritage of the university **Basic:** Twentieth Century MT (PowePoint) Arial (business documents and stationery)	**Licensed by UTS:** NB International (headline typeface) and NB Akademie (body copy typeface) are licensed by UTS **System typeface** (when the above are not supported) by the system: Arial Regular *Arial Italic* **Arial Bold Regular** ***Arial Bold Italic***	**Licensed by UNSW:** Clancy (primary headlines and subheadings) named after former Chancellor Sir John Clancy **Basic:** Roboto (body copy) Roboto Mono (highlights) Arial (headline and body copy text to avoid compatibility issues)

A conflation of basic functionality (such as legibility and compatibility considerations) and identity values is observed across the use of typography across the university websites and other communications. Typefaces are therefore an organizational identity tool, adding to the visual differentiation of the brand through a set of carefully selected masterbrand typefaces complemented with more common fonts for readability purposes. In this sense, as a visual resource, the status of typography combines a functional and aesthetic purpose to frame layout structures and design elements and draw attention to certain design units, simultaneously fulfilling the purpose of the visual organizational identity communication.

5.2.7 Graphic shapes

‘Graphic shapes’ or ‘devices’ are a visual identity element on the UNSW web homepage only, with the other three making use of rectangular shapes only. As semiotic inventories, graphic shapes either unify or disconnect elements of the visual composition. Seven standardized graphic shapes introduced in the UNSW visual style guide (Figure 5.14) represent angles from physical spaces across the university campus to celebrate

“different viewpoints, the unique and the asymmetrical” (University of NSW, *Visual Style Guide*, on staff intranet 2021: n.p.).

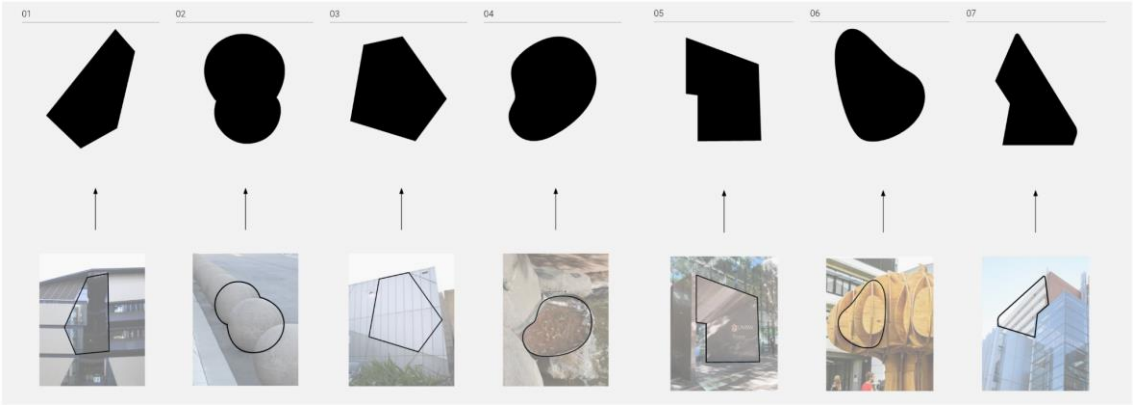


Figure 5.14 UNSW brand graphic shapes

The shapes are filled with either flat color (i.e., an unmodulated solid color) or pattern (i.e., a line raster or concentric line). As the most recent addition to the web homepage, ‘graphic shapes’ appear as figure/ground in the viewport – the visible part of the first screen of the page, or the ‘above the fold’ area – partly serving as a framing device uniting some elements into layout structures or demarcating them from other layout units on the page. Whereas all viewport images in carousels as well as the ‘hero’ in 2020 are either square or rectangular, a ‘hero’ on the 2022 UNSW homepage is presented in the form of a graphic shape that appears against another graphic shape, usually flat and filled with primary UNSW brand colors – UNSW yellow or white (Figure 5.15).

Figure 5.15 Two graphic shapes reinforcing the visual identity on the UNSW homepage in 2022 (https://web.archive.org/web/20220901000000*/unsw.edu.au)

At the same time, graphic shapes contribute to the aesthetics of a given artifact and express values (cf. van Leeuwen, 2015b). For example, circles and shapes are considered more natural and organic whereas squares and rectangles are often associated with man-made structures, changes to the natural environment (Gibson, 2015: 63) that have come to represent stability. Similar to color and typography, graphic shapes, geometric or organic, draw on 'provenance' (Kress & van Leeuwen, 2001: 23) – the shapes are imported from the physical and translated into the digital, thereby bringing specific sets of values associated with the architecture of on-campus buildings. Notably, 'graphic shapes' are progressively asserting themselves as a visual identity element that now appears across other university communications, particularly university's newsletter 'Inside UNSW.' Therefore, 'business name', 'logo', 'motto', 'color', 'typography', and 'graphic shapes' are visual semiotic resources characterized by generic features that together with meanings imbedded in them contribute to a distinct OVI of each page, communicating institutional and broader social values of each university.

In addition to the core OVI elements, another stratum of organizational identity communication is carried through the communicative content of `page-flow`. It is examined in detail in the subsequent sections across two layers informed by the GeM-annotated corpus: (1) semiotic material (i.e., minimal perceptible design units on the page) and (2) multimodal ensembles (i.e., key layout structures), particularly in the viewport as the most strategic space of each homepage.

5.3 Communicative content

5.3.1 Semiotic material

Communicative content of the page (or 'the site of the communicative artifact' in Figure 3.1) is first addressed through the examination of the base elements on the page before their structural configurations are discussed in SECTION 5.3.2. The analysis presented in this section draws on the base layer annotations of the GeM model as specified in SECTION 4.3.1.

Overall, 580 base minimal perceptible design elements (i.e., base units) were identified across the annotated corpus (Table 5.5). It should be noted that the highest number of units on the UNSW homepage may be initially attributed to the page length/spread. As discussed in CHAPTER 4.2, the UNSW Sydney homepage was rebranded in 2020 to extend to approximately eight screens. This means that envisaged audiences are expected to scroll the page at least seven times to reach the content at the end of the footer. This supposedly provides more space for the integration of material resources. However, such an observation warrants caution as it was not generalizable when compared to the rest of the data set. For example, the UTS homepage features the lowest number of material resources (i.e., base units) although it is rather similar in length (3.2 screens) when compared to the University of Sydney (3.5 screens) and Macquarie University (3.5 screens).

Table 5.5 Base units in the GeM-annotated corpus

Annotated corpus	06_mq	10_sydney	11_uts	13_unsw	Total
Semiotic resources (units)	173	131	81	195	580
Area (screens)	3.5	3.5	3.2	7.5	17.7

Thus, although longer pages provide more space to accommodate different resources, it is not necessarily the page length that determines what/how many resources get incorporated. For example, despite being half in length in comparison to the UNSW web homepage, on average, the Macquarie University (μ^{20}=49.4) includes more base units per screen than any other page. Each screen of the University of Sydney (μ=37.4) is nearly as rich in semiotic resources, whereas UTS (the most compact page) and UNSW (the longest page) share nearly the same average of semiotic resources per screen (μ=25.3 and μ=26 respectively) which makes them the least informationally dense pages

[20] 'μ' is a symbol for average values.

in the data set in terms of base unit distribution per screen. For larger populations, understanding of the structural patterns of this kind can be strengthened through a correlation analysis and t-test for independent samples.

Table 5.6 summarizes distribution of all base units across each page in the annotated corpus.

Table 5.6 Distribution of the base units in the GeM-annotated corpus by university (raw count)

		06_mq	10_sydney	11_uts	13_unsw	**SUM**
T1	sentence	5	12	8	27	52
T2	deictic expression	2	3	1	6	12
T3	**horizontal** menu item	15	13	4	14	46
T4	**vertical** menu item	40	16	17	17	90
T5	headline	4	3	2	5	14
T6	sentence fragment	17	11	2	9	39
T7	**motto**	1	1	0	0	2
T8	title	15	9	14	18	56
T9	**date**	0	3	1	7	11
T10	**address**	2	0	0	1	3
T11	**other business details**	2	3	1	3	9
T12	**phone number**	2	0	0	1	3
T13	captions of images **and videos**	0	0	1	7	8
T14	**name**	3	2	1	3	9
P1	image	10	5	5	11	31
P2	**video**	0	1	1	0	2
P3	**logo**	2	6	1	7	16
D1	icon > right arrow	16	7	1	10	34
D1	icon > magnifying glass	2	2	1	1	6
D1	icon > other	4	0	0	0	4
D1	icon > envelope	0	0	0	2	2
	icon > document	0	0	0	2	2
D1	icon > envelope	0	0	0	3	3
D1	icon > up arrow	0	0	0	1	1
D1	icon > left arrow	1	0	1	0	2
D1	icon > cross	0	0	0	1	1
D1	icon > speech bubble	0	0	0	1	1
D2	**separator**	6	9	0	7	22
D3	**box**	11	10	14	21	56
D4	**line**	7	11	0	1	19
D5	**social media icon**	5	4	5	12	26
	SUM	173	131	81	195	580

Textual-typographic resources (354 units) – the type that sees the most versatility in terms of differentiation – are the most frequent minimal elements on each page. T4 `<vertical menu item>` is the most representative unit amongst textual resources (90 instances or 15.5%) across the four pages and occurs 40 times on the Macquarie

homepage, sixteen times on the University of Sydney homepage, and seventeen times on UTS and UNSW homepages (Figure 5.16). Therefore, textual-typographic base units are one of the key expressive resources on each page in the annotated corpus.

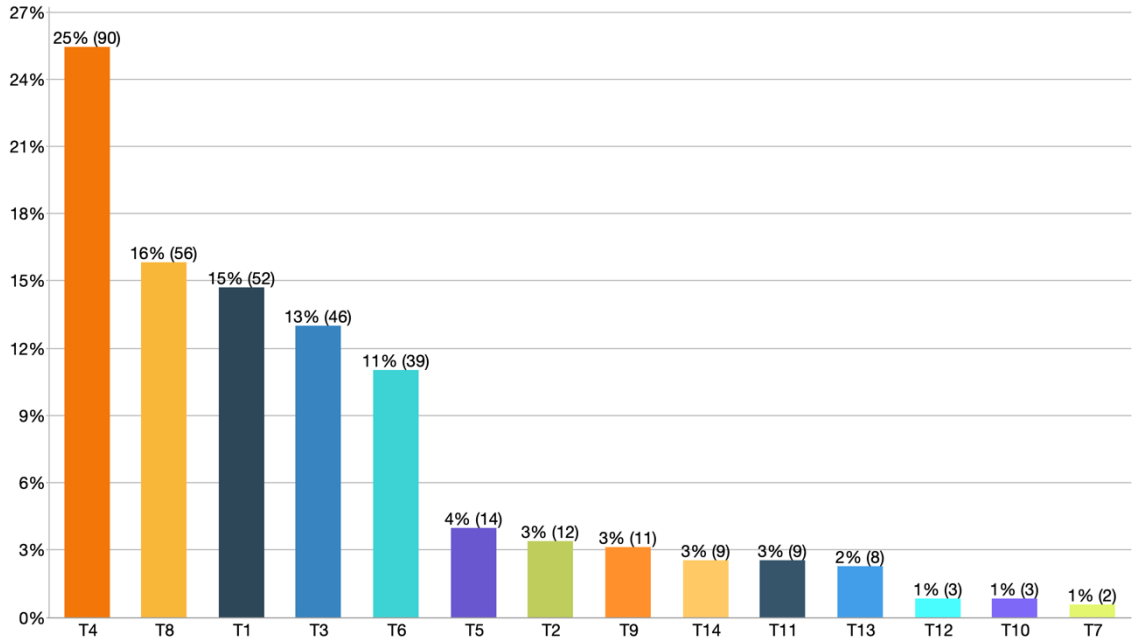


Figure 5.16 Distribution of textual-typographic resources in data set #1

There are fewer pictorial elements (50 units) (i.e., images and videos), with P1 <image> being the most frequent (31 instances or 63% of pictorial resources) (Figure 5.17).

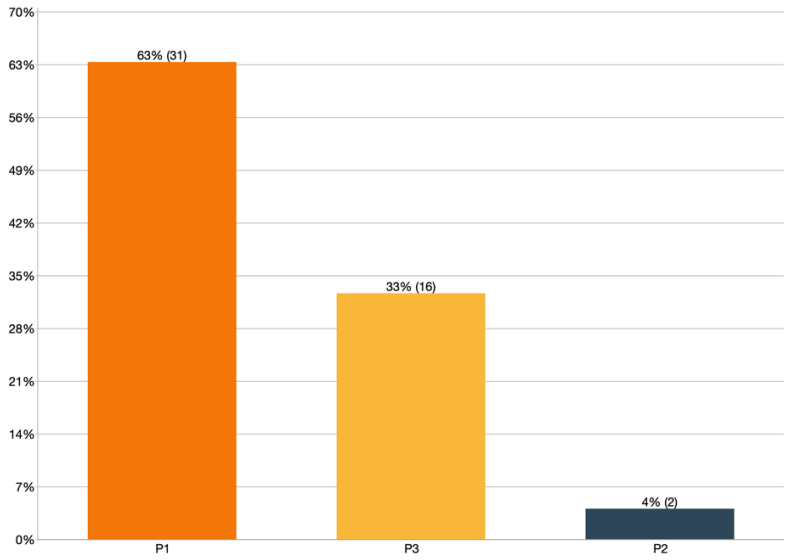


Figure 5.17 Distribution of pictorial resources in data set #1

Among diagrammatic resources (D1-D5; total: 177), D3 <box> featured in 56 instances (32% of all diagrammatic resources) and navigational arrow <□> in 34 instances (19%).

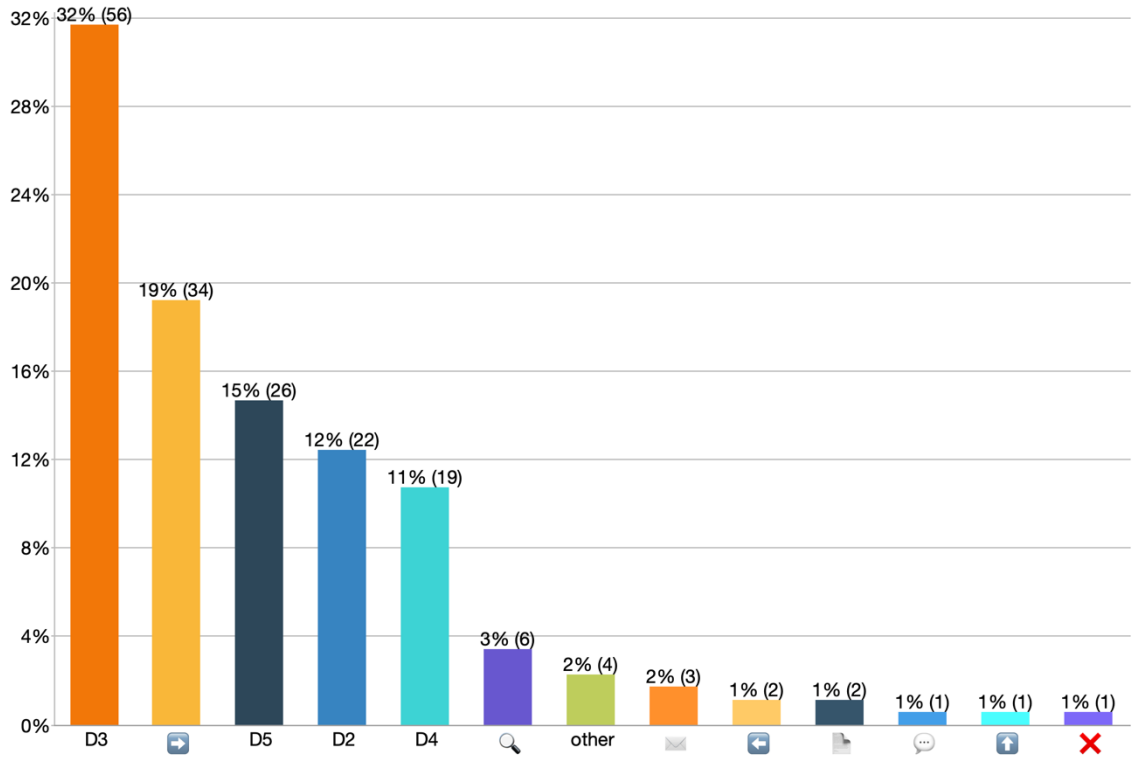


Figure 5.18 Distribution of diagrammatic resources in data set #1

APPENDIX C provides the key to reading the code system (also refer to CHAPTER 4.3.1), and Figure 5.19 visualizes the frequencies of all base units across four analyzed web homepages.

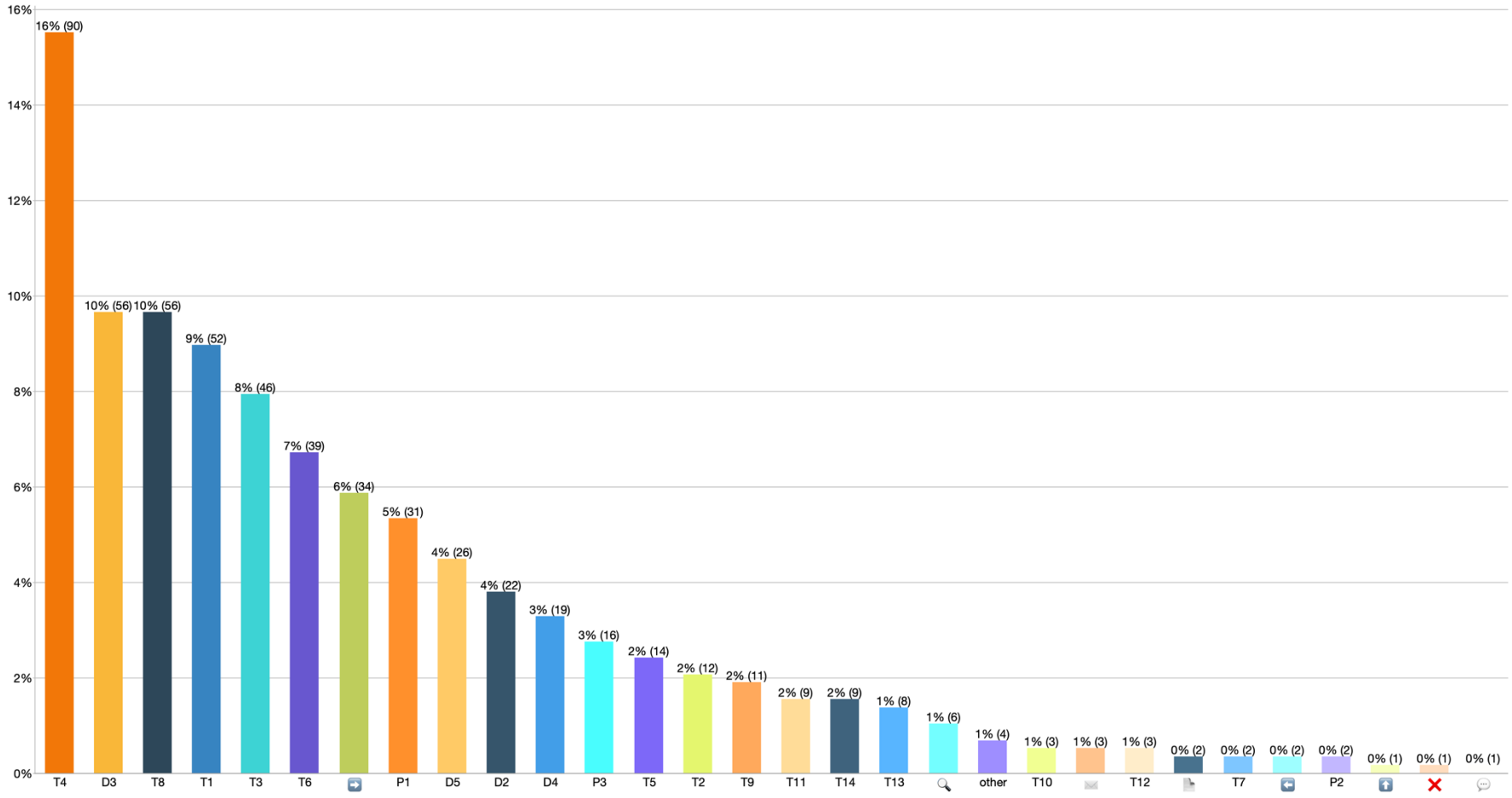


Figure 5.19 Frequencies of all base units in data set #1

From the base unit distribution analysis, each homepage draws on a similar set of semiotic resources most of which are text-typographic and less so, diagrammatic and pictorial. Despite a lower frequency of pictorial and diagrammatic units, in terms of coverage (i.e., how much space units take up in relation the whole page area), these two kinds of semiotic resources occupy considerably more space across each page in comparison with the textual-typographic resources. A useful concept from information studies in relation to the distribution of semiotic resources is information density of the page, referring to, as Gabillon et al. (2013) explain, the percentage of space used in each individual group of communicative content (i.e., local density) in relation to the percentage of display used to present all content (i.e., global density). Despite the largest number of textual-typographic units (N=354) in the annotated corpus, they occupy only 7% of the coded area, while pictorial units (N=50) take up 43%. Diagrammatic resources are the most expansive in terms of area coverage, populating 50% of the whole coded area. In addition, diagrammatic and pictorial elements also play a significant role in organizing the content of the page, as further discussed in SECTION 5.3.2 and CHAPTER 6.1.1, pointing to the increasing visuality in contemporary design practices (see, e.g., an edited volume by Stöckl et al. 2020).

While useful for an understanding of the distribution of different semiotic resources and their salience on the page, the discussion of the semiotic material through the first analytical layer of the GeM model only attended to the communicative content on the level of the minimal design units. It means that it addressed the material deployed on the web homepages, pointing to the need to clarify how different materialities – textual-typographic, pictorial, and diagrammatic – integrate in larger layout structures and what meaning potentials these structures carry, particularly in the viewports of homepages.

5.3.2 Key multimodal configurations

Now that the communicative content is clarified, the next layer of organizational identity design addresses the structure of web homepages. Analysis of the co-occurrence of minimal design elements reveals 57 shared occurrences of different base units across the data set. ‘Co-occurrence’ refers to configurations of two base units occupying the same space in the annotated corpus. Out of these, Table 5.7 singles out the most frequent cases of shared configurations. The ‘Frequency’ column shows the number of times a particular combination (indicated in the column ‘Configurations’) occurs across four analyzed pages. For example, the second row in the table shows that T8 (title) co-occurred with the most frequent resource for multimodal combinations D3 (box, marked in bold), in 18 instances.

Table 5.7 Key multimodal configurations on web homepages in the data set

Configurations	Base units	Frequency
T8 + **D3**	title + box	18
T4 + **D3**	vertical menu item + box	17
T1 + **D3**	sentence + box	16
D3 + D5	box + social media icon	15
T3 + **D3**	horizontal menu icon + box	14
D1 + **D3**	icon + box	13
D3 + D4	box + line	10
P3 + **D3**	logo + box	9
P1 + **D3**	image + box	7
T13 + P1	captions of images and videos + image	7
T2 + **D3**	deictic expression + box	6
P1 + D1	image + icon	5

Key. Diagrammatic resources are marked in green, pictorial resources are marked in red, and textual resources in blue.

From Table 5.7, two key groups of semiotic resources are found to be the most significant for organization of layout structures: (1) *diagrammatic complexes* – i.e., configurations with D3 (box), and D1 (icon), D2 (separator) D4 (line), and D5 (social media icon) in Table 5.8) – and (2) *image-complexes* – i.e., configurations with P1 (image) and P3 (logo). These are analyzed in the subsequent sections, by zooming in to key structures of the most strategic space of each web homepage that also showed a higher degree of standardization (see SECTION 5.1) – its viewport.

5.3.2.1 Viewport layout structures

The viewports of the web homepages in the data set are predominantly visual and rely on diagrammatic complexes and images for the integration of layout structures. The structures shared across the data set include: 'logo' and 'business name', a single- or double-layer horizontal menu plates, featured event, image(s), and navigational arrows (for carousel designs on the Macquarie University and UTS homepages only). As explained in section 4.4.2.1, the layout structures are identified based on spatial proximity (Gestalt) and the system of FRAMING and SALIENCE. Because of spatial proximity, size, and landscape format alignment, 'logo' and 'business name' are considered to represent a single haptically accessible (i.e., interactive) layout unit that

redirects envisaged audiences to the homepage when it is activated on other pages of the website.

Six layout structures identified in the viewport of the Macquarie University homepage are: ‘logo’ and ‘business name’, horizontal menu 1 and 2, image-complex, course search, and vertical menu (Figure 5.20).

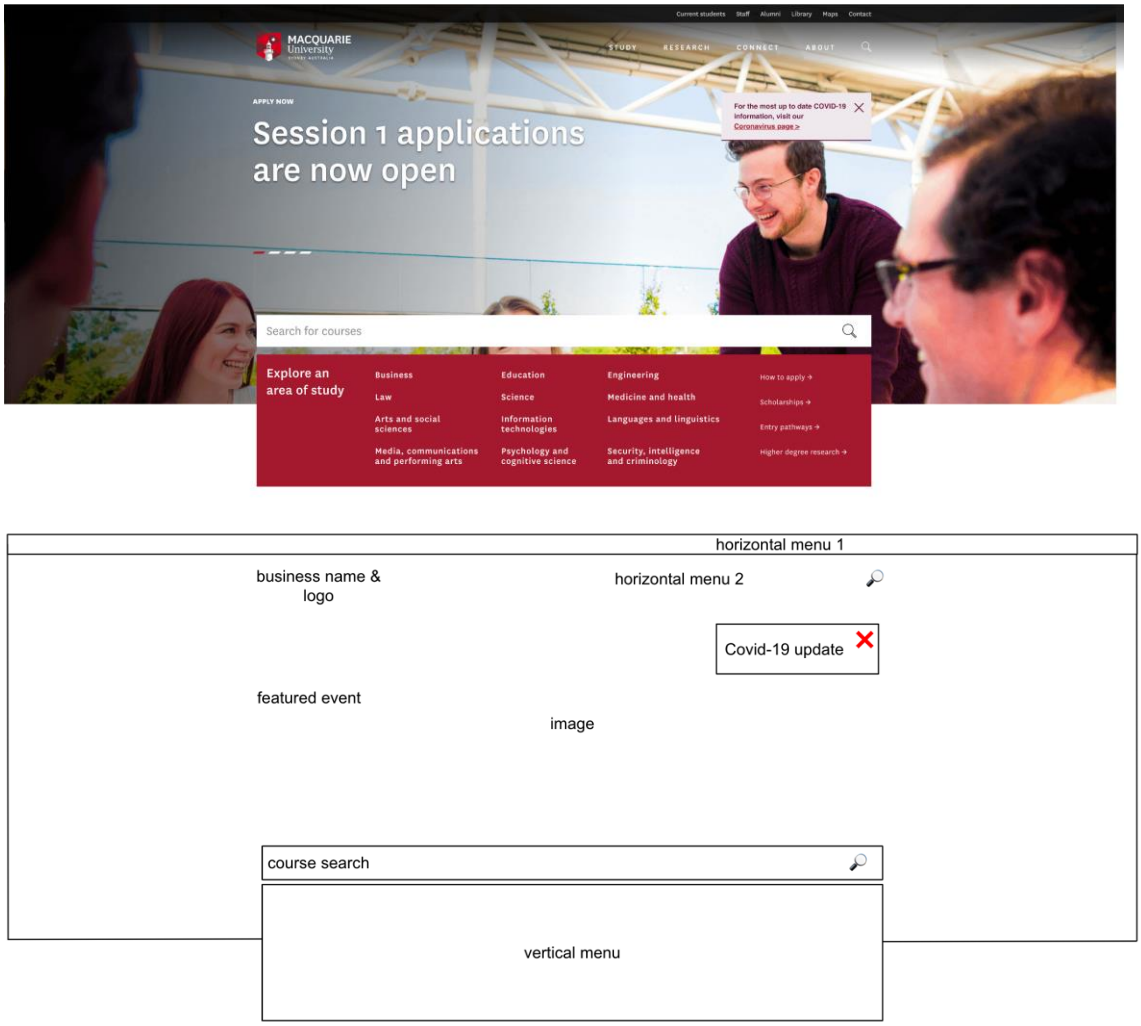


Figure 5.20 Area model of the viewport of the Macquarie University homepage

The ‘logo’ and ‘business name’, horizontal menu 2, and featured event are overlaid with the image signaling maximum connection of the layout structure `image-complex`. Horizontal menu 1 is framed in a shape filled with brand color, whereas ‘course search’, and vertical menu ‘explore an area of study’ are framed through D3 <box>, thus forming `diagrammatic complexes` 1 (‘course search’) and 2 (‘vertical menu’) (Figure 5.22). The inclusion of two diagrammatic complexes provides envisaged audiences with more starting points for navigational trajectories, targeting prospective students through a set of sixteen options in a vertical menu and layout structure ‘course search’ (different from diagrammatic icon <magnifying glass> (‘□’) – i.e., search for anything on the website).

‘Covid-19 update’ is provided in a rectangular shape overlaid with the image and has a ‘close’ option represented by an icon <red cross> (‘✕). Superimposed on the viewport image, this layout structure is organized in a `diagrammatic complex sub-1`. The diagrammatic and pictorial resources are shaded in light orange, and white leaves indicate the textual-typographic layout units in the viewport. Figure 5.21 has been drawn manually, although Hiippala (2016) offers an auto-GeM tool that can be applied to generate visualizations of different layout structures for larger corpora.

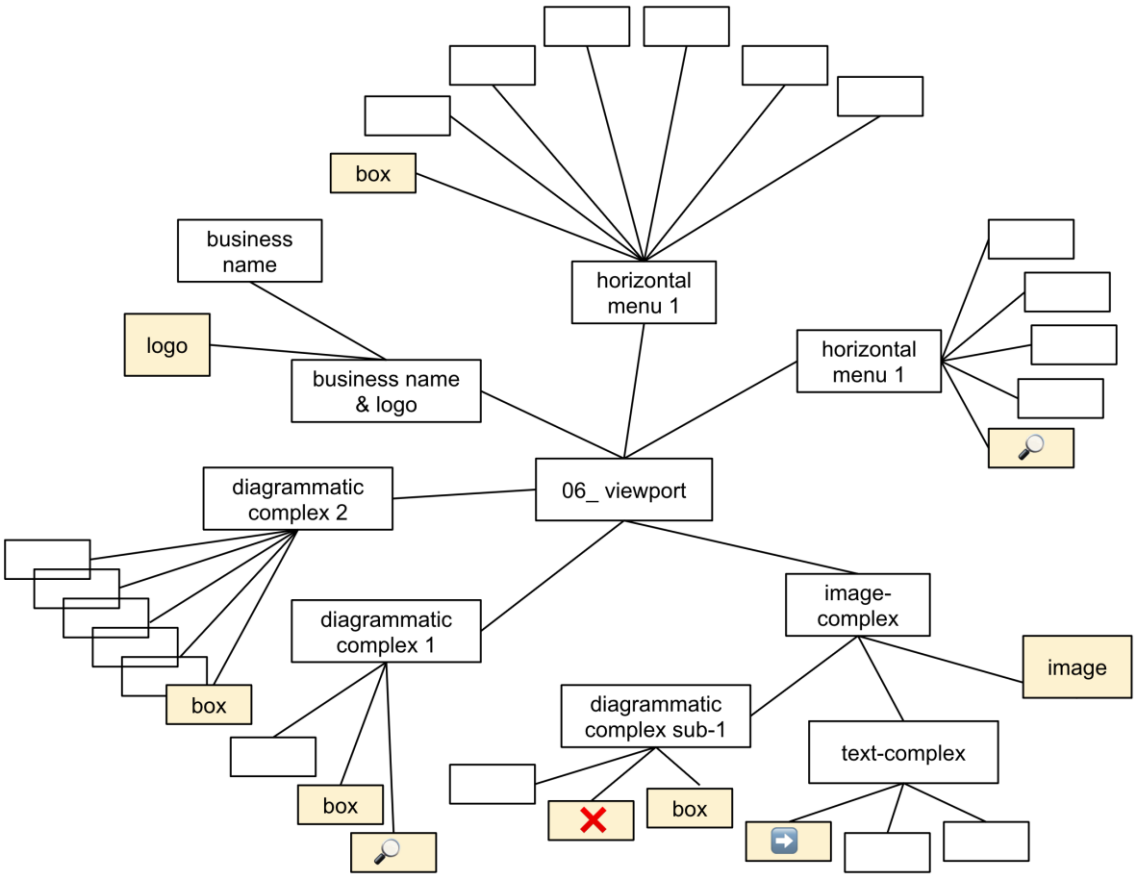


Figure 5.21 Layout structures in the viewport on the Macquarie University homepage

Similarly, the viewport of the University of Sydney opens the page with ‘logo’ and ‘business name’, followed by a single-level horizontal menu with six options (Figure 5.22). The viewport structures are organized around an `image-complex` and two `diagrammatic complexes`. The diagrammatic resources play an integrational role in framing ‘Covid-19 update’ (`diagrammatic complex 1`) and ‘course search’ (`diagrammatic complex 2`), and the `image-complex` organizes a featured event embedded in a semi-transparent rectangular shape superimposed on the bird view shot of the university campus (Figure 5.22).

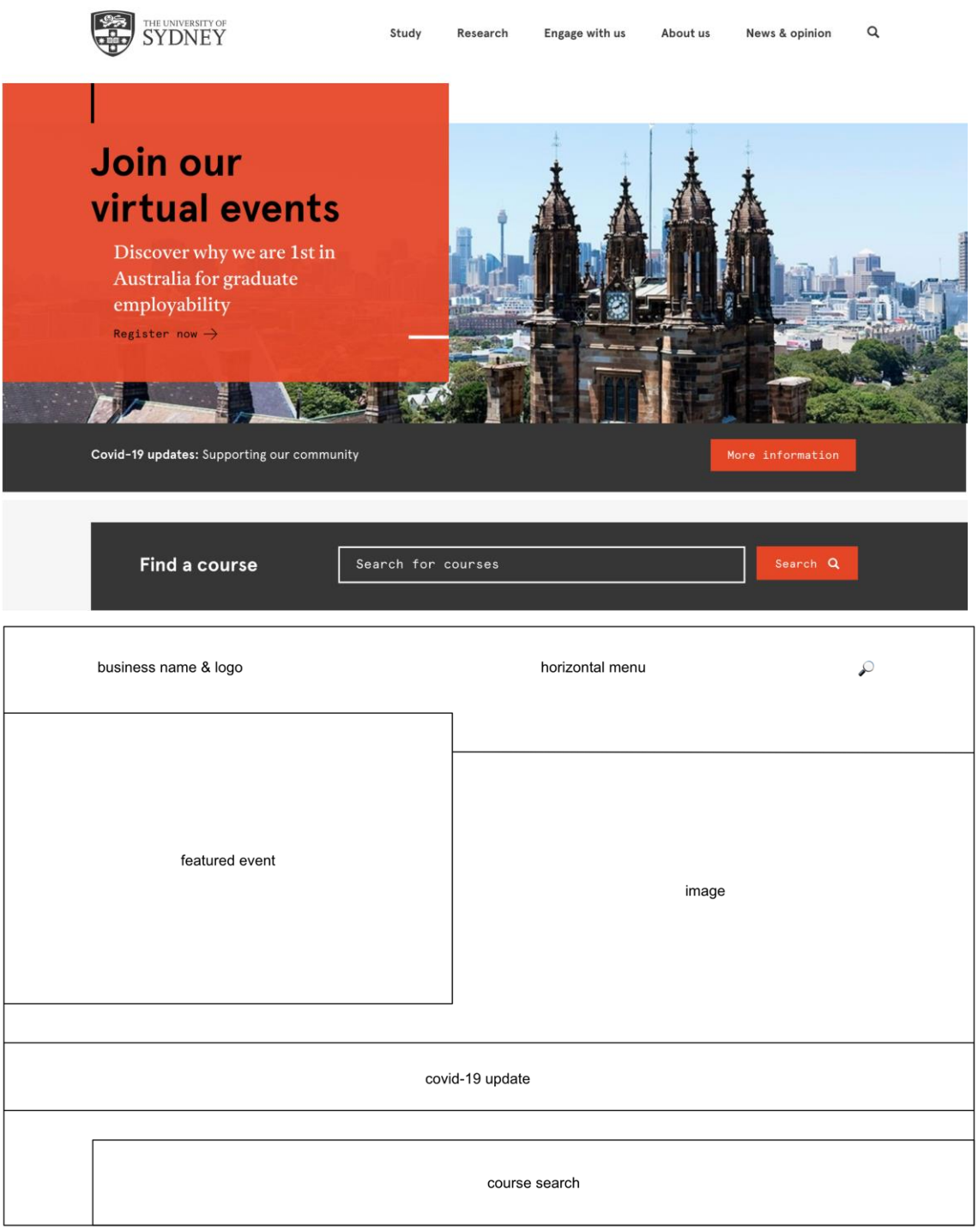


Figure 5.22 Area model of the viewport of the University of Sydney homepage

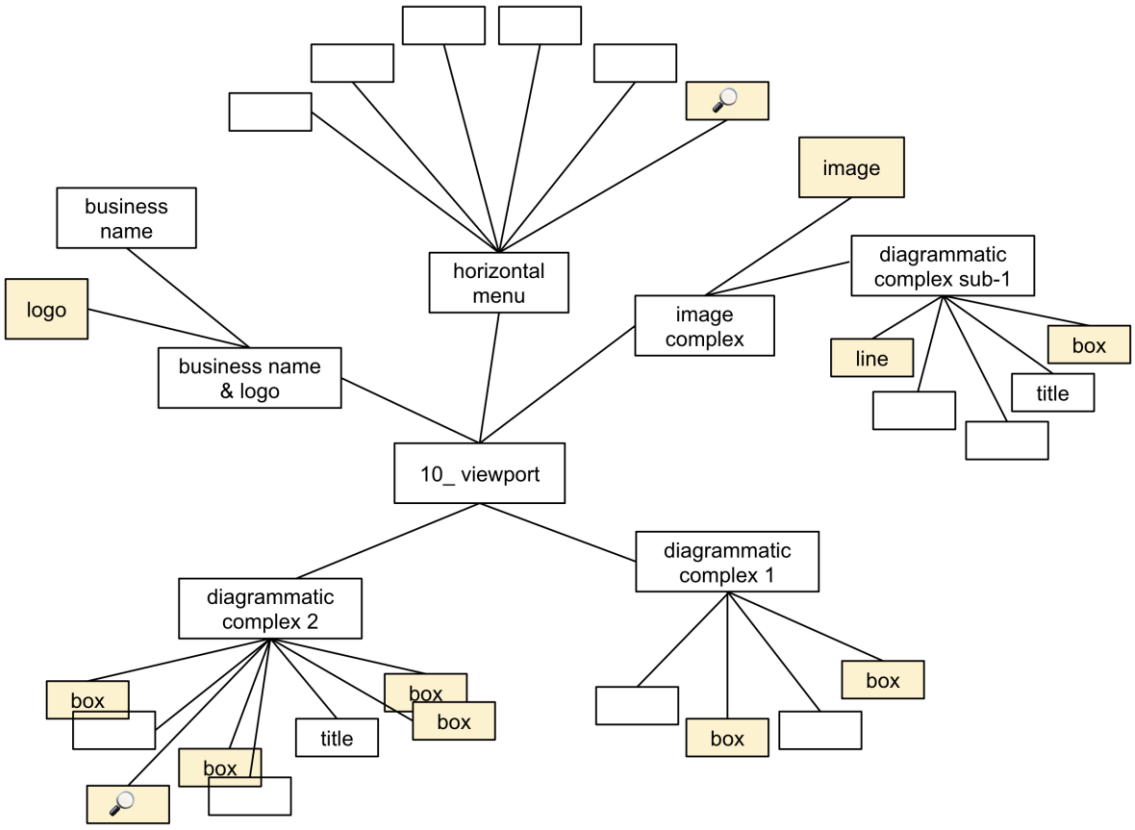


Figure 5.23 The layout structure of the viewport of the University of Sydney homepage

The viewport of the UTS web homepage draws on fewer layout structures, but their logical organization is similar to Macquarie University's viewport. The image integrates a featured event and navigational icons, both in diagrammatic rectangular shapes (Figure 5.24). The 'logo' and 'business name' appear above the horizontal menu on the same level as an embedded search function realized by a navigational magnifying glass.

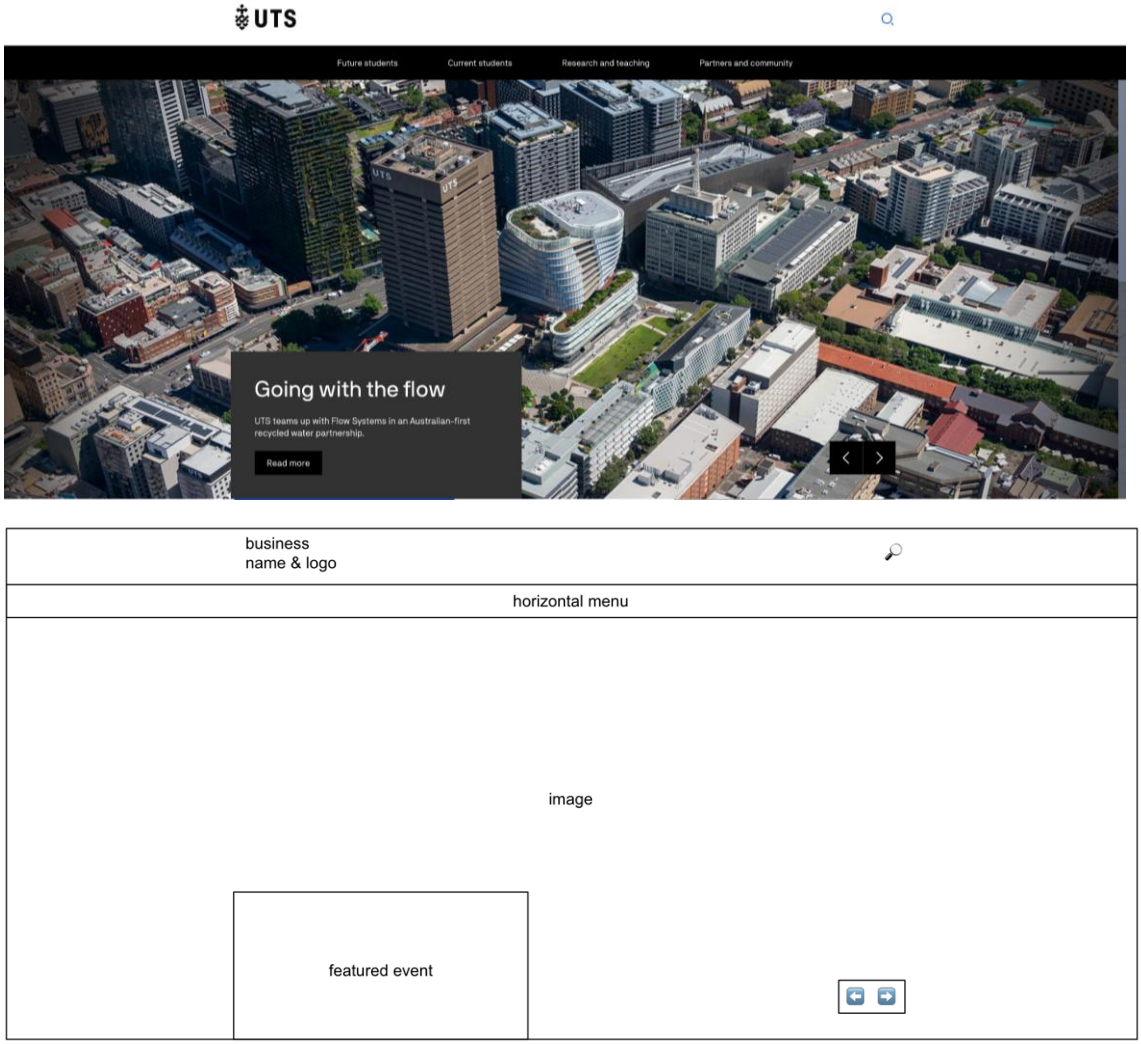


Figure 5.24 Area model of the viewport of the UTS homepage

The viewport structure encompasses four layout structures: business name and logo, stand-alone <magnifying glass> (‘□’), horizontal menu comprised of a limited set of four menu items (‘Future students,’ ‘Current students,’ ‘Research and teaching,’ and ‘Partners and community’) and the `image complex` that includes a carousel image, `diagrammatic complex 1` with a box in the black color with information about the featured event, and diagrammatic complex 2 which affords in-carousel navigation through two diagrammatic arrows (‘□’ and ‘↩’) (Figure 5.25).

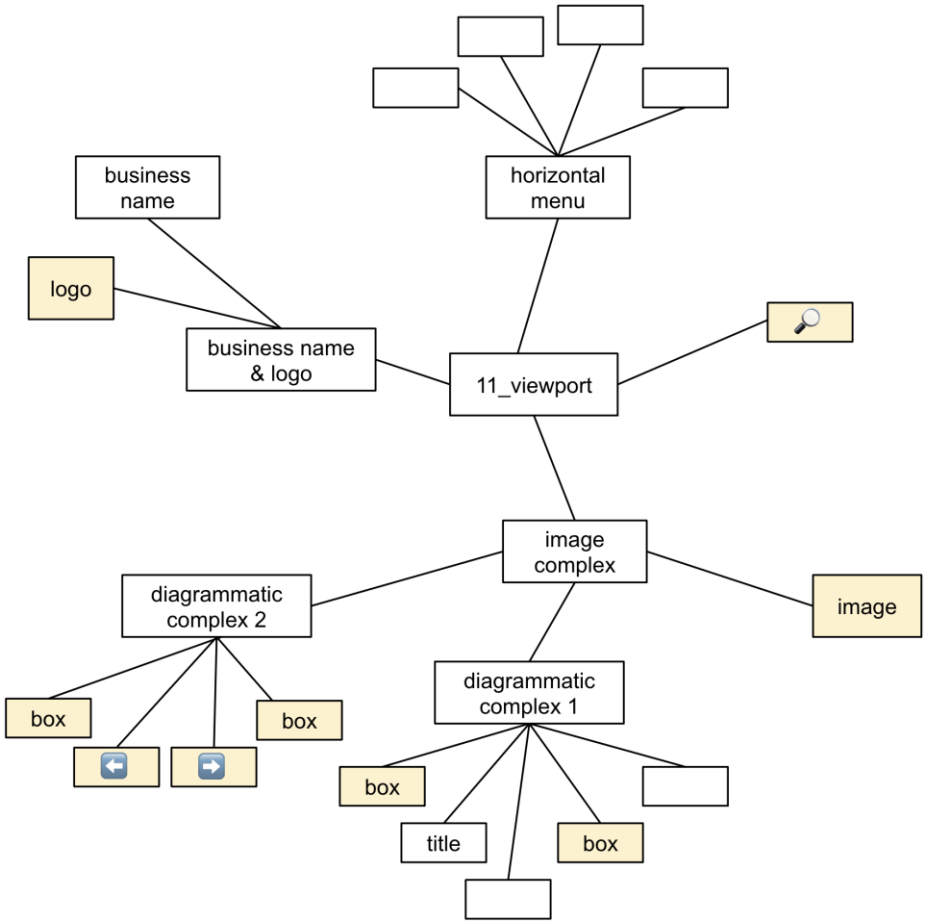


Figure 5.25 The layout structure of the viewport of the UTS web homepage

The viewport of the UNSW homepage features two sets of horizontal menu items – one integrated into a hero-yellow background color (‘News & Events,’ ‘myUNSW,’ Alumni & Giving,’ and ‘envelope emoji’ Contact us’) and one embedded into a white horizontal box with navigational magnifying glass (‘□’) demarcated in the black box, superordinating a set of four menu items (‘Study,’ ‘Research,’ Engage with us,’ and ‘About UNSW’). The logo and business name are placed in the top left corner, in the same box in white that frames horizontal menu 2. The `image-complex` is composed of a hero image, verbal text detailing the featured event, and diagrammatic box that frames navigation to a corresponding page with more details on the event (Figure 5.26).

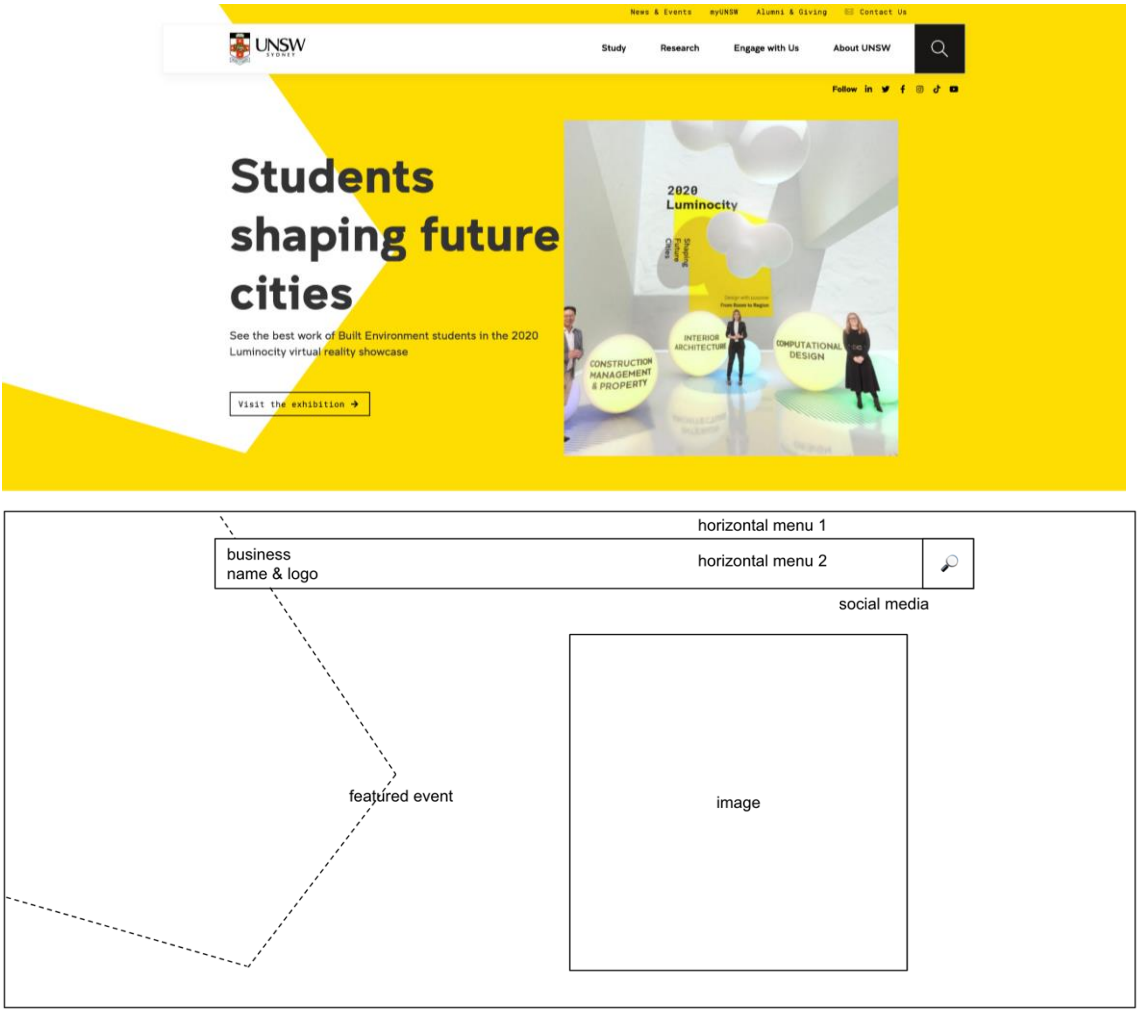


Figure 5.26 Area model of the viewport of the UNSW homepage

Key: the graphic shape (dotted line) and brand color as the 'backdrop' for organizational logic

Partially due to the design choice of graphic shape integration, the viewport of the UNSW web homepage features limited diagrammatic complexes, placing emphasis on the brand elements more than the rest of the dataset. It foregrounds the UNSW yellow color and graphic shape that simultaneously serve as the means of integration for the featured study on the page, and image-complex is realized by spatial proximity only (Figure 5.27).

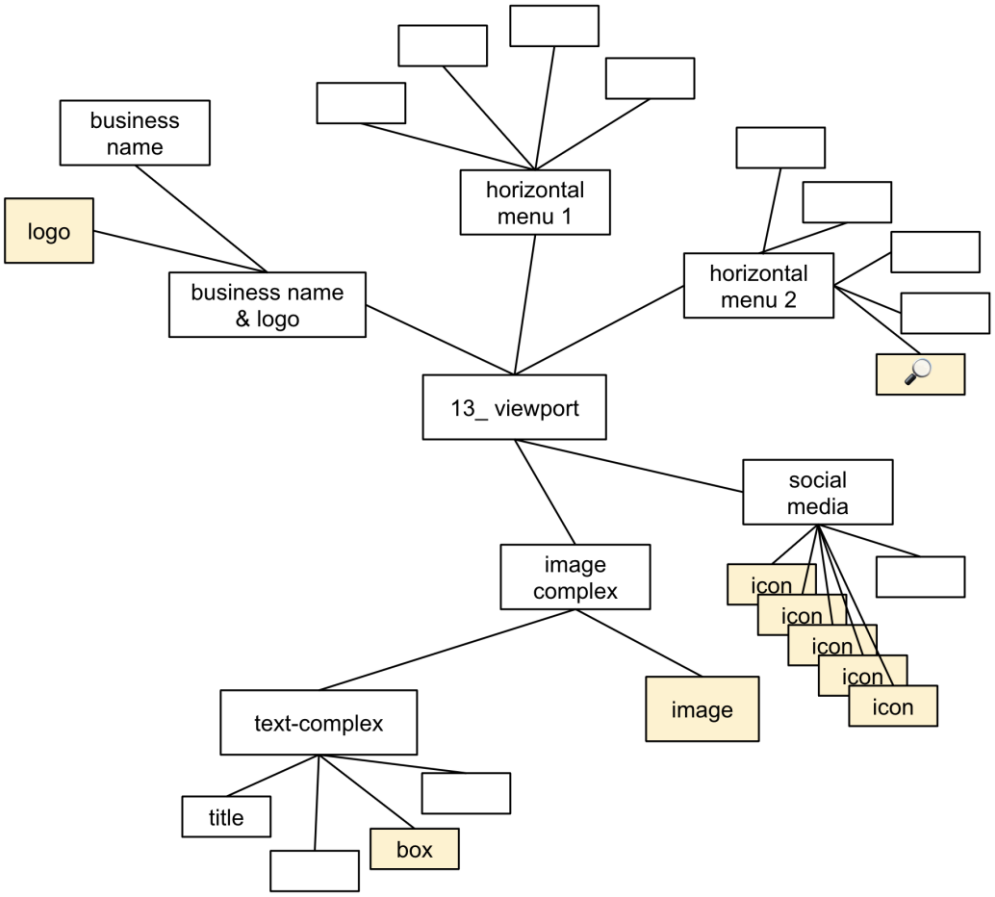


Figure 5.27 The layout structure of the viewport of the UNSW homepage

5.3.2.2 Diagrammatic complexes

As the most frequent resources for multimodal combinations, rectangular shapes (D3 <box>) are the key diagrammatic resources that integrate layout structures. These closed forms or paths are delineated figures filled by a solid color. On the rank of the layout structure, they integrate elements into meaningful chunks of information (i.e., multimodal ensembles), combining different material resources into syntagms, and on the rank of the page, they frame layout structures and demarcate them from other multimodal ensembles on the page. Although their interpretation does not require the audience to apply discourse semantics (cf. Hiippala & Bateman, 2022), this thesis refers to these configurations as ‘diagrammatic complexes’ to highlight the diagrammatic (and visual) nature of their material structure. Unlike icons, D3 (box) as most frequent resource that integrates different layout structures across the annotated corpus is not explicitly addressed as an object of analysis in their own right in web and graphic design studies, and are only passingly discussed in terms of the page aesthetics through the principles of balance, unity, or other laws of perceptual organization (see, e.g., Landa, 2013).

In this data set, boxes are found to perform an important semiotic work of the layout integration. As a framing device, they are among the most significant design element that integrate layout units into layout structures. The structural properties of this diagrammatic resources are similar across pages – they are rectangular shapes with no border, filled with solid color. Table 5.8 shows nine most frequent co-occurrences of different base units with D3 (box). For example, from the first row, T1 <sentence> occupied the space of D3 box in 21 instances.

Table 5.8 The most frequent expressive resources that co-occur with D3 <box> (first column), base units (middle column), and frequencies across the data set (right column)

T1	sentence	21
T8	title	18
T4	**vertical** menu item	17
P1	image	17
D5	**social media icon**	15
T3	**horizontal** menu item	14
D4	**line**	14
D1	icon > right arrow	12
P3	**logo**	10

D3 (box) framed different expressive resources the most frequently on the UNSW homepage (in twenty-one instances), and nearly equally in the rest of the annotated corpus – in fourteen instances on the UTS homepage, eleven on the Macquarie homepage, and ten on the University of Sydney homepage. These diagrammatic resources are rectangular shapes filled with the primary or secondary brand color, and as one of the key compositional resources, they connect multimodal ensembles and support interaction with other, usually textual-typographic, expressive resources mobilized in them. In their essence, boxes are not quite representative of what Hiippala and Bateman (2020) tentatively label 'diagrammatic mode' because they only support integration of the layout structures as a FRAMING resource, and on their own, are unlikely to yield different interpretations in different contexts of use. Nevertheless, these elements play a crucial role in organizing elements of visual composition on the page, serving as a colligation device for several multimodal configurations, as discussed below.

A large portion of the configuration 'T4 <vertical menu item>+ D3 <box>' accounts for the layout configurations. Figure 5.28 exemplifies these configurations in the footer – one of the most standardized in both content and organization layout structures across all four pages – through an excerpt from the footer of the UNSW homepage (top) and the 'below the fold' layout structure <area of study> on the Macquarie University

homepage (bottom). In Figure 5.28 (top image), four menu items (left) in the footer of the UNSW homepage are visualized through four added shapes (right). All four vertical menu items (T4) are juxtaposed against a diagrammatic resource D3 (box) that frames different expressive resources in the footer. Importantly, the four resources are framed by a single box filled in black color.

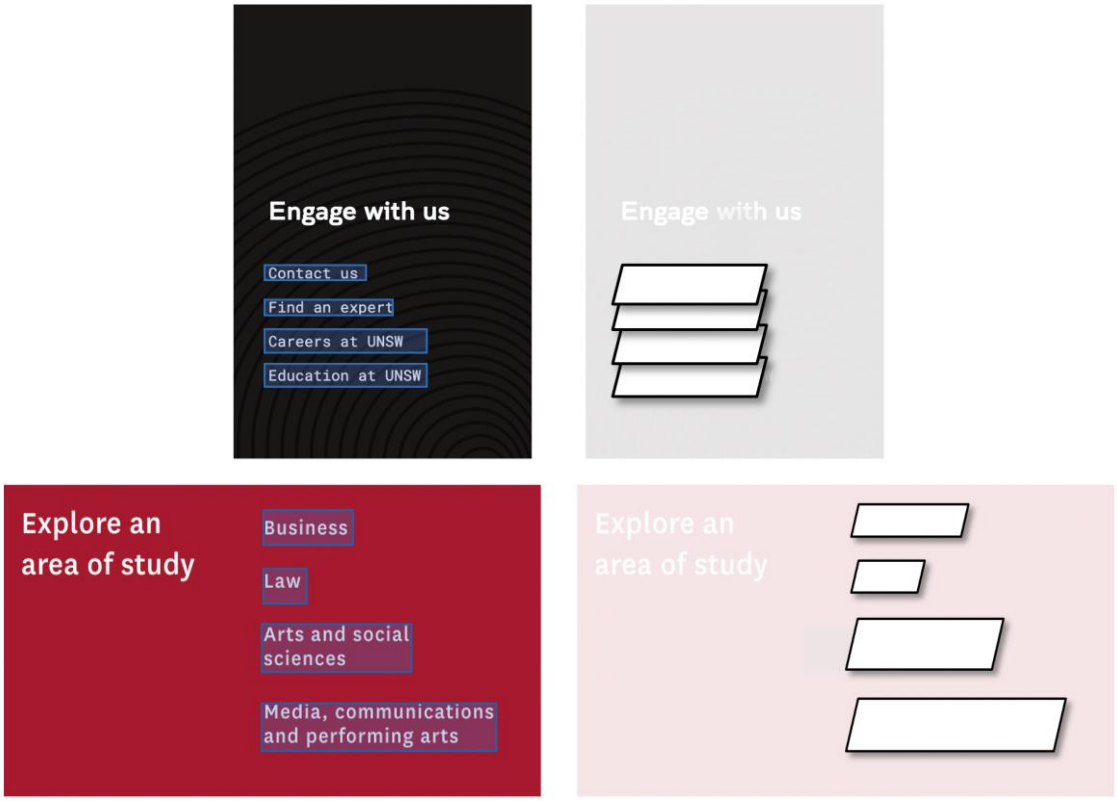


Figure 5.28 Sample configuration 'T4 <vertical menu item> + D3 <box>'

Example of the layout structure <engagement> in the footer on the UNSW web homepage (top) and in the layout structure <area of study> on the Macquarie university homepage (bottom)

'T8 <title> + D3 <box>' account for frequent combinations 'below the fold', organizing a range of layout structures for key target groups of educational consumers (Figure 5.29).

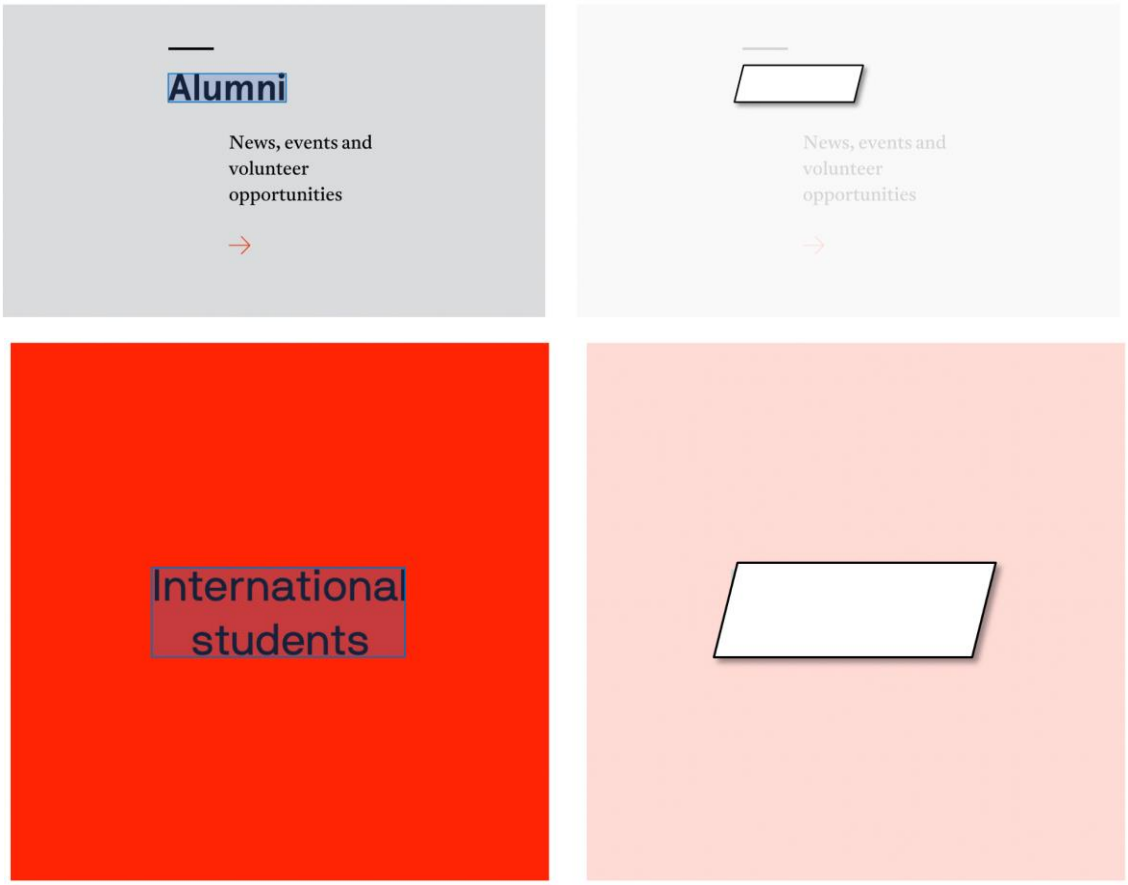


Figure 5.29 Sample configuration ‘T8 <title> + D3 <box>’

Example of the layout structure <Alumni> on the University of Sydney homepage (top) and <International students> on the UTS homepage (bottom)

Another frequent co-occurrence is ‘T1 <sentence>+ D3 <box>’ – a common design solution in the majority of layout structures on the UTS web homepage (Figure 5.30).

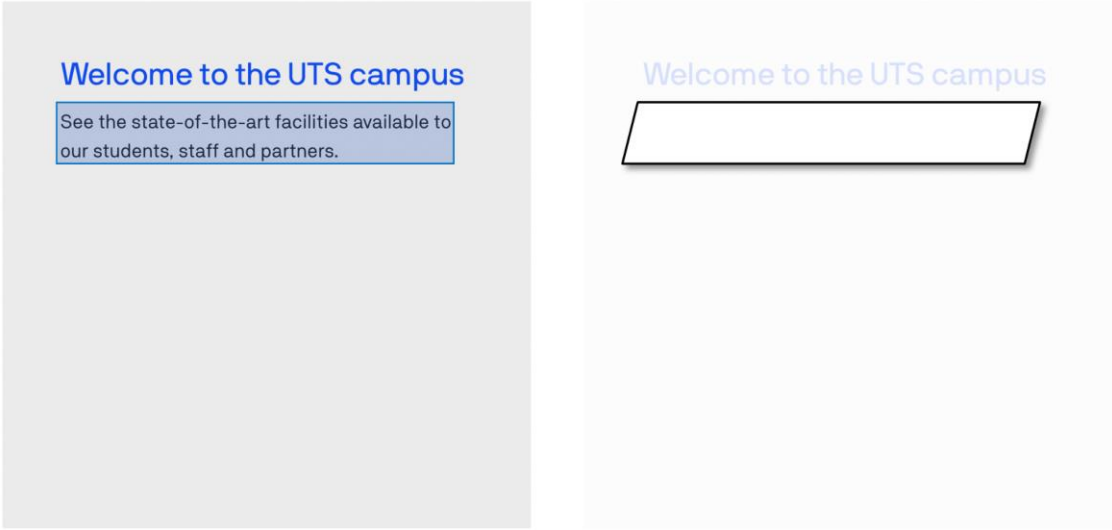


Figure 5.30 Sample configuration 'T1 <sentence> + D3 <box>'

Example of the layout structure <campus> on the UTS homepage

Rectangular shapes also organize an important space for envisaged audiences – menu panels – on the UTS and UNSW homepages (Figure 5.31).

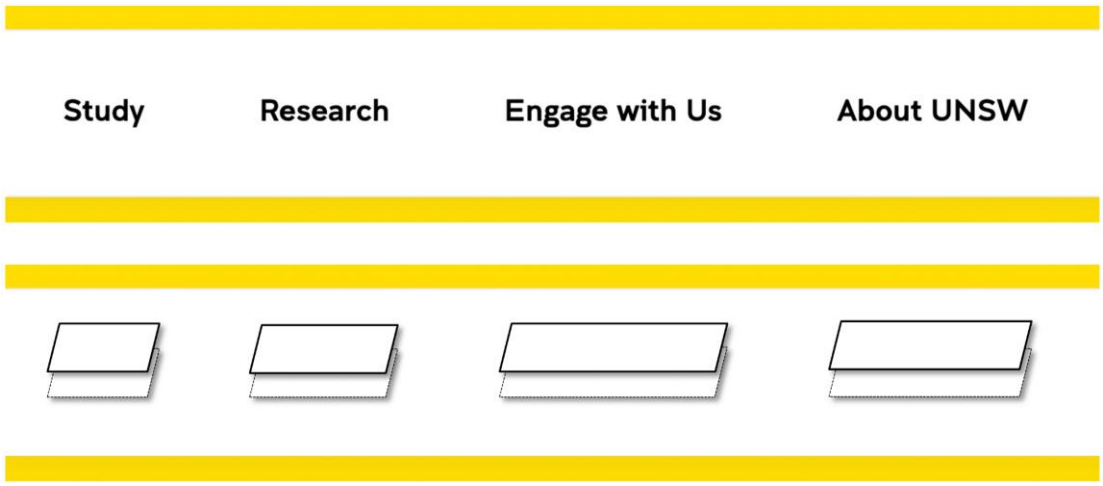


Figure 5.31 Sample configuration 'T3 <horizontal menu item> + D3 <box>'

Example of the layout structure <menu> on the UNSW homepage

These key combinations outlined in Table show that rectangular shapes contribute to the formation of what I term '<diagrammatic complexes>', that is, multimodal ensembles where diagrammatic resources serve as the underlying means for layout structure integration. <Diagrammatic complexes> are, thus, the layout structures that use diagrammatic means as the main source for combinations of information.

5.3.2.3 Image-complexes

Unlike diagrammatic resources, images intersect/overlay with other semiotic resources much less frequently. As multi-ranked hierarchical systems, semiotic modes in images realize representational, interactional, and compositional meanings (Kress & van Leeuwen, 2021; van Leeuwen, 2007) and play an important role in organizational visual identity communication. Images taking 'the center stage' (Stöckl, 2020: 19) is reflective of the widely discussed image-centric multimodal meaning-making practices (e.g., Kress, 2005; van Leeuwen, 2020) where 'image-nuclear' discourses (cf. Caple & Bednarek, 2010) are communicated through the visual-verbal interplay of semiotic resources. This discussion is elaborated in CHAPTER 6.

In addition to these functions, images in viewports perform another type of semiotic work – they are the metaphorical 'glue' for the integration of different expressive resources because different layout units are overlaid against them (e.g., Figure 5.32) or permeate their space (e.g., Figure 5.33). Similar to the logic of identification of the diagrammatic complexes, images are viewed as the main resource for the layout structure integration as identified through the concept of a semiotic mode, Gestalt principles, and the compositional system of SALIENCE. As the most salient layout unit in the most strategic space of the homepage, images are examined for this additional 'glue' function in the viewport. I explore subtle differences in the ways they form multimodal ensembles, combining this discussion with an analysis of the key layout structures in the viewport of each page.

In the data set, images often appear in proximity with a set of the following semiotic resources, forming image-complexes: T1 `<sentence>`, T13 `<captions of images and videos>`, D1 <□>, and D1 <▯>. Figure 5.32 shows the most frequent combination of layout units that forms image-complexes in the data set.

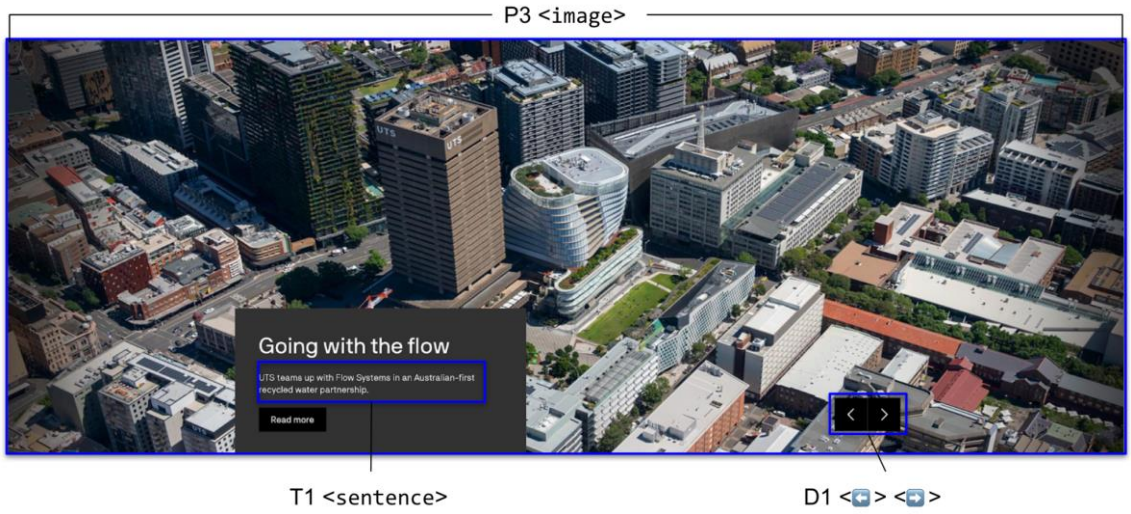


Figure 5.32 A sample of the image-complex structure in the viewport of the UTS homepage

On the Macquarie University homepage, one image stretches across the whole viewport, serving as a backdrop for an integration of several layout structures: a featured event, horizontal menu 2, navigational lines (performing the function of left/right arrows), course search, and vertical menu (Figure 5.33).

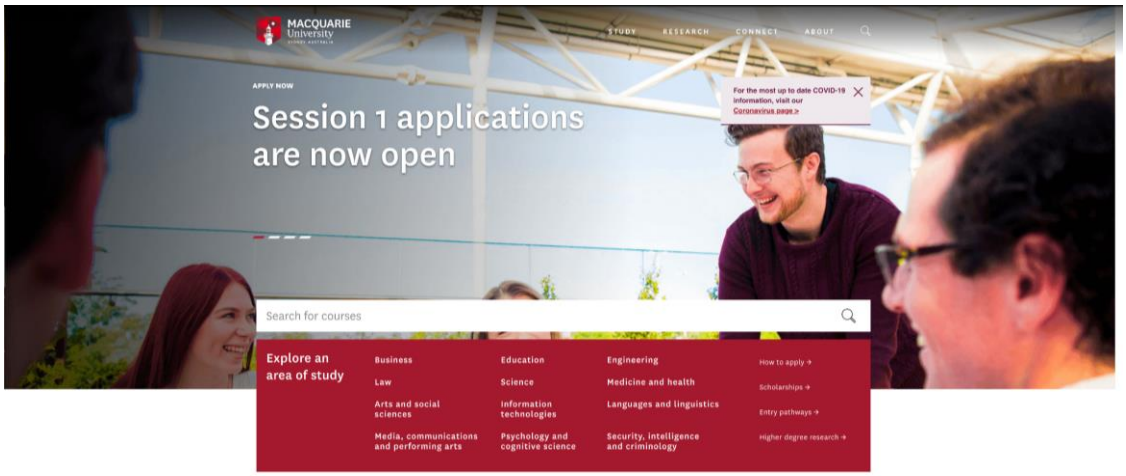


Figure 5.33 Image as a ‘backdrop’ of the viewport on the Macquarie University homepage

The `image-complex` is comprised of an image, text-complex (title of the featured event and a sentence detailing the action that the event is communicating (i.e., apply now), and lines that serve navigational purpose (i.e., to ‘click on’ to explore other featured events in the viewport).

Similarly, the viewport of the University of Sydney centers the structure around an `image-complex` and several diagrammatical complexes. The diagrammatic complexes play an important integrational role in framing ‘course search’, and the `image-complex`

organizes a featured event embedded in a semi-transparent rectangular shape superimposed on the image (Figure 5.34).

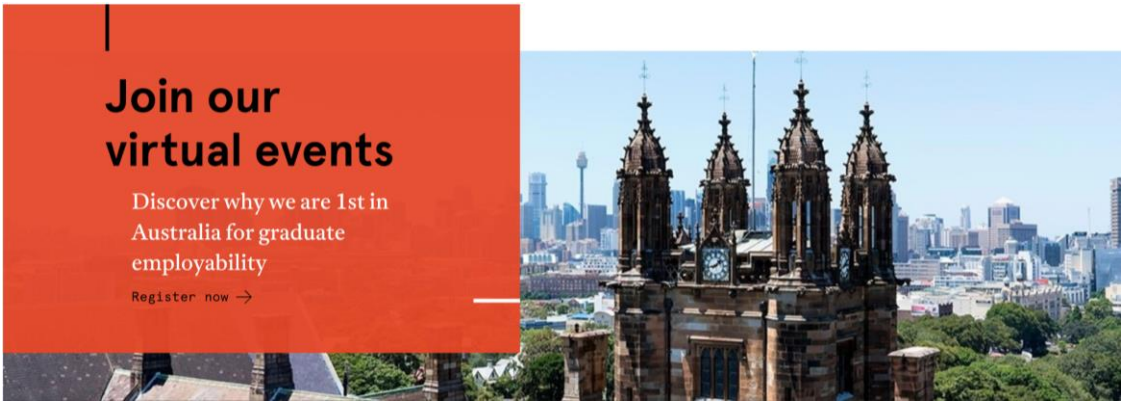


Figure 5.34 Image-complex organizing a featured event in the viewport of the University of Sydney homepage

The `image-complex` draws on two major layout structures: image of the university and a diagrammatic complex that mentions the title of the event, explains its essence in a sentence, signals action in relation to the event (i.e., 'register now'), placing these elements in a semi-transparent rectangular shape of the primary brand color red with a decorative white line to the right that appears to have no specific functional purpose. This line is a 'process mark' explained in the brand guidelines as a component of the process-driven design, which appears as a series of margins and gutters across all university communications and general collateral. Such a small and seemingly inconspicuous typographical brand design element thus has a specific value that is likely to go unnoticed for the layperson.

The viewport of the UTS homepage draws on fewer layout structures, but the logical organization of these structures is similar to the Macquarie University's viewport. The image integrates a featured event and navigational icons, both in diagrammatic rectangular shapes (Figure 5.35).

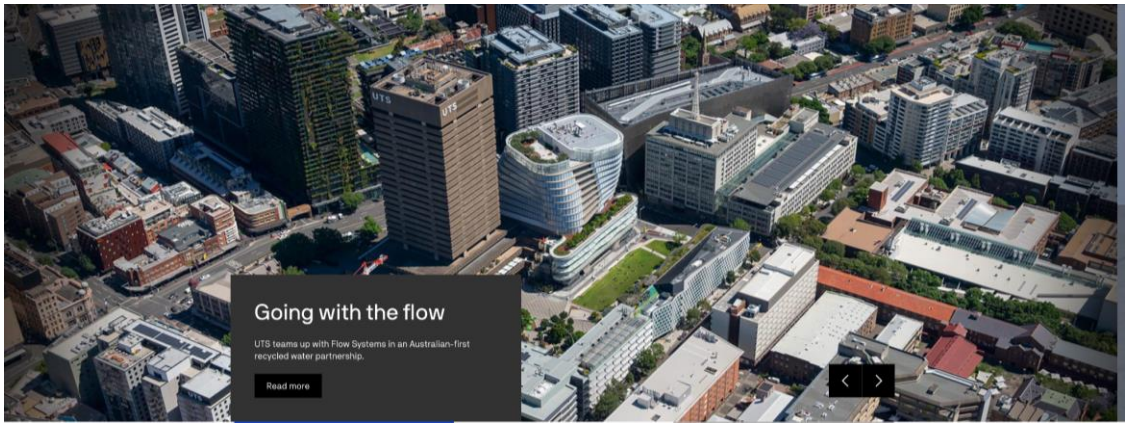


Figure 5.35 Image-complex in the viewport of the UTS homepage

Similar to the Macquarie University homepage, the viewport of the UTS homepage draws on a carousel design with the `image-complex` constituted by the image stretching across the whole viewport. The image provides space for integration of the featured story though strong framing realized by a diagrammatic box and navigation to other featured stories through left and right arrows, also in a box overlaid with the image. This compositional choice shows that the structure is to be read as one, nevertheless, the orchestration of the overall meaning is allocated to three distinct modalities – image and two diagrammatic complexes. Unlike the viewport of the Macquarie University homepage, the `image-complex` is not as integrated with other layout units with no superimposed textual layout units embedded in the image space. Instead, the role of the diagrammatic complexes in demarcating the elements plays a more significant textual role.

The viewport of the UNSW web homepage also integrates an `image-complex` as one of the key visual design units that organizes the content in the viewport. The `image-complex` is comprised of a haptically inaccessible 'hero' image that relates to the title of the featured event on the left (Figure 5.36). The image has weaker textual ties with the rest of the layout units because UNSW's page draws on a rather different 'backdrop' – a graphic shape demarcated in white against the brand yellow color. This design solution introduced in 2020 adds an additional layer of brand identity communication that ties all the layout units in the viewport together.

Figure 5.36 Image-complex in the viewport of the UNSW homepage

Other `image-complexes` appear 'below the fold' before footer. These layout structures usually behind with a rectangular or square image on the left or in the top, drawing on a Given-New or Ideal-Real composition. For example, Given-New in the layout structure in Figure 5.37 places the image as a point of departure, something familiar an unproblematic (i.e., it represents researchers as the key audience this design structure targets) which is presented as a starting point for viewer engagement with New (i.e., the various options for researchers).

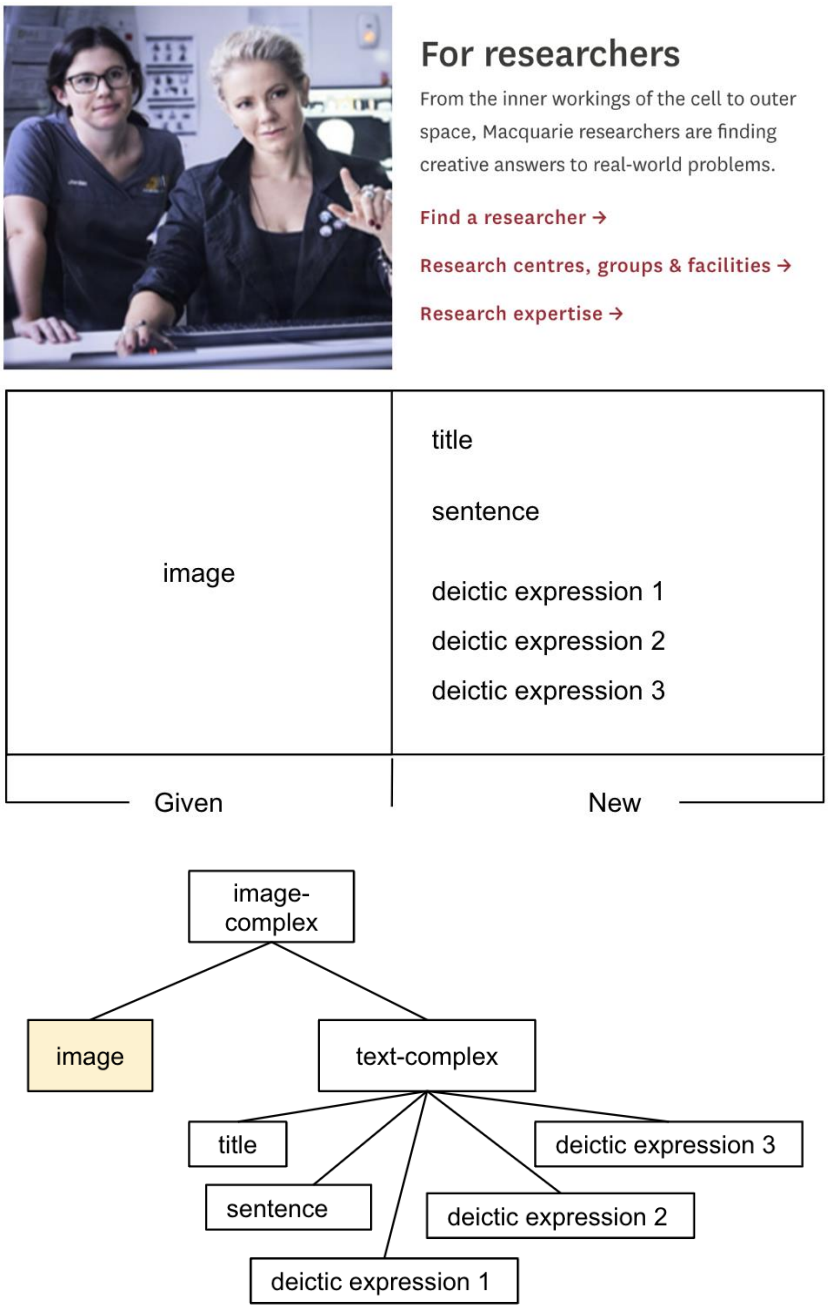


Figure 5.37 A representative example of `text-complex`

Note. `Text-complex` is a part of the image-complex layout structure 'For researchers' in a Given/New `image-complex` on the Macquarie University web homepage

The Ideal-Real composition of the layout structure on the UNSW homepage (Figure 5.38) reflects the placement of the image of a single represented participant as Ideal or something to strive for, whereas the sentence below (Real) provides an opportunity to explore this option for future students by engaging with the practical information about how to become 'a rebel with a double degree' displayed on the subsequent page when activated with a click.

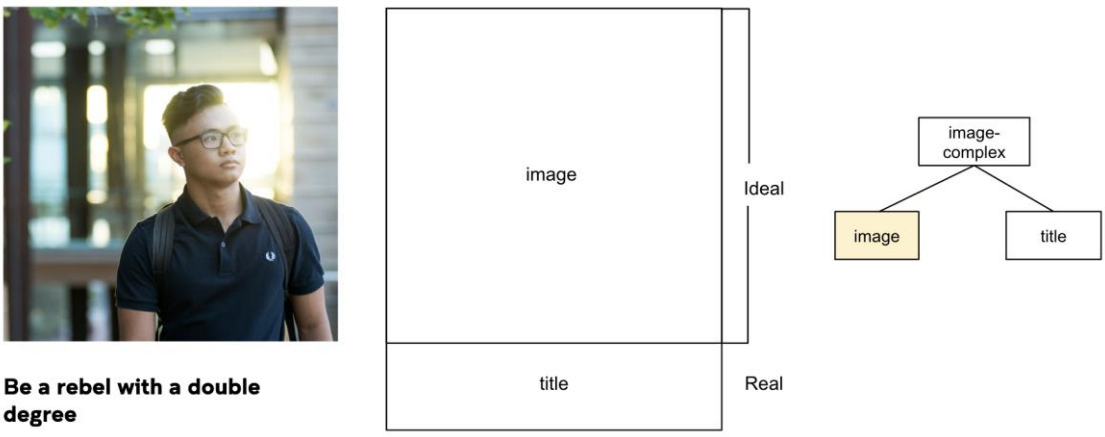


Figure 5.38 A representative example of `<title>` integration in `image-complex`

Note. The example is from the layout structure **‘Double degree option’** in an Ideal-Real `image-complex` on the UNSW web homepage

Therefore, image-complexes are prominent layout structures in the viewport of each page, bringing together different semiotic resources such as images, language, and diagrammatic shapes by means of design. Drawing on principles of SALIENCE, FRAMING, and Gestalt, they are the most visually prominent part of a featured event – the shared layout unit in the viewport of each page, appearing in a carousel on the Macquarie and UTS homepages and as a ‘hero’ on the University of Sydney and UNSW homepages. An image also integrates the title of the featured event and action to be taken in relation to this event (i.e., ‘explore/find out more’) on the Macquarie homepage, whereas diagrammatic boxes serve as means of integration of these textual layout units on the University of Sydney and UTS web homepages. UNSW uses an additional layer of organizational visual identity in the viewport through a graphic shape that simultaneously provides a space for the layout integration of the featured event, reinforced by the brand color. In this way, despite sharing design similarities in the image-complexes, the viewports of each page provide different aesthetics and feel of the brand. Such an analysis also demonstrates the key design practices in the most strategic space of the homepage of four prominent universities in Sydney.

5.3.2.4 Textual-typographic resources

As discussed in SECTION 5.3.1, although numerous, textual-typographic units occupy only a small portion of the overall page space. A semiotic mode of `text-flow` of one-dimensional linear-interrupted text (Bateman 2011: 26, cited in Hiippala, 2013: 74) is not representative in the data set, which means that stretches of verbal text are not utilized

as means of communicating university messages on web homepages. Instead, textual-typographic layout units are integrated in different layout structures either by diagrammatic resources or through an overlay against the background of rectangular shapes filled with brand color. Menu panels are important to consider because, as outlined in SECTION 5.1, they provide options for interacting with the university's identity for three key audiences – students (prospective and current), staff, and general public (Table 5.9).

Table 5.9 Horizontal menu items in the data set

Layer/ University	**06_mq**	**10_sydney**	**11_uts**	**13_unsw**
horizontal menu 1	current students staff alumni library maps contact	library current students intranet give	/magnifying glass	news & events myunsw alumni & giving contact us
horizontal menu 2	study research connect about /magnifying glass	study research engage with us news & opinion /magnifying glass	future students current students' research and teaching partners and community	study research engage with us about unsw /magnifying glass

Students receive the most prominent representation through the following menu items: 'Study' and 'Research' on the Macquarie University, University of Sydney, and UNSW homepages and 'Current students' and 'Prospective students' on the UTS web homepage. Staff representation is less standardized, for example, through menu items 'Staff' on the Macquarie University homepage and 'Staff intranet' on the University of Sydney homepage, which appear in smaller font sizes in another layer of the menu item panel. Staff on the UNSW homepage is only integrated into the category of the institutional login 'myUNSW' that also allows for student access, whereas UTS does not have a corresponding menu item and only features staff profiles when 'Research and teaching' unit is activated. Yet this menu item targets future students who look for potential supervisors for their research projects. Lastly, the general community (i.e., 'anyone') is represented by a set of different menu items: 'Engage with us' on the UNSW and University of Sydney homepages, 'Connect' on the Macquarie University homepage, and 'Partners and community' on the UTS homepage. Therefore, the four sites imagine and address similar audiences, and offer these audiences several navigational opportunities to varying degrees, with the most possibilities to construct pathways for potential students as one of the key consumer groups.

5.3.3 Icons

5.3.3.1 Representational and navigational icons

While there are several established ways to analyze the semiotics of icons as pictorial 'object-signs' (Barthes, 1957/1973; van Leeuwen, 2001), in this data set, the identified icons appear in the form of an outline, that is, their materiality is schematic rather than pictorial. Figure 5.39 shows the distribution of all icons identified in the data set (D1 `<icon>`). Right arrow ('□'), magnifying glass ('□'), and a set of unique to the Macquarie University page icons ('other') are used the most frequently. In terms of functionality, they are the closest to Peirce's concept of symbol – a sign that has an arbitrary relationship to that which it represents (Lacey, 1998).

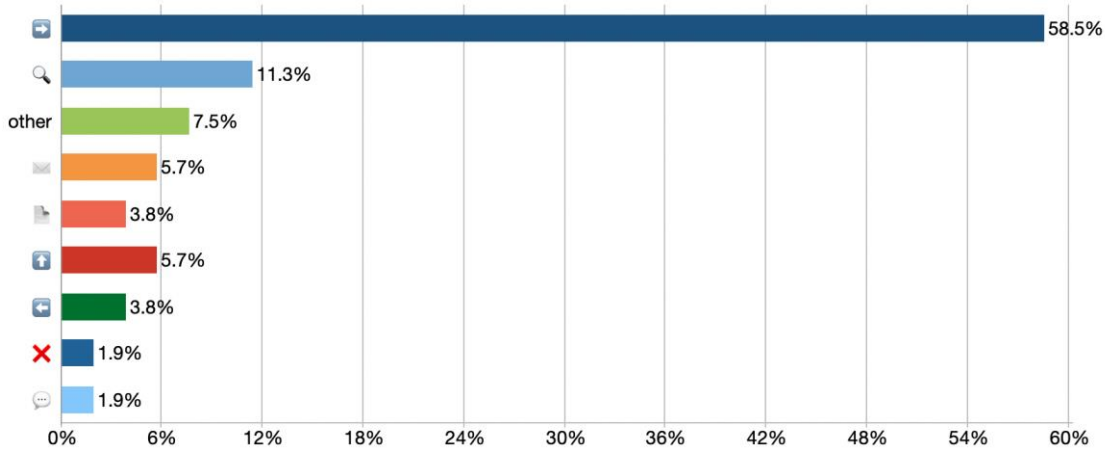


Figure 5.39 Distribution of icons in the data set

Note. The icons used in the figure present the schematic materiality in a pictorial (i.e., emoticon-type) form

The identified icons are characterized by several structural properties, including continuity, closure, symmetry, simplicity, and unity (refer to the principles of Gestalt psychology discussed in CHAPTER 4.4). They have a continuous and symmetrical outline, are rather simple and unambiguous, with not many fine details, unified by consistent size and positioning in the layout sub-structures (Table 5.10).

Table 5.10 The most frequent icons in the data set

Icon/ Homepage	06_mq	10_sydney	11_uts	13_unsw

These structural properties are enhanced by color rhyme, often repeating the same primary or secondary brand color on each page, adding to the visual coherence of the overall design. Such properties help create optimal conditions for recognition of the meaning potential of icons on the page, and, in design studies, are reported to reduce the 'articulated distance' (i.e., a perceived difference between a symbol and its meaning) and reaction time (Blankenberger & Hahn, 1991).

From the metafunctional point of view, the identified icons appear to foreground three types of meanings: firstly, representation – generalizing the concept expressed by adjacent textual-typographic resources; secondly, navigation – signaling that a particular pathway can be built); thirdly, interaction – showing a call to action (e.g., 'click on the right arrow to open a new page'). Based on the identified meanings that different icons foreground, two sets of icons are identified: representational and navigational (Figure 5.40).

Figure 5.40 Examples of representational (left) and navigational (right) icons

Left: on the UNSW homepage. Right: on the University of Sydney homepage

All navigational icons are haptically accessible and signal interactivity of the layout unit (usually a deictic expression) that they are integrated with. Upon clicking, a redirection occurs to other pages within the website, pointing the audiences to a particular part of the website succinctly outlined by the verbal content of the layout unit on the homepage

(e.g., ‘Register now” + ‘□’). The use of navigational icons varies across pages, with most frequent use on the Macquarie homepage (N=21), nearly equal distribution on the University of Sydney and UNSW pages (N=11 and N=12 respectively), and fewest on the UTS homepage (N=3). This distribution does not mean that there are fewest navigational opportunities on the UTS homepage as these opportunities can also be outlined by other means, such as a change of textual form (see SECTION 5.4).

The right arrow icon (‘□’) is used across diagrammatic complexes (‘news’, ‘courses’, ‘search for a researcher’, and so on) across Macquarie University, the University of Sydney, and UNSW homepages, indicating redirection to other pages on a website. On the UTS and Macquarie homepages (homepages that draw on carousel designs), this icon signals navigational possibilities to alternate the images in the same design space without redirection to other pages. Such a dynamic web page design choice implies that images are played in rotation, and the diagrammatic arrow enhances user control over the succession, offering audiences the opportunity to explore the content in the viewport.

The search icon (‘□’) appears on all pages in the top right corner of the viewport. It uses a schematic magnifying glass to represent the search function within a website. This diagrammatic resource does not rely on any verbal association between the name of the object depicted and the signified function. This means that the relationship between the sign ‘magnifying glass’ and its function ‘search for information’ is arbitrary and draws on the established tradition in web design to use this icon as a symbol of search (see, e.g., Okhovati et al., 2017). The Macquarie and University of Sydney also duplicate the search icon just below the viewport as an option to search for courses, restating the purpose of this space with a verbal text `<search for courses>` in contrast to a more general search icon in the viewport (‘search for anything within the site’) that does not have any accompanying text.

The Macquarie University homepage is the only page that uses a set of four unique icons combined into a layout structure `<Why Macquarie>`, following the right-left placement with the icon as Given and verbal text as New, using white space as a weak framing device to separate the two. The icons are representational in nature, aiming to generalize the essence of the verbal text. For example, the layout sub-structure `<employability>` in Figure 5.41 reads as a representational icon ‘trophy/success’ followed by a verbal elaboration ‘#9 in Australia for employability (QS Graduate Employability Rankings, 2020)’. Salient in size, representational icons serve as a means of integration of a diagrammatic complex `<icon>^<sentence fragment>` for four layout sub-structures,

encoding the envisaged reading paths (from left to right) for the audiences to follow, with the icons to be ‘read’ first and the verbal description thereafter.

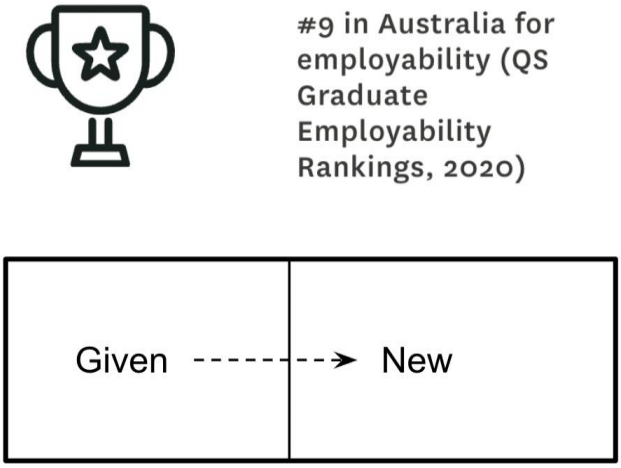


Figure 5.41 Sample representational icon and its integration into a layout sub-structure <employability> on the Macquarie University homepage

As diagrammatic resources, icons perform different kinds of semiotic work. Right and left arrows, magnifying glass, and red cross enable navigation on the page and signal interactivity of the content that these icons are overlaid with. An ‘envelope’, ‘speech bubble’, ‘document sign’, and a set of less standardized icons on the Macquarie homepage foreground representation and can only be fully interpreted in relation to the adjacent units in a layout structure. Another important subset of icons – social media – is integrated into footers (D3 <box>) on all four homepages. UNSW also duplicates the social media panel in the viewport below the horizontal menu and search icon. Social media panels are of interest due to their significance in cross-platform brand communication.

5.3.3.2 Social media

Similar to representational icons, social media icons also generalize concepts but foreground interpersonal relationships with audiences across two scales. Firstly, they indicate the university social media engagement that also encompasses a set of associations that the envisaged audiences may have in relation to the brand meaning of different social media platforms. Secondly, the inclusion of social media icons signals interal cross-branding work (or ‘exophoric reference in Hasan’s (1985) terms. It shows the university engagement with audiences across other sites that are more interactive in nature. For example, unlike homepages, organizational accounts on social media can be interacted with more directly in a sense that these platforms allow multiple

interactional possibilities, such as commenting, threads, re-sharing of the content to personal profile timelines, and so on. Social media icons on homepages are also indicative of the expanded possibilities for co-construal of the meanings of identity in a less 'controlled' environment that allows for more 'voices.' Through a reduced social distance, audiences are given additional agency in contrast with organizational websites which foreground building pathways but not commenting (e.g., no threads are allowed).

In terms of materiality, social media icons appear in various forms consistent with the overall brand image of each page, mainly through continuities of color and font as Figure 5.42 demonstrates across several selected universities in Entire data set #1 (see CHAPTER 4.2).

Figure 5.42 Variation in selected social media panels in entire data set #1

The reasons behind the inclusion of the social media panels could also stem from a broader social context, such as a transition to the Social Web, the perpetual advancement of communication technologies, and the rise of what van Dijck (2013) calls 'the culture of connectivity' whereby digital connectivity has become a new social norm. Hofstede's (2001) cultural dimensions, especially the power distance index (PDI), could also provide cross-cultural insights, but given that the focus of this thesis is on Australian universities, such an examination is outside the scope of this thesis.

Therefore, Australian university homepages bring the *social* to the fore, and the social media icons are cross-functional, performing semiotic work independent of the

functionality of homepages, as clarified by Bateman et al. (2017: 348)[21]. Like many universities worldwide, universities in the data set engage with audiences through several social media platforms as social media facilitate the sharing of multimodal messages to an unprecedented number of people. The target audience (re-)enters the social practice of organizational identity communication, not only reproducing and resharing the messages constructed for them but also adding new identity values. More broadly, this changes how the audience is construed: there is a shift from passive consumption to more active participation where the audience has some equality with the university.

5.4 Navigation/access structures

Navigation pathways are signaled by the change of the textual form when the mouse points at a specific layout unit (e.g., a menu item in a horizontal menu) or the whole sub-structure (e.g., 'Event 1' of the layout structure `<events>`). Examination of these pathways is useful for this study because it allows for identification of the potential trajectories for different imagined audiences invited to interact with the identity of each page.

A significant portion of possible pathways is offered through drop-down menu widgets in the viewport of each page. This combination of horizontal menus *in praesentia* and drop-down menus as innovative writing frames is reported to have three functional roles of great importance, which are navigation through deictic expressions, suggestions for structural support, and contextual support while searching for information (dos Santos et al., 2011). Drop-down widgets are enabled by an HTML generic markup and non-standardized HTML structure (Antonelli et al., 2018), allowing multiple sub-pathways to be packaged in a solid rectangular shape that either stretches across the whole viewport or appears in the center of the viewport after the horizontal menu items are activated. Drop-down menus are used on each page to delimit the user input and allow audiences to select options from the list instead of typing information. Such a design solution of second-level functions conserves screen space and help audiences to save time by allowing them to jump down a hierarchical level to get to the content they seek, with the recommended number of five to eight items (Shah, 2021).

To examine the pathways for students as the key envisaged audiences of the university

[21] Particularly, Bateman (2014b) argues that such elements as search buttons need to be investigated in relation to the medium rather than a particular genre since they are by no means unique to, say, homepages of bird websites or university websites, but are instead increasingly found on *any* website.

and consequently its homepage, I examine the pathways offered under the menu item <study> or <students> on each page. Figure 5.43 demonstrates a drop-down menu for a menu item <study> in the viewport of the University of Sydney. When activated by action '*point a mouse at a menu item*', this menu item opens eight additional pathways in a rectangular square shape of the secondary brand color. Each of these options follow the same structure – a succinct phrase followed by a navigational icon ('□'/right arrow) with the meaning potential of 'explore/find out more'. This menu item and the subsequent set of drop-down menu options evidently targets prospective students, providing information about courses, application process, accommodation, destination, study options, and practical information on how to prepare for the university life. It also outlines events for prospective students and provides a relevant link to information for international students as another key audience with a set of specific needs arising from studying at a university in a foreign country. Current students receive representation and an option to build pathways through a horizontal menu item <current students> in the horizontal menu 1 only.

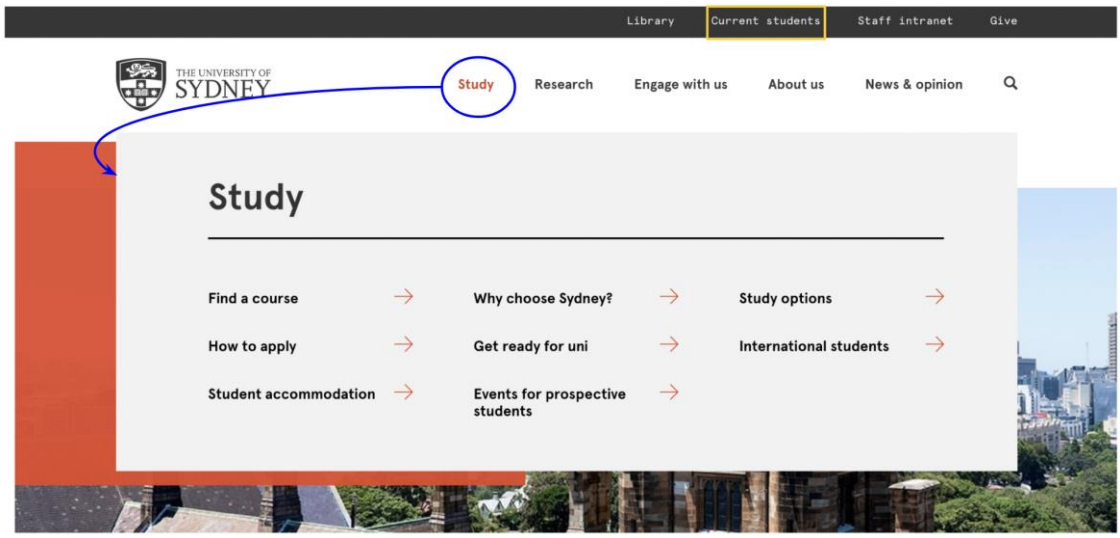


Figure 5.43 A drop-down menu of the menu item <study> and a set of options for prospective students on the University of Sydney homepage

Key. Menu item <current students> is marked in light orange

The range of options for the menu item representing students and offering them navigational trajectories varies quite significantly across the data set. The most options are offered in the drop-down menu of the Macquarie University that organizes these options under titles in brand color to introduce some grouping logic to a set of 33 possible pathways (Figure 5.44).

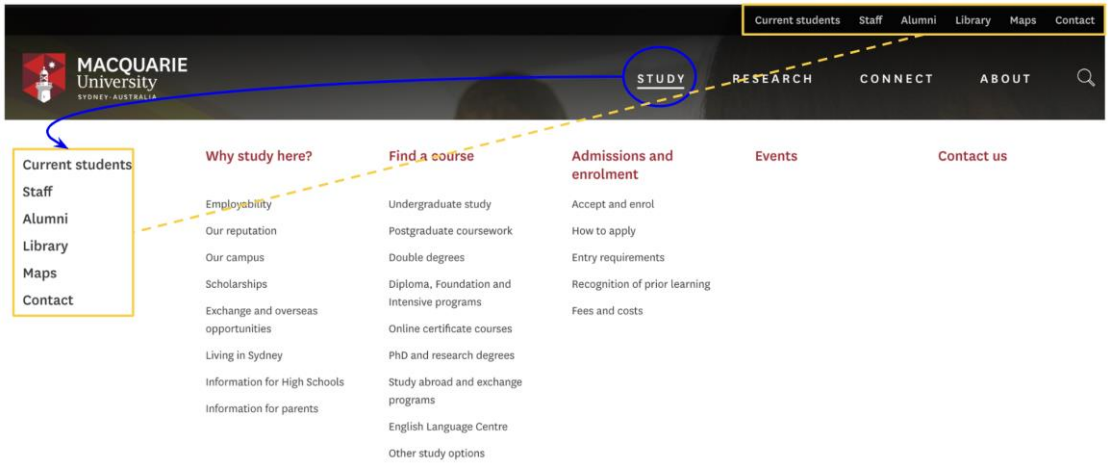


Figure 5.44 A drop-down menu of the menu item <study> on the Macquarie University homepage

The macro-menu aligned along the vertical axis with the items <current students>, <staff>, <alumni>, <library>, <maps>, and <contact> appears in the drop-down menu across highlighted in bold in the first column, seemingly offering several ways to construct pathways for key audiences (i.e., current students, staff, and alumni) and key topics (i.e., library, maps, and contact). In this way, the study option offers two groups of navigational possibilities – a 'master' menu for the audiences who have/had organizational ties with the university (i.e., current students, staff, and alumni) and those who are invited to become a part of the university (i.e., future students). Such a representation shows a reduced social distance between current students, staff, and alumni who are equally represented in both horizontal menu 1 and the vertical menu (column 1) of the drop-down menu as a subset of horizontal menu 2. In this way, the needs of the current students are acknowledged on the homepage.

Nevertheless, similar to other homepages in the data set, prospective students are the group that gets the most opportunities to build their pathways from a set of options organized as three overt taxonomies with the following Superordinates: 'Why study here?', "Find a course', 'Admissions and enrolment' and two 'stand-alone' Superordinates 'Events' and 'Contact us'. It is worth noting that despite a clear visual organization that is generally found to point to a hyponymical ('kind of') relationship between the Superordinate and Subordinates (see Kress and van Leeuwen, 2021: 76), some of the menu items in the drop-down menu on the Macquarie homepage have a meronymic ('part of') relationship with the Superordinate (i.e., the title or the category that they are structured under. For example, while the menu item <information for parents> relates to the category 'Why study here?' only partly, it can be seen as an elaboration or extension of the benefits of choosing Macquarie. Such a semiotic

conflation of different functionalities under a single menu item ‘Study’ may be confusing for the audiences, as the visual organization does not reflect the expected semantic logic that follows.

The menu item <study> in the drop-down menu of the UNSW homepage targets prospective students exclusively, offering them a set of 36 carefully curated and specific options organized in five taxonomies ‘Why UNSW’, ‘What to study’, ‘The UNSW experience’, ‘Getting in’, and ‘Apply now’. The application process is spelled out from general information about how to apply to application portals for distinct groups of future students (undergraduate, postgraduate, international, pathways) and their needs (scholarships and accommodation). Current students are acknowledged least explicitly compared with other homepages in the data set through the institutional login button ‘myUNSW’ that also allows login for the staff at the university (Figure 5.45).

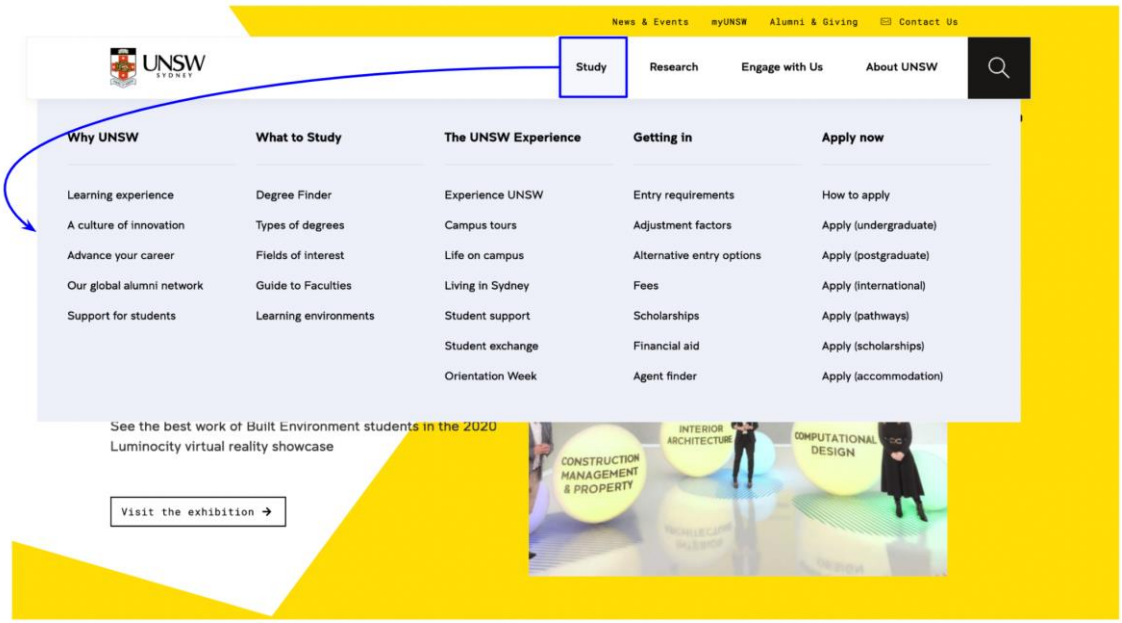


Figure 5.45 A drop-down menu of the menu item <study> on the UNSW homepage

Whereas the predominant target audience of the Macquarie University, University of Sydney, and UNSW’s drop-down menus are prospective students, UTS offers more equal navigational possibilities for both future (Figure 5.46) and current students (Figure 5.47). These options are grouped in the drop-down menu in the viewport of the homepage similar to other examined menus and are presented in a vertical list with titles as Superordinates. When activated, the <future students> menu icon shows fourteen possible selections from a set of options in relation to courses offered at the university. The menu item that yields these options does not change its textual form as other pages do, but it uses a reverse toggle (^) icon at the bottom of it that shows nested items. A

separate taxonomy called ‘Information for’ sums up eight options for groups of students: undergraduate, postgraduate, graduate research, online, short courses, indigenous, students with accessibility requirements, and international students. When any of these options are pointed at, they appear in a brand color blue, contributing to the brand cohesiveness.

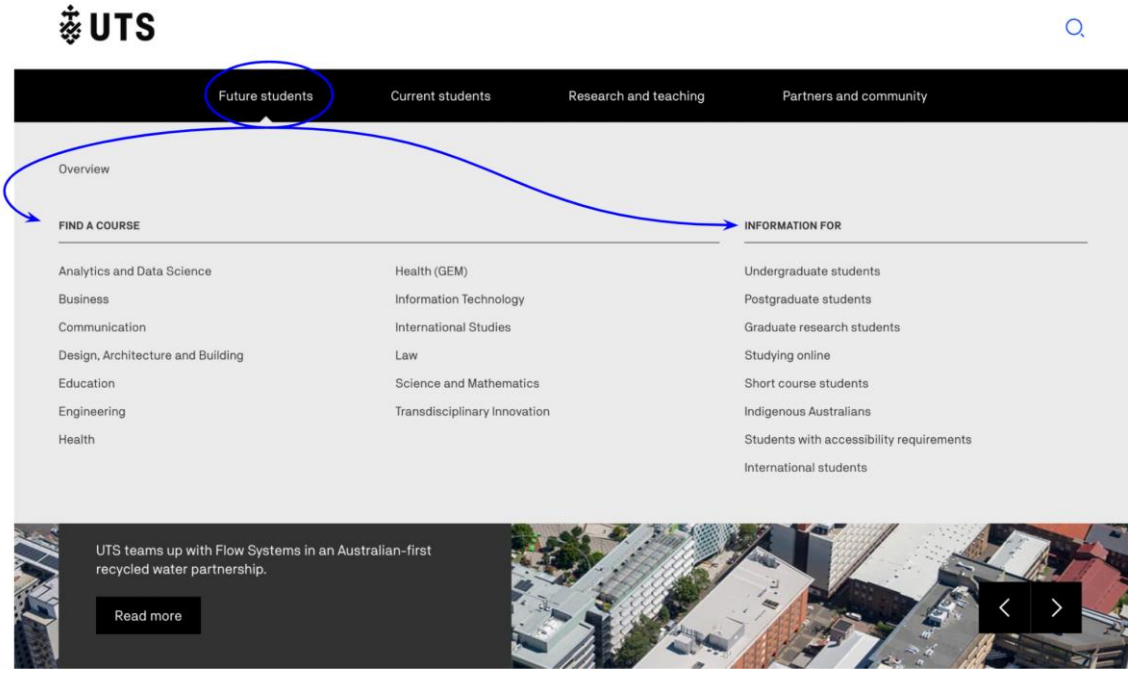


Figure 5.46 A drop-down menu of the menu item `<future students>` on the UTS web homepage

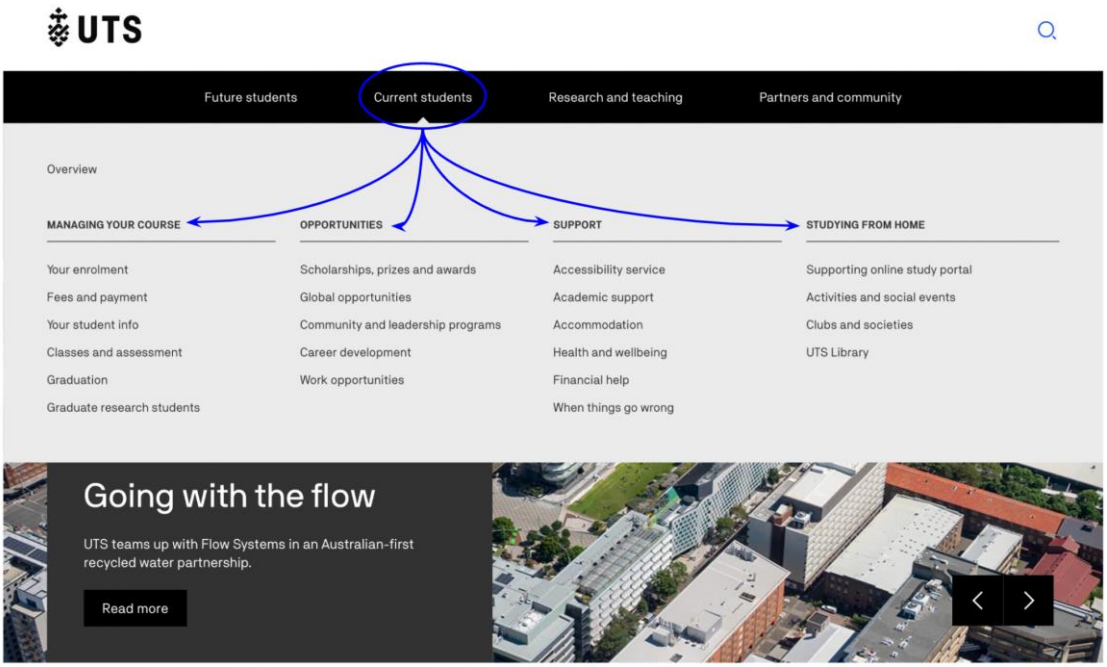


Figure 5.47 A drop-down menu of the menu item `<current students>` on the UTS homepage

Information for current students is structured in five columns listing trajectories in relation to ‘Managing your course’, ‘Opportunities’, ‘Support’, and ‘Studying from home’. In this way, in addition to a more equal representation of all students – future and current – both groups of students will find content relevant to their circumstances on the UTS homepage. The column ‘Studying from home’ is also unique in comparison with other universities in the data set, and it gathers relevant information for those students who study online as an option resulting from Covid-19 disruptions to on-campus learning. In this way, the pathways offered for current students draw on relevance and practical considerations of the needs of the key envisaged audiences.

In addition to drop-down menus, interactivity of other design units is signaled by a small set of typographic and visual resources. These resources involve change of the textual form either by typographic means (Figure 5.48) or the background change of the layout unit/structure (Figure 5.49). A frequent way to show interactivity is through underlined text when a layout unit is pointed at. The line color is always a brand color from the primary color palette, enhancing color rhyme on the page and reinforcing brand values that the colors are intended to communicate.

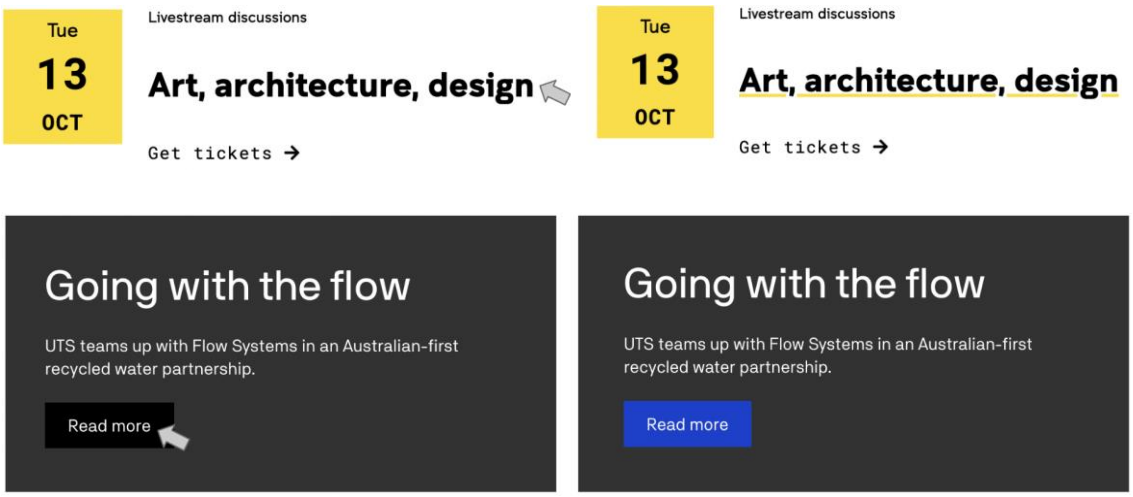


Figure 5.48 Navigation signaling of different layout units/structures via typographic means

Top: Textual changes in the layout structure **<key date>** on the UNSW homepage. Form *in praesentia* (left) and underlined in the primary brand color when pointed at (right).
Bottom: Textual changes in the layout unit **<featured event>** on the UTS homepage. Form *in praesentia* (left) and shaded in the primary brand color blue when pointed at (right)

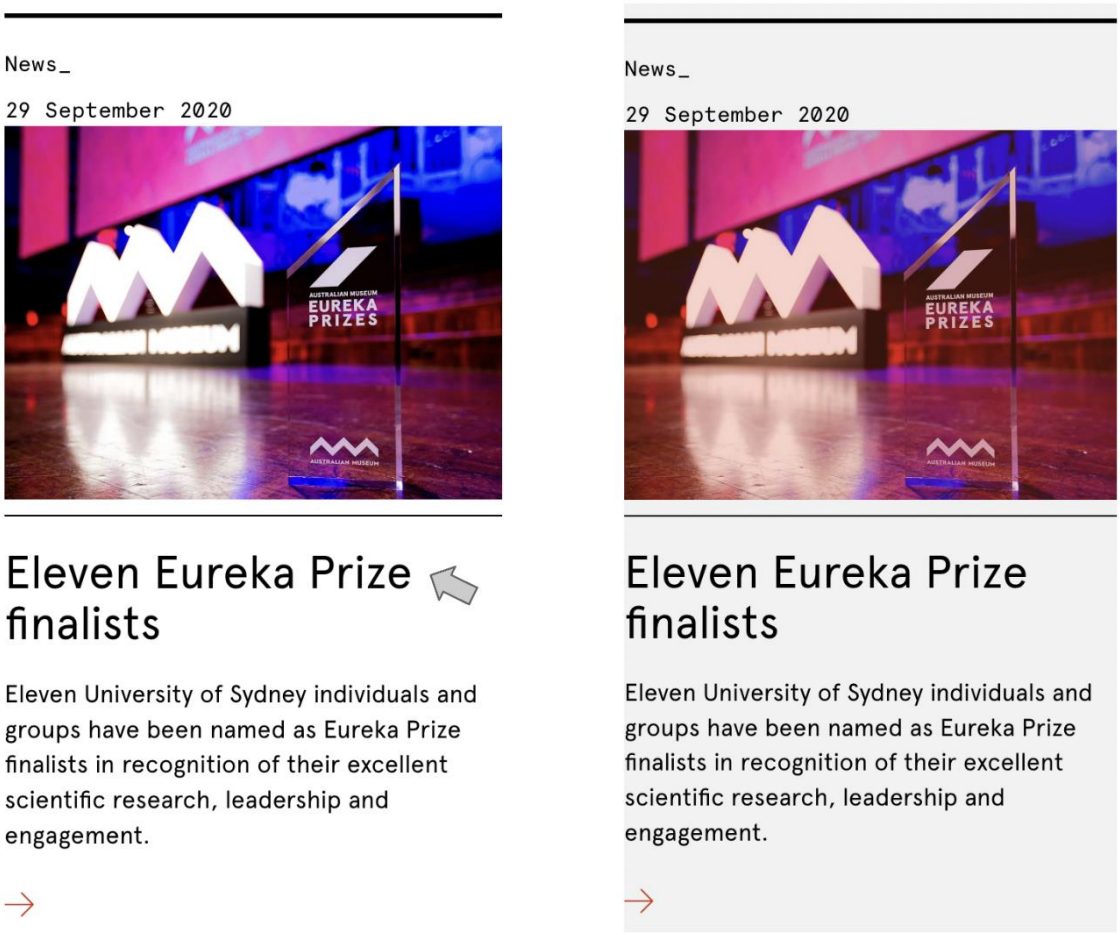


Figure 5.49 Navigation signaling through color

Key. Background changes in the layout structure **<news>** on the University of Sydney homepage. The original unit (left) and shaded in brand color image and secondary brand color gray diagrammatic box (left)

In addition to these textual-typographic and graphic changes, interactivity is also signaled through diagrammatic means, mainly right arrows, as discussed in SECTION 5.3.3.1. The arrow follows the directionality of writing in western culture from left to right, and is reminiscent of turning a page in a (hypertextual) book. Arrows usually appear next to an imperative in a deictic expression and for some units, also change to a brand color when pointed at. In this way, from offering navigational possibilities for certain envisaged audiences, as well as signaling interactivity by small textual changes, we can note how each university designs their organizational identity through a complex set of semiotic resources.

5.5 Concluding remarks

The aim of this chapter was to analyze organizational identity of four university homepages on the site of the communicative artifact. This is the part of the website that the envisaged audiences see and interact with first when entering the website. By zooming in to three strata – the OVI elements, communicative content, and navigation, this chapter has identified that organizational identity design plays a crucial role in mobilizing important resources for organizational identity communication. The OVI elements represent the most regulated set of organizational identity elements that appear on the page as a result of 'prescribed' rules defined by the brand guidelines. They carry the core visual meaning of university's identity, legitimizing each university ('logo', 'business name', and 'motto') and ensuring visual identification of the brand ('color', 'typography', and 'graphic shapes'). The communicative content displays most regularities across viewports and footers, and draws on similar semiotic material organized in multimodal ensembles by diagrammatic and pictorial means. The navigation/access structures afford specific pathways for key envisaged audiences of each page – mostly prospective students and the public. Whereas some statistical validation was deployed for the identified patterns, it should be noted that the quantitative findings are only representative of the selected Australian university web homepages, with some expected differences for other web pages within each website or in other organizations.

By examining several layers of the homepage, we can systematically address how these impact discourses of identity, from the smallest perceptible units on the page and their organizational logic and placement in the overall visual composition to navigational trajectories that foreground the user agency (although this agency is largely pre-determined and regulated by the university).

Chapter 6 Images as organizational visual identity markers

Orientation

Organizational homepages are promotional sites designed to visually appeal to their envisaged audiences. To achieve this, they often feature images that contribute to shaping organizational visual identity alongside color, typography, and graphic shapes. 'Images', often referred to as visuals, is an umbrella term encompassing "a variety of representational, abstract, or non-objective images – photographs, illustrations, drawings, paintings, prints, pictographs, signs, symbols, maps, diagrams, optical illusions, patterns, and graphic elements and marks" (Landa, 2013: 114). On university homepages, visuals appear as either naturalistic photographs of people and places or abstractions representing the essence of ideas and concepts. They often draw on the principles of emotionally evocative designs to construe university communities (Mafofo & Banda, 2014), convey the vibrancy of student life (Zhang & O'Halloran, 2012), and confer social presence (Gefen & Straub, 2003). Following the visual turn through the Internet (Oeldorf-Hirsch & Sundar, 2016: 625), images are one of the key visual resources on web homepages, organizing other semiotic resources into layout structures that CHAPTER 5.3.2.3 refers to as `image-complexes`.

In the ecosystem of organizational identity communication, images are unique sites of viewer engagement, aiming to represent universities, construct positive university portraits, and strengthen brand identification. Their communicative purpose is in line with university branding alongside other OVI elements – "to identify, differentiate, and build a sustainable presence and position in the marketplace as well as to engender trust in the brand or group" (Landa, 2013: 245). In this context, this chapter sets to understand how images, as one of the most recent OVI markers alongside 'typography', 'color', and 'graphic shapes' examined in CHAPTER 5.2, contribute to organizational visual identity communication. More specifically, it sets out to (1) identify the visual strategies of viewer engagement and (2) analyze visual identity personae and representational tropes constructed by images in the viewports of university web homepages. These two tasks are guided by the following questions:

(1) What visual strategies of viewer engagement are deployed in images in the viewports of web homepages?

(2) How do these strategies contribute to organizational visual identity communication?

To answer these questions, the study incorporates an integrated model for image analysis introduced in CHAPTER 4.4. The model is applied to identify the image types (CHAPTER 4.4.1), representational structures (CHAPTER 4.4.2), and visual interaction between the represented participants and the envisaged audiences (CHAPTER 4.4.3).

As the most salient part of the page, the viewports of four university websites examined in this thesis (Macquarie University, the University of Sydney, the University of Technology Sydney, and UNSW Sydney), draw on a relatively small set of image-centric design practices, either featuring a single static image (also called the 'hero'), displaying several images in a carousel, or presenting a short automatically repeated video loop composed of a limited number of shots. These design practices can be traced back to the affordances of the medium (i.e., the HTML developments, plugins, etc.), and their meaning potentials are "based on their past uses, and a set of affordances based on their possible uses [that will be] actualised in concrete social contexts where their use is subject to some form of semiotic regime" (van Leeuwen, 2005a: 285).

By approaching images as OVI markers, SECTION 6.1 examines the brand guidelines and visual style guides that describe recommendations for visuals on four university homepages (Macquarie University, *Brand Identity Guidelines*, on staff intranet 2018; University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020; University of Sydney, *The University of Sydney Brand*, on staff intranet 2019; University of NSW, *Visual Style Guide*, on staff intranet 2021), seeking insights into institutional personalities that images are intended to communicate. SECTION 6.2 addresses the formal properties of images, looking at the visual content – human representation (specifically, gender of represented participants and group and individual representations) and non-human depictions (namely, places and abstractions). SECTION 6.3 analyzes three key factors of visual viewer engagement – distance, angle, and gaze and identify five visual strategies of viewer engagement. SECTION 6.4 discusses the most representative visual design patterns in images across the four pages before the findings are summarized through the identification of key visual personae and representational icons in SECTION 6.5.

6.1 The site of production

6.1.1 Image-centric design strategies of the viewports

Before a brief examination of content recommendations for image design across four homepages, it is important to understand how images are embedded in the process of organizational identity communication from the rhetor-institution to the envisaged audiences. This preliminary evaluation can be carried out by examining the image-centric strategies of the viewports that draw on the semiotic mode of the `image-complex`, as explained in CHAPTER 5.3.2.3.

Given the varied timeline of data collection (see Table 4.4), the designs of the viewports examined in this data set have seen minor updates. For example, UNSW introduced 'hero' images only in 2020, drawing on a carousel design between 2017 and 2019. This type of change notwithstanding, just below the horizontal menu panel(s), the viewports of all four university websites draw on three distinct image-centric design strategies: (1) carousels (for Macquarie University, UTS, and UNSW prior to 2020), (2) hero images (UNSW from 2020 onward), and (3) short video loops (the University of Sydney). Below, these three design strategies are examined in relation to two aspects: (1) the semiotic mode of an `image-complex` and (2) the interactivity potential of the semiotic resources comprising an `image-complex`. The concepts of the semiotic mode and medium (CHAPTER 3.2) guide this task.

A common characteristic of the design solutions in the viewports of web homepages in the data set is that each is spatially dominant in terms of the amount of space occupied by a large photographic image or a loop video. The carousel design (Figure 6.1) draws on an integration technique and features several images alternating in succession, usually from left to right. One image serves as a 'backdrop' for nearly the entire viewport and has a superimposed text embedded in a diagrammatic box. Navigation is signaled through two icons, namely left and right arrows. All three elements – image, text, and arrows – form `image-complexes`, with the image as the most salient resource. All base units comprising `image-complexes` are haptically accessible, with subtle differences in interactivity.

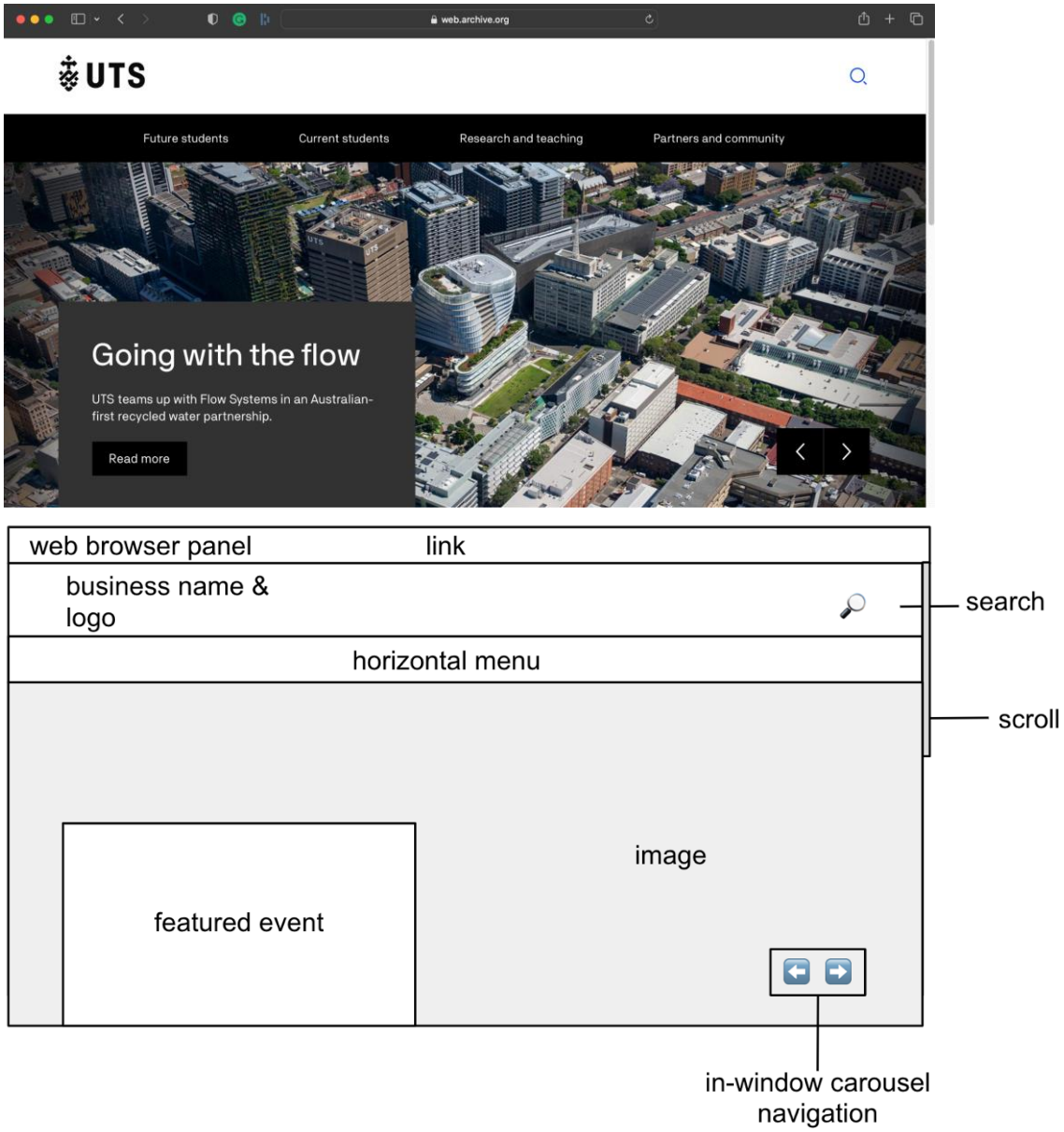


Figure 6.1 An example of a carousel image-centric design of the UTS viewport (https://web.archive.org/web/20201008080715/https:/www.uts.edu.au/)

More specifically, when activated, images and text serve as endophoric deictic expressions, redirecting audiences to corresponding pages that describe featured events in more detail. The left and right arrows enable in-window carousel navigation and alternate the featured events in the same display window without redirection to other pages. The vertical bar shaded in gray to the right of the viewport realizes an additional level of interactivity – the action potential of scrolling down, signaling the availability of content for interaction in the 'below the fold' area.

Similarly, 'hero' image designs feature a salient image next to the verbal text detailing what the featured event is about (Figure 6.2). In contrast to carousels, this image-centric design choice offers fewer navigational opportunities for envisaged audiences, with the

endophoric deictic expression *Visit the exhibition* followed by a right arrow as the only haptically accessible layout structure in the `image-complex` redirecting the audiences to the page with the event description. As a ‘document deictic expression’ (Bateman, 2008: 114), the right arrow supports the purposes of navigation to the corresponding page of the website, which offers the viewer to engage in an interactive virtual reality exhibition
(https://web.archive.org/web/20200928191759/https://luminocity.unsw.edu.au/).
The ‘hero’ image is haptically inaccessible (i.e., it does not respond to a click nor redirects users to other pages), instead serving as a ‘display copy’ in the viewport. Additionally, a graphic shape serves to integrate the `image-complex` formed by the ‘hero’ image, title, sentence, and the deictic expression.

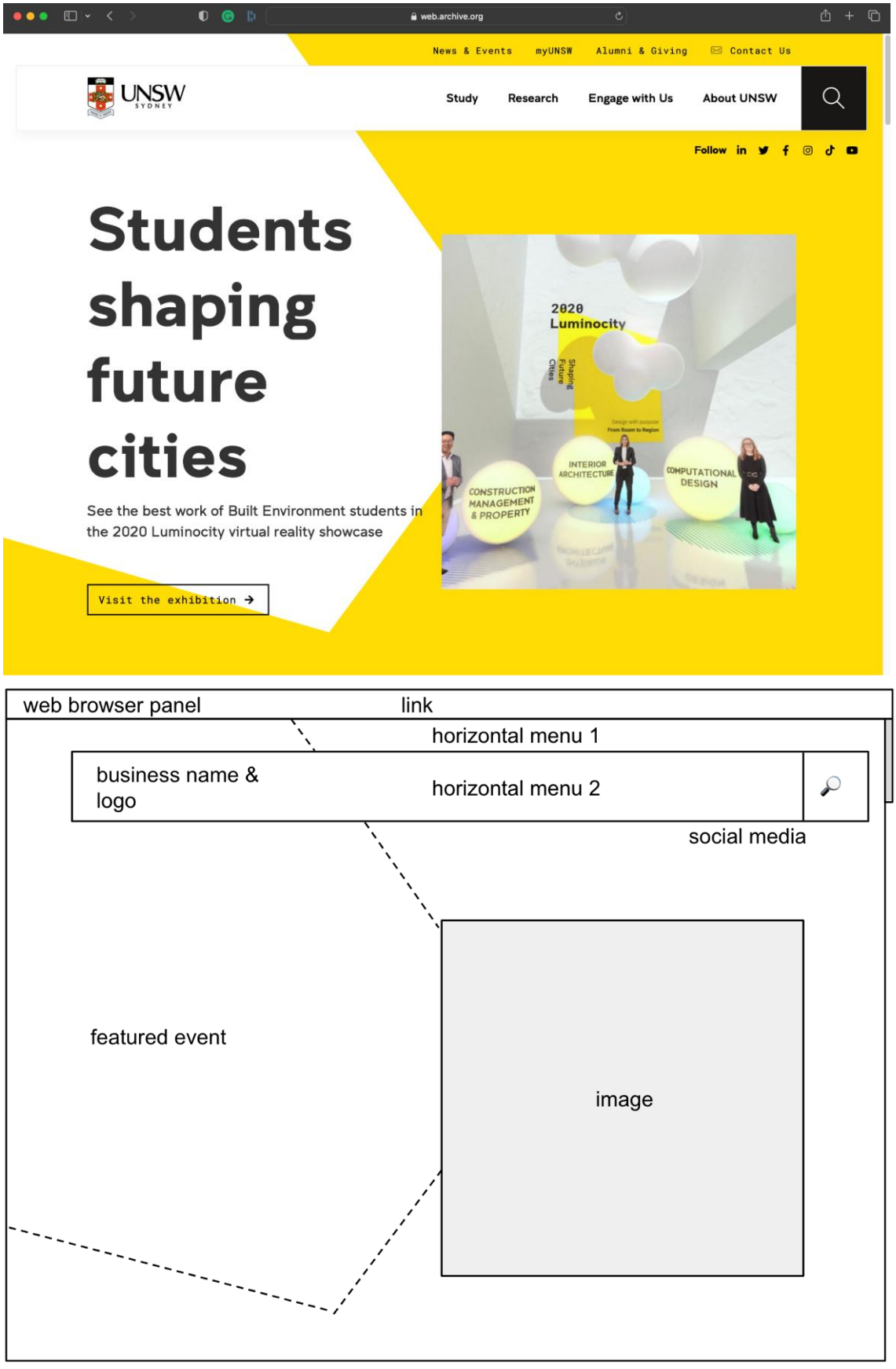


Figure 6.2 ‘Hero’ image-centric design of the UNSW viewport (https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/)

Video loops are featured only on the University of Sydney web homepage, and generally include abstractions (e.g., metaphoric contextual shots, abstract elements such as lines and shapes) and photographic shots of campus grounds (see Figure 6.3).

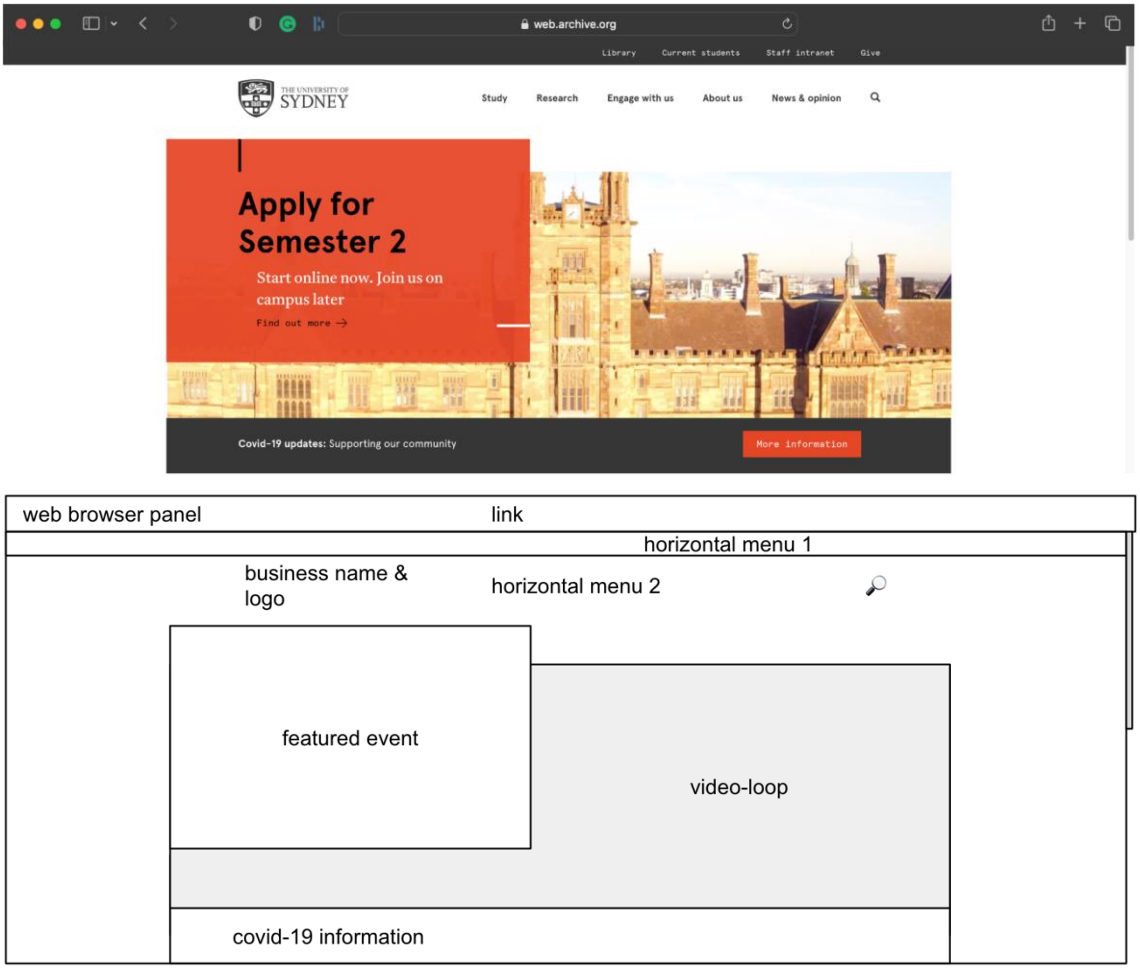


Figure 6.3 Video-centric design of the University of Sydney viewport (https://web.archive.org/web/20200615025010/https://www.sydney.edu.au/)

All three design solutions draw on the immutable ergodic canvas – that is, the envisaged audiences cannot alter the page content, but they have several predetermined opportunities to engage with `image-complexes` by clicking on haptically accessible elements and constructing pathways either across the homepage (as in the case with carousel designs) or subsequent pages of a website. The deictic expressions *Read more*, *Visit the exhibition*, and *Find out more* invite audiences to engage with the content on the subsequent pages. In terms of ergodicity (i.e., how participants are involved in the consumption of the text), carousel designs provide the most opportunities for interaction with the image and verbal content, and audiences are invited to engage in the micro-ergodic work of 'exploring the content'.

6.1.2 Photographic character

In the most recently available (at the time of writing) brand guidelines, university marketing departments started to explain the desired 'photographic character,' providing descriptive recommendations indicative of the image production techniques and values that a specific image style aims to embody. In their essence, these recommendations are less rigid than, for example, the placement and dimensions of the core OVI elements discussed in CHAPTER 5.2.

To understand the logic behind organizational identity design choices, it is helpful to examine the brand guidelines and visual style guides. A distinct and well-implemented photographic style has the potential to communicate what each university stands for. For example, the University of Sydney's *The University of Sydney Brand* (on staff intranet 2019) states:

> It is our aim to represent ourselves as a modern and progressive institution which values the process and rigour of the work carried out in our classrooms, laboratories and libraries. We can show this through beautifully executed photography (30).

Each university outlines the types and uses of images for all university communications, aiming to maintain a specific photographic style. For Macquarie University, the kinds of images identified by the brand guidelines (Macquarie University, *Brand Identity Guidelines*, on staff intranet 2018: 43-49) include (1) big issues, depicting the critical global issues that the university aspires to have a positive impact on, (2) campus-related photography, including campus facilities (i.e., buildings and different campus sites), campus grounds (i.e., landscapes), and campus life (i.e., social interactions on campus), (3) portraits, (4) creation story (i.e., images from historical archives), and (5) objects (i.e., tangible objects of discovery). From this range of recommended photo types, viewports of Macquarie's homepage in the data set mostly feature portraits and campus life (Figure 6.4).

Figure 6.4 Frequent viewport image types on the Macquarie University homepage

Top: portrait (https://web.archive.org/web/20190423060753/https://www.mq.edu.au/)
Bottom: campus life (https://web.archive.org/web/20190326130322/https://www.mq.edu.au/)

The University of Sydney's photographic character aspires to appear 'visionary/inspirational,' 'contemporary,' 'confident,' 'authentic,' and 'creative' (University of Sydney, *The University of Sydney Brand*, on staff intranet 2019: 31). To communicate the university's personality to the envisaged audiences, the types of images described for university-produced materials are 'architectural,' 'creative,' 'constructed,' and 'portraits.' Among these, the visuals in the data set feature campus grounds and abstractions (i.e., 'constructed') as products of digitally created illustrations most frequently (Figure 6.5). In contrast to Macquarie University, social interactions on campus are not a part of the recommended photography style, although images featuring people appeared on the page more frequently up to 2020.

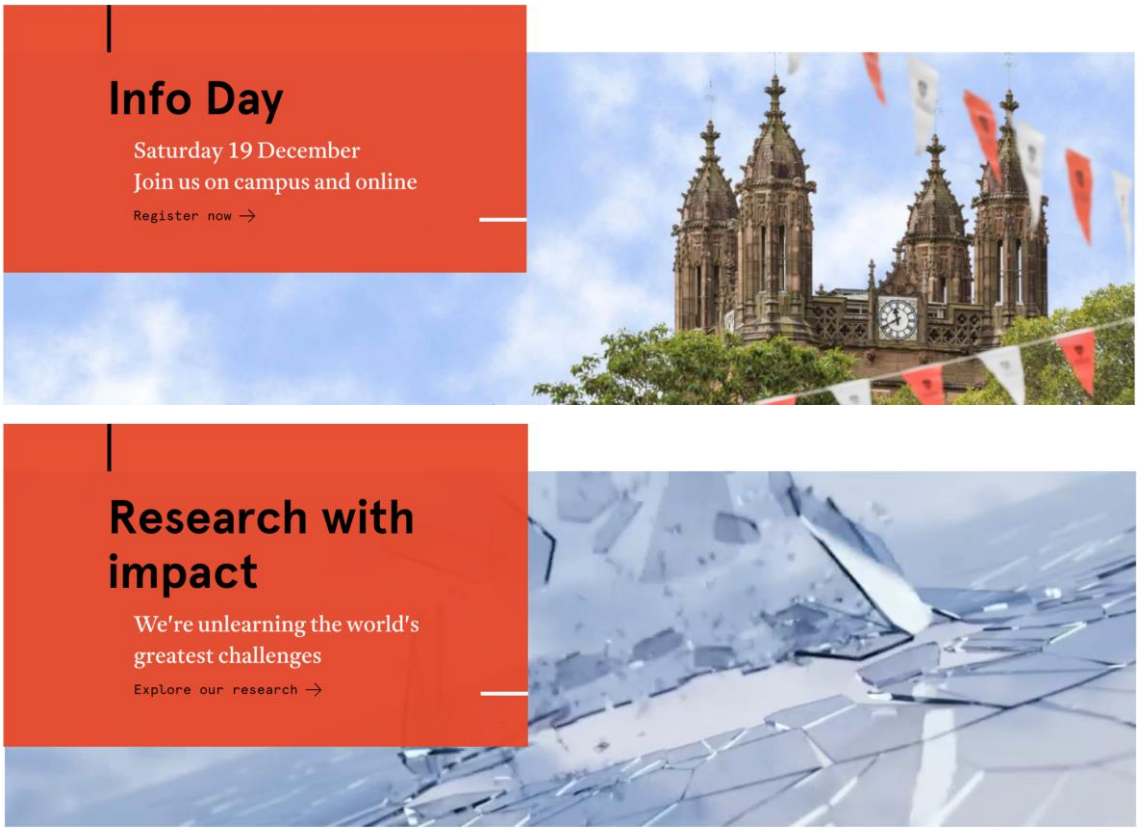


Figure 6.5 Frequent viewport image types on the University of Sydney homepage

Top: architectural (https://web.archive.org/web/20201205064429/https://www.sydney.edu.au/)
Bottom: 'constructed' (https://web.archive.org/web/20200101040831/https://sydney.edu.au/)

University of Technology Sydney uses four main types of images to communicate the university's personality, including 'people' and 'portraits' (Figure 6.6) and 'buildings' and 'research' that encompasses various abstractions or close-up shots of scientific equipment (Figure 6.7) (University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020: 51-54). Another important tool used by the university marketing team 'MCU Creative Services' is data visualization app called 'The UTS Visualiser' that draws on numeric data collated by the university, generating hero graphics based on a particular visual style (e.g., grids, radials, particles, cubes) selected by branding experts (60-63). The UTS Visualiser contributes to visual storytelling for the purposes of university's brand image communication, complementing the visuality of the homepage with unique to the university graphic elements.

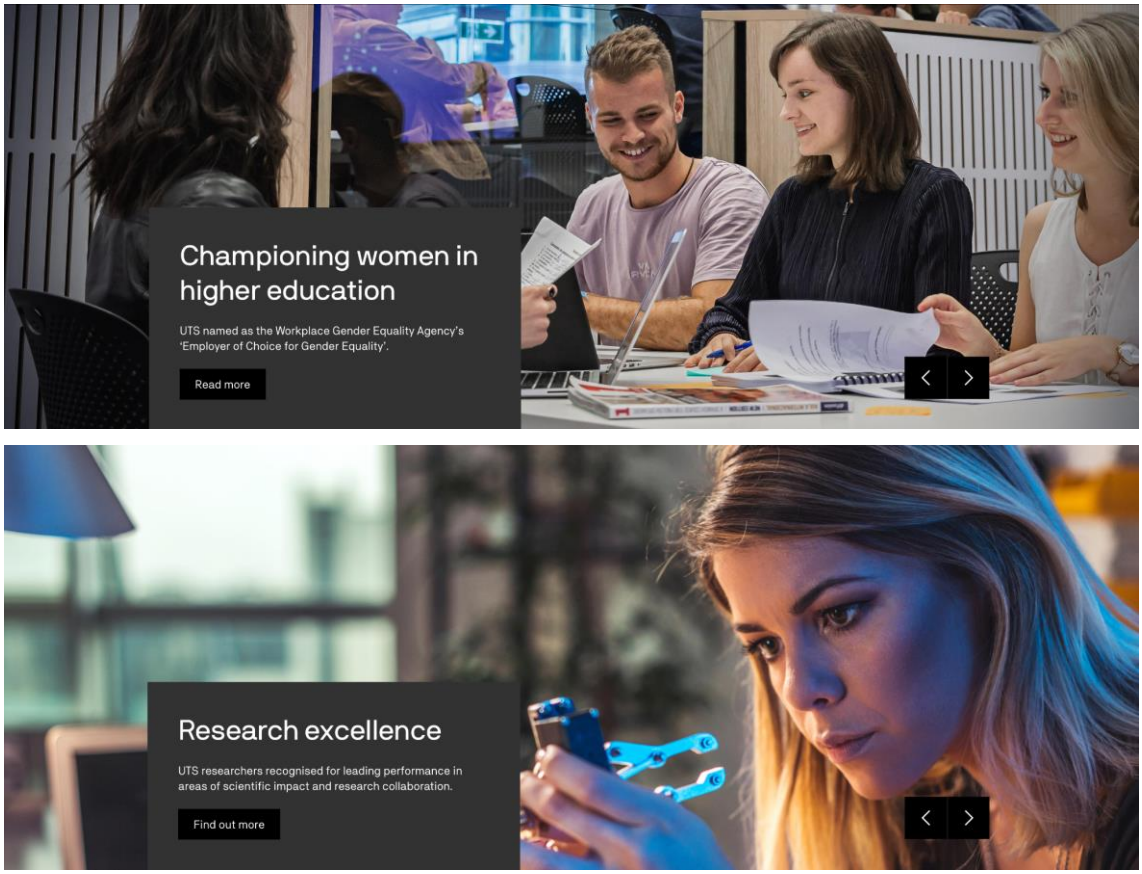


Figure 6.6 ‘People’ and ‘portrait’ in the viewports of the UTS homepage

Top: ‘people’ (https://web.archive.org/web/20200420085756/https://www.uts.edu.au/)
Bottom: ‘portrait’ (https://web.archive.org/web/20200818010051/https://www.uts.edu.au/)

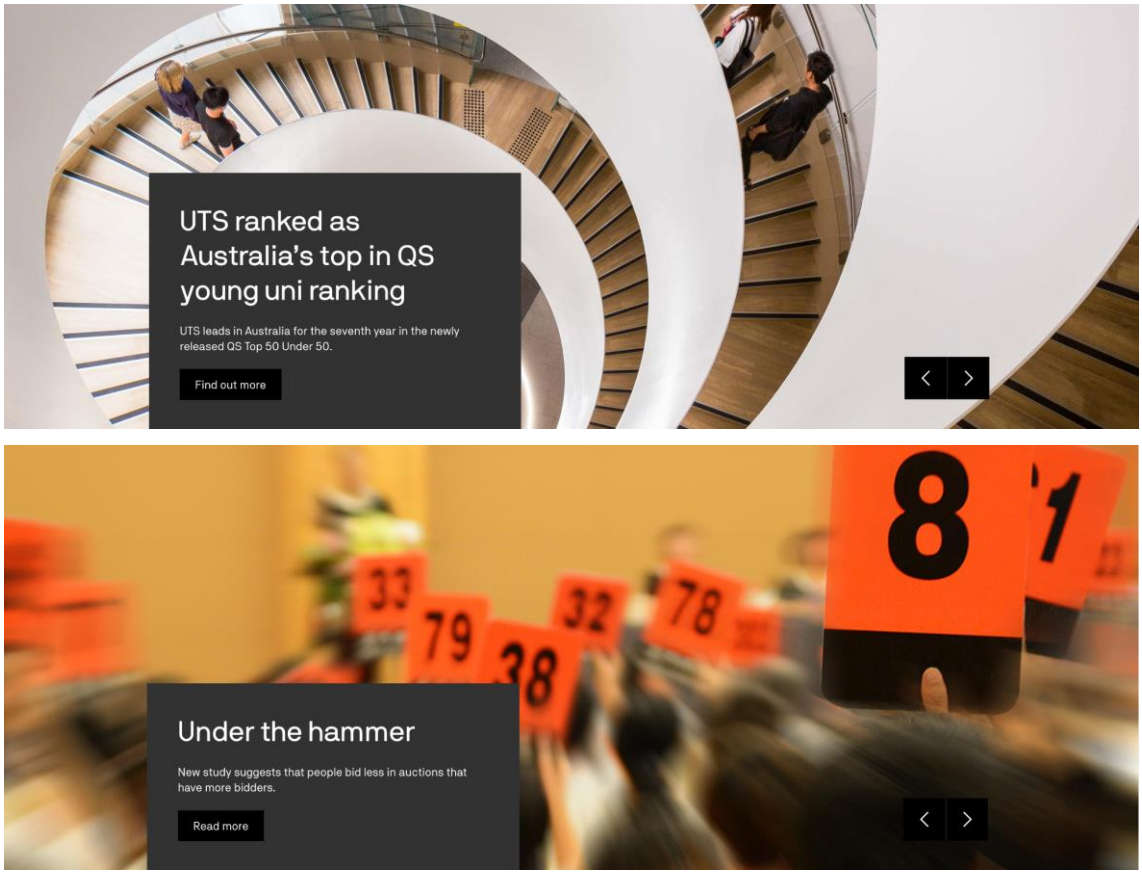


Figure 6.7 'Buildings' and 'research in the viewports of the UTS homepage

Top: 'building' (https://web.archive.org/web/20200625085927/https://www.uts.edu.au/).
Bottom: 'research' (https://web.archive.org/web/20190430035638/https://www.uts.edu.au/)

Lastly, UNSW incorporates three styles of images for their visual brand communication: 'people', 'places', and 'subject matter' or textural and detailed imagery to visualize abstract ideas (UNSW, *Visual Style Guide*, on staff intranet 2021: n.p.). All three types are featured in the viewport of the UNSW homepage, with a relatively stronger emphasis on the depictions of people (Figure 6.8).

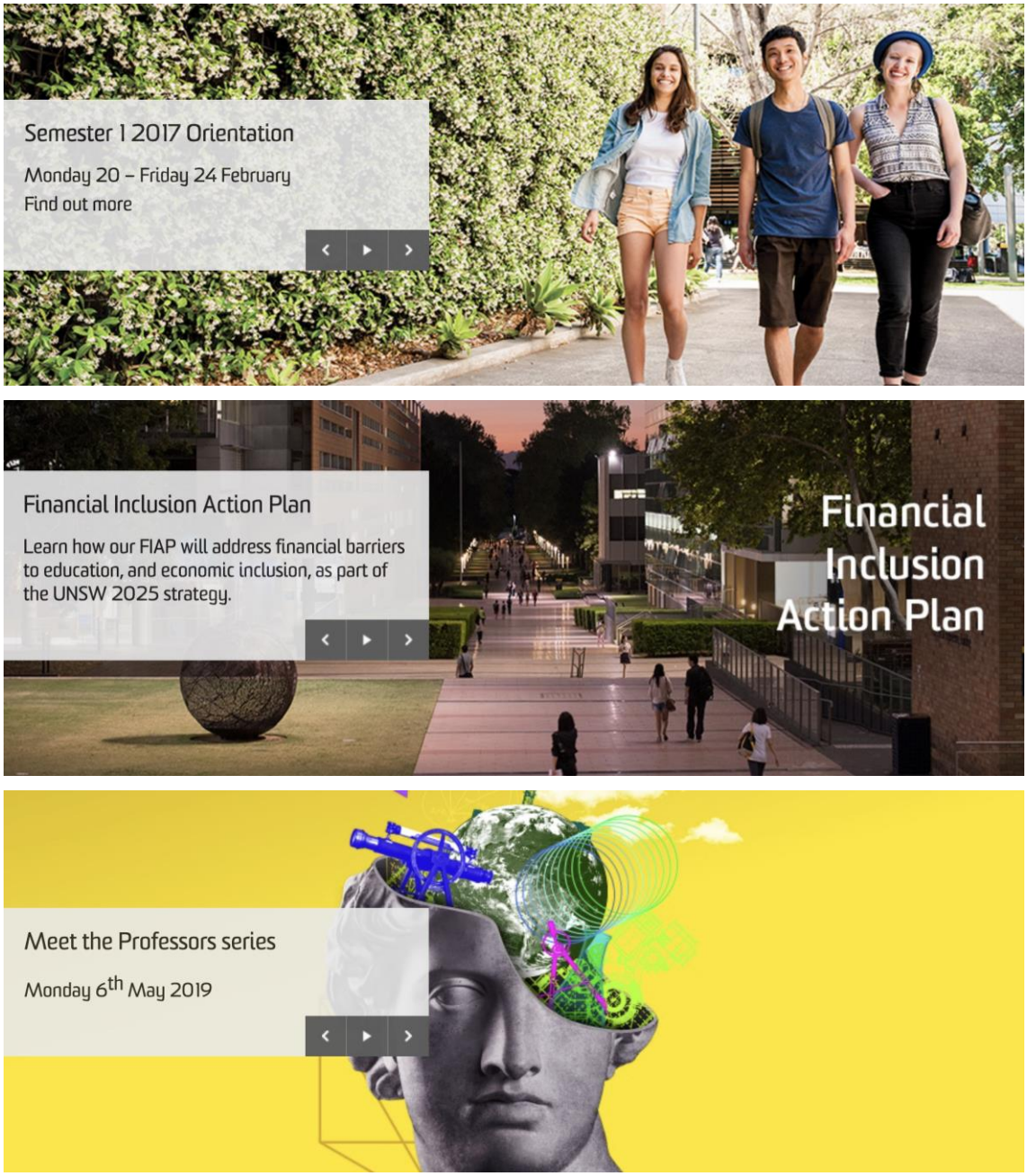


Figure 6.8 Types of viewport images on the UNSW homepage

Top: people (https://web.archive.org/web/20170131032611/https://www.unsw.edu.au/).
Center: places (https://web.archive.org/web/20180330042143/https://www.unsw.edu.au/).
Bottom: abstractions (https://web.archive.org/web/20190430001128/https://www.unsw.edu.au/)

As evidenced by the examined brand guidelines and visual style guides, each university recognizes the opportunities for communicating institutional character in images, detailing types and purposes of different visuals. Three key groups of images shared across the data set include people ('human images'), places (university campus and study/social settings), and abstractions (digitally manipulated kinds of images introduced to communicate abstract concepts). The subsequent section examines the

communicative content of these images while also analyzing group and individual representations to compare emphases on certain representational tropes and inclusivity.

6.2 Visual content analysis

6.2.1 Human vs. non-human representations

The inclusion of people in images has the potential to elicit favorable attitudes from the envisaged audiences, and is reported to enhance the effectiveness of brand interaction (Caspi & Blau, 2008; Nadeem et al., 2020), satisfaction (Richardson et al., 2017), and online trust (Hassanein & Head, 2007). However, the analysis revealed that a binary opposition of human/non-human categorization in images is problematic. Some images that depict human participants, especially through long shots, also emphasize locations or settings. In such images, representation balance between human/non-human content is typically achieved through nearly equal distribution of 'human' and 'inanimate' content in the frame, a wide horizontal angle, and a high vertical angle [POWER: viewer power]. Such images of *visual indetermination* anonymize social actors (see van Leeuwen, 2008: 39) and emphasize Locative Circumstances or Setting (Kress & van Leeuwen, 2021: 45) that relate inanimate content of the image (usually analytical structures, such as 'the background consists of…') to represented human participants. Figure 6.9 demonstrates an instance of visual indetermination through content distribution, a wide horizontal angle, and low vertical angle.

Figure 6.9 Visual indetermination as the means of representational balance (https://web.archive.org/web/20170106194135/http://www.mq.edu.au/)

Most images were found to depict people (274 instances, or 68.5%) in contrast to places and abstractions that were the content matter for 126 images (31.5%). Table 6.1 provides the frequencies of human and non-human images in the annotated corpus: Macquarie

University (82%), the University of Sydney (54%), UTS (67%), and UNSW (62%). Across all human images, representation was predominantly *complete* (i.e., when the head and body are visible) (227 instances) and much less so *metonymic* (i.e., when the body parts – usually, hands – are depicted) (15 instances).

Table 6.1 Distribution of human and non-human images in the annotated corpus (data set #2)

University/ Image types	**Macquarie**	**Sydney**	**UTS**	**UNSW**	**Total**
Human	81	51	69	66	267
Non-human	18	44	30	41	133
Total	99	95	99	107	400

In online environments, images of people can be used to incite positive emotional responses (Riegelsberger et al., 2003) and "augment perceptions of social presence of a website" (Cyr et al., 2009: 555), which may result in increased online trust and favorable attitudes towards an organization (Riegelsberger et al., 2003, 2005). Representationally, a human figure (even more so, a face) bears high 'psychological salience' (Kress & van Leeuwen, 2021: 58), drawing viewers' attention to it and contributing to the envisaged reading path.

Alongside human images, the University of Sydney featured places more prominently than the homepages of other universities. There were 27 instances of featured places on the University of Sydney homepage in contrast to four instances on the Macquarie University homepage, nine instances on the UTS homepage, and five instances on the UNSW homepage, which means that the University of Sydney featured places in 60% of the images in the annotated corpus. As Australia's oldest university, the University of Sydney prides itself on its splendid architecture, much of which dates to the mid-1850s, and compared with the other three younger universities, architectural imagery is used on the University of Sydney web homepage more prominently. It is also the only university that offers viewers a 360° interactive digital experience to see the campus 'through a student's eyes.'

Lastly, abstractions in images were preferred by UNSW more than other analyzed universities (Table 6.2).

Table 6.2 Distribution of places and abstractions in the non-human images in the annotated corpus (data set #2)

University/ Image types	Macquarie	Sydney	UTS	UNSW	Total
Places	4	27	9	5	45
Abstractions	14	17	21	36	88
Total	18	44	30	41	133

Abstractions were used to express concepts and ideas, and, less frequently, generalize research accomplishments (e.g., Figure 6.35).

6.2.2 Group vs. individual representations

Groups and individuals were found to be depicted nearly equally across the annotated corpus, with 133 (52.3%) and 121 (47.7%) instances respectively. Macquarie University was found to depict students in groups most frequently, whereas web homepages of the other three universities depict people in groups nearly equally compared to one another. Notably, the viewport images on the UTS homepage depicted individuals more frequently than other web homepages. Larger groups were found to homogenize participants, diminish their individual differences, and organize them into the category of studentship, whereas smaller groups emphasize diversity and individuality by the visual inclusion of different ethnicities, placing focus on their distinctive physical features. *Visual homogenization* and *differentiation* (van Leeuwen, 2008: 144) (Figure 6.11) were judged by the compositional means of salience, such as relative size, the overall composition of the image (e.g., the group placement in the foreground or background), and modality variables, such as sharpness, focus, and detail of representation (see CHAPTER 4.4.1).

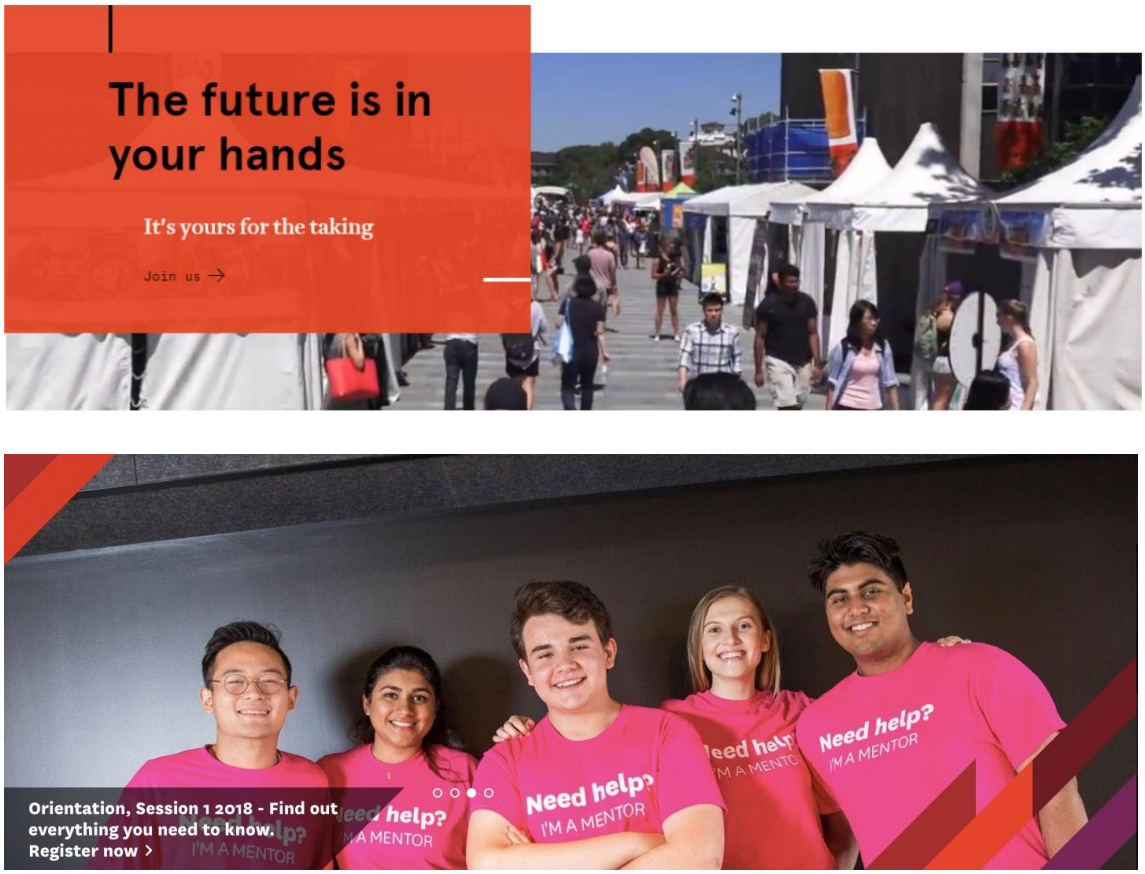


Figure 6.10 Representational strategies of homogenization and differentiation

Top: Homogenization (https://web.archive.org/web/20170222150228/http://sydney.edu.au/)
Bottom: Differentiation (https://web.archive.org/web/20180224120231/https://www.mq.edu.au/)

In the kinds of images, such as the bottom one of Figure 6.11, although the emphasis is on the diversity and individuality of the featured participants, group representation, dynamic vectors, and clothing also signal unity and belonging to a single entity (i.e., a university).

A rapid transition to online learning because of COVID-19 and the rise of Zoom contributed to a new digitally mediated group representation (Figure 6.12) where several represented participants in different physical places are depicted as interacting with one another, constituting a *digitally mediated group*. This new representational form displays a strong reliance on the compositional means of framing – strong frame lines demarcate each represented participant, signaling the individual representation and, at the same time, representing them as a group, visually unified by an implied rather than explicitly stated common purpose. In this way, people are depicted as a group whilst retaining their individuality, reinforced by different narrative processes that individuals are

engaged in – they talk [narrative\verbal], pet a dog [narrative\action\transactional], eat lunch [narrative\behavioral], or laugh [narrative\behavioral].

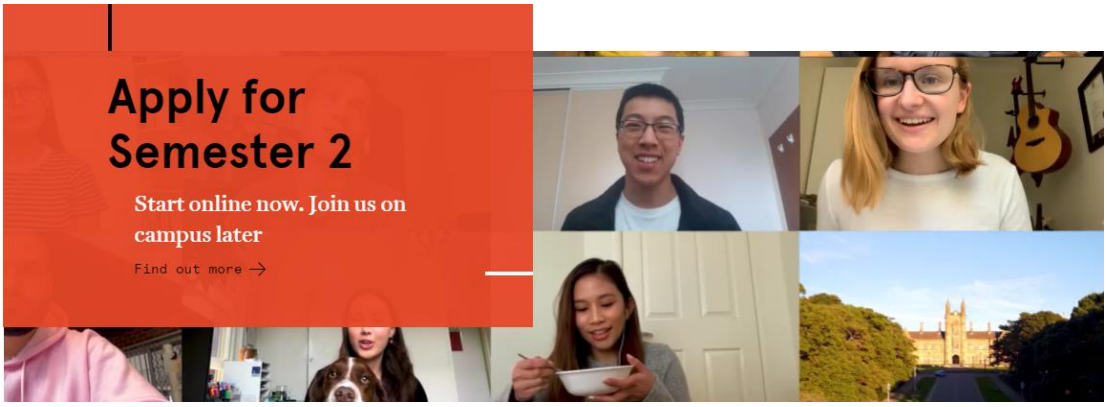


Figure 6.11 New 'digitally mediated group representation
(https://web.archive.org/web/20200615025010/https://www.sydney.edu.au/)

Lastly, a specific technique of group representation positions a group of represented participants as Locative Circumstances (Kress & van Leeuwen, 2021: 45; see also Halliday, 1985). In such visuals, individual (or the main represented participant) is foregrounded through either the relative size or direct address (i.e., eye contact with the audience), and the group provides *Setting* which is usually blurred or desaturated to some extent (Figure 6.13). In this way, although the individuality is visually emphasized, the representation shows that a foregrounded individual is also part of a group, which subtly indicates that the university membership is social.

Figure 6.12 Group representation as *Setting*
(https://web.archive.org/web/20191113072910/https://www.unsw.edu.au/)

Although no significance was observed for the variables 'Gender' and 'Individual/group representation', when a group of five represented participants is depicted, the female-to-

male ratio was usually 3 to 2. This visual choice arguably contributes to the portrayal of an inclusive university environment, although represented female participants were featured more frequently – there were 300 instances of featured female represented participants (58%) in contrast to 213 instances of featured male represented participants (42%). To understand how student enrolments by gender compare to gender representation in images, Table 6.3 provides numbers of student enrolments, and Table 6.4 shows findings on the female and male representation in visuals on the web homepages.

Table 6.3 Student enrolments across four universities in 2020

University	Student enrolments (female), N	Student enrolments (male), N	Female : male enrolments, %
Macquarie	23,050	21,747	51:49
Sydney	42,074	30,472	58:42
UTS	22,549	23,664	49:51
UNSW	29,396	33,886	46:54

Note. Data on female and male student enrolments[22] are from Australian Government Department of Education, Skills and Employment (2022)

Table 6.4 Gender representation in the images in the data set

University	Female representation, N	Male representation, N	Female : male representation %
Macquarie	107	90	54:46
Sydney	54	35	61:39
UTS	73	51	59:41
UNSW	66	40	52:48

The data in Table 6.3 show that enrolments of female students are the largest for the University of Sydney, which aligns with the most significant in the data set representation of female students in images and loop videos on this university's homepage (Table 6.4). Macquarie and UTS student enrolments by gender are nearly equal, but in UTS images, female students are featured more frequently. This representational strategy may be reflective of the university's aspiration to recruit more female students. UNSW has the

[22] Student enrolments for the category 'Intermediate/intersex/unspecified' presented in the report were not accounted for because of the difficulty to judge these gender identities from visuals.

lowest female student enrolments yet also represents female participants more frequently in the viewport images on their homepage.

6.3 Visual strategies for viewer engagement

Based on the analysis of visual interaction (CHAPTER 4.4.3) across three design systems – distance, angle, and gaze as always present in two-dimensional human images (van Leeuwen, 2008: 141) – five visual strategies for viewer engagement were identified, as explained further below:

(1) the strategy of *proximation*, depicting people at either a socio-consultative or casual-personal social distance from the viewer, asking the envisaged audiences to form a social affinity with represented participants
(2) the strategy of *alignment*, depicting people as angled towards the viewer and positioning the viewer as 'part of the world shared by the represented participants'
(3) the strategy of *equalization*, depicting people at eye level, as having a shared and equal relationship with the viewer
(4) the strategy of *objectivation,*[23] depicting people as 'subjects for scrutiny', to capture them or their interactions with other represented participants in a more authentic and unfiltered way
(5) the strategy of *subjectivation*, depicting people as making eye contact with the viewer, asking to symbolically engage with them through the gaze

The visual strategy of *proximation* depicts represented participants at a socio-consultative (133 instances or 45%) or casual-personal distance (85 instances or 29%), positioning the viewer as a "friend" or as a "part of the community", albeit in a one-way manner since it cannot be reciprocated in human-computer interaction (Figure 6.14). Based on Hall's (1964) proxemics (as cited in Kress & van Leeuwen, 2021: 124), these semiotic choices in images reflect personalization. As a visual theme, personalization is situated within a broader societal trend of informalization found across different social practices (e.g., grooming, dress, shopping, and business conversations), started in the 1920s and accelerated by the rise of digital technologies (van Leeuwen, 2021a). In other words, viewers are positioned as if they are close enough to the represented participants to be part of their world.

[23] A term 'objectivation' is introduced by Leeuwen (2008: 141). The strategy can also be referred to as 'objectification.' The current study identifies the strategy of 'subjectivation' which can also be termed 'subjectification.'

Figure 6.13 The visual strategy of proximation through a socio-consultative SOCIAL DISTANCE (https://web.archive.org/web/20190928001649/https://www.unsw.edu.au/)

In contrast, long shots [SOCIAL DISTANCE: public] were often used in conjunction with bird's eye view shots [POWER: viewer power] to emphasize the scope/breadth of the representational content instead of aiming to elicit any close emotional connection with the viewer. Combinations of public social distance and viewer power comprise a common representational strategy in the loop videos on the University of Sydney's homepage (Figure 6.15).

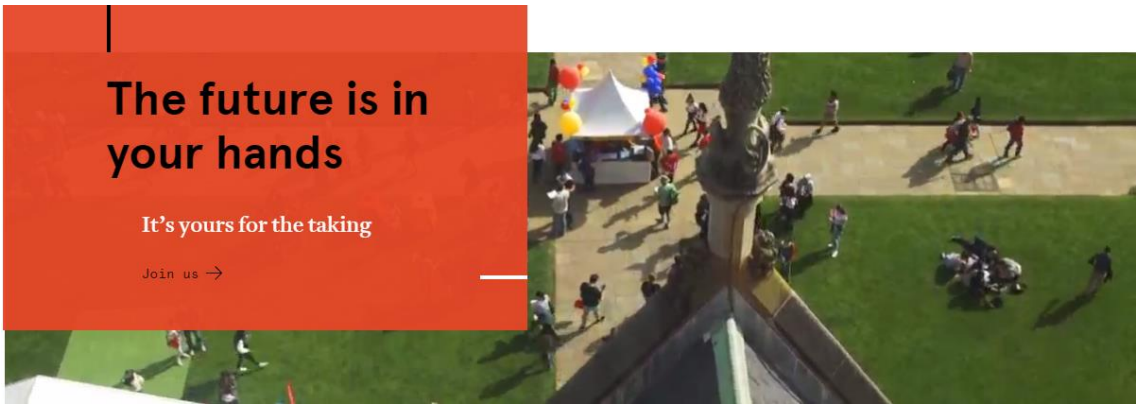


Figure 6.14 Public SOCIAL DISTANCE as a frequent choice in visuals on the University of Sydney homepage (https://web.archive.org/web/20161228111239/http://sydney.edu.au/)

The strategy of *alignment* positions viewers as 'aligned', 'brought into agreement' with the participants represented in images, showing that the represented participants are "part of the viewer's world". 67.8% of human images (211 instances) depicted people angled toward the viewer. This visual design choice was often used together with the strategy of proximation (i.e., represented participants angled toward the envisaged audiences were mostly depicted at a personal or socio-consultative distance),

maximizing the representational positioning as “friends”, “us”, “part of the community” and “part of the viewer world” (Figure 6.16).

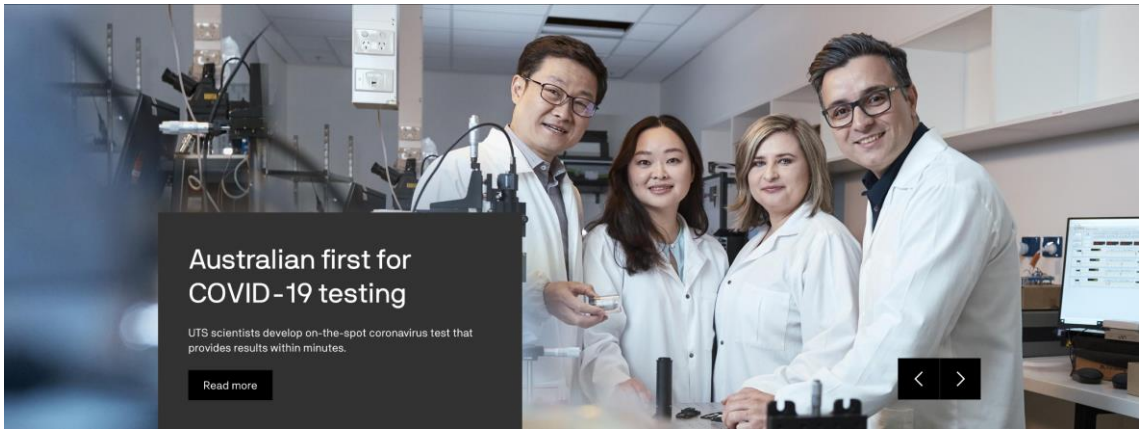


Figure 6.15 The visual strategy of alignment through a frontal angle [SOCIAL RELATION: involvement]
(https://web.archive.org/web/20201031051940/https://www.uts.edu.au/)

In contrast, representations in more agentive roles were depicted at an oblique angle [SOCIAL RELATION: detachment] so that the viewer is positioned as an observer of a transactional action that a represented participant is engaged in (Figure 6.17).

Figure 6.16 Agentive representation at an oblique angle on the UTS web homepage [SOCIAL RELATION: detachment]
(https://web.archive.org/web/20201218151855/https://www.uts.edu.au/)

The visual strategy of *equalization* encodes a shared and equal relationship between the viewer and the people depicted in an image (193 instances or 67%). Representations at eye level reflect no power difference with the envisaged audiences. In this way, images invite the viewer to form a connection with the represented participants, reinforced by either direct or indirect address, contributing to relating the audience as ‘equal’ to a representation (Figure 6.18).

Figure 6.17 The visual strategy of equalization through eye level representation [POWER: equal] (https://web.archive.org/web/20201227190120/https://www.unsw.edu.au/)

The visual strategy of *objectivation* (212 instances or 75%) is manifested through indirect address (i.e., represented participants make no eye contact with the viewer and are presented for observation). The strategy of objectivation is indicative of an attempt to capture people's experiences at a specific point in time (Figure 6.19), in contrast to more staged 'posing for photos' shots.

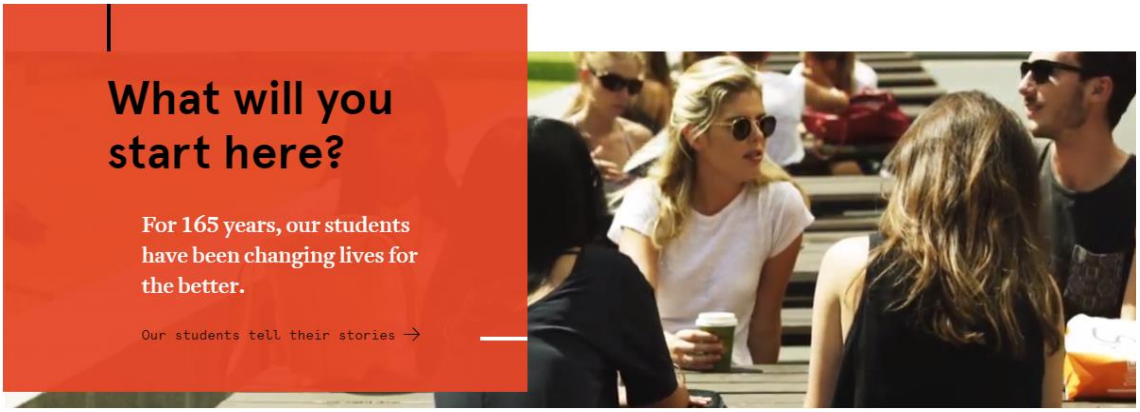


Figure 6.18 The visual strategy of objectivation [SOCIAL INTERACTION: indirect address] (https://web.archive.org/web/20160830051741/http://sydney.edu.au/)

The visual strategy of *subjectivation* establishes an imaginary connection with the viewer, 'demanding' the viewer's attention. Although the images where participants making eye contact with the viewer comprised only 25% (70 instances), interpersonally, this design choice is significant as the representation 'asks' for viewer attention to and engagement with the content of the image through gaze. This strategy was used in more official university contexts, such as functions and celebrations of accomplishments. It vastly

applied to the portraits of individuals, mostly staff, depicted at a personal or socio-consultative distance (e.g., top image in Figure 6.20) and so-called 'posing' group photos in formal functions and events (e.g., bottom image in Figure 6.20). Subjectivation was used for student depiction infrequently, although one might expect such photos to be frequent.

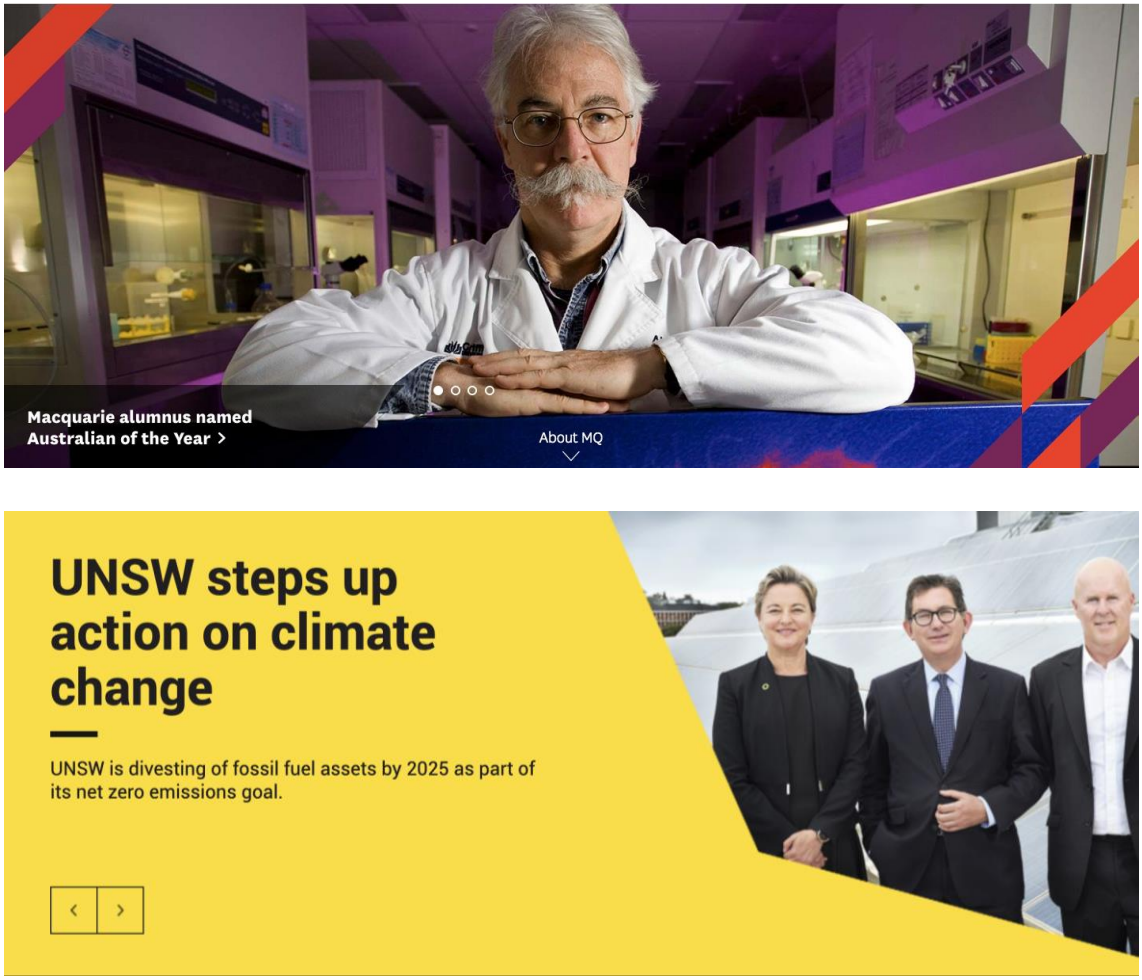


Figure 6.19 The visual strategy of subjectivation [SOCIAL INTERACTION: direct address]

Top: portrait (https://web.archive.org/web/20170130015642/http://www.mq.edu.au/)
Bottom: group photo (https://web.archive.org/web/20200320080515/https://www.unsw.edu.au/)

The identified strategies of proximation, alignment, equalization, objectivation, and subjectivation contribute to designing the viewer's relation to the people represented in images, arguably enticing the envisaged audiences to form favorable reactions to representations. The nature of these envisaged reactions bears subtle differences, as explained in the following section.

6.4 Visual design choices

The four analyzed homepages share the visual strategies for viewer engagement, which contribute to the construction of several sets of organizational visual identities. In the following sections, the most frequent co-occurrences of visual choices for three variables – non-human images, group images, and individual portraits – across four university homepages are presented through 'visual maps.' The visual maps were generated through the *Visual Tools* capability of the MAXQDA software and subsequently edited manually to show the most representative connections between the identified variables outlined above. The process included exploring the summary and frequencies of all codes in the annotated corpus, referred to as *Code Matrix* in MAXQDA, and then rendering these data into the visual maps presented in the subsequent sections. All four maps show clusters of visual choices indicative of the visual strategies for viewer engagement identified in SECTION 6.3 and subtle differences across several representational and interactional design choices across universities. These are first discussed further below before specific visual personae are identified in SECTION 6.5. APPENDIX D provides a coding sheet for all visual choices, and APPENDIX F lists all the coded segments in the data set.

6.4.1 Macquarie University

Macquarie University used all visual strategies for viewer engagement, depicting represented participants in groups and individually with subtle differences, as reflected in Figure 6.21. Three colors reflect the color codes assigned to the three types of annotations as explained in CHAPTER 4.4 – green for the choices in the viewer network across the systems of SOCIAL DISTANCE, INVOLVEMENT, POWER, and SOCIAL INTERACTION, which formed the basis for the identification of the visual strategies for the viewer engagement, purple for visual content analysis (i.e., places, abstractions, groups, and individuals), and orange for the choices across specific types of NARRATIVE PROCESSES and CONCEPTUAL STRUCTURES (i.e., representation). The larger the circles next to each code, the more code assignments have been made with that code the frequencies of which are specified in brackets next to each code. Lines between two codes indicate code co-occurrences, and the line width shows that two codes co-occurred more frequently (thicker lines) or less frequently (thinner lines). Three colors are used to differentiate code-occurrences for individual portraits (grey lines), group depictions (blue lines), and places and abstractions (black lines). The distance between different codes is not meaningful in the visualization because they simply demonstrate that specific design choices occur in the annotated corpus.

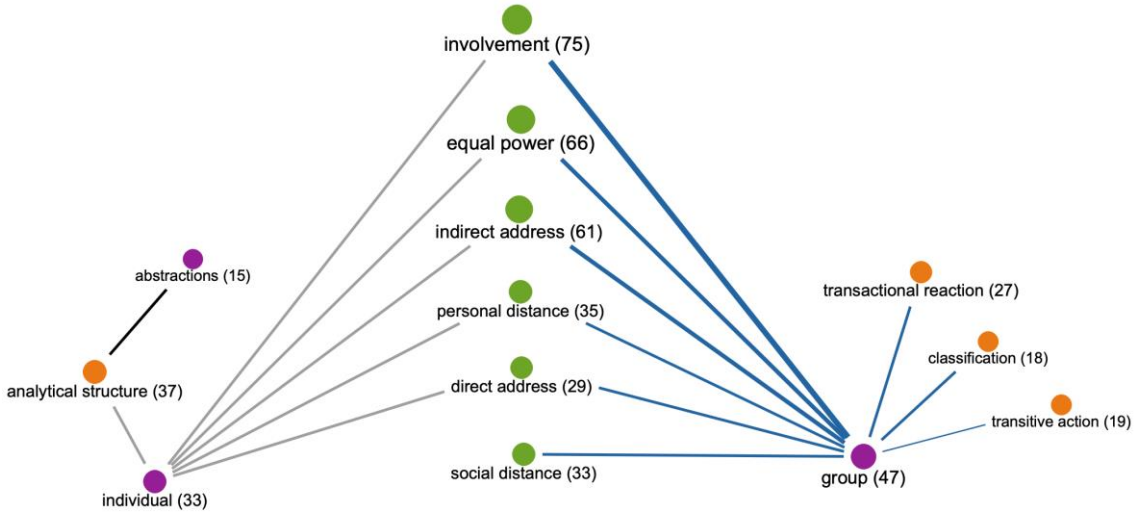


Figure 6.20 Clusters of visual design choices in the viewport images on the Macquarie University homepage

Both in groups and as individuals, the represented participants on Macquarie's homepage were depicted at a frontal angle [the strategy of alignment; SOCIAL RELATION: involvement] and at eye level with the viewer [the strategy of equalization; SOCIAL RELATION: equal power], communicating a sense of equality and approachability and inviting the envisaged audiences to develop social bonds with the represented participants. Additionally, the strategy of objectivation [SOCIAL INTERACTION: indirect address] was used to position the envisaged audiences to observe the social environment of the represented participants and share the positive sentiment inscribed in images. Depictions at the personal distance were more characteristic of individual portraits, and socio-consultative distance was used for group representation.

Figure 6.22 demonstrates how the most frequently deployed strategies for viewer engagement on images on the Macquarie web homepage come together in a single visual. Two represented participants are depicted at a personal social distance, at eye level from the viewer, with one of the participants partially angled toward the viewer. Both participants look at each other, and not the viewer. The focus is on transactional reaction between the participants who do not 'demand' the viewer's attention but invite the envisaged audience to closely observe their social interaction during a university event signaled by the participants' badges and the background. The personal distance suggests that viewers are close enough to be 'part of' this scene, and the eye-level angle suggests that the viewer and represented participants are 'equal' in some way.

Figure 6.21 The strategies of proximation, equalization, (partial) alignment, and objectivation in a visual on Macquarie's web homepage (https://web.archive.org/web/20180622132938/https://www.mq.edu.au/)

For group representations, transactional reactions where represented participants (i.e., Reacters) were often looking at other represented participants (i.e., Phenomena) which contributes to visual depictions of shares social interactions (i.e., university life is a joint experience), contributing to the atmosphere of a collegial social setting. The visual strategy of subjectivation [SOCIAL INTERACTION: direct address] was used less frequently in individual representations (29 instances, e.g., the top image in Figure 6.20). Groups were often represented as classifications, and this representational choice often occurred alongside direct address (i.e., group of participants making eye contact with the viewer). In Figure 6.23, nine represented participants are posing for a photo – they are positioned next to each other at a predominantly frontal horizontal angle, at public social distance, somewhat 'out of reach' for the viewer, yet addressing the viewer through the gaze. The image is static and constructs the celebration of 'achievement.' The visual theme of 'achievement' is reinforced by the text to the bottom left as well as the stage setting.

Figure 6.22 The visual strategy of subjectivation on Macquarie's homepage (https://web.archive.org/web/20170901042206/http://www.mq.edu.au/)

The type of representation in Figure 6.23 appeals to the rhetorical principle of ethos, presenting management, award winners, and sometimes staff in the context of their academic achievements. In the annotated corpus, it was the preferred semiotic choice for depicting people with a higher status (62%), such as senior management, honorable visitors, university medalists, and less so students. This contrasts with a more casual representation: students were likely to be depicted as non-posing when the intended purpose of representation is to show them in the setting of their university experience. The variation was found significant in relation to the student-to-staff/senior management representation for all four pages – judged from the visual evidence, 77% of all represented participants were students and only 23% staff and visitors.

6.4.2 University of Sydney

Contrasting to the rest of the annotated corpus, the images on the University of Sydney homepage deployed a limited range of visual strategies for viewer engagement and had a stronger emphasis on analytical structures (Figure 6.24). This significant portion of images is conceptual in nature, either providing a bird's eye view of the university campus (places) or depicting abstract phenomena (abstractions).

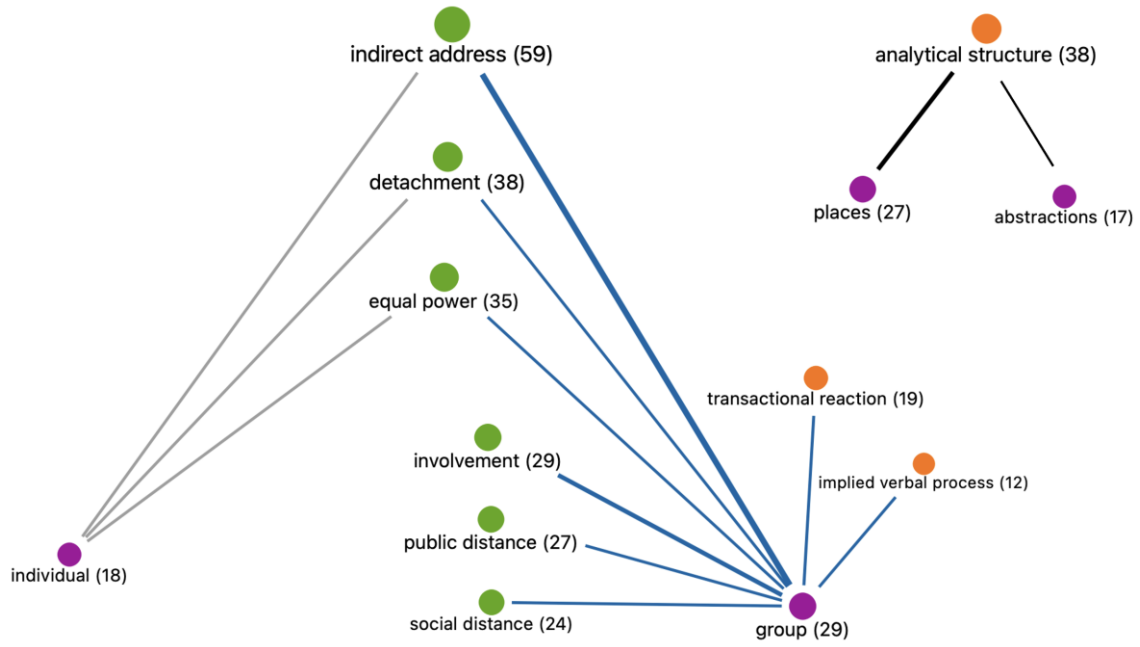


Figure 6.23 Clusters of visual design choices in the viewport images on the University of Sydney homepage

The depiction of places (27 instances) was more frequent on the University of Sydney homepage compared with the rest of the data set. Although people were often shown in such images, the campus buildings were foregrounded as an architectural icon that invites the viewer to form social bonds with the place rather than people who are depicted as 'attributes' of the place. As shown in Figure 6.25, people are part of campus or physical environment (i.e., part of the university as a physical place).

Figure 6.24 Depiction of campus grounds as a common representational technique on the University of Sydney homepage
(https://web.archive.org/web/20150826190905/http://sydney.edu.au/)

The represented participants as part of campus were also often depicted as traversing through campus and sometimes chatting to their peers on the way (i.e., implied verbal

process), and the viewer is invited to look at them from above rather than bond with them, for example, indoors [POWER: viewer power] where the viewer is invited to pay attention to the impressive architectural design of the stairwell (Figure 6.26).

Figure 6.25 Depiction of interior as a representational technique on the University of Sydney homepage
(https://web.archive.org/web/20180731041420/https://sydney.edu.au/)

Group representations were also mainly presented at an oblique angle (i.e., detachment), not looking at the viewers (i.e., indirect address) but as having equal power with them. The participants in groups were mostly engaged in transactional reactions – looking at each other or objects within the frame. Groups were depicted at a public distance more frequently in the University of Sydney's visuals compared to the rest of the annotated corpus. This type of long shots that result in public distance depictions further diminishes the individuality of represented participants and homogenizes them.

Individuals were depicted only in eighteen instances, as not looking at the viewer and at an oblique angle but at the eye level (i.e., of equal power). These visual choices result in constructing somewhat 'detached' portraits where represented participants (who were predominantly female) are presented for observation rather than any symbolic engagement. For example, in Figure 6.27 the viewer is positioned to observe the represented participant as well as the focal point (the plane taking off in the background) vicariously.

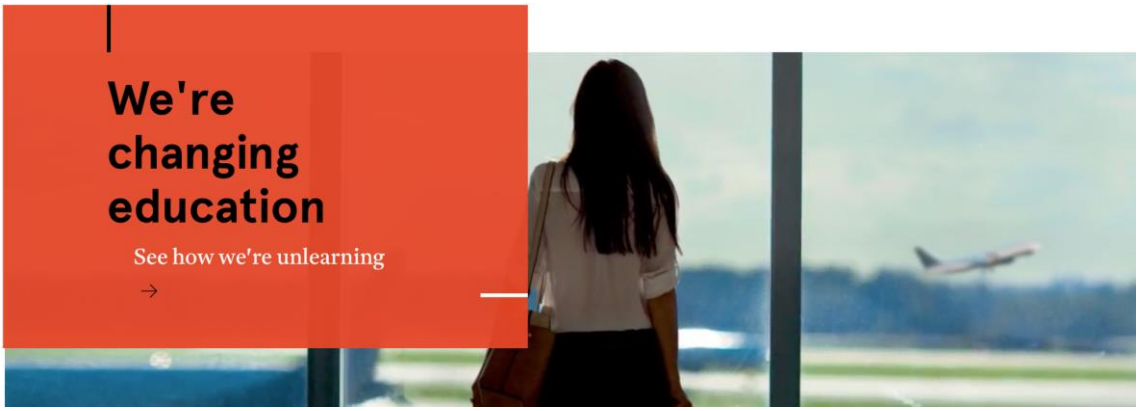


Figure 6.26 Detachment as a common strategy in the viewport images on the University of Sydney homepage (https://web.archive.org/web/20170927045140/http://sydney.edu.au/)

The co-occurrence of these three design choices (i.e., an oblique angle, individual representation, and absence of gaze at the viewer) invites the envisaged audiences to form associations with the physical space (most frequently, the university campus) rather than with individuals while also emphasizing individuality (and not sociality) of the depicted person.

6.4.3 University of Technology Sydney

UTS homepage was found to draw on the visual strategies for viewer engagement, and depict individuals and groups angled toward the viewer (involvement: 58 instances), not making eye contact with the viewer (indirect address: 49 instances), at the equal vertical angle (equal power: 42 instances), and at a social distance (39 instances). Figure 6.28 highlights the predominant representation of individuals, although group representation is also prominent. Individuals were mostly female, and in addition to the above-discussed interactional choices, they also appeared at a personal distance (24 instances) from the viewer, making eye contact with the viewer (direct address: 18 instances), and, in seventeen instances, at low vertical angle (representational power). The visual choice of close-up shots tends to be '*personizing'* (Ang & Knox, 2020, n.p.), positioning the viewer to interact with and relate to the depicted person more closely, and is complemented with the eye contact aiming to establish rapport with the viewer.

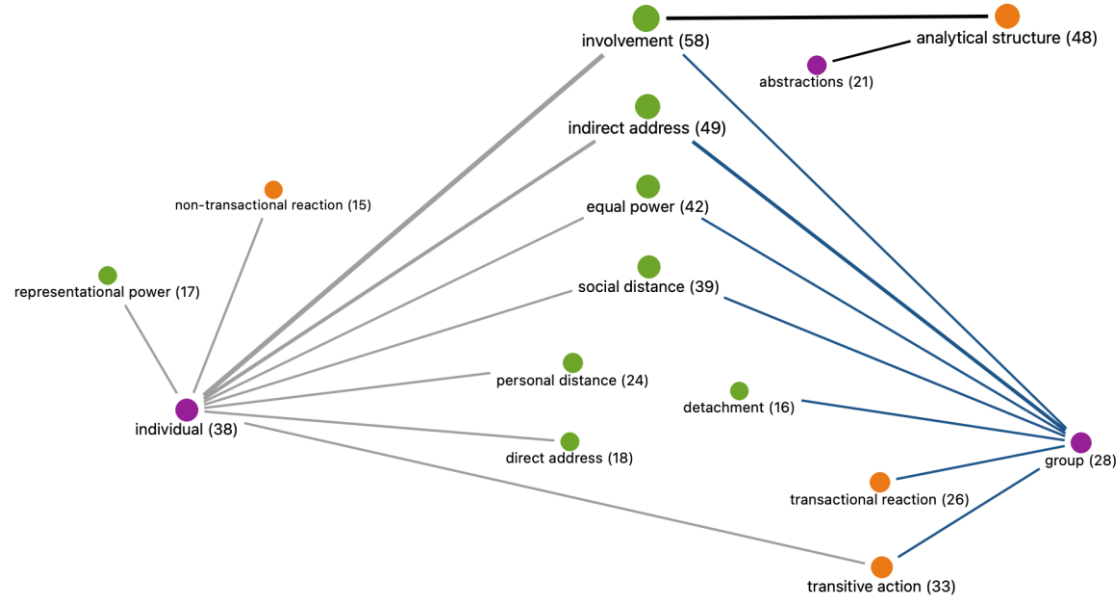


Figure 6.27 Clusters of visual design choices in the viewport images on the UTS web homepage

Analytical visual structures (i.e., people and things depicted for scrutiny) were another frequent representational choice for the images on the UTS homepage, presenting participants (i.e., Carriers) and their features (i.e., Possessive Attributes) for scrutiny. Often, Carriers were depicted in a scientific and medical kinds of *Setting*, and the viewers were invited to look at the details of their apparel (e.g., Figure 6.29).

Figure 6.28 Analytical structure as a frequent representational choice on the UTS homepage https://web.archive.org/web/20200415055147/https://www.uts.edu.au/

Human represented participants were engaged in agentive roles most frequently in the UTS viewport images compared with the rest of the data set (33 instances). They were represented as operating in their campus environment – working with tubes, taking notes, recording videos, building robots, and so on (Figure 6.30). This representational technique creates a sense of a dynamic university environment where things are 'getting

done' rather than one where things simply 'happen', which aligns with the university's motto, "Think. Change. Do."

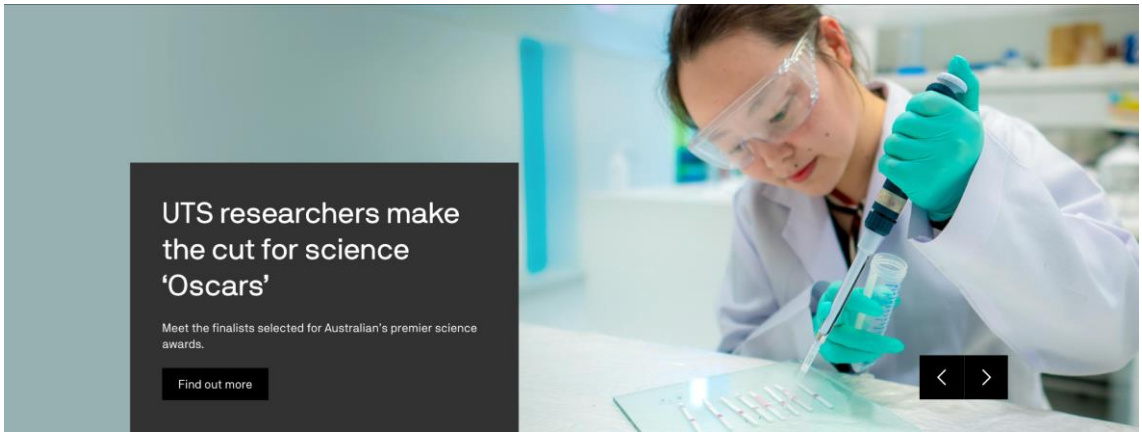


Figure 6.29 Agentive representation through transactional action on the UTS web homepage (https://web.archive.org/web/20201012050322/https://www.uts.edu.au/)

Transitive action (32 instances) and indirect address (49 instances) frequently co-occurred in the UTS images, which is anticipated – when represented participants are doing something, the gaze usually leads toward the affected object (i.e., Phenomenon). However, it is the indirect gaze that helps to create the sense of authenticity, the symbolic value of 'the moment', which would have had a different effect if the depicted people were looking at the viewer. The represented participants engaged in transactional actions were mostly female (22 female Actors in 32 instances of transitive action). Often, they were depicted individually, and the representations reinforced the agency and individuality of women, often working with scientific or technical equipment (e.g., Figure 6.30).

6.4.4 UNSW Sydney

UNSW Sydney incorporates all strategies for viewer engagement and makes use of representational and interactional content outlined in Figure 6.31. The most frequent strategy of viewer engagement was proximation [personal and socio-consultative social distance: 50 instances]. The visual strategies of alignment [involvement: 49 instances], objectivation [indirect address: 43 instances], and equalization [equal power: 46 instances] contributed to symbolically positioning represented participants as "friends" in relation to one another, enjoying social events together and looking at one another [transactional reaction], and the viewer is invited to observe their social interaction.

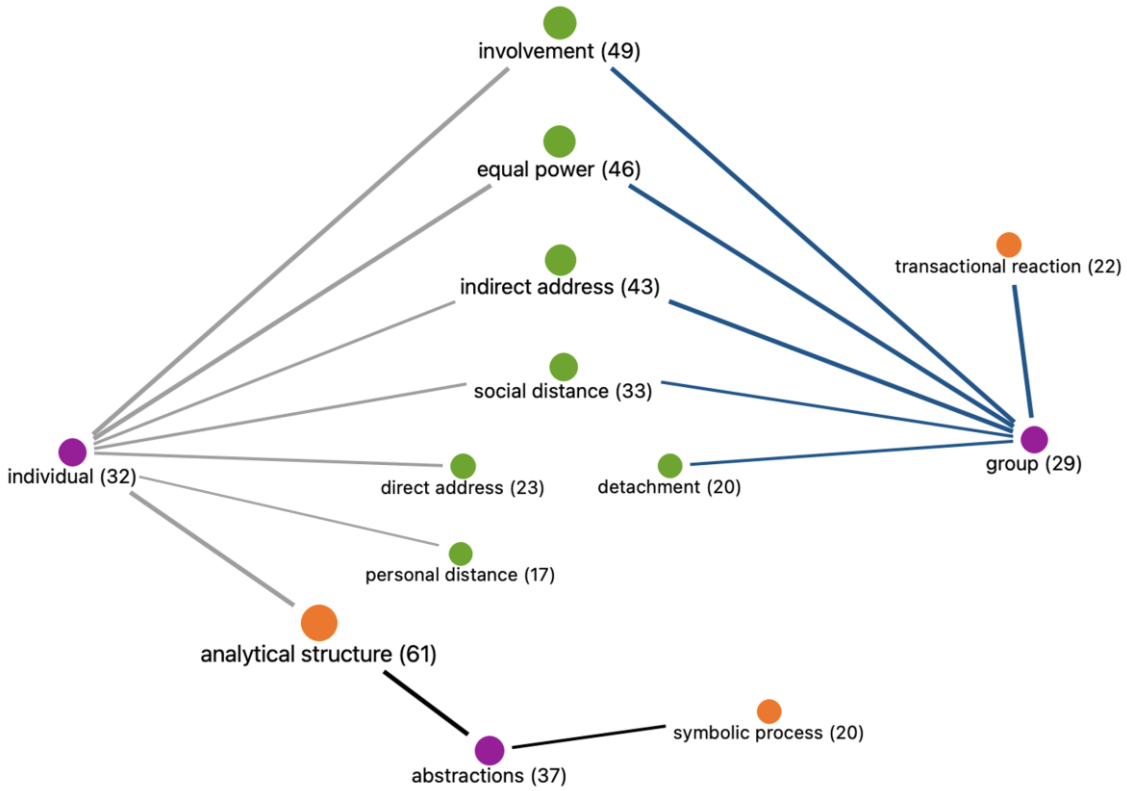


Figure 6.30 Clusters of visual design choices in the viewport images on the UNSW web homepage

The viewport images on the UNSW homepage represented participants of both genders nearly equally (female-to-male ratio: 52:48), but individual representations were predominantly female (32 instances), with only 11 instances of individual depictions of male represented participants. Similar to Macquarie's homepage, the strategy of subjectivation was deployed less frequently (23 instances) and mostly for the depictions of female represented participants as individuals (e.g., Figure 6.32). These visual choices, reinforced by the angle toward the viewer, contribute to the construction of more personal and intimate portraits of women on the UNSW homepage.

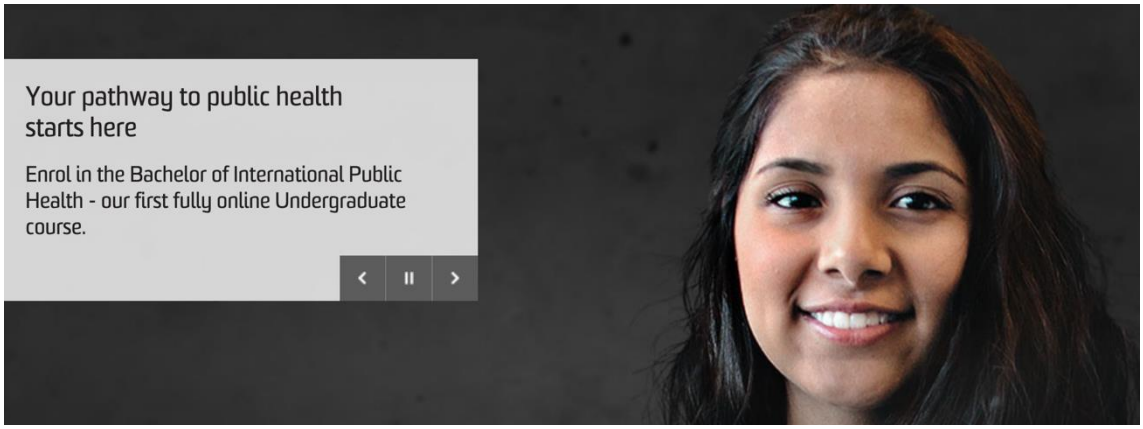


Figure 6.31 The strategy of subjectivation in an individual female portrait on the UNSW homepage
(https://web.archive.org/web/20171116063734/https://www.unsw.edu.au/)

A higher volume of analytical structures (61 instances) in comparison with the rest of the data set shows that UNSW favored depictions of social constructs rather than social action (i.e., the represented participants as well as abstractions were represented as 'being' rather than as doing something). Another type of conceptual structure – symbolic processes – was used 0.5 times more frequently (52%) than other homepages in the data set, usually with the Carrier establishing meaning or identity through Symbolic Attributes (Figure 6.33).

Figure 6.32 Symbolic structure on the UNSW web homepage
(https://web.archive.org/web/20200211093242/https://www.unsw.edu.au/)

UNSW was also found to experiment with the visual design choices in viewport images more frequently than the rest of the data set, particularly in terms of coding orientation, from more naturalistic, objectified depictions of people (e.g., Figure 6.32) and places to creative multimodal integration of various design elements from an abstract coding orientation. Figure 6.34 shows two such experimental designs on the homepage, demonstrating intensified focus on the integration of several OVI elements (such as

brand color, typography, and graphic shapes (top) and color and typography (bottom) into the viewport image space.

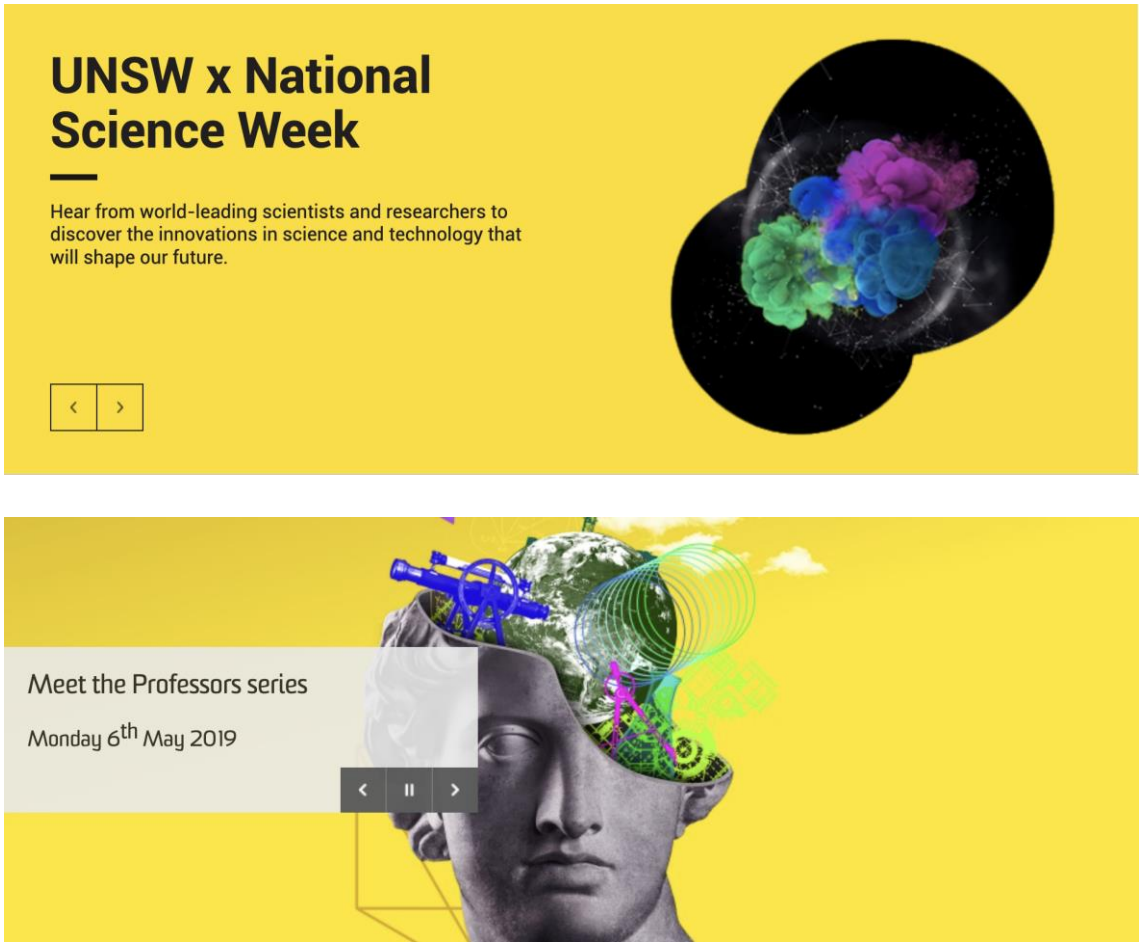


Figure 6.33 Experimentative visual designs of viewport images on the UNSW web homepage

Top: abstraction embedded in ‘graphic shape’
(https://web.archive.org/web/20200803032126/https://unsw.edu.au/)
Bottom: symbolic abstraction embedded in the brand color ‘hero yellow’
(https://web.archive.org/web/20190430001128/https://www.unsw.edu.au/)

6.5 Organizational visual identity personae and representational icons

Based on the identified visual strategies of viewer engagement realized by the visual choices of personal and socio-consultative social distance, frontal angle, eye-level shots, as well as direct and indirect address through gaze, each university deployed a similar range of viewer engagement strategies to represent its OVI in the viewport images. In conjunction with formal image properties, such as human vs. non-human representation

and group vs. individual representation, differential use of these strategies resulted in constructing several personae and representational icons reflective of four broader sets of visual identities: (1) university member as an individual, (2) university members as community, (3) university as a physical entity, and (4) university as an abstract entity. These sets of broad identities were judged by the visual choices discussed above and three main indicators: individualism, membership, and affiliation, as discussed below.

In *individual representations* (i.e., a single represented participant is featured), the visual strategies of viewer engagement are deployed together with specific narrative and conceptual structures to construct personae of a university member and individual. The identified personae are: “agent”, “achiever”, “aspirant”, and “friend”.

The visual persona of “agent” emerges in individual representations that deploy the strategies of proximation and objectivation alongside transactional action. The envisaged audiences are positioned as observers of the action performed by an individual in an image, always in a university setting, and are invited to do so from a close socio-consultative distance (Figure 6.35). Such representations capture individuals working on a problem or issue, usually with intentional focus. As discussed in SECTION 6.4, individual “agents” are often female participants, often working with scientific equipment, which may be indicative of university efforts to increase female enrolments in science, technology, engineering, mathematics, and medicine (STEMM) to bridge the existing gender gap in these fields. This visual persona is particularly characteristic of the visuals on the UTS web homepage.

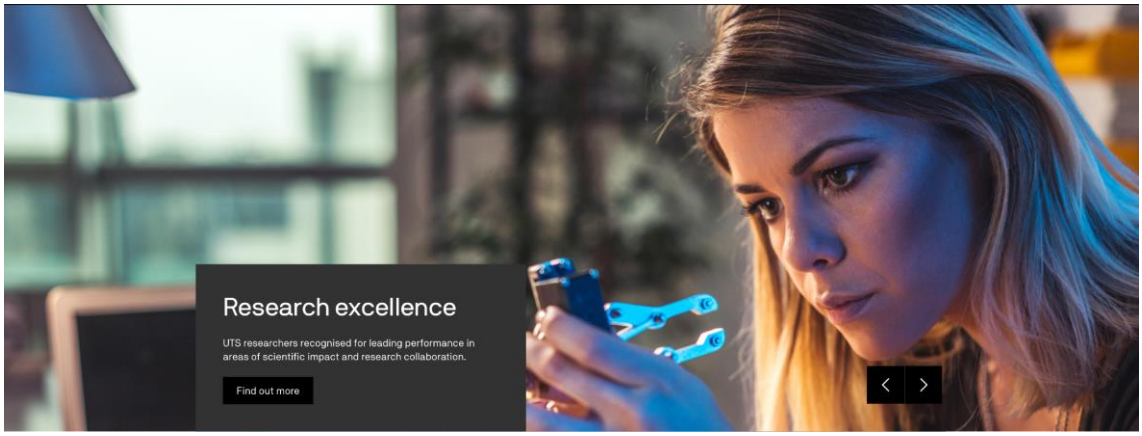


Figure 6.34 Visual persona of individual “agent” on the UTS homepage (https://web.archive.org/web/20200807061745/https://www.uts.edu.au/)

A visual persona of “achiever” emerges as a product of the deployed strategies of alignment, subjectivation, and proximation. Personae of “achiever” foreground

accomplishments of individuals, and these accomplishments can be visually realized through symbolic processes (e.g., a medal), naming (i.e., verbal descriptions of accomplishments in a headline as a part of image-complex), or both (e.g., Figure 6.36).

Figure 6.35 Visual persona of individual “achiever” on the UNSW homepage (https://web.archive.org/web/20180129185553/https://www.unsw.edu.au/)

To construct a visual persona of “aspirant”, the strategies of proximation and objectivation are used together with representational power (i.e., low angle). The viewer is invited to ‘look up’ to the representation positioned as a role model, develop an identification with the person in the image, and strive to be like them (Figure 6.37).

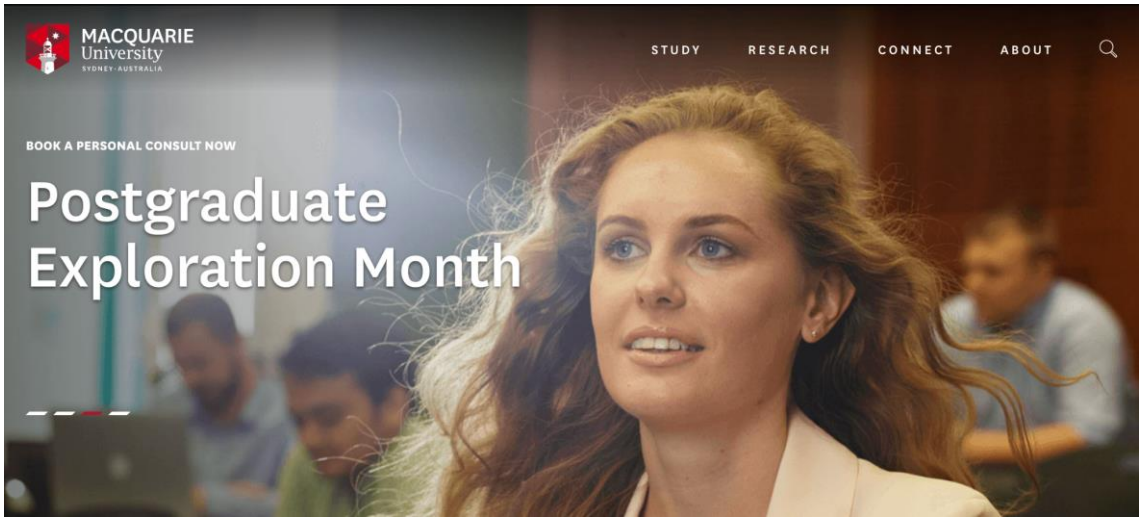


Figure 6.36 Visual persona of “aspirant” on the Macquarie web homepage (https://web.archive.org/web/20200929074124/https://www.mq.edu.au/)

In comparison with the visual personae of “agent”, “achiever”, and “aspiration”, a broader amalgamation of viewer engagement strategies and visual design choices is necessary to construct a visual persona of “friend”. Specifically, such representations use the four most frequent strategies of viewer engagement: proximation, alignment, equalization,

and subjectivation, resulting in warm portraits of individuals who are represented as ‘equals’, facing viewers, making eye contact with them, and symbolically interacting with them as friends (Figure 6.38).

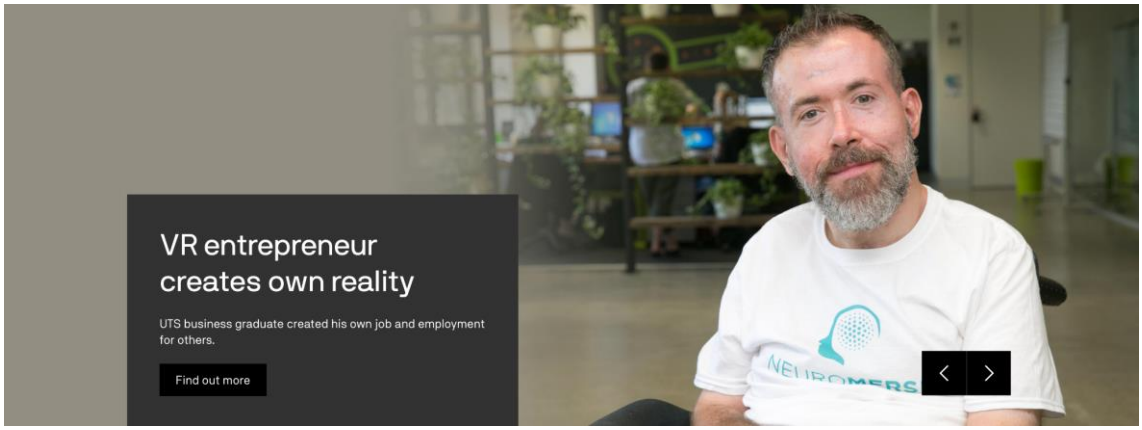


Figure 6.37 Visual persona of “friend” on the UTS web homepage (https://web.archive.org/web/20201102044438/https://www.uts.edu.au/)

In *group representations*, another set of distinct representational icons emerges to emphasize university life as a community experience happening at a university both as a physical space and an abstraction. These icons include: “*social*[24] community”, “agentive community”, and “community achievers”.

To construct the visual representational icon of “*social* community”, the strategies of proximation and objectivation are used together with transactional reactions (i.e., people represented in a group look at one another). This type of representation depicts positive social interactions on campus, specifically during social events, with foregrounded participants smiling and groups of other people serving as a background for contextualization (Figure 6.39).

[24] It is important to recognize that any experience is social in its essence, and in this particular context, the ‘social’ is reflective of representations participating in social events in the university setting.

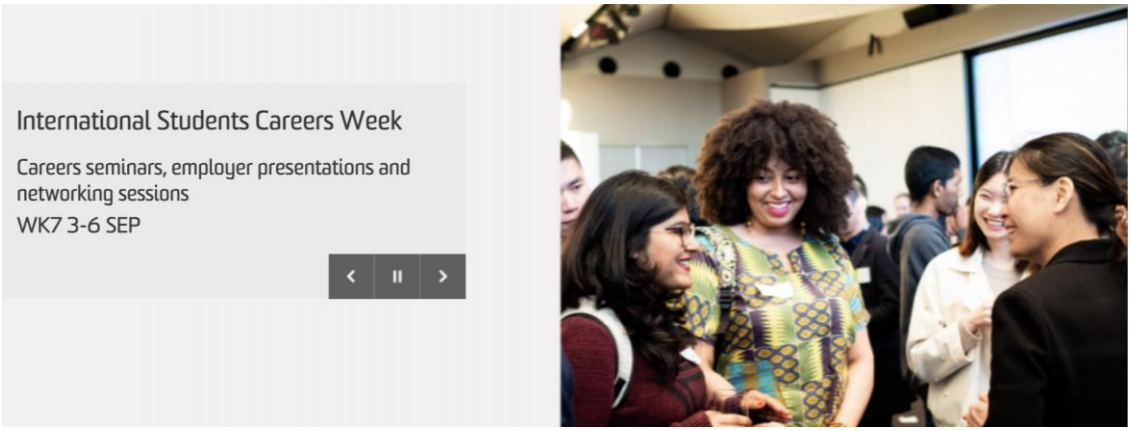


Figure 6.38 Group representation as “social community” on the UNSW web homepage (https://web.archive.org/web/20180828170310/https://www.unsw.edu.au/)

To construe the representational icon of “agentive community”, the visual strategy of objectivation and transactional action are used for group representations. In such representations, a group of participants is shown as working on a problem together. Although a problem or task may not be explicitly stated, the Goal is generally made visible in the shot (i.e., the viewers can see what people in a group are working on). Figure 6.40 demonstrates how a multimodal composition unifies a visual persona of the individual “agent” (left) and “agentive community” (right) in the viewport image on the UTS web homepage.

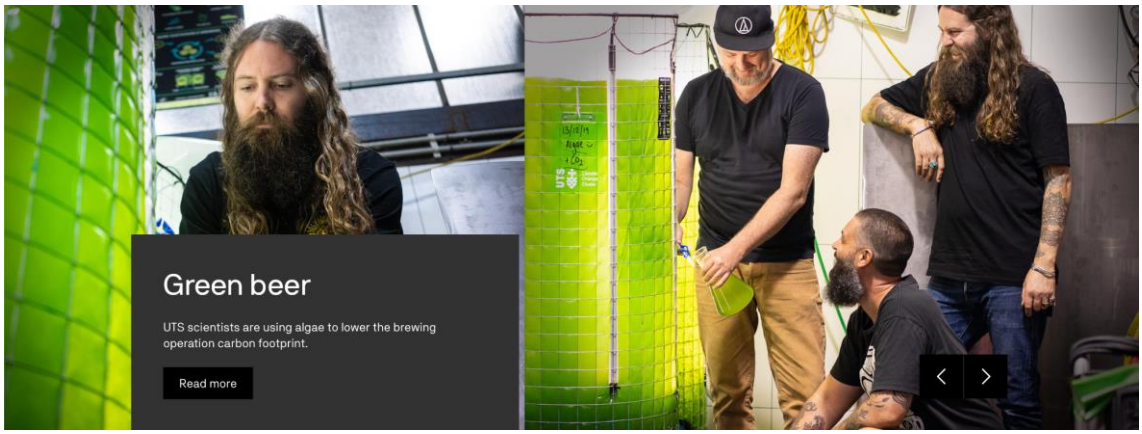


Figure 6.39 Representational icon of “agentive community” on the UTS homepage (https://web.archive.org/web/20200322083945/https://www.uts.edu.au/)

Another closely related to “agentive community” is the possible representational icon of “learning as part of community”, with a group of represented participants depicted in a classroom setting. However, such a representational trope was used only in a single instance on the University of Sydney homepage (Figure 6.41). Nevertheless, this (still

arguably the most traditional mode of learning at a university) is assumed but not represented in images.

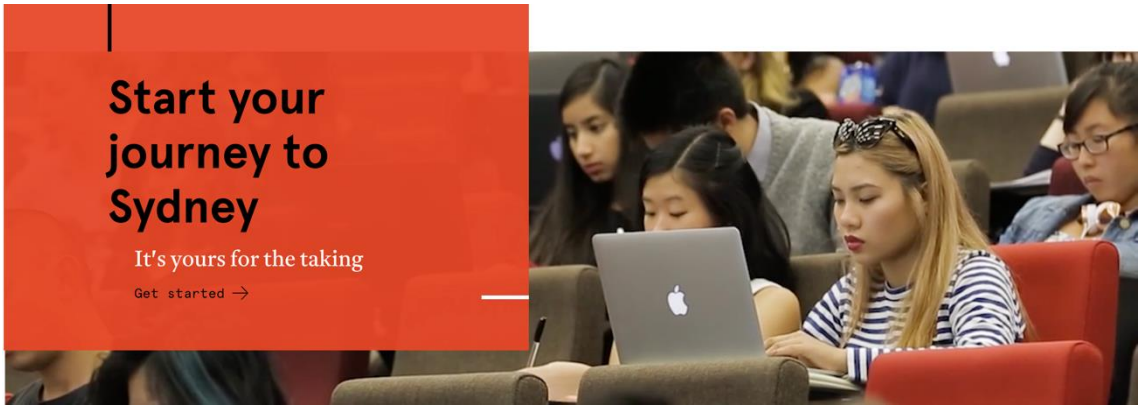


Figure 6.40 Representational icon “learning as part of community” on the University of Sydney web homepage
(https://web.archive.org/web/20180629231300/https://sydney.edu.au/)

The representational icon of “community achievers” is realized by the visual strategies of alignment and subjectivation. These are typical ‘posing’ photos discussed in SECTION 6.4.1, with minor differences in the size of the shot compared to the visual persona of the individual “achiever” – SOCIAL DISTANCE is predominantly socio-consultative or public and less so personal (Figure 6.42). Such a minor interactional design difference helps to capture all members of the group celebrating an achievement and simultaneously demonstrate that such an achievement has materialized from a team (i.e., group) rather than individual effort. Similar to an individual “achiever”, the outcome of the effort is named/labeled (i.e., the achievement is stated through a verbal text which is a headline as part of the `image-complex`).

Figure 6.41 Representational icon of “community achievers” on the Macquarie web homepage (https://web.archive.org/web/20170525213929/http://www.mq.edu.au/)

In *non-human representations* which include ‘places’ and ‘abstractions’, two representational tropes stand out – those of “university as physical entity” and “university as abstract entity”.

Images of places (e.g., campus buildings and campus grounds as analytical structures) construe a representational icon of “university as physical entity”. As discussed in SECTION 6.2.1, such images often include people, but due to co-deployment of several visual choices, particularly, long shots and intransitive actions, the individuality of human depiction is diminished (Figure 6.43) to emphasize the magnitude of campus, especially in the images and loop videos on the University of Sydney homepage.

Figure 6.42 Representational icon of “university as physical entity” on the University of Sydney web homepage (https://web.archive.org/web/20180831135937/https://sydney.edu.au/)

The representational icon of “university as abstract entity” visualizes ideas and concepts, and these depictions bear high validity in an abstract coding orientation (e.g., Figure 6.34). This type of representational icon draws on abstractions and analytical structures and reflects that a university is a space for solving challenges and engaging with abstract ideas.

To summarize, visual personae and representational icons found in the viewport images in the data set are:

1) University member as an individual
    - “agent” [**proximation** + **objectivation** + transactional action]
    - “achiever” [symbol/naming **+ alignment** + **subjectivation** + **proximation**]
    - “aspirant” [representational power **+ objectivation** + **proximation**]
    - “friend” [**proximation** + **alignment** + **equalization** + **subjectivation**]
2) University members as a community
    - “*social* community” [**objectivation** + **proximation** + transactional reaction]
    - “agentive community” [transactional action **+ objectivation**]
    - “community achievers” [naming + **alignment** + **subjectivation**]
3) “University as a physical entity” [places + analytical structures]
4) “University as an abstract entity” [abstractions + analytical structures].

6.6 Concluding remarks

This chapter investigated organizational visual identity communication in the viewport images on four university homepages, examining the design techniques of layout integration into the layout structure ‘`image-complex`’, the intended ‘photographic character’ outlined in brand guidelines and visual style guides, the content matter of representations, the ways in which the viewer is positioned to relate to represented participants (and thus, the rhetor-institution) through several strategies for viewer engagement, and the similarities and differences in visual design choices that contribute to the construction of several visual personae and representational tropes.

SECTION 6.1 identified that whereas the viewports are seemingly different in terms of inclusion and distribution of semiotic resources, three distinct image-centric design solutions integrate salient visuals into layout structures. These include carousels where images alternate in a succession, ‘hero’ image with a haptically inaccessible visual, and video loops that automatically display short clips. Video loops are exclusive to some

iterations of the University of Sydney homepage, 'hero' image displays characterize the latest versions of the UNSW Sydney homepage, and carousel designs apply to the viewports of Macquarie University, University of Technology Sydney, and UNSW before 2020 (see also CHAPTER 7.1).

While these broad design solutions are not reflected in brand guidelines and visual style guides, such documents outline a desired 'photographic character' or 'the spirit of the university' that the visuals are expected to communicate. Universities aim at representations that are "modern and progressive" (University of Sydney, *The University of Sydney Brand*, on staff intranet 2019: 30), "contemporary in a confident way and represent the diversity" of the university (University of Technology Sydney, *Visual Identity Guideline*, on staff intranet 2020: 50), "optimistic and forward-looking, but never staged or contrived" (University of NSW, *Visual Style Guide*, on staff intranet 2021: n.p.), and "tell stories of heritage, discovery and aspiration with greater clarity and distinction" (Macquarie University, *Brand Identity Guidelines*, on staff intranet 2018: 42).

The desired 'photographic character' is achieved through a range of image types and formal image properties, as outlined in SECTION 6.2. The broad image types include people (i.e., human participants represented individually and in groups), places (mostly of campus grounds and indoor settings), and abstractions (i.e., digitally created visuals containing abstract shapes, metaphoric representations, and so on). While most images in the data set featured human represented participants, foregrounding representation of the university as a place of sociality, the analysis problematized the binary categorization of image content. A strategy of (nearly) equal distribution of 'human' and 'non-human' representation was found to contribute to 'visual indetermination' which homogenizes visual social actors (that is, diminishing their individuality) whilst emphasizing *Setting*. The analysis of individual and group representation showed that group depiction was favored by Macquarie University and the remaining three universities represented both individuals and groups nearly equally. This finding shows that the visuals on Macquarie homepage foreground the spirit of the university as a space of collaborating, learning, and socializing with other members more frequently while capturing both collaboration/sociality and individuality is more equally distributed across the viewport images of the remaining three homepages.

Individual and group photos were found to share five strategies for viewer engagement – namely, *proximation*, *alignment*, *equalization*, *objectivation*, and *subjectivation*, as SECTION 6.3 clarified. The identified strategies are drawn from the most representative visual design choices shared across the homepages. These include depicting

represented participants at a socio-consultative and personal SOCIAL DISTANCE, positioning the viewer as 'part of' the scene (proximation), frontal angle of depiction indicating INVOLVEMENT, enhancing the desired viewer engagement with the representation (alignment), eye-level angle signaling equal POWER (equalization), subjects looking off camera, indicating indirect address whereby the represented participants are represented for observation (objectivation), and subjects looking at camera, positioning the envisaged audiences to interact with the represented participants through gaze (subjectivation), both constructing different viewer position in terms of SOCIAL INTERACTION with the represented participants.

While the strategies of viewer engagement characterize images across the whole data set, subtle difference in representational structures and content design choices across each homepage were revealed in SECTION 6.4. University of Technology Sydney showcased (mostly transitive) actions most frequently, contributing to the construction of the university through a lens of a more active, dynamic environment in comparison with visuals on the homepages of other universities. Interestingly, UTS *Visual Identity Guideline* (University of Technology Sydney, on staff intranet 2020) makes a mention of "movement and energy" to reflect "the vibrancy, warmth and energy of people in the shots" (50). University of Sydney featured places and architectural imagery most frequently compared to other organizations. Although the university brand guidelines provide detailed recommendations for portraits, none were found in the viewport visuals and video loops. The preferential inclusion of long shots, oblique angles, and intransitive actions resulted in the emphasis on the university's architecture and facilities which humans are an integral part of, but it is presented as somewhat de-emphasized and homogenized. UNSW Sydney favored analytical structures, symbolic representations, and transactional reactions, particularly for group representations. Analytical and symbolic structures emphasize the value of ideas and creativity while transactional reactions in group photos arguably communicates the stories of the university members and environments "in an authentic, unfiltered way" (University of NSW, *Visual Style Guide*, on staff intranet 2021: n.p.). Macquarie University had more 'staged' photos but such featured staff members in groups and never students, presented in overt taxonomies with a verbally realized Superordinate (i.e., explicitly stated shared category that the Subordinates are 'part of'). Since the usual practice for posing photos is that represented participants look at camera, more visuals on Macquarie homepage directly addressed the viewer through gaze, thus making the strategy of subjectivation more prominent compared to the rest of the data set. In this context, a broader remark on the strategy of subjectivation is noteworthy. While one might expect that the images that

directly address the viewer bear more interactional potential and thus, the strategy of subjectivation would be preferred, the opposite is true for the images in the data set. The strategy of objectivation (i.e., subjects looking off camera) was far more frequent, arguably reflective of an aspiration to communicate authenticity or, as outlined in the UTS *Visual Identity Guideline* (University of Technology Sydney, on staff intranet 2020) "natural 'caught in the moment' mood" (50).

The findings from visual content analysis, visual strategies for viewer engagement, and differences in visual design choices were revisited in SECTION 6.5 to identify key representational tropes and visual personae. As the last analytical step, it synthesized the findings in relation to human (individual and group representations) and non-human (places and abstractions) representations. Each university was found to construct shared visual personae and icons representing the university as a physical and abstract entity and the university life as both an individual and shared experience. The interwoven identities that subsequently arise are those of the university, the university community, the person as a member of the university, and the person as an individual.

Distilling and funneling down the essence of the identified design choices into a single organizational visual identity for each university warrants caution because the identified strategies of viewer engagement, as well as visual personae and representational icons, are shared rather than contrasting. All four universities incorporate the discussed visual strategies of viewer engagement to construct specific visual identities for different purposes set out in brand guidelines. These purposes are also reflective of the complexities and richness of a modern university as an entity and the concept of university life as a place of personal, professional, and social growth.

It is, therefore, arguably more productive to approach the subtle variations in visual design strategies across universities as *points of collective difference*. Such points of collective difference or preferred organizational visual 'portraits' or organizational visual identity *characters* are presented in Table 6.5.

Table 6.5 Points of collective difference of organizational visual identities

Organization	**Preferred visual portraits**
Macquarie University	Stronger focus on “community achievers” and “*social* community”
The University of Sydney	Accentuation of “university as physical and abstract entity”
University of Technology Sydney	Substantial preference for individual “agents” and “agentive community”
UNSW Sydney	Foregrounded emphasis on “*social* community” and “university as abstract entity”

Similar to the evasive concept of personal identity, organizational identities in images are not fixed – they change depending on the purposes envisaged by each rhetor-institution and in response to the everchanging and demanding context of marketized higher education. The synergies and complexities of university experiences are reflected in the viewport images of university web homepages, similar to how students and staff learn, grow, celebrate achievements, socialize, challenge their thinking through engagement with novel ideas in a ‘real’ university setting, both as individuals and members of the community.

Chapter 7 Evolution of organizational identity design

Orientation

Examining organizational identity across different university homepages at one point in time – the focus of CHAPTER 5 – provides a snapshot of organizational identity communication practices, illuminating connections between such practices across different organizations. However, it is also useful to trace the historical developments in relation to identity communication across the 'same' homepage, enabling the analysts to see how the discourses of identity 'live' *through* time, as the process of 'refinement' of the page designs, in the context of evolving university values and the changes in affordances in line with the technological advancements of the medium. One way to understand how organizational identity changes over time is to examine different designs of the page and evolution of the key elements of OVI communication. Therefore, the purpose of this chapter is to describe the key redesigns efforts of the selected university homepage by examining (1) the evolution of key OVI elements discussed in CHAPTER 5.3, and (2) design units that represent the selected university and relevant communities (e.g., menu items) and initiate interaction with the communicative content (e.g., social media icons, 'events,' 'news'). By examining these elements across three designs of the selected homepage, the chapter articulates the meanings of both individual elements in terms of their change and its implications for organizational identity communication. As such, the chapter is qualitative in nature, and its main mode of analysis is the metafunctional foundations informed by multimodal social semiotics. An organizational homepage continues to be understood as a strategic space for the application of organizational identity, among other institutional material of organizational identity communication (e.g., handbooks, ID cards, advertisements, and physical spaces, among others).

To account for the structural characteristics of a web homepage and the meaning potential of these characteristics, this chapter approaches the site of the virtual artifact (i.e., different versions of the same homepage) as a product of 'filtering' through and selecting from available semiotic resources, indicative of the interests of the rhetor-institution and the envisaged uses of the page. Similar to CHAPTER 5, organizational identity design is addressed as a tri-stratal product of a social semiotic practice across three strands: (i) core OVI elements, (ii) communicative content of `page-flow`, and (iii)

navigation/access structures. This chapter tracks changes in form and meaning across one homepage, that of UNSW Sydney. It applies analytical techniques of comparison and historical analysis, examining key iterations of the homepage from 2000 to the present (2021) and focusing on how the design changes manifest the shifts in the university's representation and its envisaged uses of the page.

The analytical focus of the chapter is as follows. Firstly, several main observations concerning the structure of representative versions are outlined in SECTION 7.1 before examining changes in the OVI elements and their compositional logic and meaning in SECTION 7.2. Next, I investigate the communicative content of `page-flow`, comparing the communicative content of three selected versions in terms of how key layout units are presented and structured, which design elements are prioritized on the page, and what organizational logic they follow (SECTION 7.3). Navigation/access structures are considered in SECTION 7.4 which addresses how interactivity potential is signaled on the page. After examining subtle changes across these strata of organizational identity design, SECTION 7.5 concludes with the insights into key representational and interactional changes in how the university represents its identity on the homepage and what interactions with this identity are made available.

7.1 Eight designs

As explained in CHAPTER 4.2, the versions of the UNSW homepage identified for analysis are based on three indicators of homepage variation – information density (i.e., the amount of information available on the page), layout, and navigation support (Ryan et al., 2003). Table 7.1 reminds the reader about the key designs of the UNSW homepage selected for analysis, with three designs (V1, V2, and V3) in bold selected for an in-depth analysis. APPENDIX B presents the data as static screenshots.

Table 7.1 Historical versions of the UNSW homepage

	Date	Permalink
V1	**02 Dec 2000**	https://web.archive.org/web/20001202165400/unsw.edu.au/
	24 Mar 2004	https://web.archive.org/web/20040324154035/http://www.unsw.edu.au/
	31 Oct 2008	https://web.archive.org/web/20081031005852/http://www.unsw.edu.au/
V2	**24 Oct 2009**	https://web.archive.org/web/20091024040212/http://www.unsw.edu.au/
	17 Jul 2012	https://web.archive.org/web/20120717042139/http://www.unsw.edu.au/
	14 Jun 2015	https://web.archive.org/web/20150614095543/http://www.unsw.edu.au/
	08 Oct 2020	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
V3	**22 May 2021**	https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/

7.1.1 Initial Web presence: 2000–08

V1 is typical of homepages when the Web was still in its infancy, with the first interactive elements (such as drop-down menus and embedded forms) and Cascading Style Sheets (CSS) that enabled the separation of the content (HTML) and the visual elements (the layouts, colors, and font) after the object-oriented JavaScript was introduced to afford interactivity on websites. This early version of the UNSW web homepage is primarily a catalog of information about the university structure and course offerings, presented through a set of vertical menu items and a vertical bulleted list with hyperlinks signaled via formatting cues of underlined text in dark blue (e.g., https://www.hyperlink.sample/[25]). Figure 7.1 shows this iteration of the UNSW homepage in full (right, with the 'below the fold' area shaded) and zooms into the viewport. A significant proportion of the page is taken up by a news story unfolding as `text-flow` – similar to how it would be presented in printed media. The primary catalyst for this iteration of the homepage is arguably establishing a Web presence for the university and exploring this 'new' medium for the purposes of public relations.

[25] Note. Not a valid hyperlink.

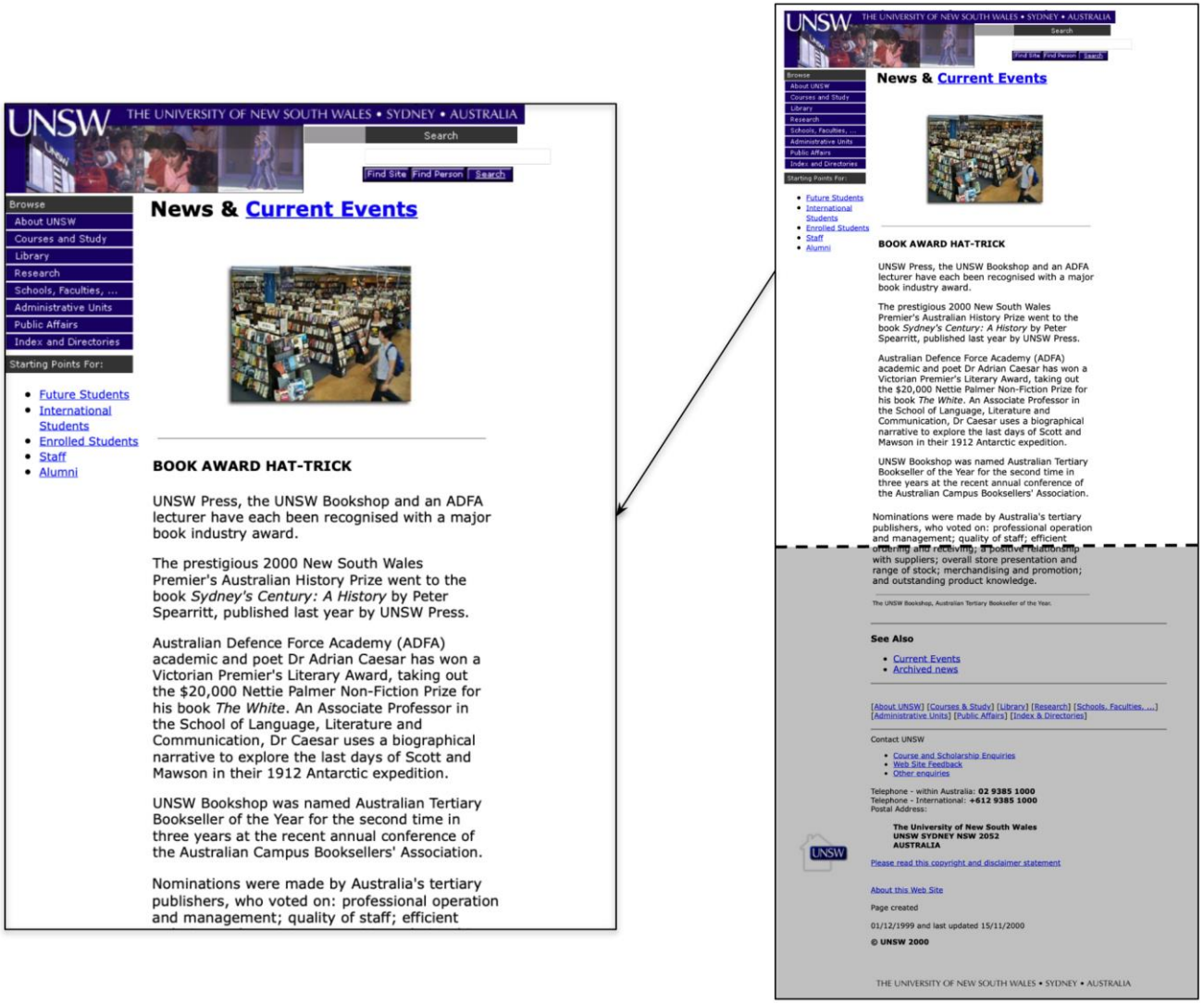


Figure 7.1 First version (V1) of the UNSW Sydney homepage, dated 2 December 2000 (https://web.archive.org/web/20001202165400/https://www.unsw.edu.au/)

The 2004 (Figure 7.2) and 2008 (Figure 7.3) versions reduced the density of the verbal content and changed the portrait layout orientation to a fixed landscape display.

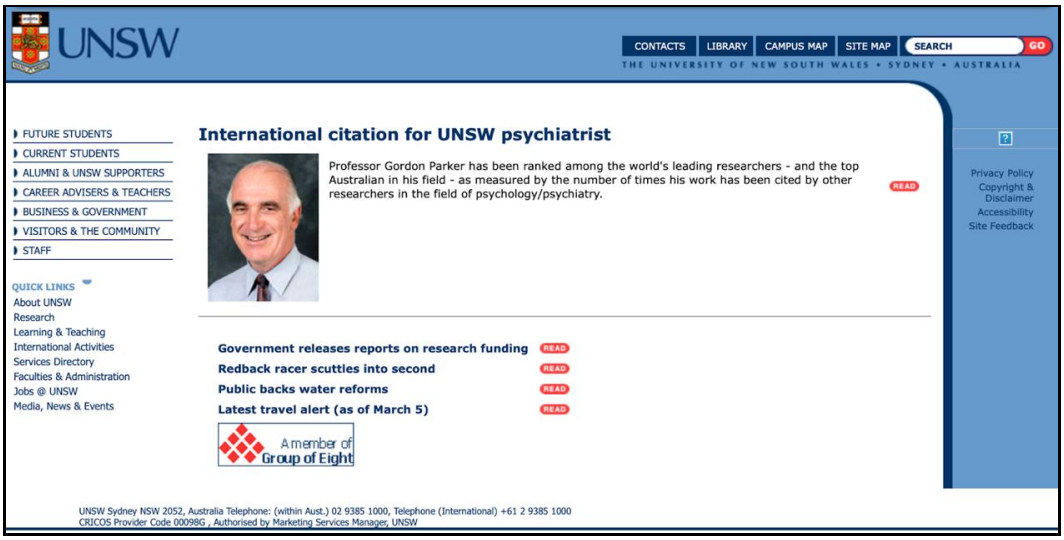


Figure 7.2 UNSW homepage on 24 March 2004
(https://web.archive.org/web/20040324154035/https://www.unsw.edu.au/)

Figure 7.3 UNSW homepage on 31 October 2008
(https://web.archive.org/web/20081031005852/https://www.unsw.edu.au/)

The menu item options expanded significantly to include a horizontal plate (in 2004) which was subsequently updated with two layers of horizontal menu items (in 2008) and retained in successive iterations. The 2008 version also established cross-platform social media content for the first time, embedding the ‘UNSW on iTunesU’ and ‘UNSW on YouTube’. It upgraded the top banner-like display to include Clancy the Lion, the official UNSW mascot, as the first OVI element, in addition to the ‘logo’ and ‘business name’. The 2004 and 2008 versions are testaments to the integration of more options, arguably due to the enhanced affordances of the digital medium, and the commencement of the visual orientation of the homepage.

7.1.2 Carousel-informed design structures: 2009–15

In 2009 (V2), which coincides with the university’s 60th anniversary, the official UNSW mascot disappeared, and the homepage was restructured to introduce a web carousel into the user interface (UI). The carousel design embedded at the top of the viewable area has enabled more than one piece of content to “occupy the same piece of prime

real estate on the homepage" (Pernice, 2013, n. p.). Images in the carousel alternate in a set pattern with embedded diagrammatic resources that indicate user navigation (right/left arrow-like icons). From the previous full-screen layout, V2 shifts content and navigation areas to the center and uses Adobe Flash Player as a browser plug-in that allows playing video directly from the page (Figure 7.4). The subsequent versions up to 2020 maintain the carousel design template and further introduce visual identity elements to the web homepage.

Figure 7.4 Second version (V2) of the UNSW web homepage, dated 24 October 2009 (https://web.archive.org/web/20091024040212/https://www.unsw.edu.au/)

The 2012 version introduced a distinctive UNSW-yellow – a brand color of the university across all genres of institutional communication – and integrated more complex design structures via several overt and covert taxonomies. The carousel design was preserved but with fewer images, while the vertical menu became obsolete but partly translated into

the four classifications (‘future students’, ‘students’, ‘life at UNSW’, and ‘staff’) embedded below the carousel. A more extended list of social media appeared at the bottom of a page, in the footer, with six clickable social media icons (Figure 7.5).

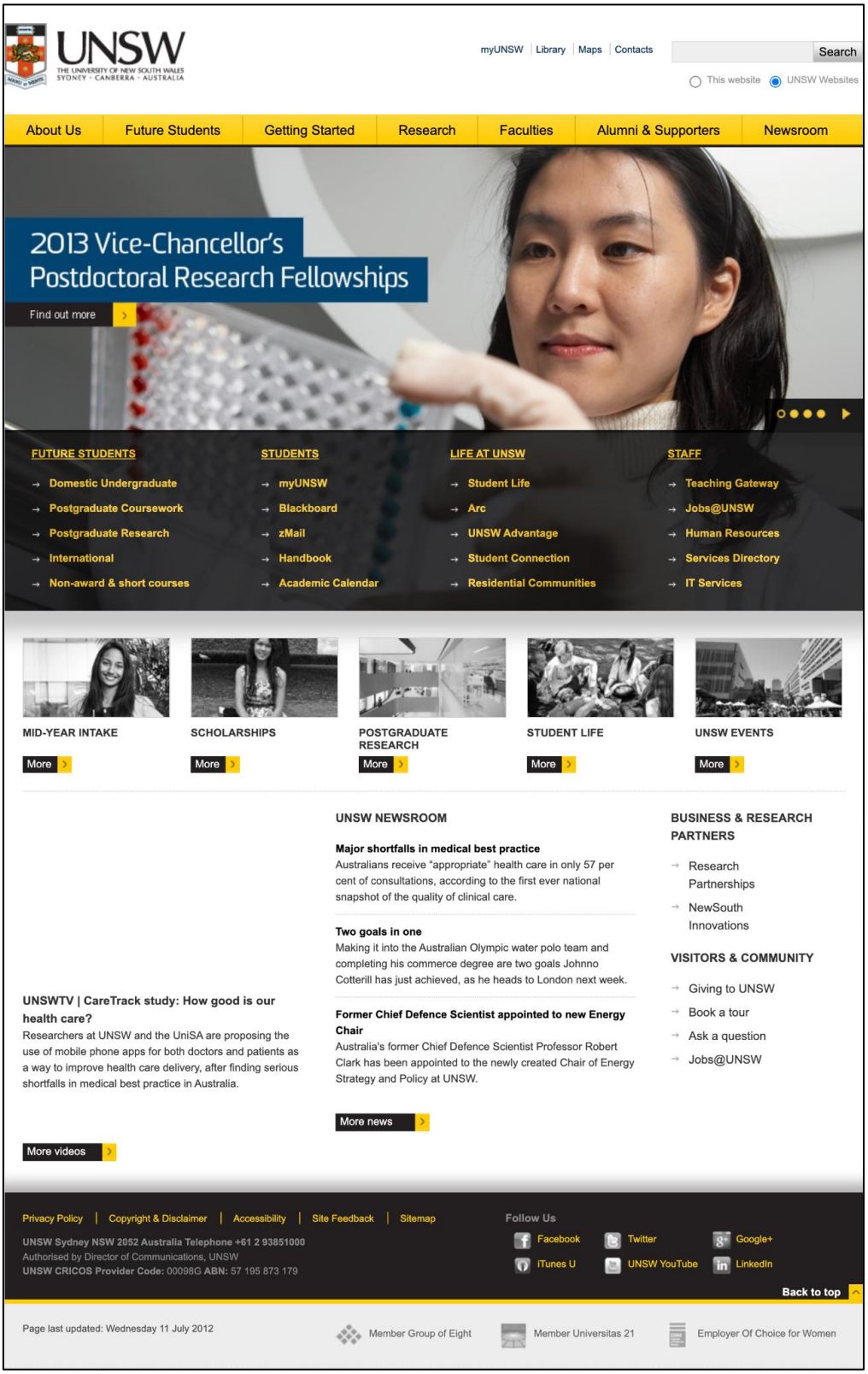


Figure 7.5 UNSW homepage on 17 July 2012
(https://web.archive.org/web/20120717042139/https://www.unsw.edu.au/)

From 2012 onward, the versions of the UNSW homepage demonstrate adherence to the brand guidelines to ensure a consistent format of the core OVI elements. The 2015

design foregrounded visuality and image-centricity in a strikingly new way. The verbal text was minimal, and the layout demonstrated reliance on the pictorial and diagrammatic resources. The previously transformed vertical menu design at the bottom of the carousel became visible only when menu items were activated with a click, and an additional horizontal menu and list of the university membership affiliations appeared in the footer (Figure 7.6).

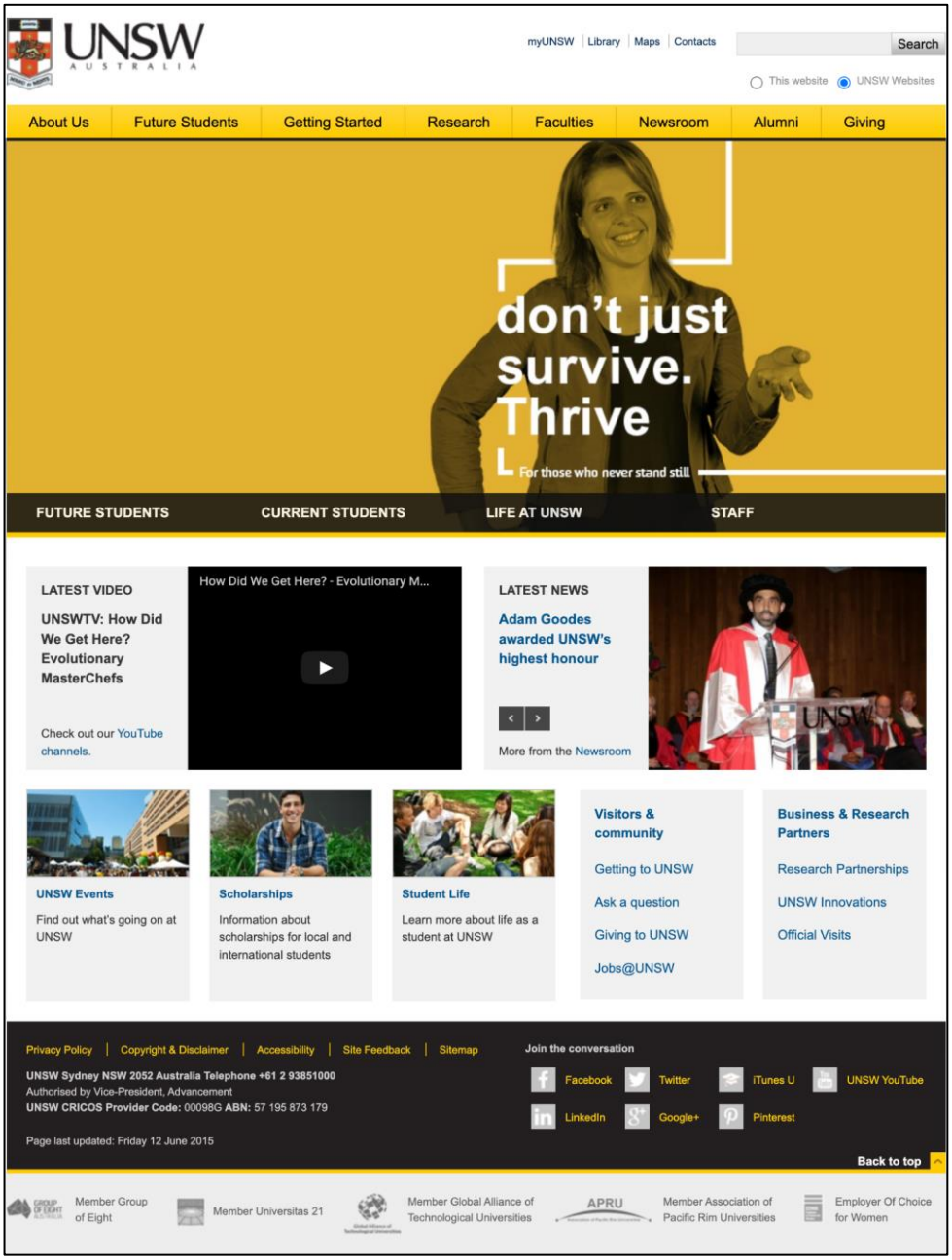


Figure 7.6 UNSW homepage on 14 Jun 2015
(https://web.archive.org/web/20150614095543/unsw.edu.au/)

7.1.2 Modern designs: 2020–onward

The 2020 version featured an overhauled appearance in (predominantly) layout and information density. The infrastructure of the page changed significantly in both length and content. This version shows the most significant change in size, from just over a single screen to a stretch of approximately eight screens. This version discontinued the carousel design and opted for a single hero image. The hidden vertical menu migrated to the 2nd layer of the horizontal menu panel, which activated sub-sets of options by pointing a mouse to a menu item. In addition to retaining in the footer, the social media panel was replicated at the top of the page, with some adjustments: it displayed stand-alone icons with no verbal naming of the social media platforms. The page introduced student testimonials and graphic design shapes, such as raster and concentric lines, and compared to previous versions, it is the most image-centric and visual. The 2021 (and the latest available version at the time of writing) is relatively similar and comprises V3 for analysis (Figure 7.7). This version integrated all OVI elements and enhanced the cohesion of the page through repetitions of the brand color.

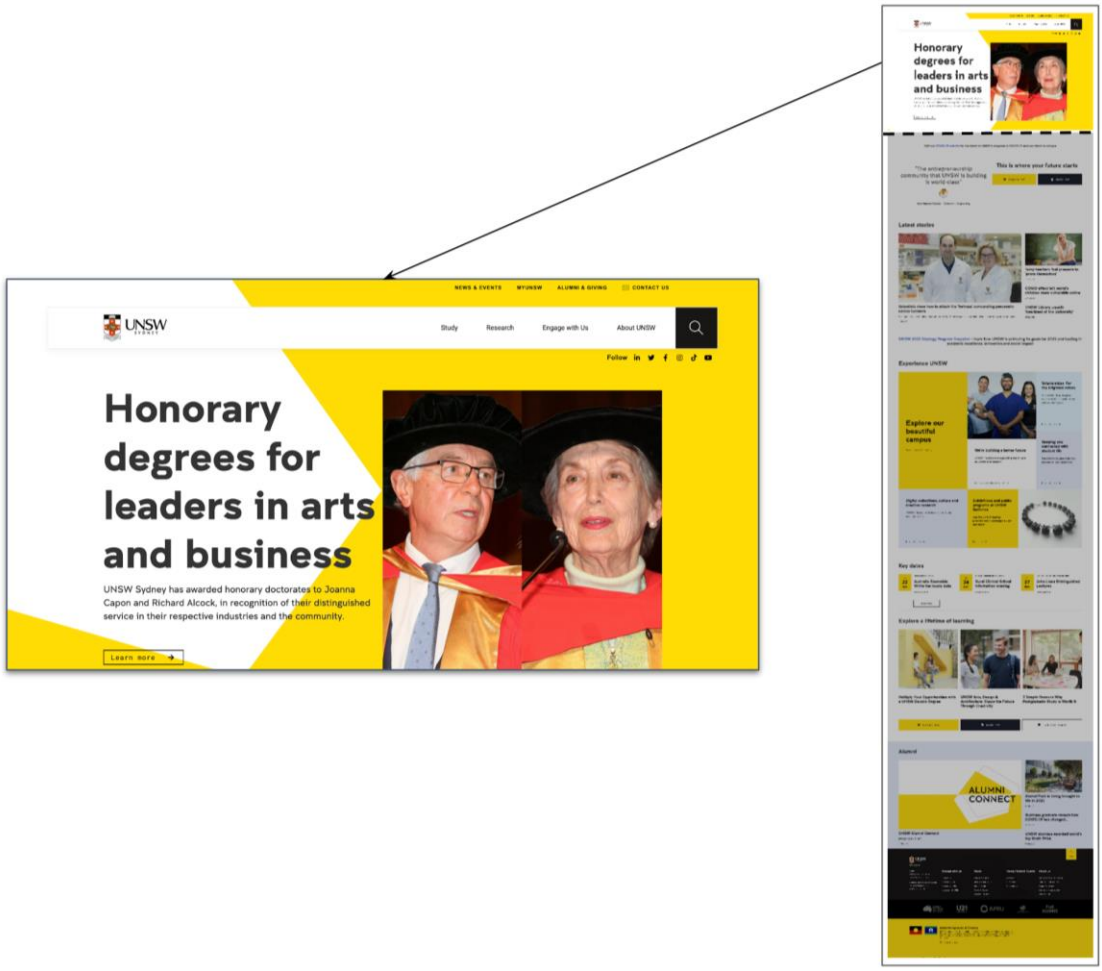


Figure 7.7 Third version (V3) of the UNSW homepage, dated 22 May 2021 (https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/)

7.2 Evolution of organizational visual identity elements

To support the visibility and distinctiveness of the university's identity, the most recent *Visual Style Guide* (University of NSW, on staff intranet 2021) and *Brand Guidelines* (University of NSW, on staff intranet 2019) outline the format, usage, and styles of the OVI components. The discussion proceeds with an examination of the formal structures of the core OVI elements on the UNSW web homepage to understand how the visual distinctiveness of the brand has progressed.

7.2.1 Business name

The university's first official name was 'The New South Wales University of Technology' (1946), which changed to 'The University of New South Wales' in 1957 to show a transformation to more generalist course offerings. The name remained unchanged until 2013, when for branding and marketing purposes, the business name changed to 'UNSW Australia' (University of NSW, 2013). The most recent university's business name is 'UNSW Sydney', introduced in 2017. 'Business name' thus invokes a destination narrative (Hansen, 2010; Hanna et al., 2021) to communicate and cultivate engagement with the destination and reinforce the university's iconic location in Sydney. Such small shifts in naming practices reflect a strategic branding move – localization of the institutional narrative used to develop a network of positive associations based on the characteristics of the place.

Figure 7.8 Timeline of the UNSW business name

It is noteworthy that UNSW Canberra has its dedicated website <*https://www.unsw.adfa.edu.au/*> (the first observable iteration is from 2000 when it was still 'Australian Defense Force Academy' (ADFA), UNSW's college). The most recent campus name is UNSW Canberra at ADFA, and the 2021 version of its website (Figure 7.9) incorporates the same OVI components as the UNSW Sydney's homepage, particularly in the footer. However, the homepage of UNSW Canberra at ADFA integrates a set of different compositional elements and broader design choices (e.g., carousel design and not hero image in the viewport of the 2021 version). Some notable differences include more verbal-centric layout structures, the additional brand color 'purple', the

inclusion of the Google Maps plugin allowing audiences of the page to find routes to the campus location, a single set of limited social media icons in the footer, and so on).

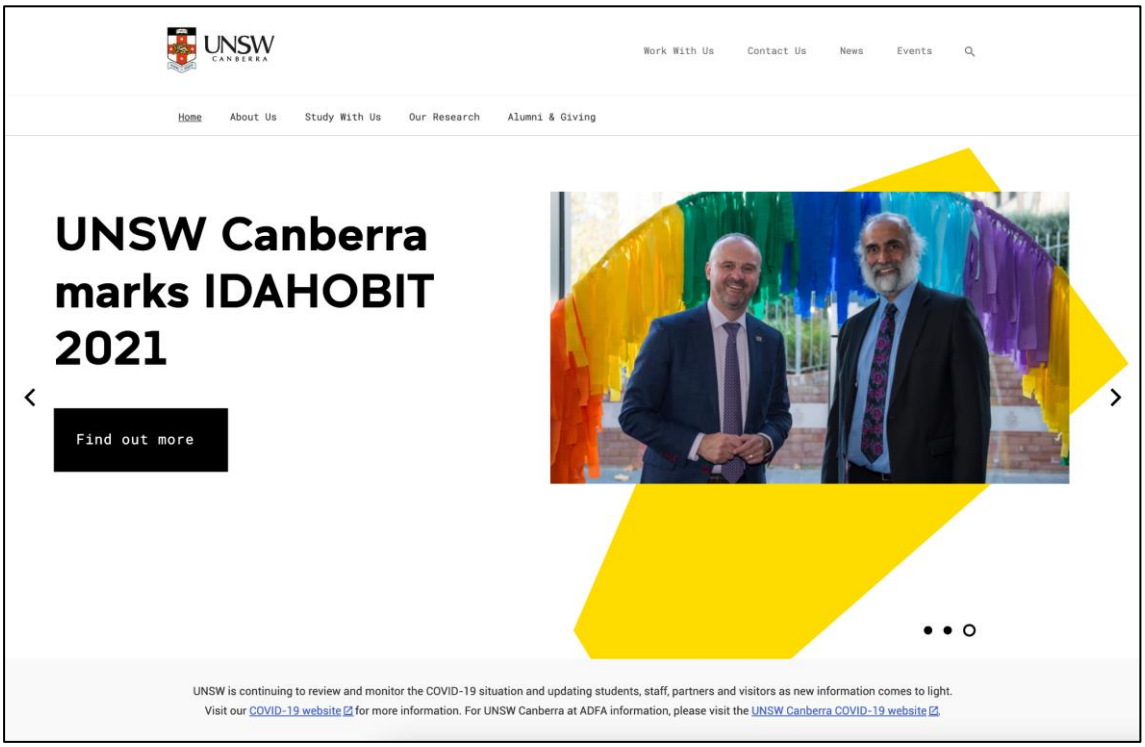


Figure 7.9 The viewport of the UNSW Canberra at AFDA web homepage on 25 May 2021 (https://web.archive.org/web/20210525040336/https://unsw.adfa.edu.au/)

7.2.2 Logo and motto

The UNSW logo represents the university and ensures recognition of the brand, acting as a signature and identifier of the university. 'Logo' can remind the audience of the site's provenance and is a shorthand for everything the brand stands for (Rowley, 2004). Although the UNSW logo has undergone some minor ideational changes (Figure 7.10), its positioning remains stable across all versions of the web homepage, occupying the top left corner, or the Given, in Kress and van Leeuwen's (2021) terms.

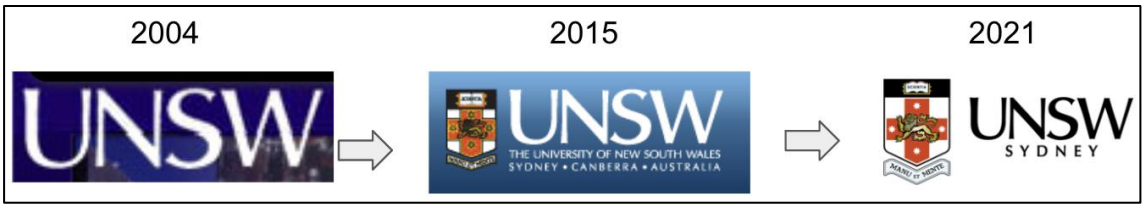


Figure 7.10 Changes in the UNSW logo in three versions of the UNSW web homepage

In terms of interactivity potential, and depending on the location of the interactant, the logo enables two options: (1) return to the homepage from any page of the website or

(2) return to the viewport of a homepage from 'below the fold'. Compositionally, it functions as a 'Given', an understood point of departure (Kress & van Leeuwen, 2021), as well as the 'anchor' of the homepage, enabling a return to a known point of the website. At the same time, it marks the macro-Theme, similar to a text opener in a verbal text, establishing the identity of the page. Representationally, then, it is an antecedent of organizational identity, endowing the page with the ideological import of the point of departure, something known or familiar that the audience will instantly recognize and identify with.

The visual cues of the most recent logo include a shield, an open book with the word 'Scientia' written in it, a red cross and four stars, a lion that appears to be moving (i.e., represented through a non-transactional action), a motto 'Manu et Mente' ('knowledge by hand and mind'), written in a ribbon of a light blue hue and the university's business name. The open book signifies the purpose of the institution and is commonly associated with education and erudition (Drori et al., 2017). The use of the coat of arms with heraldic symbols traditionally conveys not only historic pride, but also "adherence to and validation of strict rules, the authenticity of right, and rigorously authoritative, if not royal, oversight" (Idris & Whitfield, 2014: 53). Given that UNSW is a relatively young university with no medieval lineage, the use of heraldry may be somewhat unanticipated. Such a choice appears to adhere to the founding characteristics of older world-class universities (e.g., Cambridge, Harvard, and Princeton) that all deploy coats of arms, thus conveying epistemological tradition, eliciting familiarity, and reinforcing positive associations with the brand (see also Drori et al., 2013).

7.2.3 Typography

As an OVI element, 'typography' adds visual meaning to the recognizability of the UNSW's organizational identity. Types are shapes that can be rectilinear, curvilinear, geometric, or organic (Landa, 2013: 22), holding the potential to elicit specific associations in the audience's mind. The most recent version of the UNSW's web homepage displays a carefully considered set of typeface pairings for conceptual and aesthetic reasons (Figure 7.11). For heading and subheadings, UNSW uses its own brand font named after the former Chancellor Sir John Clancy and his namesake, the UNSW's lion mascot. The font is 'modern and clean' and is viewed to keep the focus on what is being said. Roboto is used for body copy, and Roboto Mono is recommended for emphasis. Arial – arguably the most frequent font choice across various document types and fields – is a supporting font meant for menu items, sub-menu options, and Microsoft Word documents, primarily to avoid system compatibility issues. The types belong to the

family of sans serifs, characterized by the absence of serifs that are considered easily recognizable and most legible (Landa, 2013).

Figure 7.11 A set of UNSW brand fonts
(University of NSW, *Visual Style Guide*, on staff intranet 2021: 15)

Combinations of fonts with different typographic textures contribute to the 'visual textuality' (van Leeuwen, 2020) and balance the overall composition of V3. Alternations between fonts with various 'distinctive features of the typography semiotics' (van Leeuwen (2005c) provide different visual effects. For example, the different material textures of Clancy as the densest font in terms of font mass and Roboto Mono as the most spaced-out font type contribute to contrast and visual interest on the page, segmenting it into meaningful clusters. The UNSW typefaces voice became an organizational identity tool only in 2020, adding to the visual differentiation of the brand, whereas V1 and V2 used Arial for legibility and readability purposes. In this sense, as a visual resource, the status of typography has transformed from serving a purely functional purpose, mainly for framing the page elements in earlier versions, to the organizational identity marker that enhances the university's visual identity.

7.2.4 Color

The distinct 'UNSW yellow' or 'hero yellow' started communicating a set of brand-associated values in the 2012 iteration of the web homepage. The previous versions of

the page saw minor upgrades in the color palette on the spectrum of blue color that was used primarily for readability purposes (CHAPTER 5.2.5). As a brand color, the UNSW yellow aims to remind audiences of the sun-drenched, world-famous beaches of Sydney's eastern suburbs (University of NSW, *Brand Guidelines*, on staff intranet 2019), and is selected to convey the purpose of positive difference. Yellow is also representative of the Yellow Shirts volunteer program run annually at UNSW and recognized on the Australia Higher Education Graduation Statement as a prestigious student activity. The program helps to develop communication skills and teamwork abilities for approximately 170 students each year. The other two primary colors – black and white – are used alongside yellow to help the university "maintain brand attribution through all [...] communications" (University of NSW, *Visual Style Guide*, on staff intranet 2021: 26), and to create harmony on the page through 'color rhyme' (van Leeuwen, 2005a) which contributes to the design balance and unity, the primary color palette also includes black and white (Figure 7.12).

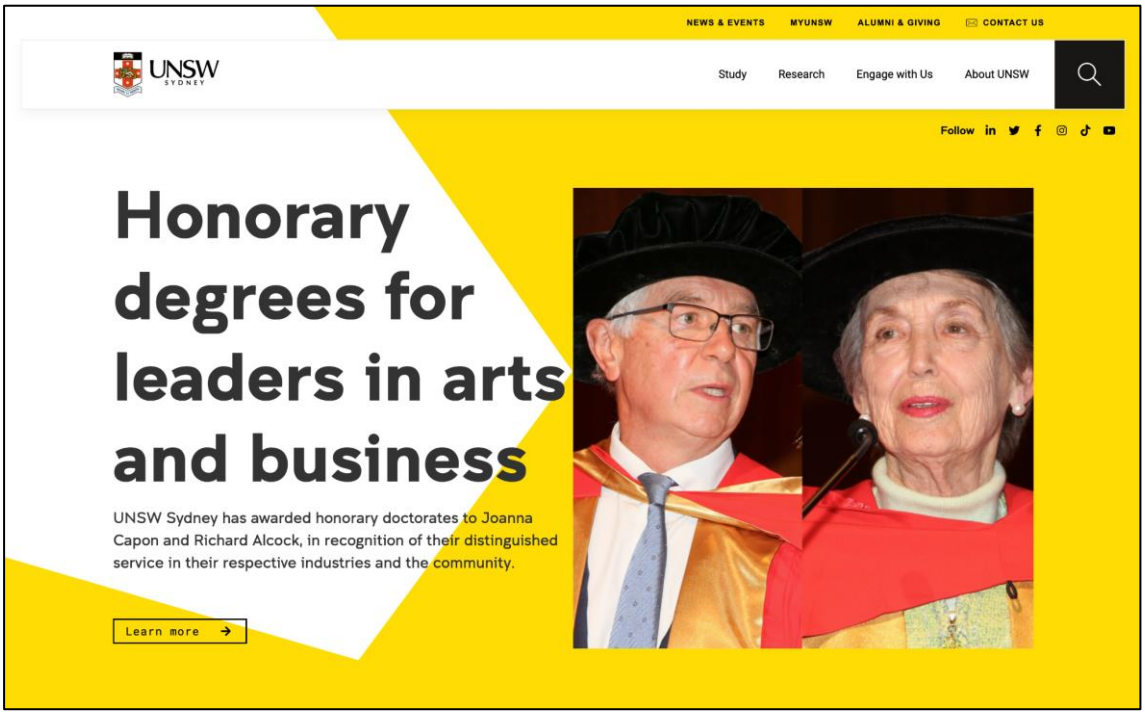


Figure 7.12 Primary UNSW colors in the viewport of V3
(https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/)

The brand colors are specified across several coding systems – Pantone® (i.e., the international standard for producing colors), CMYK (Cyan, Magenta, Yellow, Key/Black) for print, RGB (Red, Green, Blue) for the screen, and hexadecimal values (HEX) for websites (Figure 7.13), making them a standardized organizational visual identity element.

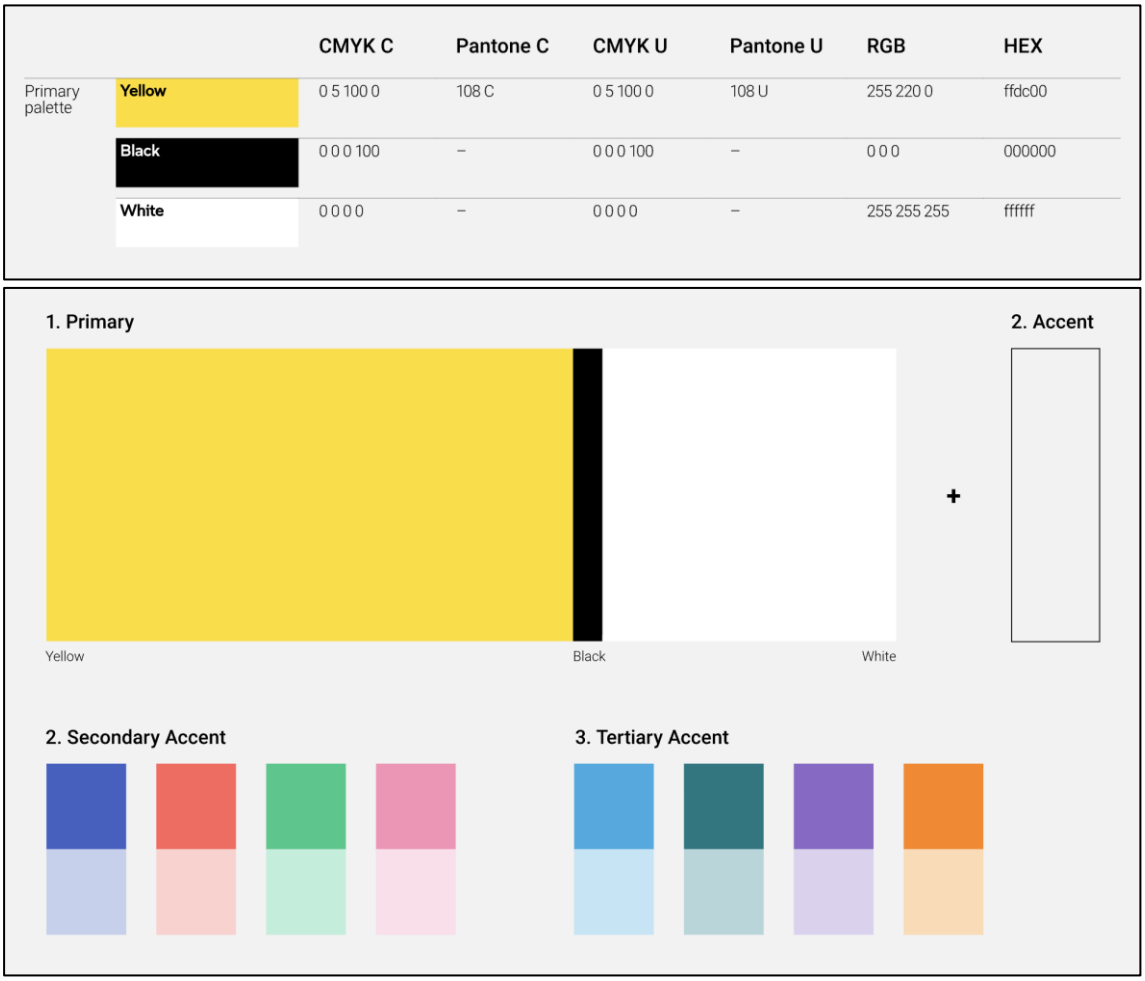


Figure 7.13 Primary UNSW brand colors and accent palettes
(University of NSW, *Visual Style Guide*, on staff intranet 2021: 26-28)

A secondary accent palette is used to “create interest in the layout” (University of NSW, *Visual Style Guide*, on staff intranet 2021: 27). A tertiary accent is reserved for representing eight faculties at the university when navigational cues are needed to differentiate between faculties. A tertiary accent palette is also used on the dedicated faculty pages.

In the context of organizational identity communication, it is the associative value of color (Kandinsky, 1977, as cited in Kress & van Leeuwen, 2002: 354-355) in contrast to the direct value derivative from the material (physical) properties that contributes to the interactional (i.e., interpersonal) meaning potential of this visual resource as an organizational visual identity element. Ultimately, brand colors add to the recognizability of the UNSW brand, even on a perceptual level, since the color is usually recognized prior to processing any other features of a given artifact (Wheeler, 2017), enhancing the positive associations with the brand personality (Aaker et al., 2004). As a metafunctionally diversified resource, color not only ‘means’ (ideationally) but is also

used in certain ‘color acts’ (Kress & van Leeuwen, 2002), initiating that envisaged audiences affiliate with the university. Therefore, similarly to ‘typography’, ‘color’ has evolved from principally serving a legibility function to eliciting emotional associations with the organizational identity.

7.2.5 Graphic shapes

As discussed in CHAPTER 5.2.6, ‘graphic shapes’ are the most recent addition to UNSW’s visual distinctiveness. As geometric semiotic inventories, ‘graphic shapes’ on the 2020 version of the university homepage and onward (Figure 5.14) present general outlines of physical spaces on the university campus. In Figure 7.14, two two-dimensional ‘graphic shapes’ are defined by the white color (left) and contours (right), with ‘hero yellow’ and ‘white’ providing the focal points of contrast. These two ‘graphic shapes’ serve as a background for verbal text and an outline for a hero image, contributing to what Landa (2013: 20) refers to as ‘graphic identity’ arising from a careful consideration of the figure/ground relationships (i.e., visual perception of shapes in relation to background) by a designer.

Figure 7.14 Two ‘graphic shapes’ contributing to the university’s graphic identity in the viewport of the UNSW homepage (https://web.archive.org/web/20210227090853/https://www.unsw.edu.au/)

As the most recent addition to the UNSW homepage, graphic shapes serve as a framing device, uniting several layout units into an `image-complex` and celebrating the different viewpoints inspired by campus buildings.

The key OVI elements ‘business name’, ‘logo’, ‘typography’, ‘color’, ‘graphic shapes’, as well as images (CHAPTER 6) establish the ‘essence’ of the organizational visual identity of the university on its homepage. The form and placement of these elements are prescribed by brand guidelines at the site of production, and they are the most highly regulated and least frequently updated organizational identity design elements. These elements provide identification of the institution, add authority to the web homepage, and ensure recognition of the UNSW brand. The ‘business name’, ‘logo’, and ‘motto’ comprise the nucleus of the university’s identity, and have an established presence across all analyzed versions, asserting the legitimation of the institution. On the other hand, ‘typography’, ‘color’, ‘graphic shapes’, and ‘images’ are a younger addition to the brand, with color becoming a visual identity tool in 2012 and typography and graphic shape in 2020. Ultimately, the OVI elements are the heavy lifters of visual identification of the UNSW’s identity.

7.3 Evolution of the communicative content

The spatial organization of the UNSW homepage is an essential arena for packaging meaning-making resources that shape the university’s web identity. Communicative content available to website visitors is the subject and substance of different layout units, and a systematic exploration of the changes in the communicative content of different versions of the page can provide comprehensive insights into the development of organizational identity. Approaching the three identified versions of the same page at <*https://www.unsw.edu.au*> as “historically distributed manifestations of a single (multimodal) genre” (Bateman, 2014b: 248) helps to systematize the ongoing changes in how the university represents itself and builds rapport with the envisaged audiences.

To address these communicative artifacts whilst also appreciating the complexities of multimodal communication, the subsequent sections examine the page versions in relation to three compositional foci: the viewport, critical layout units that bear significance for the university representation and brand affiliation, and compositional structures of the ‘below the fold’ area in V3. As the prime ‘real estate’ of the homepage, the viewport establishes the university’s identity similar to a book title, providing an outline of the possible pathways for key envisaged audiences. Menu items, social media, and images are the main layout structures for representation, inviting interaction with the university’s identity. Design structures ‘below the fold’ in V3 elaborate additional design features presented for exploration.

7.3.1 Compositional logic of the viewports

The visibility of the content in the viewport to all audiences entering the digital space of a homepage makes viewports the most strategic part of web pages. Representationally, different versions feature different configurations of semiotic modalities: image-text-complexes, tabled multimedia, and stand-alone deictic expressions (Paraboni & van Deemter, 2002, as cited in Bateman, 2008: 114), or references to other parts of the same document. On the rank of the page, one of the significant differences is that nearly the whole communicative content is made visible on the first screen (i.e., viewport) in earlier designs. Notably, V1 and V2 organize content through predominantly overt taxonomies (e.g., *Browse* and *Starting Points For* in V1; *Menu*, *Student Links* in V2), providing practical information for future applicants, current students, and staff through 'functional design' (van Leeuwen, 2021b: 24) that builds on the available templates in the early generation of the Web. In contrast, only a small portion of the page Is presented in the viewport of V3, which draws on a prominent image-centric layout structure as its overarching design strategy. The viewport of this version appears to prioritize prospective students as it provides information primarily for them.

The most prominent organizational design elements of the viewport of each version are the 'logo' and 'business name', panels of menu items (vertical and horizontal in V1 and V2 and horizontal in V3), search function, featured stories/news, and social media (apart from V1). These layout units simultaneously serve several functions: establishing the university's identity (e.g., 'logo' and 'business name'), communicating the schema of the website and representing relevant communities (e.g., menu panels), showcasing recent achievements (e.g., news), and inviting the audiences to explore the communicative content within the website (e.g., the layout unit *Learn more*) or on other platforms (e.g., social media in V2 and V3).

In V1, the verbal text expands in the center of the page and down to the end of the viewport area. However, tabled multimedia (i.e., two vertical menu panels and search functionality) are also prominent (Figure 7.15).

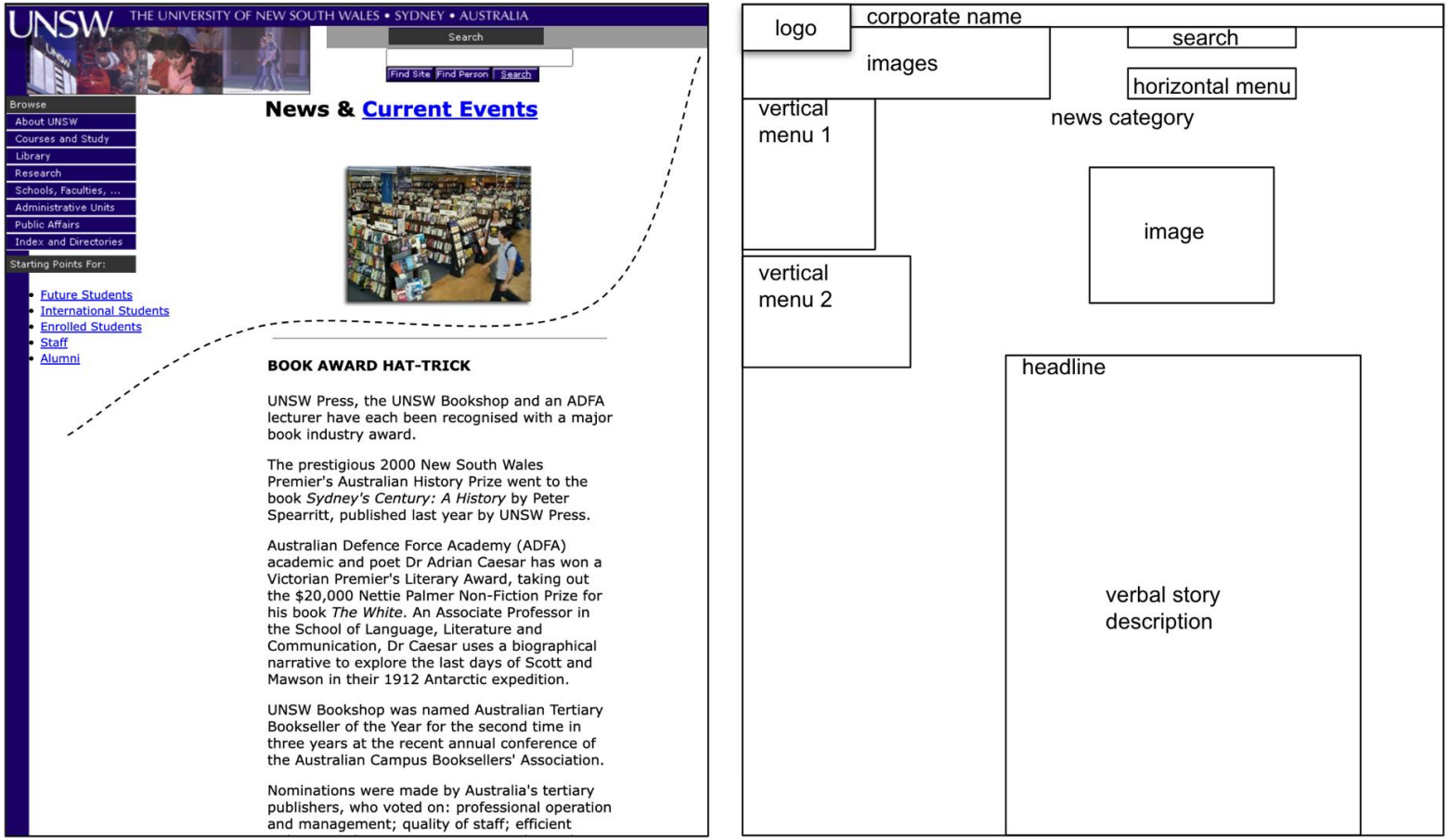


Figure 7.15 Key layout units in the viewport of V1

Note: Yin-yang composition is marked with a dotted line in the figure to the left

In addition to the expanded verbal description of the featured story, the viewport of V1 is largely a catalog of information provided in a concise and mostly list-like format. Vertical menu panels detail practical information about the university, its structure, governance, and course offerings while providing quick links for key envisaged audiences of the website – students (future, international, and enrolled), staff, and alums. The search functionality is made available in the top right corner (slightly shifted to the center), providing a type-in option, two search buttons, and options to search the content on the website (*Find Site*) and staff (*Find Person*). The images included on the page feature the campus building and more or less naturalistic photos of people in an auditorium, campus, and bookshop. The viewport of V1 thus prioritizes listing information about the university and provides tools for navigating the content of the page, having minimal (if any) promotional flare.

In V2, the viewport builds on the carousel design, where several multimodal 'posters' placed in the center of the viewport, slightly to the right, alternate in an automated succession with embedded diagrammatic resources signaling navigation (Figure 7.16). Through such a design solution, V2 provides the audience with more opportunities to explore the recent achievements of the university community. Since the whole page fits within the first screen, it is rather informationally dense. In addition to the prominent carousel with the on-page navigation, it contains several layout structures: 'logo' and 'business name', two horizontal and two vertical menu panels, three featured news stories with an image as 'Given' and short verbal description as 'New', salient layout unit *UNSW TV* (i.e., the 'proto' social media), university advice on Swine Flu outbreak and available vaccination in the university medical clinic, site navigation panel followed by the business details, and information about when the page was last updated.

The 'logo' and 'business name' are followed by a verb group 'Celebrating 60 years of extraordinary achievement' providing details about the university's anniversary and redirecting audiences to a dedicated page containing the message from the vice-chancellor who acknowledges the community achievement by referencing the university's performance in world rankings. The inclusion of the institutional login *MyUNSW* and *Library* indicates a gradual digitization of university services. At the same time, the student begins to be prioritized as the key envisaged audience of the page through a dedicated vertical menu 2 *Student Links* with five options for building pathways as well as the menu items *Future Students* and *Current Students*.

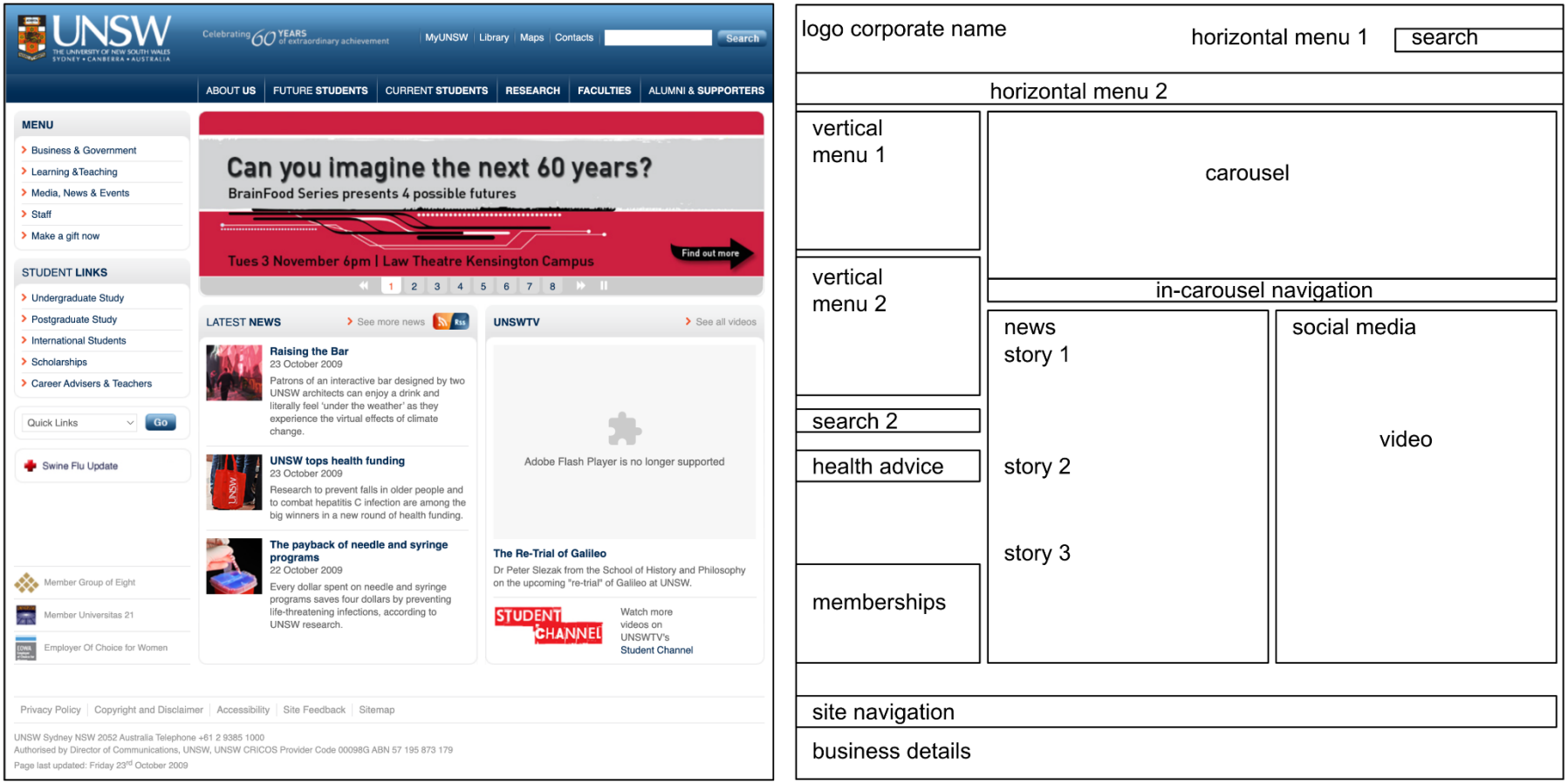


Figure 7.16 Key layout units in the viewport of V2

V3 opts for a single ‘hero’ as the new organizational logic of the viewport – a large image occupying the right half of the <image-complex> layout structure (i.e., featured story) to the right of the headline ‘*Honorary degrees for leaders in arts and business’*, a sentence detailing the featured event, and a deictic expression ‘Learn more + □’ (Figure 7.17). Although this design solution reduces the content available in the viewport, the limited interaction potential is compensated through the length of the page that expands the presented information across the vertical axis of its physical space (i.e., the viewer is expected to scroll down).

The layout units in the viewport are minimal, with only five layout structures – ‘logo’ and ‘business name’, horizontal menu 1, horizontal menu 2, social media, and featured story. The ‘logo’ and ‘business name’ continue to provide points of departure for interaction with the page. Two horizontal menu panels primarily target prospective students (e.g., *Study* and *Research*), provide institutional login for current students (*MyUNSW*), and list information for alums and the general community (e.g., *Alumni & Giving*, *Engage with Us*, *Contact Us*) but not staff. The formal structure of the university is not made explicit – faculties and staff (V1 and V2) and administrative units (V1) are not represented through menu items. However, some information about the university structure and governance is listed in a drop-down menu when the menu item *About UNSW* is activated.

The library is no longer prioritized in the viewport of V3, and this menu item is removed as a separate menu item – the inconvenience lamented by many staff members – but is accessible in a drop-down menu when the menu item *About UNSW* is activated. In contrast, V3 prioritizes social media engagement through a curated set of icons that redirect audiences to corresponding university profiles on six social media platforms – LinkedIn, Facebook, Instagram, TikTok, and YouTube. Thus, in the viewport of V3, UNSW constructs a rather different portrait of the university in comparison with V1 and V2, emphasizing visual identification (e.g., ‘color’, ‘graphic shapes’, ‘typography’) and is mainly for prospective students and the general community.

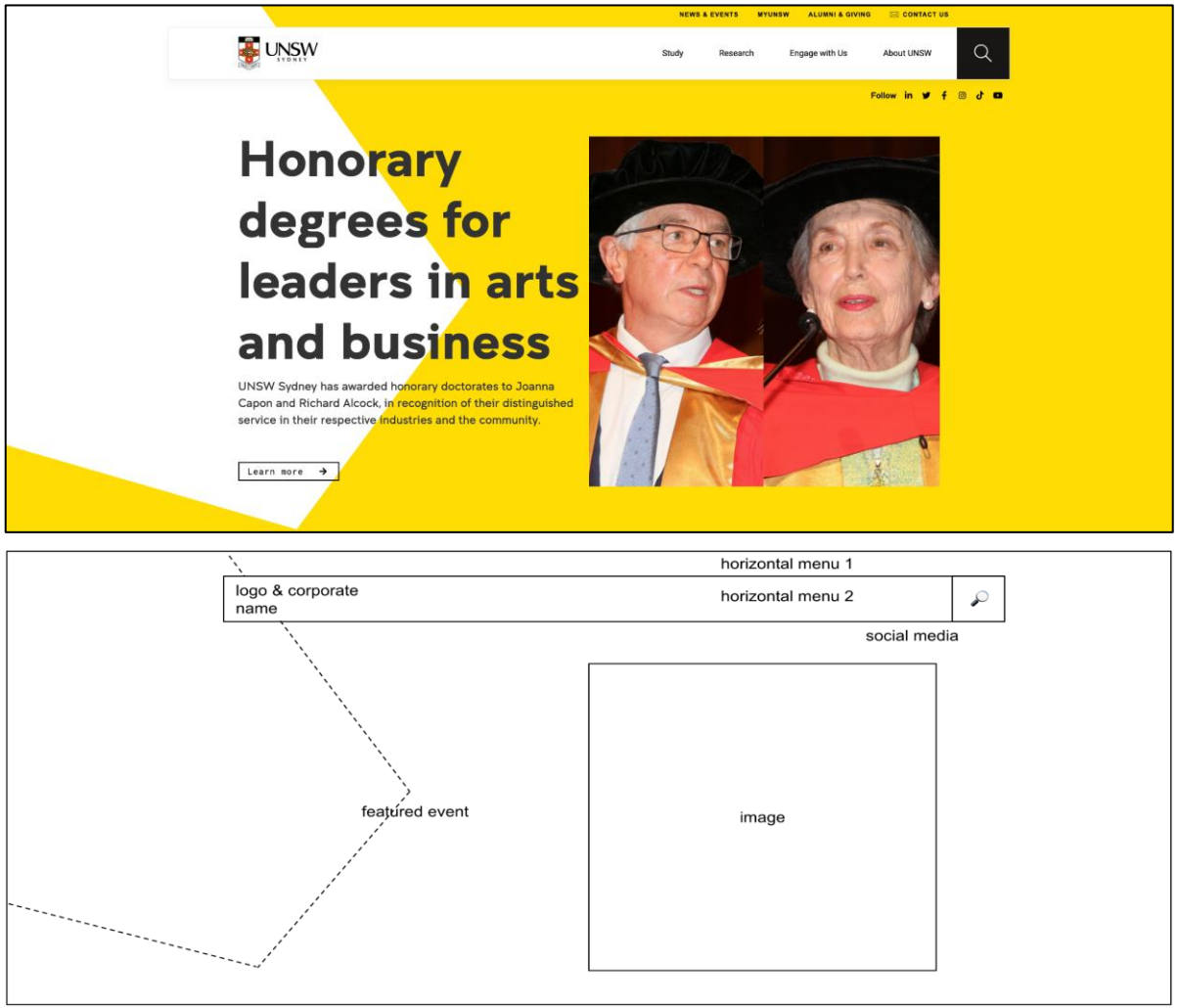


Figure 7.17 Key layout units in the viewport of V3

7.3.2 Menu items

Menu item panels or 'plates' are one of the critical layout structures that allow interaction with the page through a set of possible pathways for key envisaged audiences. As layout units, the menu items are realized by nouns (e.g., *Staff*) and noun groups (e.g., *Alumni & Supporters*), verbs (e.g., *Search*) and verb groups (e.g., *Find person*), and prepositional phrases (e.g., *About UNSW*), pointing audiences to other parts of the website through several 'interactivity cues' (Adami, 2015) – *respond to click*, *respond to hover*, or *respond to type-in and click* across all versions. The menu items enable audiences to build pathways based on specific needs and preferences, choosing between, for example, *News & Events*, *Alumni & Giving*, *Study* or *Research,* and so on.

As discussed in SECTION 7.3.1, the menu items represent relevant communities, with V1 and V2 catering to the needs of a range of key groups, such as future students, current students, staff, alums, and media. In V3, the representation of communities is delimited to three major groups: (1) prospective students (both undergraduate and postgraduate) and current students (although these are addressed explicitly through one menu item only *MyUNSW*, which also encompasses staff), (2) potential research partners and benefactors, and (3) more general communities (e.g., *Contact Us*, *Engage with Us*; i.e., 'anyone'). Staff, an unmistakably crucial part of the university, are not represented as a separate category, unlike V1 and V2. The interactional units *About us*, *Contacts*, *Course information,* and *Research* are featured on all versions at the top of the 'real estate' of the homepage, which reflects the major prioritized pathways for potential newcomers. These design choices highlight the underlying function of the page – marketing to prospective and current 'customers' and enrolled students instead of being a functional avenue to find information and 'get the job done' for staff. The options available in menu items of V3 show that staff is not 'part of' the visible organizational identity of the institution. Staff members are also infrequently featured in the images on the page. However, their achievements (cf. the representational trope "community achievers" discussed in CHAPTER 6.5) are featured prominently in 'news' labeled as *Latest stories*.

Regarding the number of possible choices, V1 and V2 feature a much larger set of navigational possibilities – eighteen pathways are presented on both versions through two vertical menu panels and two horizontal menu plates. These are organized as classificational processes that relate Subordinates (elements of the same kind in some sense) to at least one Superordinate as an overarching category that can either be shown explicitly in overt taxonomies (OT) or implicitly through spatial arrangements and

perceptual similarity of Subordinates in covert taxonomies (CT). In V1, the menu items are organized in three OTs: *Browse*, *Starting Points For*, and *Search* (Figure 7.18).

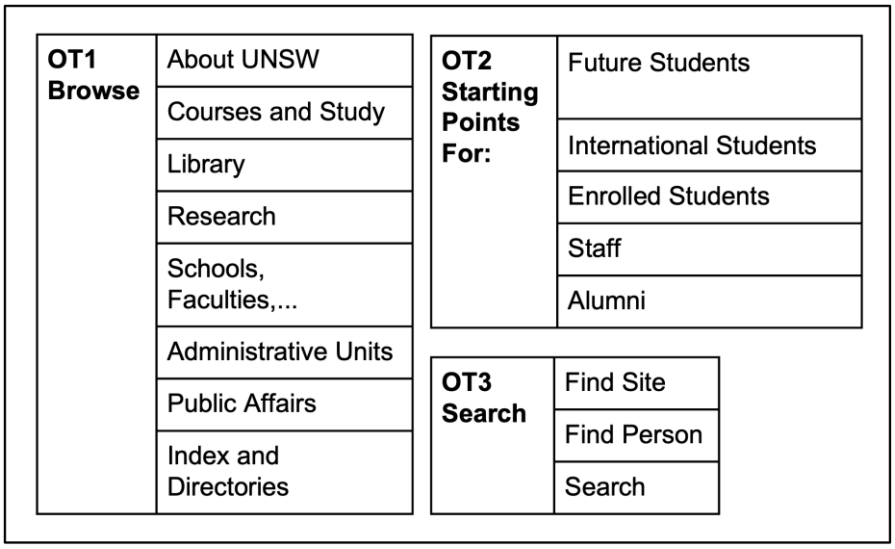


Figure 7.18 Representational structures of menu items in V1

In V2, some options disappear (e.g., extended search functionality) while several new options are added (e.g., login, contacts, scholarship). These menu items and the latest news are organized in overt taxonomies. In contrast, two CTs organize the carousel design of the viewport (Figure 7.19) and show university memberships and recent accomplishment, '*Employer of Choice for Women*'.

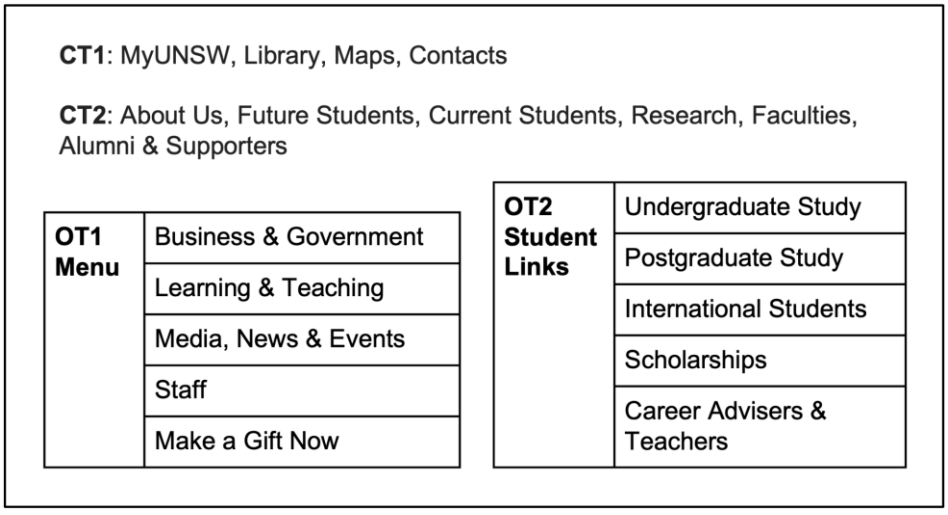


Figure 7.19 Representational structures of menu items in V2

The viewport of V3 packages possible pathways into a modest set of nine menu items arranged in two horizontal menu panels presented as overt and covert taxonomies (Figure 7.20). This version requires envisaged audiences to consider their broader

category of interest first (e.g., *Study* or *Research*) and explore the applicable sub-sets of options on subsequent pages instead of being offered more specific links, such as *Future Students*, *International Students*, and so on as was done in V1 and V2.

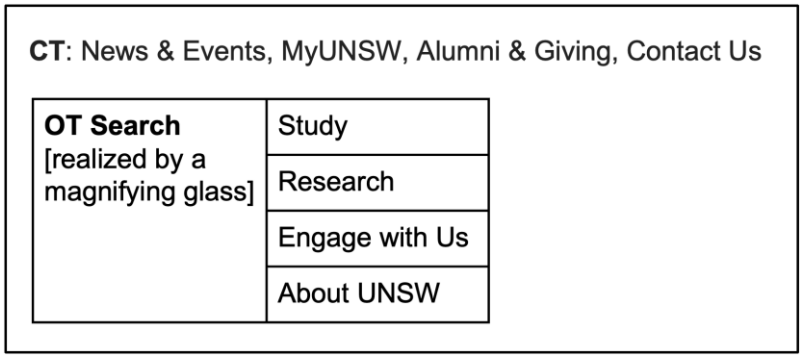


Figure 7.20 Representational structures of menu items in V3

However, a more significant portion of expanded menu options is made available through the drop-down menus integrated into the viewport of V3. As addressed in CHAPTER 5.4, such a combination of horizontal menus *in praesentia* and drop-down menus that open when a menu item is pointed at provides a new writing frame that aims to delimit the user input. As shown in Figure 7.21, a single menu item *Study* opens five OTs in a drop-down menu: *Why UNSW* (five menu options), *What to Study* (five menu options), *The UNSW Experience* (seven menu options), *Getting in* (seven menu options), *Apply now* (seven menu options).

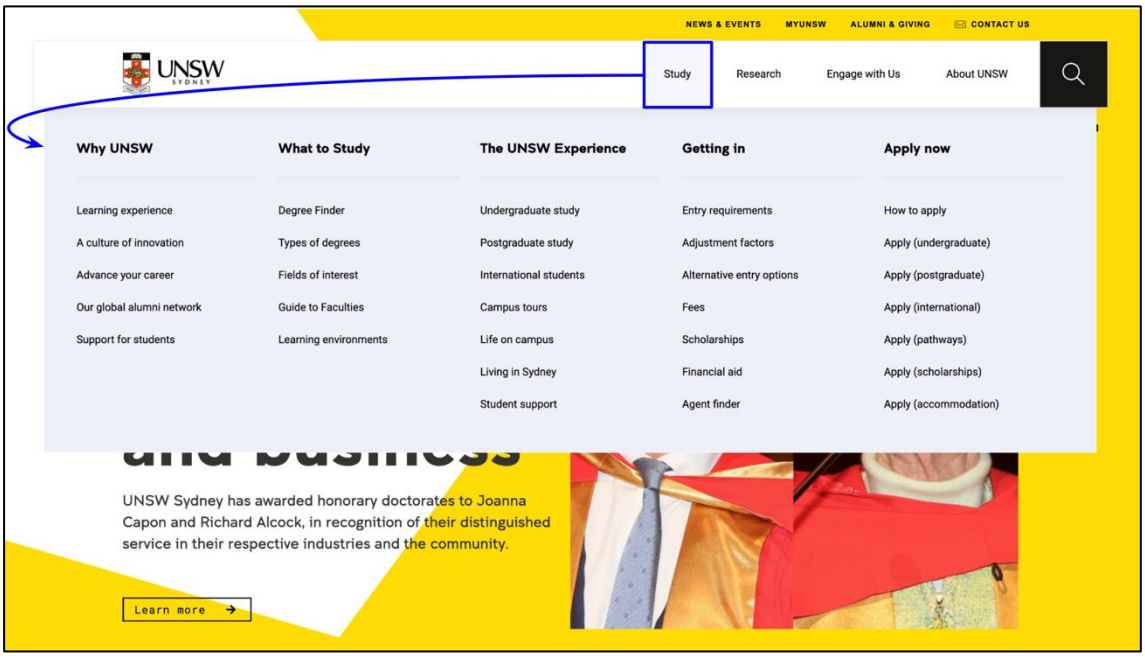


Figure 7.21 A drop-down menu of the menu item Study on the UNSW homepage

Therefore, the three versions show several trends concerning representation and navigation, retaining some menu items (e.g., *Research*), removing others (e.g., *Find Person*), changing the form of some choices (e.g., verbally realized menu item *Search* to diagrammatic representation through /magnifying glass icon), and repositioning/restructuring some of the first-order items into drop-down menus (e.g., *Library*). These are indicative of changes in how the university represents itself and what it prioritizes through the immediately accessible options in menu panels. Table 7.2 highlights the continuities and modifications of the menu items across the three designs. In addition to the key OVI elements 'logo' and 'business name', several menu items remain consistent across all analyzed versions. These include *search, research, about UNSW, news, students/study,* and alums.

Table 7.2 Consistencies (in white) and absences (in grey) of the menu items

V1 (2000)	**V2 (2009)**	**V3 (2021)**
	Login (MyUNSW)	Login (MyUNSW)
Search (twice)	Search	[magnifying glass icon]
Research	Research	Research
About UNSW	About Us	About UNSW
News & Current Events	Media, News & Events	News & Events
Future Students	Future Students	Study
Alumni	Alumni & Supporters	Alumni & Giving
Library	Library	
Schools, Faculties, …	Faculties	
Administrative Units	Business & Government	
Enrolled Students	Current Students	
International Students	International Students	
Staff	Staff	
Public Affairs		Engage with Us
Index and Directories		
Find Site		
Find Person		
	Contacts	[envelope icon] Contact Us
Courses and Study	Undergraduate Study Postgraduate Study	
	Scholarships	
	Career Advisers & Teachers	
	Maps	

The menu item *Search* appeared in the top right corner across all three versions (Figure 7.22). Still, it is most prominent in V1 which duplicates this unit at the top of the page while offering similar navigational potential but concerning more specific queries through the menu items *Find Site* and *Find Person*.

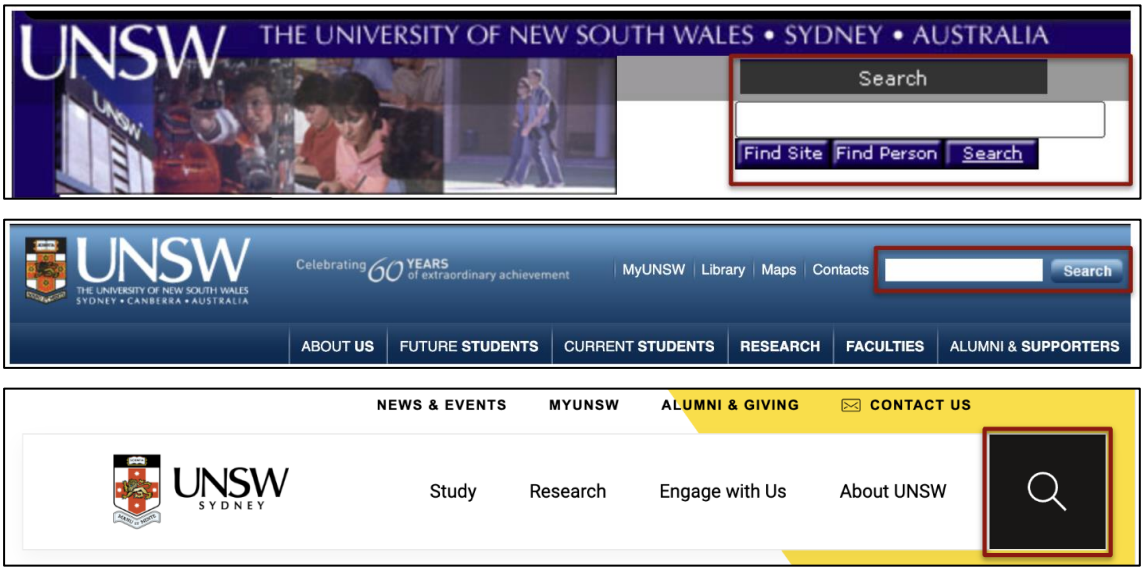


Figure 7.22 Form and placement of the menu item Search across V1, V2, and V3 (top to bottom)

V2 makes this layout unit salient through the visual contrast of a white box against a blue background and a 3-D-like button to the right that verbally states *Search*. In V3, the verbal signaling is removed altogether, yet the search function is made salient through relative size, a contrast of the brand color 'black', and the diagrammatic icon <magnifying glass> ('□'). The latter realizes Superordinate of the overt taxonomy 'menu items', and when clicked, it enables general search by typing in a specific query. The gradual simplification of form from the duplication of the verbal menu item to an integration of a stand-alone diagrammatic icon for the visual realization of the function *Search* shows that this menu item has become a part of the generic structure of the homepage whereby the audience 'expects' it to be there (specifically in the top right corner) and verbal signaling is no longer required.

About UNSW is a vital layout unit for legitimizing the university, its history, and key accomplishments. In V1, the information listed on the page that redirects audiences when the unit is activated includes factual information about administration, governance, contact details, general inquiry forms, employment, event calendar, and so on. V2 foregrounds the university's accomplishments, initiatives concerning climate change, and rankings, while V3 provides a wealth of information in nine sub-sections. In V3, the respective *About UNSW* page starts with a 'Welcome to UNSW Sydney' message, yet the author of this message is not stated explicitly as, for example, is done in V2), and follows several generic moves provided in Table 7.3.

Table 7.3 Generic moves on the About UNSW page in V3

Move	Sub-section title
Welcoming	Welcome to UNSW Sydney
Establishing credentials	The University
Explaining strategic initiative	UNSW 2025 Strategy
Outlining administration	Governance & Management President & Vice-Chancellor
Detailing industry connections	Business & Research Partners
Honoring legacy	Former Professors and senior officers Former Officers of the University Honorary Degree and Fellowship holders Former Members of the Council
Describing social impact	Enterprise

(https://web.archive.org/web/20210516122028/https://www.unsw.edu.au/about-us)

Therefore, the *About UNSW* menu item provides important information that legitimizes the university, outlines its key achievements, and honors service to the community.

The menu item *News* is prominently featured in the center of V1, with the verbal text detailing the featured event, shifting towards decreased verbal text but maintaining compositional prominence in V2 (menu item *Latest News*). In addition to being preserved as a separate menu item in V1, the category 'news' is also presented through the layout structure *Latest Stories* in the 'below the fold' area, minimizing the verbal text to a headline and subheading. Although 'news' is not an OVI element, its appearance across all pages demonstrates the assigned importance of notifying different audiences about the university's events and achievements.

7.3.3 Social media

The social media panel, with its high cross-platform interactional potential, deserves special attention. The earlier versions of the UNSW homepage (2012 onward) place the social media icons in the footer. V3 retains this design choice but also makes social media more salient by placement beneath the two-layered menu at the top right of the page. The UNSW social media content first appears in the 2008 version, featuring 'UNSW on YouTube.' This layout unit sees several textual changes, from a banner-like embedded YouTube image to the naming of the social media platforms and social media icons (i.e., the verbal text followed by a diagrammatic icon) against weak framing through

continuous black color in the 2009-2015 versions, to the inclusion of social icons with no verbal text against unmodulated black and white in 2020, and to their integration against the 'hero yellow' both in the viewport and in the footer in 2021 (Figure 7.23).

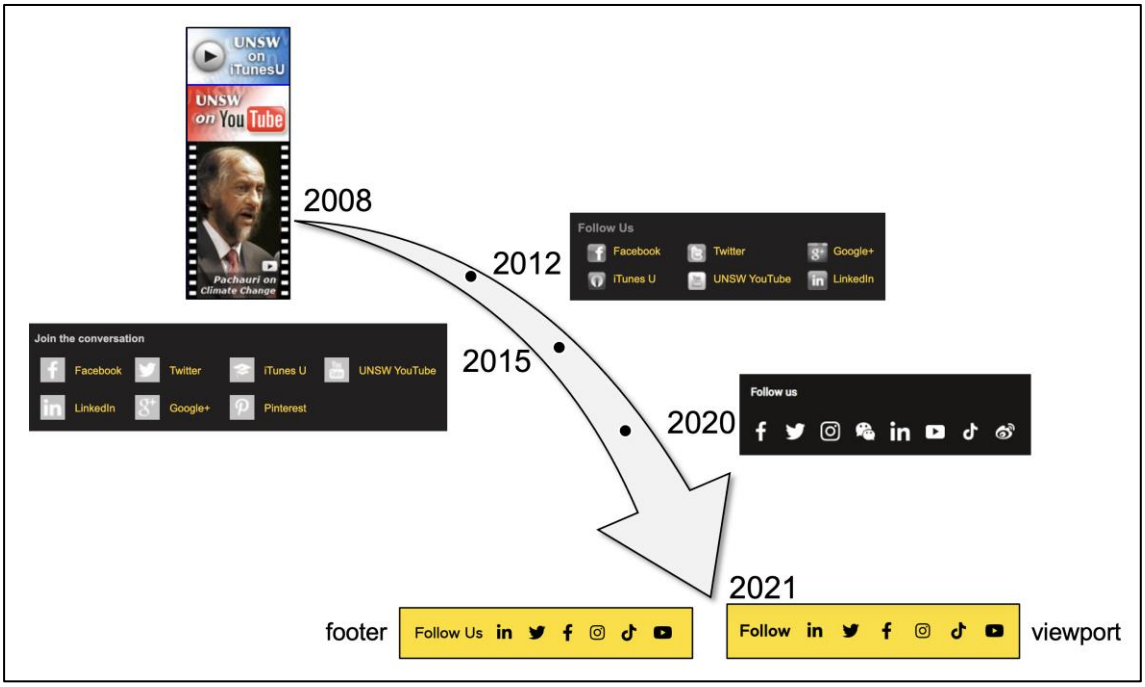


Figure 7.23 Evolution of social media panels on the UNSW homepage

The Interplay between the gradual simplification of form and prioritization through placement reflects the increased institutional presence on social media in the context of the general informalization of modern discourse structures. In a sense, the web homepage brings the social to the fore, and the social media icons are cross-functional, performing semiotic work independent of the functionality of homepages, as clarified by Bateman et al. (2017: 348). Like many universities worldwide, UNSW engages with audiences through several social media platforms as social media facilitate the sharing of multimodal messages to an unprecedented number of people. The envisaged audiences re-enter the social practice of organizational identity communication, reproducing and resharing the messages constructed for them and adding new identity values. More broadly, this changes how the audience is construed: there is a perceptible shift from passive consumption to more active participation where the audience has some equality with the university.

7.3.4 Images

Although a detailed metafunctional image analysis is outside this chapter's scope (see CHAPTER 6.4.4), it is noteworthy that the envisaged purposes of images as a design

choice have changed across different versions of the page. In V1, a limited number of images are ‘complementary to a verbal text’ (Martinec & Salway, 2005) as they tend to add visual meaning to the verbal text they are featured next to (e.g., an image of the library interior above the news article ‘Book award hat-trick’). In V2, images appear in carousels — prominently placed multimedia in the upper half/center of the viewport, with others appearing in <image-complexes>, anchoring the verbal content of three stories under *Latest News* (Figure 7.1).

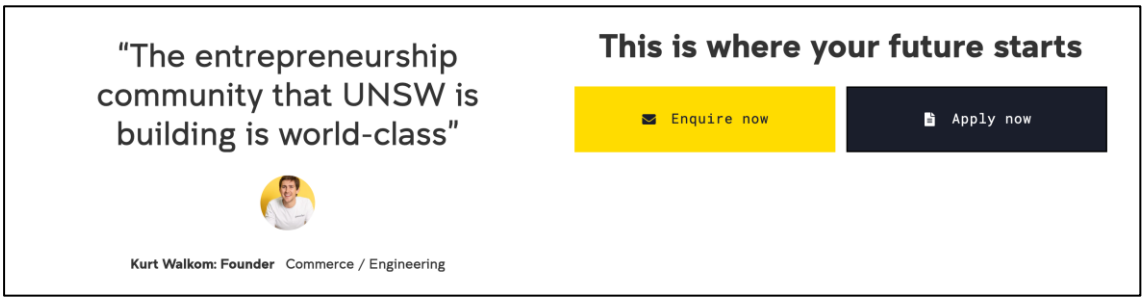
In V3, the ‘hero’ image design solution appears to be what the university wants the visitors to see on the first screen, its pictorial focus, with an option to read the featured story through the provided menu item *Learn More*. The hero image occupies most of the viewport yet offers limited and largely predetermined interaction. This design solution focuses on aesthetics rather than functionality, offering a clean and modern look to the viewport but not much interaction potential. Although highly salient (by size, positioning, representational and interpersonal content of the image, etc.), the hero image is ‘haptically inaccessible’ and is offered for observation and scrutiny rather than interaction.

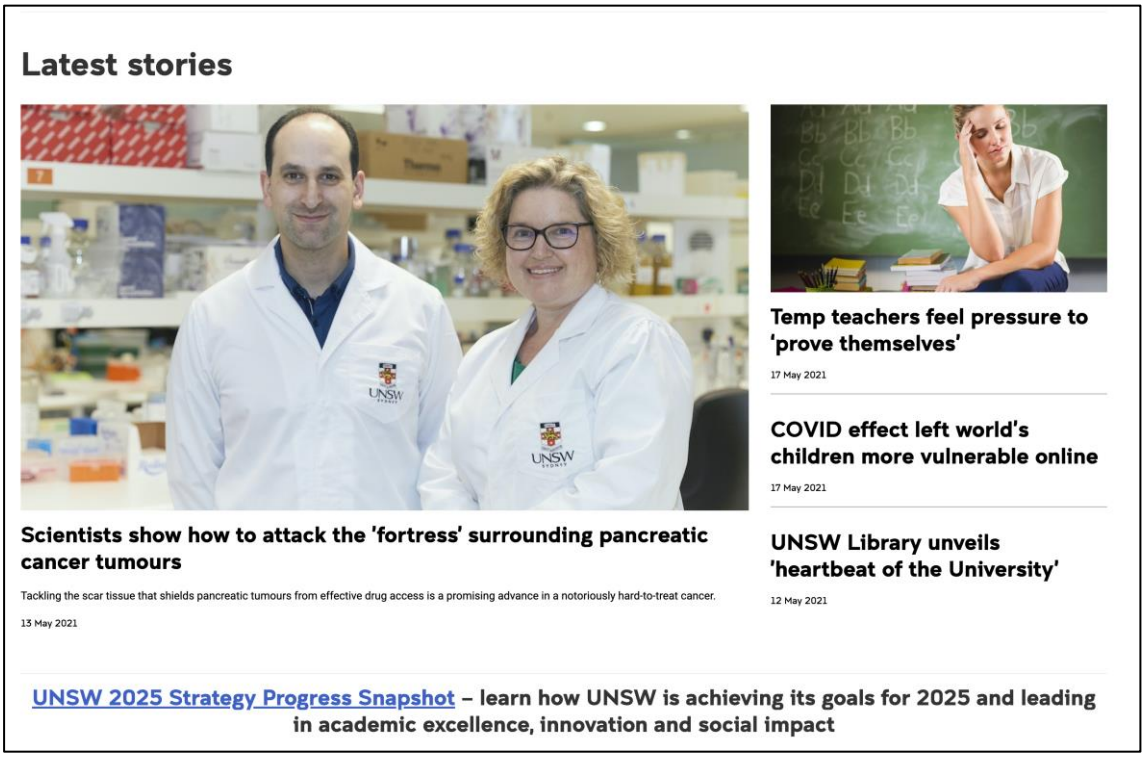
Other images featured in V3 show people rather than places or abstractions. Interestingly, it is almost inevitably students and not staff, represented in groups rather than individually, depicted at either socio-consultative or casual-personal social distance from the viewer, at eye level, as having a shared and equal relationship with the viewer, angled towards the viewer, as if inviting them to their life-world, and lastly, not making eye contact with the viewer as the evidence of a representational attempt of an authentic and unfiltered portrayal. Images are often the focus of content analysis. However, although significant as ‘front-end’ elements, they do not fully determine the website’s identity, as ‘back-end’ elements (i.e., the base units combined into layout units) also contribute fundamentally to the overall meaning of the website as well as other elements of OVI, as demonstrated in the preceding chapters.

7.3.5 Representational structures in the ‘below the fold’

Significant changes are observed in relation to the selection and placement of other layout structures in the ‘below the fold’ of V3. In this version, seven screens are available for scrolling, presenting various options placed individually and ‘floating’ on the page (Figure 7.24). On the rank of the page, these appear as disassembled analytical structures (Kress & van Leeuwen, 2021: 83*)*, presenting a visual ‘this is’, a form of ‘free

association’ (p. 90). Several layout units appear with each new screen, with no indicative cues about the categories that follow in the subsequent sections of the page.





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Explore our beautiful campus

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UNSW Precincts are supporting health care, education and research

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Scholarships. For the brightest minds

Our scholarships empower our international students to achieve their goals

Find out more →

Keeping you connected with student life

The UNSW Student Life Hub answers all your questions

Find out more →

Digital collections, culture and creative research

UNSW Library exhibitions are available wherever you are

Find out more →

Exhibitions and public programs at UNSW Galleries

See the work of leading practitioners in contemporary art and design

What's on →

Key dates

Sat **22** MAY

PERFORMANCE ON CAMPUS

Australia Ensemble: While the music lasts

LEARN MORE →

Mon **24** MAY

CAREERS IN MEDICINE AND HEALTH CARE

Rural Clinical School information evening

LEARN MORE →

Thu **27** MAY

A SERIES OF THOUGHT PROVOKING LECTURES

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Alumni

UNSW Alumni Connect

NETWORK. LEARN. THRIVE.

31 Mar 2021

Alumni Park is being brought to life in 2021

09 Mar 2021

Business graduate reveals how COVID-19 has changed...

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- Newsroom
- UNSW events
- Research news

About us
- Our rankings & reputation
- Faculties and Schools
- Campus locations
- Centres and Institutes
- UNSW Library

GROUP OF EIGHT AUSTRALIA | U21 UNIVERSITAS 21 | APRU | Global Alliance of Technological Universities | PLuS ALLIANCE

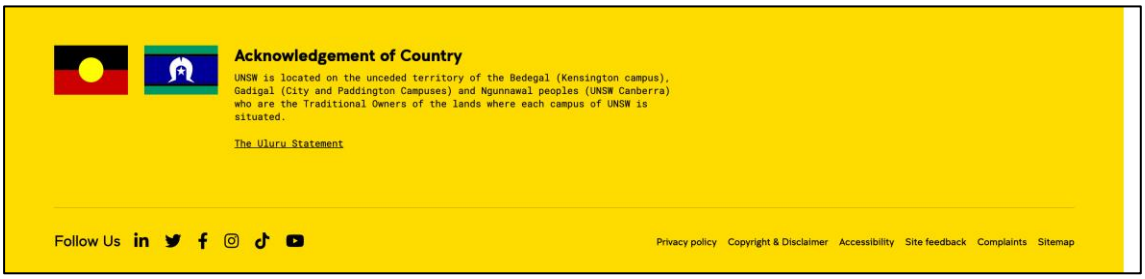

Figure 7.24 Layout of the ‘below the fold’ area in V3

Ordering/sequencing of the overarching categories is mainly intuitive, and the units are organized through the principles of proximity and size in addition to different diagrammatic resources that either demarcate the base elements (e.g., through spacing and discontinuities of color) or unify them (e.g., through consistent visual elements). Some macro-ordering is indicated by the vertical (top-bottom) content structuring because the essential information is usually placed at the top of a page as the most salient and highest in the hierarchy of importance (Knox, 2007: 33).

However, even this prioritization appears to follow no predetermined logic, beginning with student testimonials and information for future students and moving on to *Latest stories*, and *Experience UNSW* information in the form of a grid. Application details, degree finder, and study inquiry options appear twice, signaling the priorities of the page, that is, to recruit prospective students.

The key representational structures of the ‘below the fold’ in V3 are shown in Figure 7.25.

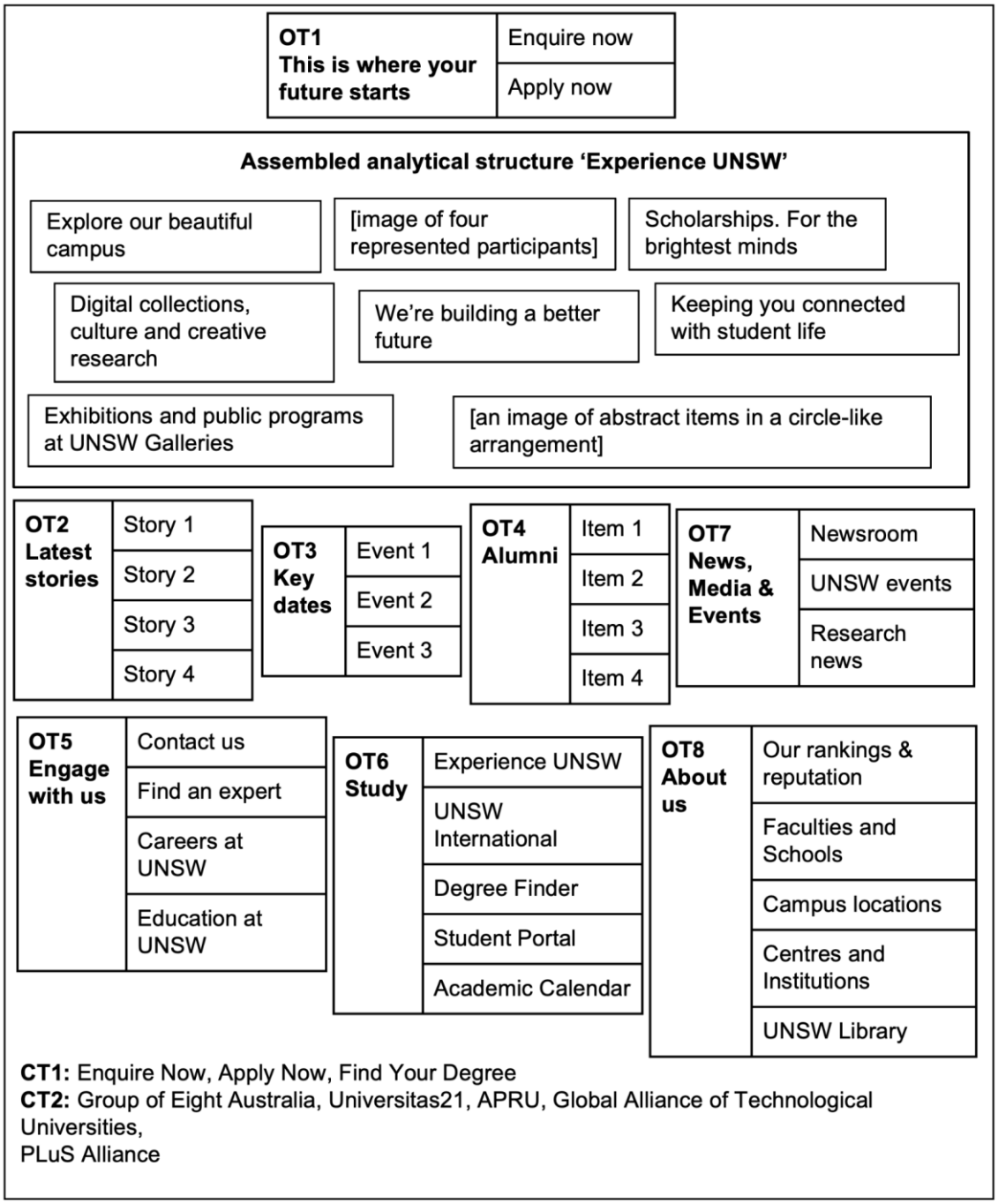

Figure 7.25 Key representational structures in the 'below the fold' area in V3

As captured in Figure 7.25, the 'below the fold' area of V3 draws on eight overt taxonomies. However, the most spatially prominent is the assembled analytical structure <Experience UNSW>, inviting the envisaged audiences to explore a range of options – campus and scholarships, exhibitions and digital collections, and so on, to get a glimpse into the student life at the university. The lack of explicitly stated information about the university administration, governance, and study support (apart from a link to the Student Life Hub as a part of the assembled structure) points to the construction of the picture of the university as an abstract place and student life as a social experience rather than a

challenging individual undertaking. Carefully curated images of people, appearing primarily in groups (e.g., in the layout structure *Explore a lifetime of learning*), contribute to such a portrait. In a sense, these choices add visual embellishment to the organizational identity of V3 as that of 'lots of fun, not much work, and no hassles', to cite Klassen (2000), instead of representing the university as an organization with a hierarchical infrastructure as V1 and (less so) V2 do.

7.4 Access: Evolution of the navigation structures

Embedded navigational resources realized by several diagrammatic means enable pathways to be constructed across each version of the UNSW homepage. In V1 and V2, navigation is activated by a click, whereas V3 introduces additional visual cues of signaling interactivity potential, such as a change of the textual form of the layout unit (e.g., shading, color change, underlining in brand color, and so on). To enable easy navigation in the context of the increased complexity and length of the page, V3 also introduces a scrollable vertical bar to the right of the page, indicating the spatial positioning of the envisaged audiences with options to scroll up or down and signposting how much of the available communicative content relative to the page length is left unexplored. As a result, V3 is expected to be explored one screen at a time, and as a stable design element, the navigation bar specifies the (digital) location of the audience on any web page within the website (i.e., it is found on a homepage, *Future Students* page, etc.).

In V2 and V3, the 'logo' and 'business name' layout structure holds the interactivity potential of 'return to the top of the page' when activated besides its core OVI communication capabilities, and V1 affords this type of navigation only through 'business name'. Macro navigation across the entire website is presented through the design element *Sitemap* at the very bottom of each version, opening a 'table of contents' of the website when activated. *Search* option discussed in SECTION 7.3.2 is the only unit that holds the type-in interactivity potential, allowing audiences to locate answers to specific queries that they may have. The standardized placement of this layout structure in the top right corner of the viewport in all eight versions (slightly shifted to the center in V1) indicates that this element is a part of the generic structure of the homepage.

The nonlinearity of `page-flow` requires significant input from the audiences that determine how the presented information is to be read and what evaluative judgments follow. The web page can, thus, be characterized in terms of the action potential that its hypertextual nature affords (Baldry & Thibault, 2006: 104). In building the trajectories,

the envisaged audiences are invited to engage in the micro-ergodic semiotic work of composition (Bateman et al., 2017), particularly in the viewport, selecting from a set of provided possibilities that correspond to their needs and building trajectories across the website. In the 'below the fold' area of V3, the provided content is for exploration, usually signaled by the deictic expressions *Find out more*. By interacting with the layout units of <page-flow> through a predetermined set of access/navigation structures, the audiences also engage in the co-construal of the organizational identity, assigning meaning to different layout units and OVI elements in the process of traversing the site.

7.5 Concluding remarks

This chapter examined how organizational identity design coordinates the representational and interpersonal prominence of various layout units across different versions of a single web homepage. It analyzed the core OVI elements (i.e., 'logo', 'business name', and 'motto'), the 'new' OVI elements (i.e., 'typography', 'color', and 'graphic shapes'), changes in how the university represents itself through menu items and how it invites interaction with the presented identity for key envisaged audiences through social media, images, and broader navigational structures of the page.

The analysis shows that UNSW has gradually adopted a comprehensive branding strategy to maintain a distinct organizational identity on its homepage. The 2021 version of the page is no longer a catalog of information but a "central front door" to the university to represent "ideals, values and vision that [it embodies] as a vast, diverse and inclusive community" (University of NSW, 2020: n.p.). Emphasis on specific aspects of the organizational identity is achieved through an arrangement of design elements according to importance, making some superordinate and subordinating other elements. These choices construe the representation of the university and relevant communities, which are increasingly prospective students and the public but less so staff. The inclusion of social media icons in the viewport foregrounds the audiences of the page as more active participants who are invited to interact with the university and contribute to its identity through cross-platform engagement.

Chapter 8 Conclusion

"It is new ideas, concepts, and models that we ultimately want, not just new facts."
Sandvig & Hargittai (2015: 13), *How to think about digital research*

8.1 Summary

This thesis has studied web homepages as technology for meaning making to understand the complex social practice of organizational identity communication. It sought to examine how universities incorporate different semiotic resources on the page by means of *organizational identity design* mediating representation of a university and initiates interaction with the relevant communities, from the ways in which multimodal resources combine to the meaning potentials that different combinations hold for the discourses of institutional identity. To pursue this aim, the thesis addressed the designs of web homepages more broadly and visual representational and interactional design choices in the viewports of homepages more specifically, guided by three research questions:

- How do different semiotic resources combine in web homepages to construe discourses of organizational identity?
- What visual strategies are deployed in images in the viewports of web homepages, and how do these strategies contribute to organizational visual identity communication?
- How have organizational identity practices changed over time?

For this purpose, three complementary data sets were drawn from thirty-nine web homepages of Australian university websites in 2020. Data set #1 included four homepages for a study of organizational identity designs (CHAPTER 5); data set #2 consisted of 400 images from the 'above the fold' web area as the most strategic space on four homepages between the years 2015 and 2021 (CHAPTER 6); data set #3 was comprised of eight historical versions of a selected web homepage between the years 2000 and 2021, with three most representative designs for an in-depth investigation (CHAPTER 7).

Two analytical techniques were applied to analyze the data. Comparative analysis of web homepages of different universities demonstrated how the most recent renditions of homepages differ in terms of distribution of semiotic resources, what compositional parts of each page bear the highest degree of similarity, what groups of envisaged audiences are foregrounded on each page, and what navigational possibilities they are offered to

interact with the identity of each university (CHAPTER 5). Comparative study of images across web homepages of different universities revealed what visual personae are constructed through images in the most prominent part of each page (i.e., the viewport) and what strategies for viewer engagement they draw upon (CHAPTER 6). Finally, historical analysis of different 'designs' of the 'same' homepage demonstrated how organizational identity practices change over time in line with the developments of the medium and evolving standardization of the brand across all university communications, especially concerning the core OVI elements and identity markers (CHAPTER 7).

In the context of these findings, two fundamental considerations outlined by van Leeuwen (2009: 218) applied: *choice* and *change*. University identities on web homepages are a matter of choice. However, these choices are constrained by semiotic resources, technological affordances, and regulatory practices that apply to normative discourses surrounding organizational identity communication. Organizational web identities are also subject to change because the visions and values each university aims to communicate are updated in line with institutional policies and responses to broader societal changes. The results corroborated the previous findings on the increased marketization of university discourses (e.g., Askehave, 2007, Fairclough, 2013; Zhang, & O'Halloran, 2012) – the identity presented for interaction is increasingly marketized and visual. In this thesis, instead of the critique of market ideology permeating university branding endeavors, university representation and active production of meanings was highlighted, as facilitated by designs that realize the discourses of identity.

This chapter overviews the key findings of this project and highlights its main contributions, as well as theoretical and practical implications. It outlines the project limitations and points to the avenues of further research.

8.2 Highlights of the study

The current thesis addressed organizational identity communication on web homepages through two inseparable planes – *representation* and *interaction* as two 'chains of meaning' through which a university identity emerges as something more than an 'educational product' to appeal to actors characterized by more than a 'target group'. Representation was crucial for understanding the discourses of identity on web homepages because it indicated a discursive environment in which the social production of (motivated) sign-complexes manifests the social purposes of the text (cf. Kress, 1993). The shifts in representational choices were also considered for interpersonal implications because, in a metafunctional sense, the features interpreted as interpersonal (i.e.,

SOCIAL DISTANCE, SOCIAL RELATION (INVOLVEMENT and POWER), and SOCIAL INTERACTION) are always representations of interpersonal relationships. Through foregrounded representation, discourses of identity, thus, have received a more tangible illocutionary force.

One of the highlights of the current thesis is that it draws attention to the multimodal and increasingly visual nature of identities on web homepages as semiotic technology. Clarifying the key concepts of semiotic mode and characteristics of the medium (CHAPTER 2) has helped to move beyond a general discussion of meaning-making resources and draw conclusions based on the form and function as two facets of multimodal meaning making. To account for the complexities and mitigate the issue of "infinite detail" in multimodal research (Forceville, 2007: 1236; cited in Hiippala, 2015: 38), this thesis directed attention to the discourses of identity on the site of the virtual artifact through the lens of organizational identity design. In this way, the study foregrounded the role of design as both a social practice of 'translating' the rhetorical purposes of the homepage into multimodal ensembles comprised of different semiotic resources and as a mediating 'tool' between the rhetor-institutions and envisaged audiences, emphasizing the role of designers as 'intercultural intermediaries' (Bourdieu, 1984; du Gay et al., 2013). Examining three data sets, this thesis addressed the semiotic material and identified the design patterns reflective of the aspirations of each university to construe specific identities that are open to negotiation and extension by the envisaged audiences. Such an approach helped to explain organizational identities not as static products but as *collaborative digital spaces* that represent the university and invite envisaged audiences to interact with it.

Another highlight of this thesis is that it reveals the gradual move from verbal to visual logic of multimodal organization on homepages, which has prompted the development of new ways to understand how design encapsulates existing semiotic resources in a digital medium. Approaching web homepages as semiotic technology (CHAPTER 3) helped to address the questions of the increasingly ubiquitous 'constellations of image and screen' (cf. Kress, 2005) impacting the communication of organizational identities carried on a digital medium. Homepages were studied as semiotic artifacts structured by non-linear patterns that connect an image, text, video, and so on into multimodal wholes (Martinec & van Leeuwen, 2009). Also, an understanding of design as 'communication design' helped to reveal the envisaged interactions between the rhetor-institution and audiences.

The interdisciplinary methods adopted in this project constitute another highlight of the thesis (CHAPTER 4). The adapted GeM schema helped to reveal the ways in which intricate parts of a web page come together, what the semiotic material, organization, and placement tell us about the institutional discourses of identity, and what implications the changes in these combinations have for identity communication. By addressing web homepages as multimodal multi-layered artifacts combining minimal perceptible design elements (base layer), how they integrate into larger meaningful units (layout layer), and what navigation they offer to audiences (navigation/access structures), this project incorporated a systematic way of addressing the structure, meaning potentials, and interaction on homepages. Adopting a multimodal social semiotic perspective meant that these structures could be approached as organizational identity designs, highlighting the uses of semiotic resources in actual texts. In this way, strengths of two methods/modes of analysis were integrated – the GeM provided the tools for recording formal features of web homepages, and the metafunctional theory formed a basis for contextual interpretations. When developing the annotation schema, I was guided by the overarching research question – how a university communicates its identity on web homepages and what interactions with this identity are offered for the envisaged audiences.

Through studying representation in a social semiotic spirit, this study moved beyond typical marketing terms in relation to studying marketized discourses in academia, contributing to the scholarship that problematizes the notion of 'student as consumer' (e.g., Lažetić, 2019; Tomlinson, 2017). While discourses of web homepages were found to be marked by a promotional 'flavor,' a more productive way to understand organizational identities is arguably not through looking at them as 'selling education' but as sets of 'motivated signs' (Kress, 2005; Kress & van Leeuwen, 2021) that provide visual identification of the brand and enact relationships with the key envisaged audiences of the page. Building on the vast body of work in multimodality studies, design, branding, and organizational semiotics, this thesis proposed one way to examine different layers of visual identification and interaction through a particular mode of representation: semiotic modes and organizational identity design for conceiving and constructing web homepages in a certain way so that the representations are (ideally) acted on in line with the envisaged uses of web homepages.

8.2.1 Organizational identity designs as 'integration code'

CHAPTER 5 identified that web homepage designs are a critical integration code for mobilizing multiple semiotic resources and realizing the discourses of organizational

identity. In line with the multimodal social semiotic approach, this thesis approached designs as tools for giving shape to the interests of the rhetor-institution/designer, drawing on the available semiotic material and operating from the assumption of the rhetorical purposes for this type of semiotic technology. Design was also viewed as 'compromise' between different compelling and often conflicting constraints (Bateman, 2008; Bateman et al., 2017) surrounding organizational identity communication. To communicate appealing (brand) images to the key envisaged audiences of the page, university web homepages draw from similar sets of semiotic resources, share a visual-centric approach to structure, but reveal important differences in the inclusion/exclusion of certain structures as well as interactional (i.e., navigational) pathways.

Homepages provide options for interacting with the university for three key audiences – students, staff, and the public. However, prospective students receive the most prominent representation, mainly through menu items 'Study,' 'Research,' 'Current students,' and 'Prospective Students' with multiple trajectories 'hidden' in the drop-down menus, varying from eight to a sizeable thirty-six pathways. Drop-down menus in the viewport of each page compress the content and contribute to an ergonomic design by packaging information in covert structures that only become visible when activated, given that they correspond to the anticipated needs of the envisaged audiences.

In addition to prioritizing the same audience groups (i.e., primarily prospective students), each university uses similar formal elements and more abstract principles of composition, such as spatial positioning and content ordering, as resources for making meaning. Notably, meaning lies not only in the material being used but also in how it is used, the potentials and constraints of the medium, and the (largely pre-determined) agency of the discourse participants. Design is, then, the 'supply' drawn upon, both material (e.g., formal design elements and structures) and nonmaterial (e.g., spatial considerations and content structuring), all contributing to the production of *meanings* and fostering *identification* with such meanings in the form of association with the university's identity.

Drawing on the concept of a semiotic mode, CHAPTER 5 has identified two critical visual-centric design strategies for content integration on homepages: `diagrammatic complexes` and `image-complexes`. Although significant, verbal resources (i.e., textual-typographic units) were found to neither appear in paragraphs nor organize extended stretches of text. Instead, images and diagrammatic resources (e.g., shapes and lines), often complemented with (dis-)continuities of color, integrate layout structures, signaling a connection of smaller design units into a layout structure while disconnecting them

from other layout structures. In this sense, `diagrammatic complexes` and `image-complexes` fulfill two critical roles – they organize layout units into multimodal ensembles and do so in a way that emphasizes the university's competitive advantage. These roles can be thought of in terms of what van Leeuwen (2022: 24) terms 'functional design' – what it *does* (i.e., diagrammatic resources and images organize layout structures) and 'identity design' – how the particular choices contribute to creating a distinct identity for the organization (i.e., the same semiotic resources enhance identification with the university).

Whereas each web homepage draws on similar sets of semiotic resources, with some differences in the number of resources used, the page length defines neither the number nor type of semiotic resources, as no correlation between the two was observed. In this way, by paying attention to the communicative content (what design elements are used) and space (how much area they occupy), it became possible to minimize arbitrary interpretations (e.g., the inclusion of more textual typographic resources does not imply that they occupy more space nor that they are the most salient elements on the page). While some statistical validation was deployed for the identified patterns, it should be noted that quantitative and qualitative findings are only representative of the selected Australian university web homepages, with variations to be expected should the studied context of the higher education landscape change. For example, anecdotal evidence suggests that few Hong Kong universities include social media platforms on their homepages while these layout units appear on all Australian web homepages in early 2023 – in the footer (excluding Bond University's website), viewport (Western Sydney University only), or both in the footer and viewport (UNSW only). Studying such seemingly inconspicuous differences in the inclusion and exclusion of specific design elements could provide cross-cultural insights into the authority, power, and social distance encoded in web page designs, particularly when complemented with Hofstede's (2001) cultural dimensions and the power distance index.

8.2.2 Organizational identity is visual (and plural)

CHAPTER 6 demonstrated that visual distinctiveness of each university is achieved through crucial OVI elements, such as 'logo,' 'business name,' 'color,' 'typography,' and 'graphic shapes.' The elements of organizational identity are the most prescriptive (i.e., their dimensions and use are specified in the official documentation) and standardized in terms of both form and placement. The keystones of visual identity are a 'logo' and 'business name' that carry an imperative value for the university as an entity, legitimizing a web homepage and contributing to immediate recognition of the organization. The

connotative meanings of logos relate to several abstractions. For the University of Sydney, the logo embodies guidance and support; for Macquarie University – guidance and support; for UTS – innovative, technological, and collaborative character, discovery and exploration, and equality and strength in unity; for UNSW – knowledge, history, and serving a higher purpose. Including the geographical location in the business names of all four universities supports a destination narrative to communicate and cultivate engagement with the campus locations in Sydney. 'Color,' 'typography,' and 'graphic shapes' reinforce the visual cohesion of the brand not only on the homepage but also between the pages of the website and other forms of university communications, including the built environment.

Another significant visual identity element addressed in CHAPTER 6 are images in the viewports of the studied web homepages. The desired 'photographic character' is also recommended in the university brand guidelines, but it is less prescriptive compared to the core OVI elements. It is generally referred to in terms of 'image styles' in conjunction with the descriptive rhetorical purposes. Given the salience of images for organizing the communicative content in viewports, they contribute significantly to the construction of university visual portraits. The results indicate a preference for the inclusion of people, contributing to 'personizing' (cf. Ang & Knox, 2020: 5) rather than 'objectivizing'; that is, the visuals highlight a person rather than an object. The human face bears a symbolic value, encouraging a personal connection between the university and the envisaged audience (Klassen, 2000). The findings show that the universities generally represent people and community and less so physical places. The University of Sydney was a notable exception, featuring places and showcasing different locations as the architectural pride of Australia's oldest university. Further research can reveal how much alignment there is between the 'values' captured in brand guidelines and visual style guides and the 'instances' (i.e., the actual texts).

Also, in CHAPTER 6, images were found to construct several personae summarized under broader sets of identities related to individuation, membership, and sociality. Together with other design choices (CHAPTER 6.5), five identified visual strategies of viewer engagement – *proximation* (positioning the viewer as 'part of' the scene), *alignment* (enhancing the viewer engagement through the frontal level of depiction), *equalization* (representing the participants at an eye-level and positioning the viewer as 'equal' with the representation), *objectivation* (presenting participants for observation and capturing them 'in the moment'), and *subjectivation* (positioning the interactive participants to interact with representations through gaze) – contribute significantly to the construction of specific visual personae. These include representing university as a physical and

abstract entity and the university life as both an individual and shared experience. As a result, no single identity can characterize the visual portrait of the university. Instead, identity is plural and is made up of a combination of the following visual personae – those of "achiever," "agent," "aspirant," "friend," "social community," "agentive community," "community achievers," "university as a physical entity," and "university as an abstract entity." The identified visual personae link to social identity of the envisaged audiences – representational tropes are used to foster identification with other members of the organization (the 'ingroup'). At the same time, identity switch may occur to help the envisaged audience elicit different types of identification and develop their preferred social identity in relation to one of the presented personae.

In relation to construing the 'natural reality', images emphasized constructs of 'being' (e.g., part of university more broadly or part of a featured even more specifically) and 'doing' (e.g., solving problems, engaging in research, etc.). The social construct of 'being' reinforced by more statically oriented participant roles (e.g., reactions[26], analytical and symbolic structures) overweighed the social construct of 'doing' (i.e., transitive and intransitive actions), with a notable exception of the images on the UTS homepage that featured more dynamic participant roles compared to other universities. The choice to paint the picture of idyllic, *sans-souci* university experience is consonant with the much-lamented theme of marketization of the academic discourse structures (see e.g., the dichotomy of 'having' and 'being' in higher education – Shankar & Fitchett, 2002; Molesworth et al., 2011; on selling education as 'the promise of happiness' – Anctil, 2008).

In the context of encompassing these intertwined identities in images, the role of *organizational identity design* is notable. Recognizing the strategic significance of the viewport as a visual space where the envisaged audiences and the university 'meet' and its visual content as the site of organizational identity design work provides an opportunity to identify the commonalities and differences in how universities present themselves in images. A progressive focus from the 'what' (i.e., what types of identities this 'identity work' produces) and toward the 'why's and 'how's (i.e., why and how these identities are construed) provides a fruitful ground for understanding visual design choices and their implications for individual, group, and organizational outcomes.

[26] Reactions (both transactional and non-transactional) are considered a type of NARRATIVE STRUCTURES. However, these arguably contribute to a construction of less agentive portraits compared to transitive and intransitive actions.

8.2.3 Organizational identity is ambidextrous

Given that website designs are known to change rapidly in line with technological innovations and subtle shifts in the rhetorical purposes that organizations envisage for this semiotic technology, CHAPTER 7 introduced a historical perspective on one university homepage, to answer the question "How do organizational identity design practices change over time?". Eight versions the UNSW homepage occurring over twenty years were studied, focusing on three versions representative of the initial Web presence (2000), carousel-informed structures (2009), and modern design (2021). Through the analysis of the communicative content and navigation structures, it is evident that UNSW has been continually revising the branding strategy of organizational identity communication in line with the university values and technological developments of the medium.

More broadly, CHAPTER 7 revealed that the nature of organizational identity practices manifested on the UNSW homepage is *ambidextrous* – that is, the university successfully realizes two types of branding opportunities, namely exploration and exploitation (cf. Melewar & Nguyen, 2015: 762). Exploration is reflective of the opportunities that are radically new to the university (i.e., establishing the initial university Web presence on a then-new medium). Exploitation involves refinements and sustainability of the brand – e.g., adding new OVI elements (such as 'color' in the 2012 version and 'typography' in the 2020 version). Early designs of the web homepage indicate an exploration-type of brand management – that is, UNSW, not unlike other universities, started to explore the new digital terrain for self-representation in the late 1990s. Later designs, in the mid-2015s or so, demonstrate the tendency to 'exploit' this site of engagement by introducing more standardized OVI elements, attesting to the investment of significant resources into website management. The exploitation-type of identity work manifested in the later page designs points to the continuous refinement of the university's competitive advantages presented through homepages as established (yet comparatively new) media of engagement, constantly enhanced by the developments of the medium.

'Logo' and 'business name' were present across all analyzed versions, comprising the 'heart' of organizational identity and asserting the legitimation of the institution, whereas 'typography,' 'color,' and 'graphic shapes' complemented the suite of organizational identity elements in the later versions of the page, ensuring the visual identification of the university brand. Additionally, the patterns of 'typography,' 'color,' and 'graphic shapes' set up a rhythm similar to the music beat created by stress and unstress patterns. The rhythm ensured by the sequence of visual elements encodes the intended reading path

to project desired pathways for the reader's eyes to move across the page. Emphasis on specific aspects of organizational identity was achieved by arranging design elements according to importance, making some superordinate and subordinating other elements. These choices construe the representation of the university and relevant communities, which are increasingly prospective students and the public and less so staff.

The importance of navigation structures across the analyzed pages shows the tendency towards more agentive participation. In line with Kress' (2005) findings, reading a web page is not enforced: there is neither a pre-given entry point nor a clearly defined reading path for navigation. However, differential salience of semiotic resources contributes to the envisaged reading path (see van Leeuwen, 2005b: 82), inviting the audiences to interact with the page starting with the logo, menu items, and image-complexes in the viewport before scrolling to the content in the 'below the fold.' A high degree of flexibility is provided for audiences to construct different pathways based on their envisaged needs. In this sense, organizational identity design is a *participatory design* – the content of the page is the visual material to be transformed into what marketing studies refer to as customer experience (CX), with two relevant components for identity communication – navigation (i.e., what types of 'journeys' across the website are offered) and communication (i.e., what kind of image the organization puts on a web homepage as a communication vehicle) (cf. Kumar, 2022: 136).

The envisaged audiences are, therefore, progressively positioned as agents to *experience* the university instead of passively consuming presented information about the university structure and course offerings. Participatory discourses are the strongest in the most recent version of the page, on which audiences play a more determining part in constructing meaning. In this context, the status of the university shifts from 'author' to 'facilitator.' As the most recent product of the organizational identity design work, the 2021 homepage design communicates a more egalitarian relationship with the audience via reduced social distance and more equal power, where students are 'in charge' of the physical construction of their experience through effectuated semiotic sequences, although a high degree of control is exercised as to what choices are possible. Through content, organizational logic, and navigational possibilities, the design elements on the UNSW homepage legitimize the university and add affective resonance to its organizational identity.

The changes in multimodal combinations across the analyzed versions relate to the representational choices made to reflect the university's vision for its website and the changes in the medium (i.e., technological affordances of the medium at a given time).

An empirical investigation of these two motivations of representational logic is often an arduous task as it is challenging, if at all possible, to determine with any discernible certainty whether some elements are motivated from the medium or the social purpose of the text (cf. Bateman, 2014b). For example, a single design unit <learning management platform> (such as Moodle or Canvas) found in horizontal menu panels in viewports holds a different meaning potential of a shared e-learning environment when activated. This environment encompasses collaborating with others through discussion forums, interactive tasks, and so forth. Research addressing the role of digital artifacts in relation to learning and education approaches such interactional design features through the concept of 'social affordances' or how design enables shared learning environment and collaboration (e.g., Kreijns & Kirschner, 2001; Sutcliffe et al., 2011). Whereas tracing changes motivated from the medium is outside the scope of this study, it is noteworthy that research that takes a genre perspective on digital artifacts acknowledges the importance of considering materiality (e.g., fluid formatting; interactive possibilities) when addressing generic structures of hybrid genres. On the other hand, identifying the shifts in representational choices and their textual organization enables understanding the changes in the overall purpose of the page. In this sense, the identified differences on the site of the virtual artifact can be interpreted as instantiations of the rhetorical purpose that mediates social interaction between the university and the imagined audiences (cf. Bezemer & Mavers, 2011: 204).

8.3 Implications

The current research is intended to engage with and contribute to several scholarly discussions. Firstly, the structurally orientated perspective integrated into the research method indicates an opportunity to systematically record design elements, their combinations, and the meaning-making potentials of different identity-bearing artifacts circulating in public sector organizations. This study showed that the richness of the discourses of identity lies both in the structure of such communicative artifacts and the meaning potentials of different multimodal ensembles, ultimately contributing to fostering identification with the organization. Back-and-forth content design, thus, needs to match the rhetorical purposes and envisaged uses of communicative instances inculcated in organizational identity communication. Secondly, incorporating MSS into the GeM schema contributes to the body of scholarship interested in the nature and social significance of brand management in the higher education landscape. Lastly, this study encourages universities to think about designing environments that encourage participation while also communicating the realities of student life. It makes explicit what

is usually made implicit – namely, how organizational visual identity elements, content, and navigation structures on organizational websites communicate some of the core promises, such as outstanding education, vibrant student life, and research excellence, by demonstrating how concrete realizations of these values meet the abstract qualities of the brand.

8.3.1 Multimodality in conversation with organization studies

Grounded in multimodal theory, this study took a perspective of design to examine web homepages as semiotic technology for organizational identity communication. It accordingly termed these uses of semiotic resources that realize discourses of identity organizational identity design. Recognizing the importance of paying attention to the multimodal nature of web homepages as well as any communicative instances of organizational practices, this thesis contributes to the emerging field of organizational semiotics (e.g., Höllerer et al., 2019; Laba, 2023; van Leeuwen, 2018) – an interdisciplinary scholarly collaboration between multimodality and organization studies as a response to the need of better understanding multimodal communication in the life of organizations. It offers comprehensive analytical tools to address the structure and meaning of multimodal communicative artifacts guided by organizational discourses.

The models developed in this thesis can be used to analyze the identity communication practices of any organization. They provide analytical tools to study representation on the site of the virtual artifact – something that the envisaged audiences interact with directly. It is the space where “rhetorical purposes, the designer’s interest and semiotic resources, and the characteristics of the audience are all brought into coherence” (Bezemer & Kress, 2015: 130). Whereas web homepages were found to increasingly rely on images (still and moving) and visual (particularly diagrammatic) rather than verbal resources as central means of textual cohesion, an examination of organizational identity designs can reveal how different modes combine and interact with one another. In the age where multimodal communication is at the heart of most (if not all) organizational practices, design has become more than a tool of aesthetics or functionality – it is the means of conjuring up associations for the brand.

By foregrounding organizational identity design, systematic insights into the multimodal nature of messages from the perspective of representation can be drawn. At its heart, organizational identity communication implies interaction or *exchange of meanings*:

> Individuals in interaction draw on systems of representation while at the same time constructing, adopting, and changing those systems through their actions. In turn, all actions that individuals perform are mediated by the system of representation that they draw on (Norris, 2004: 13).

On the Web, such interaction involves specific possibilities enabled by the affordances of the digital medium, and understanding these possibilities and constraints provides a foundation for understanding how the envisaged audiences are expected to engage with the discourses of identity and subsequently extend them during their traversals. Additionally, studying systems of representation helps to understand how design frames, consolidates, and modifies meanings attached to organizational identity. In this way, the approach proposed in this thesis contributes to the structured approaches that address design cues and how they make meaning. As Batey (2008: 216) acknowledges, the field of semiotics has begun to gain acceptance for providing credible tools for researching and interpreting meanings, particularly in advertising. Whereas advertising can be seen as customer-centric (i.e., its purpose is to establish the best practices to make gains), the organizational identity perspective proposes studying meaning exchange between actors involved in communicative instances. In this context, the current approach offers tools to address the meanings exchanged through design structures.

Figure 8.1 summarizes organizational identity communication as a social practice that involves design considerations across four sites. Whereas mainly invisible to the envisaged audiences, the site of the virtual artifact is what such audiences directly interact with. Examining the site of any virtual artifact that communicates organizational identity through the prism of design helps to reveal discourses in the context of organizational identity communication as designs "realise the communication situation which changes socially constructed knowledge into social (inter-)action (Kress & van Leeuwen, 2001: 5).

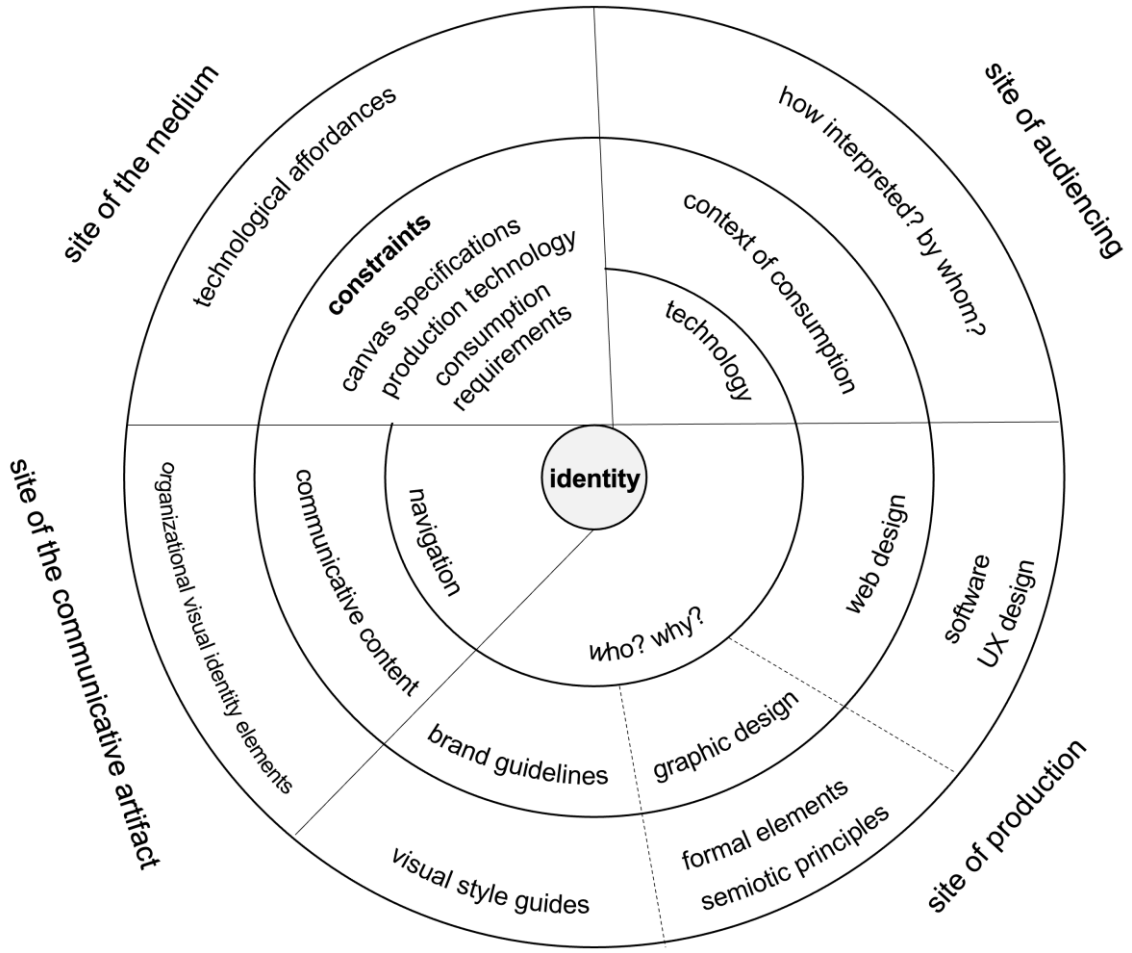

Figure 8.1 Model for analyzing organizational identity communication

By acknowledging the multimodal nature of organizational virtual artifacts, representation, and interaction, the model enables insights into a complex semiotic practice of organizational identity communication while also paying attention to a mélange of other issues, such as legitimation, power, and technology. It points to an opportunity for collaboration between multimodality research and the industry in which "practitioners are not 'hired hands' doing the bidding of their paymasters but consultants ('critical hands') whose critiques and suggestions can feed back productively into the organization" (Jancsary et al., 2023).

Another methodological contribution lies in extending the GeM annotation schema (Bateman, 2008; Delin et al., 2002; Hiippala, 2013) from paper-based media to digital page-based artifacts, complementing the similar research endeavor of Nekić (2015) who analyzes tourism websites. Several adaptations made in the base layer account for the interactivity potential of minimal elements on the page, and the layout layer complemented by the systems of SALIENCE and FRAMING helps to identify layout structures as meaningful "spatially arranged configurations of *document elements*"

(Bateman, 2008: 21; italics in original). The open architecture of the GeM model allows such adaptations to be made for specific research purposes, and demonstrates that the model can be used to answer complex research questions of post-modern digital cultures. The most significant innovation was made to the level of interpretation of the identified layout structures. Complementing the GeM model with metafunctional theory from MSS allows for a detailed contextual interpretation of identity communication as a 'big issue' studied through specific instances. The development of larger multimodal corpora and automation of the base and layout layer of the model would further strengthen the opportunities for understanding how different kinds of semiotic resources and their combinations contribute to organizational identity communication practices.

Whereas multimodal social semiotics is a strong candidate for revealing how signs are imported from other contexts and what meanings are produced through different social practices, it cannot reveal why the signs have developed in the way they have (van Leeuwen, 2018), and instead this study draws these insights from organization studies on the development of organizational identities, legitimation strategies, and innovativeness, among others. Therefore, on the one hand, organization studies benefit from interaction with multimodality through new opportunities for systematic insights into the multimodal construction of organizational identity. On the other hand, multimodal research gains more robust sociological insights into the historical and cultural contexts of a concrete multimodal phenomenon. As van Leeuwen (2018) observes, both fields of inquiry enrich our understanding of concrete communicative phenomena concerning specific interactions which they shape and are shaped by. It is arguably an example of a new (and also challenging) form of disciplinary triangulation "where insights from different perspectives may enhance and complement each other" (Bateman, 2022: 48). To address the multimodal complexity of the organizational identity communication on university web homepages, this study combines multidisciplinary perspectives from an integrationist viewpoint which "focuses on problems rather than methods and brings together researchers from different disciplines" (van Leeuwen, 2005c: 7).

8.3.2 Considerations for university communications

The relationship between the current research and its practical implications lies in the growing demand to understand organizational culture not so much by foregrounding competitiveness and customer-centric brand practices but rather by developing new knowledge of the ways in which specific (web-based) texts communicate organizational identity and engage audiences. Such an approach has implications for brand management, particularly from the identity perspective. Amongst an array of other

approaches, such as economic, consumer-based, personality, relational, community, and cultural (cf. Heding et al., 2020), the current study contributes to the body of research on branding in higher education that problematizes adoption of business parlance to public sector organizations, including public universities (Naidoo & Jamieson, 2005; Saunders, 2015). An issue that has attracted scholarly attention is the adaptation of frameworks from business contexts to study the branding practices of public organizations, which are deemed "insufficient and often not pertinent in this context" (Melewar & Nguyen, 2015: 760).

However, the commercial milieu continues to impact the higher education landscape, and is necessarily one of its drivers. The current research acknowledges that university branding practices are part of modern competitive world of higher education, not least because funding environments, particularly in Australia, mean that universities need to pursue fee-paying students and various funding opportunities. Universities make strategic choices to emphasize their competitive advantage, and they do so through what Batey (2008) terms "touch points" – or occasions on which an individual meets the brand and all that is associated with it (220). This study provides two main recommendations for one such (critical) touch point – a web homepage alongside other organizational communication material (see Laba, 2023).

The first implication stems from identifying rhetorical purposes for communication materials with organizational identity significance. Clear communication of the objectives of specific documents circulated in an organization can alleviate some of the frustrations that specific actors may have. For example, much communication for shared membership purposes (i.e., for staff and current students) now occurs through third-party platforms, such as Microsoft SharePoint, Microsoft Teams, Zoom, and so on. However, due to the proliferation of such media, especially during extensive lockdowns during COVID-19, important information may only sometimes reach the envisaged audiences. This is not so much an issue of branding but that of managerial communication. In addition, my experience presenting my research at conferences and different academic circles suggests that the shared sentiment of most staff is that university websites are 'frustrating' or even 'useless.' Identifying the uses of specific communicative artifacts and clarifying what relevance these and other digital platforms at a university have for different stakeholders has the potential to improve perceptions of university communications. This implication also has to do with softening the tensions between aesthetics and functionality of organizational websites – 'postmodern page visitors' do not scroll down; thus, perhaps, it is important to revisit what information is deemed

relevant for this type of semiotic technology and reduce the page length (i.e., number of screens for scrolling) to enhance user experience.

The second implication is concerned with the web homepage design and communicative content. Even if a web homepage moves towards addressing predominantly potential students, it needs more clarity about expectations of what university life entails. The inclusion of organizational identity elements is by all means beneficial for the recognizability and distinctiveness of the brand. Still, a web homepage also needs to reflect less 'pretty' but more realistic aspects of student life, such as the challenges that a university degree holds, practical information about how degrees are structured, and where students can seek help with academic and non-academic matters. Such a recommendation relates to the question, 'How can organizations design platforms that engage value-driven representation?'. If universities claim to value student support, such support could translate into the design elements included on the page. Currently, this information is buried in the peripheral corners of the website infrastructure, if at all accessible.

8.4 Limitations and opportunities

8.4.1 Limitations

The research conducted in this thesis focused on two sets of communicative artifacts in the context of organizational identity communication – web homepages and viewport images – from the perspectives of multimodal representation by the means of organizational identity design. As such, it has several limitations that simultaneously point to opportunities for further research.

The first limitation stems from the data collection timeline and the challenge of studying transient digital texts, such as web homepages. Since data were collected across three weeks, some design changes might have yet to be accounted for. Some of the changes might stem from different underlying logic (e.g., rebranding strategy, featuring information concerning key dates, such as Open Days, the urgency of prioritizing matters of higher relevance, such as information on the university's response to COVID-19 through a novel layout structure, etc.). In this way, the data represents a snapshot of a (usually long) iterative design process regulated internally and largely invisible to a researcher unless the arguments on linking such interpretative logic to manifested design structures are sighted by the designers and other social actors involved in the process. If a researcher can be situated within an organization, further insights would be revealed, and a longer as well as different timescale for data collection would provide new findings.

Next, the question of organizational visual identity addressed the visual strategies for viewer engagement and representational tropes in images of the homepage viewports. Importantly, the identified strategies are only indicative of how universities represent their visual identity in these specific images, with expected variation for other visuals on the same website but beyond the homepage, as well as across other organizational websites. Following Hiippala (2013: 101, 183; see also Waller et al., 2012: 239), I adopted a selective reading strategy that supports understanding images in line with the foregrounded function of multimodal texts that this study is interested in (i.e., constructing organizational identities). Intersemiotic complementarity (Royce, 2007), or in-depth exploration of how different images combine and interact with other semiotic resources in image-complexes, such as headlines, lines, diagrammatic boxes, and so forth, was outside the scope of this work. However, examining this question is relevant, especially in the context of visual branding, to understand how different resources in image-complexes work together to communicate further aspects of identity. In relation to OVI communication, the thesis studied key OVI elements (i.e., 'logo,' 'business name,' 'motto,' 'typography,' 'color,' 'graphic shapes,' and 'images') individually, and future research can address how these individual elements contribute jointly towards visual identity construction – and how understanding this joint contribution warrants attention to the page-level organization.

Moreover, the current research opted for addressing web homepages as media for communicating organizational identities. Still, it did not map all the meaning potentials of all layout structures and focused on a selected set of fundamental design structures. It highlighted the engagement with these critical layout structures through the notion of the materiality of the digital medium but did not systematically map out the pathways for different audiences to evaluate possible 'moves' to achieve a specific purpose (e.g., locate information about a particular course). Further research that addresses the materiality of the medium can be complemented with an examination of organizational identity communication shifts in different document types (e.g., handbooks and posters). A growing body of research on the digitization of social practices warrants this premise, examining resemiotization – how meaning making shifts from context to context (Iedema, 2003), such as education and learning (Cimasko & Shin, 2017), shopping (Poulsen, 2022; Rasmussen & van Leeuwen, 2022), and social media interactions (Leppänen et al., 2014), to name a few.

Lastly, this thesis provides one way to address organizational identity communication and positions itself as non-didactic. It integrated relevant insights from multimodality, visual communication, semiotic technology studies, organization studies, brand

management, graphic design, marketing, and educational management, demonstrating that studying complex organizational practices requires a mixed method, not a singular approach. With recognition of a complex and multimodal nature of contemporary discourses in all fields of communication, the methodological tools of one discipline (traditionally, linguistics and its sub-disciplines) have become inadequate for understanding contemporary communicative practices. New 'multimodal epistemologies' (Maiorani & Christie, 2014) are required to provide new ways of "approaching, elaborating on and teaching research practices that focus on communication in its complex phenomenology" (1). Exploration of the available and potential intersections of multimodality and other disciplines provides an opportunity to expand the available toolkit of studying representations – a consideration that "becomes particularly relevant when the multimodal stage of development of some discipline expands to overlap with the concerns of some other discipline" (Bateman, 2022: 48). Relevant to this study is the emergent collaboration between multimodality and organizational theory (i.e., organizational semiotics) that has begun to pay close attention to the importance of multimodality of the organizational identities (Höllerer et al., 2018[27], Ravelli et al., 2023). In this way, the thesis contributes to the characterizations of multimodal nature of digital texts at the intersection of organizational theory and multimodality "as a stage of development within a field" (Bateman, 2022: 43). Such an approach offers a possibility to move from linguistic to semiotic concepts in the discussion of the complexity of organizational identity as a particular aspect of discourses of contemporary higher education. Organization and brand management studies can further enrich the current research by bringing sociological insights into the historical and cultural contexts of the studied organizational communication phenomena embedded into institutional ecosystems that make up and represent a large part of the world we live in.

8.4.2 Avenues of further research

The models developed for analyzing organizational identities on web homepages and visual identities in images can be applied to studying a range of communicative texts, from any web page of a website to organizational social media engagement. By zooming in on decomposition of the different layers of meaning-making resources and their integration into multimodal ensembles, the interpretations of organizational identity communication can be derived based on the material used in specific communicative instances. The adapted GeM annotation schema and the organizational identity

[27] Two volumes edited by Höllerer et al. (2018, 2019) provide several multimodally-oriented organization studies that move in this direction.

communication framework detail all the ‘strata’ that make meaning and provide a sufficient ground for reproducibility. When applying these models to studying particular artifacts or their collections, future research is encouraged to explain what adaptations are being made and provide justifications for such adaptations to avoid the mourned yet prolific “clipped’ style of academic writing (Swales, 2004: 220) (i.e., the kind of writing that omits specific methodological details). In this way, the application of methods and explanations of methodology that informs these methods will continue contributing to the development of the GeM model and organizational identity communication framework that can be applied to understand higher education branding practices. As Bateman (2023) highlights, branding studies can benefit from a closer engagement with multimodality studies – “and particularly with multimodality studies where discourse is naturally included and issues of methodological guidance and empirical support have become central” (25).

The organizational identity model mainly addressed the site of the virtual artifact paying attention to the brand guidelines to understand the underlying design logic of the key visual identity elements. For a more holistic image of organizational identity communication, future research can also attend to other ‘sites’ outlined in Figure 8.1 and engage in a dialogue with the marketing teams and envisaged audiences through digital ethnography, surveys, interviews, and focus groups. This study concluded that representation in a digital world is a complex semiotic practice where two logics – space and time – provide different potentials for making meaning. By constantly enhancing the available models to studying representation, we can continue developing the means of understanding representational practices associated with the construction and interaction with organizational identities. The design and engagement with these spaces provide powerful ways of understanding postmodern structures of ‘knowledge, regulation, and identity’ (Martin, 2022).

Ultimately, organizational identity communication is concerned with the issue of meaning. Studying it through a qualitative lens can reveal the seemingly inconspicuous differences and shifts in design elements and their placement. Whereas a record of such latent observations is an essential step of a research endeavor, the interpretative potential of the discourse semiotics layer reveals more profound meanings about what an organization stands for. In this context, the metafunctional theory offers a valuable set of tools to not only carry out this interpretative work but to also reimagine what we mean by ‘identity’ – our ability to represent experiences with the world around us (i.e., ‘natural reality’), our capacity to relate to others and negotiate attitudes (i.e., our ‘social reality’), and our faculty to organize not only relationships with different actors and

systems of membership (outer ‘semiotic reality’) but also ourselves through reflection, personal development, and intellectual growth. In the age of unprecedented global flow of information, talent, and capital, universities must exploit new means of increasing the visibility of their promotional narrative. Therefore, marketization of public discourses is another unavoidable (and not new) ‘reality’, and issues surrounding it should be studied critically (as, for example, critical discourse analysis does). However, it is through the acknowledgment of such a reality, discovery, and exploration of the organizational identity practices – both at a specific point in time and historically – that an understanding of the best branding practices can be advanced. It is my position that the universities ‘compete’ in a better yet perhaps the less known sense of the word – from Late Latin *competere* – to strive in common.

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Appendices

Appendix A Data set #1

Table .1 Entire data set #1

Identifier	Name	Website	Permalink
01_anu	The Australian National University	https://www.anu.edu.au/	https://web.archive.org/web/20200105125405/https://www.anu.edu.au/
02_canberra	The University of Canberra	https://www.canberra.edu.au/	https://web.archive.org/web/20200105183938/https://www.canberra.edu.au/
03_acu	Australian Catholic University	https://www.acu.edu.au/	https://web.archive.org/web/20200105183951/https://www.acu.edu.au/
04_notredame	Notre Dame University	https://www.notredame.edu.au/	https://web.archive.org/web/20200105194101/https://www.notredame.edu.au/
05_csu	Charles Sturt University	https://www.csu.edu.au/	https://web.archive.org/web/20200105230836/https://www.csu.edu.au/
06_mq	**Macquarie University**	**https://www.mq.edu.au/**	**https://web.archive.org/web/20201008063548/https://www.mq.edu.au/**
07_scu	Southern Cross University	https://www.scu.edu.au/	https://web.archive.org/web/20200105231110/https://www.scu.edu.au/
08_une	University of New England	https://www.une.edu.au/	https://web.archive.org/web/20200105125418/https://www.une.edu.au/
09_newcastle	The University of Newcastle	https://www.newcastle.edu.au/	https://web.archive.org/web/20200105231009/https://www.newcastle.edu.au/
10_sydney	**The University of Sydney**	**https://www.sydney.edu.au/**	**https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/**
11_uts	**University of Technology Sydney**	**https://uts.edu.au/**	**https://web.archive.org/web/20201008080715/https:/www.uts.edu.au/**
12_uow	University of Wollongong	https://www.uow.edu.au/	https://web.archive.org/web/20200105125556/https://www.uow.edu.au/
13_unsw	**UNSW Sydney**	**http://unsw.edu.au/**	**https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/**
14_western	Western Sydney University	https://www.westernsydney.edu.au/	https://web.archive.org/web/20200105194126/https://www.westernsydney.edu.au/

15_cdu	Charles Darwin University	https://www.cdu.edu.au/	https://web.archive.org/web/20200105184008/https://www.cdu.edu.au/
16_bond	Bond University	https://bond.edu.au/	https://web.archive.org/web/20200105181621/https://bond.edu.au/
17_cqu	CQUniversity	https://www.cqu.edu.au/	https://web.archive.org/web/20200105071820/https://www.cqu.edu.au/
18_griffith	Griffith University	https://www.griffith.edu.au/	https://web.archive.org/web/20200105220239/https://www.griffith.edu.au/
19_jcu	James Cook University	https://www.jcu.edu.au/	https://web.archive.org/web/20200615000000*/https://www.jcu.edu.au/
20_qut	Queensland University of Technology	https://www.qut.edu.au/	https://web.archive.org/web/20200105071827/https://www.qut.edu.au/
21_uq	University of Queensland	https://uq.edu.au/	https://web.archive.org/web/20200105181635/https://www.uq.edu.au/
22_usq	The University of Southern Queensland	https://www.usq.edu.au/	https://web.archive.org/web/20200105121900/https://usq.edu.au/
23_usc	University of the Sunshine Coast	https://www.usc.edu.au/	https://web.archive.org/web/20200105231058/https://www.usc.edu.au/
24_flinders	Flinders University	https://flinders.edu.au/	https://web.archive.org/web/20200105230939/https://www.flinders.edu.au/
25_adelaide	The University of Adelaide	https://www.adelaide.edu.au/	https://web.archive.org/web/20200105183950/https://www.adelaide.edu.au/
26_unisa	University of South Australia	https://unisa.edu.au/	https://web.archive.org/web/20200105194128/https://unisa.edu.au/
27_utas	University of Tasmania	https://www.utas.edu.au/	https://web.archive.org/web/20200105194131/https://www.utas.edu.au/
28_deakin	Deakin University	https://www.deakin.edu.au/	https://web.archive.org/web/20200105125451/https://www.deakin.edu.au/
29_federation	Federation University	https://federation.edu.au/	https://web.archive.org/web/20200105125506/https://federation.edu.au/
30_latrobe	La Trobe University	https://www.latrobe.edu.au/	https://web.archive.org/web/20200106003054/https://www.latrobe.edu.au/
31_monash	Monash University	https://www.monash.edu/	https://web.archive.org/web/20200105194017/https://www.monash.edu/
32_rmit	RMIT University	https://www.rmit.edu.au/	https://web.archive.org/web/20200105194001/https://www.rmit.edu.au/
33_swinburne	Swinburne University	https://www.swinburne.edu.au/	https://web.archive.org/web/20200105125445/https://www.swinburne.edu.au/

34_unimelb	The University of Melbourne	https://www.unimelb.edu.au/	https://web.archive.org/web/20200105154829/https://www.unimelb.edu.au/
35_vu	Victoria University	https://www.vu.edu.au/	https://web.archive.org/web/20200105125542/https://www.vu.edu.au/
36_curtin	Curtin University	https://www.curtin.edu.au/	https://web.archive.org/web/20200106003041/https://www.curtin.edu.au/
37_ecu	Edith Cowan University	https://www.ecu.edu.au/	https://web.archive.org/web/20200105183954/https://www.ecu.edu.au/
38_murdoch	Murdock University	https://www.murdoch.edu.au/	https://web.archive.org/web/20200105181250/https://www.murdoch.edu.au/
39_uwa	The University of Western Australia	https://www.uwa.edu.au/	https://web.archive.org/web/20200105183003/https://www.uwa.edu.au/

Key: **bold** shows the homepages comprising data set #1

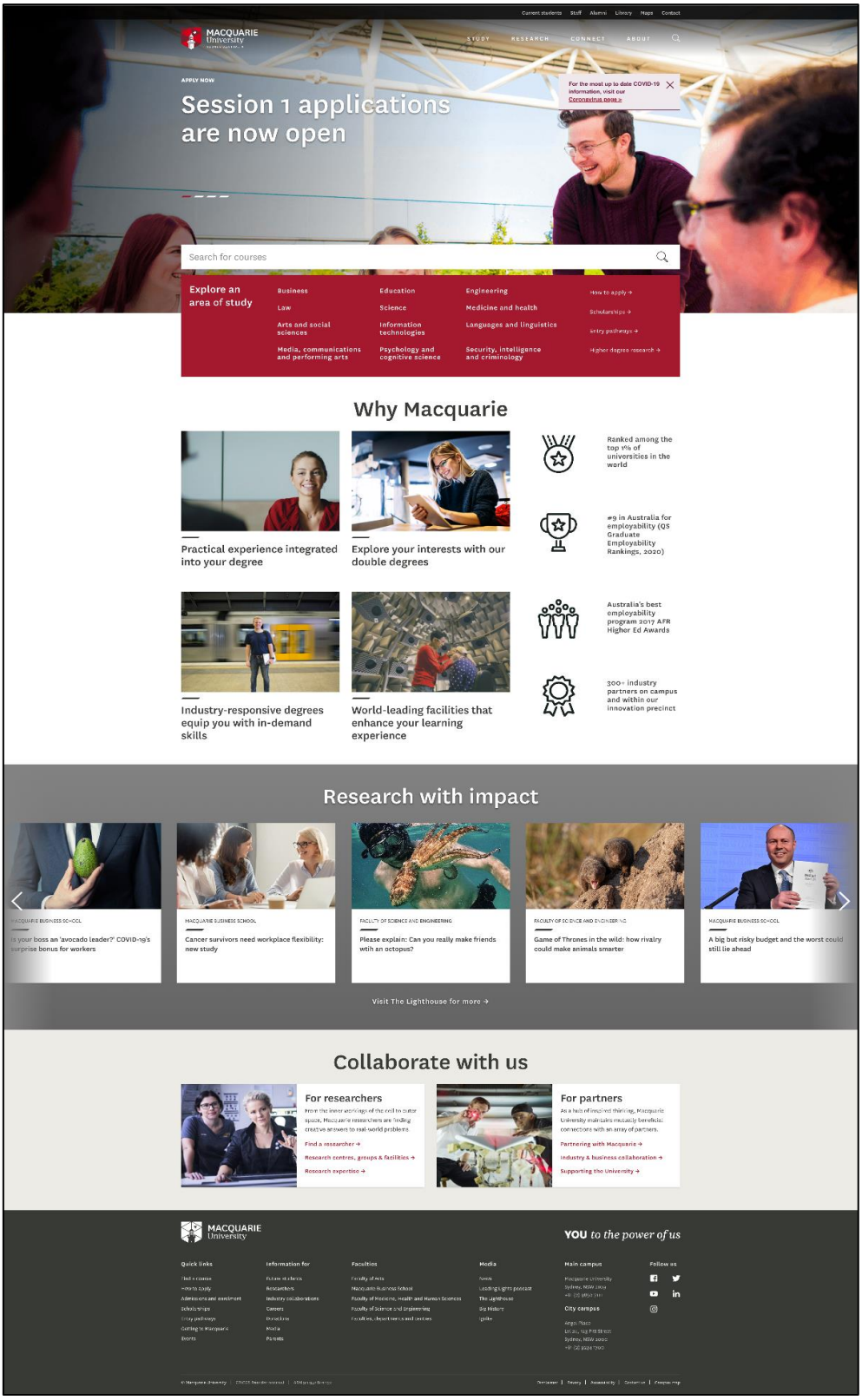
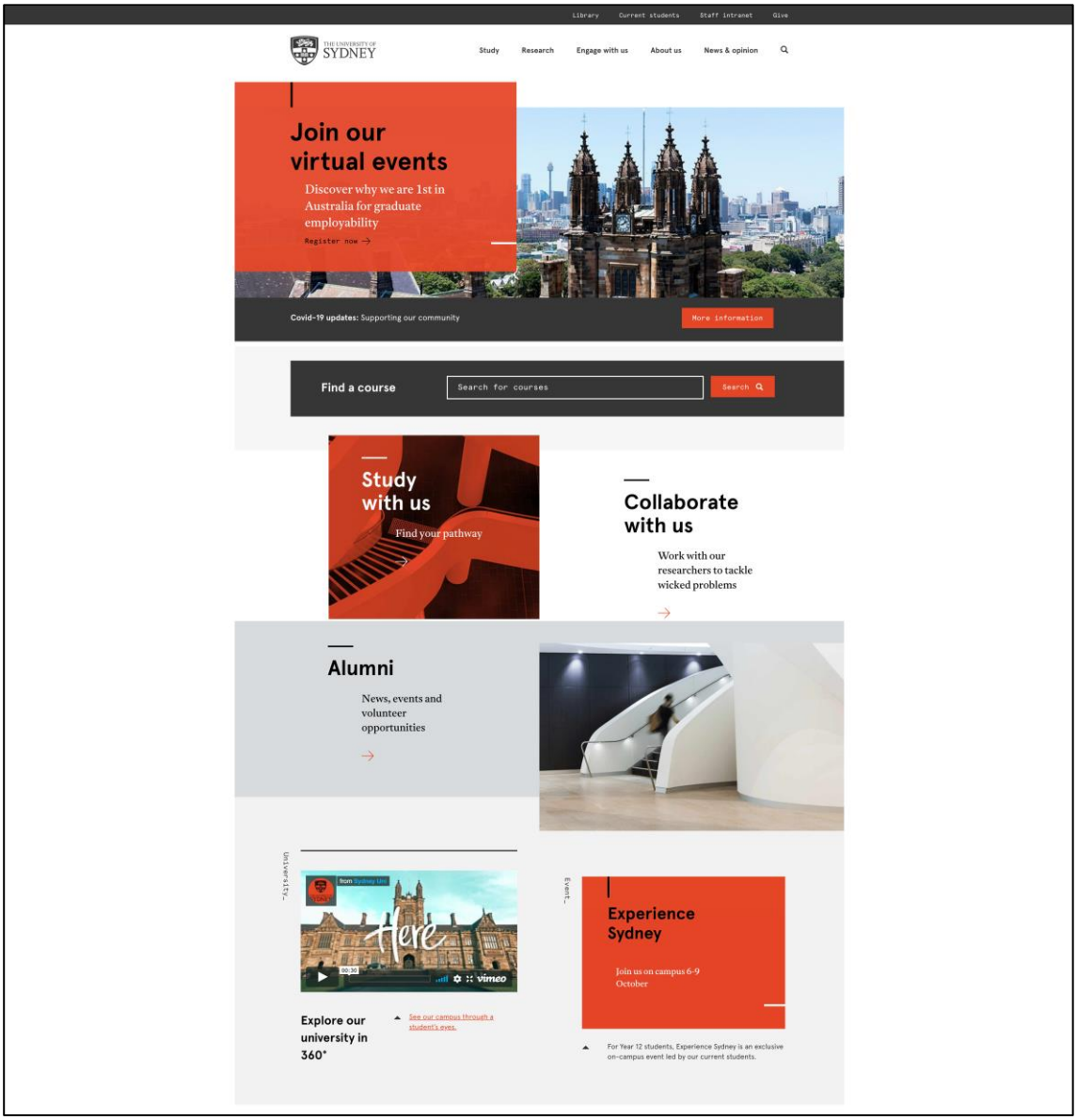


Figure .1 Homepage of Macquarie University website <*https://www.mq.edu.au/*> (https://web.archive.org/web/20201008063548/https://www.mq.edu.au/)


Library
Current students
Staff intranet
Give
THE UNIVERSITY OF SYDNEY
Study
Research
Engage with us
About us
News & opinion
Join our virtual events
Discover why we are 1st in Australia for graduate employability
Register now
Covid-19 updates: Supporting our community
More information
Find a course
Search for courses
Search
Study with us
Find your pathway
Collaborate with us
Work with our researchers to tackle wicked problems
Alumni
News, events and volunteer opportunities
University
Here
vimeo
Explore our university in 360°
See our campus through a student's eyes.
Event
Experience Sydney
Join us on campus 6-9 October
For Year 12 students, Experience Sydney is an exclusive on-campus event led by our current students.

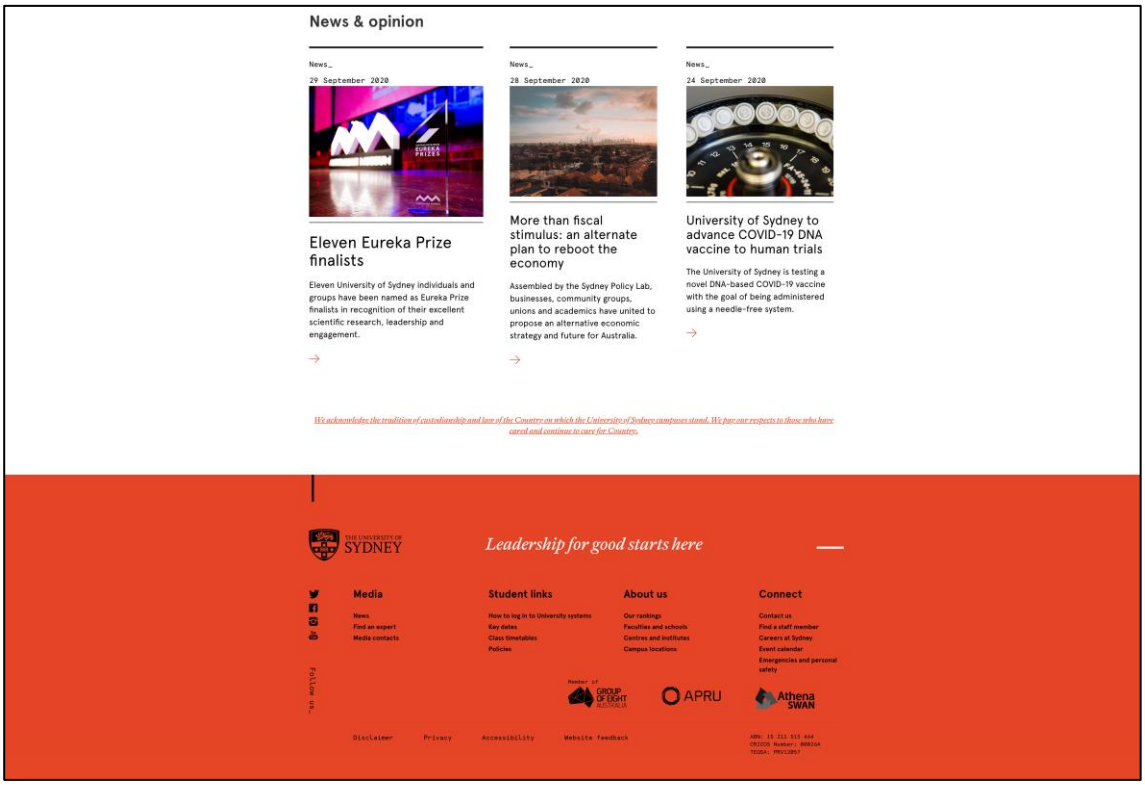


Figure .2 Homepage of the University of Sydney website <*https://www.sydney.edu.au/*> (https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/), presented in two (arbitrary) parts

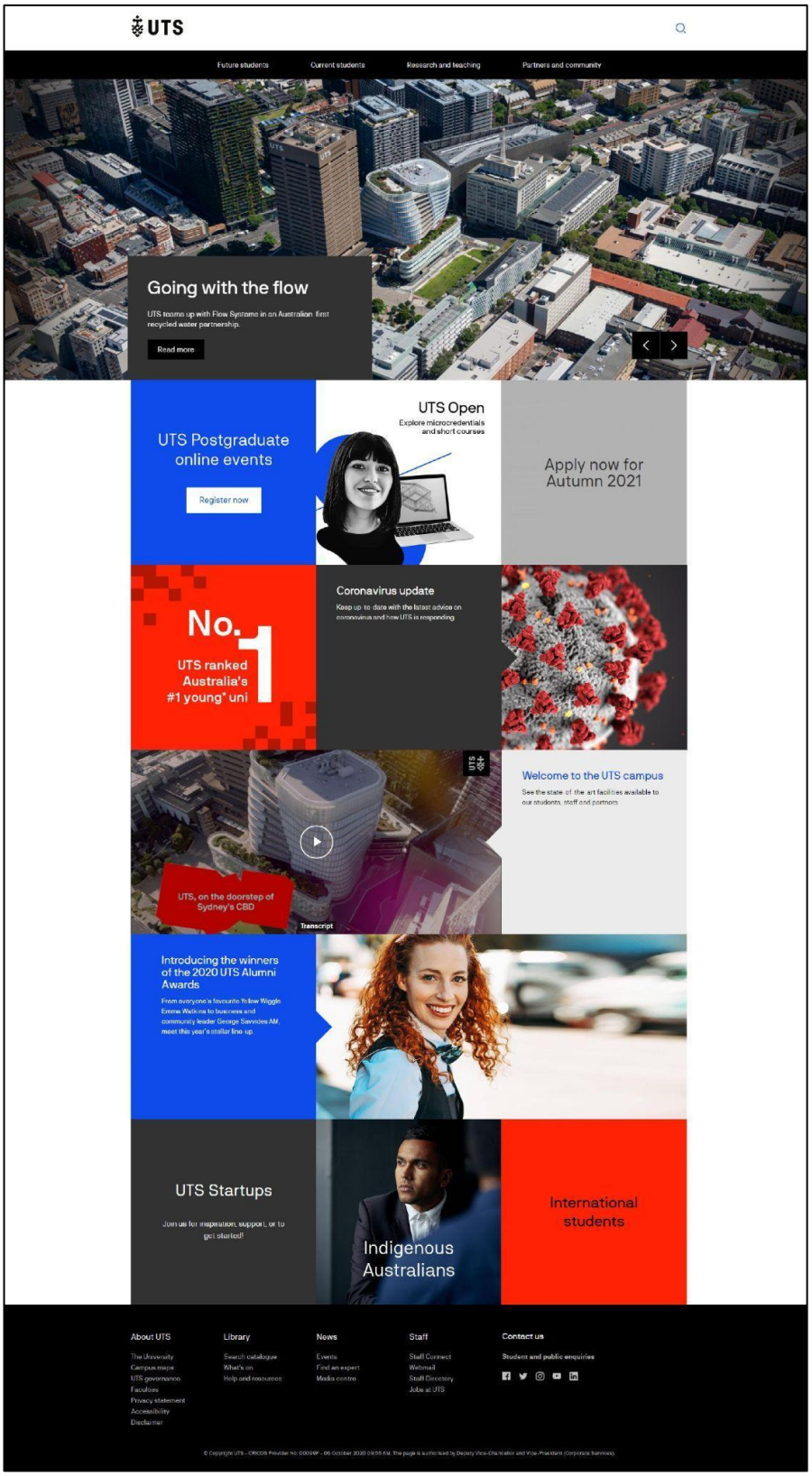


Figure .3 Homepage of the University of Technology website <*https://www.uts.edu.au/*> (https://web.archive.org/web/20201008080715/https://www.uts.edu.au/)

News & Events myUNSW Alumni & Giving Contact Us

UNSW SYDNEY

Study Research Engage with Us About UNSW

Follow

Students shaping future cities

See the best work of Built Environment students in the 2020 Luminocity virtual reality showcase

Visit the exhibition →

"My double degree challenged me to think outside of the box."

Cheyenne Bardos Commerce / Media

This is where your future starts

Enquire now

Apply now

Latest stories

Betty and Arnold receive new robot hand thanks to UNSW student

A UNSW student is building one of the world's most advanced robotic hands for use on construction sites.

25 Sep 2020

St George-Illawarra Dragons player Tristan...

24 Sep 2020

Treating our elderly people ethically and with...

23 Sep 2020

Landmark release sees bilbies return to Sturt...

24 Sep 2020

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Explore our beautiful campus

Take a virtual tour →

Coronavirus and your safety

UNSW is monitoring the COVID-19 situation and providing regular updates

Find out more →

Put down your books!

Discover the rich experiences we offer outside the classroom

Find out more →

Scholarships. For the brightest minds

Our scholarships and awards empower students to achieve their goals

Find out more →

What's different about UNSW?

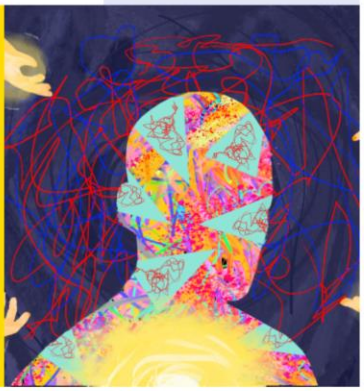
We're not afraid of being different – in fact, we encourage it

Find out more →

What can we learn while we are apart?

Talks from UNSW thinkers on everything from asteroids to Anzac biscuits

Watch the talks →



Key dates

Thu 1 OCT

20th anniversary exhibition

Tim Olsen Drawing Prize

Learn more →

Tue 6 OCT

Future teachers

Championing the classroom

Get tickets →

Thu 8 OCT

Information evening

Postgraduate study

Learn more →

Show more

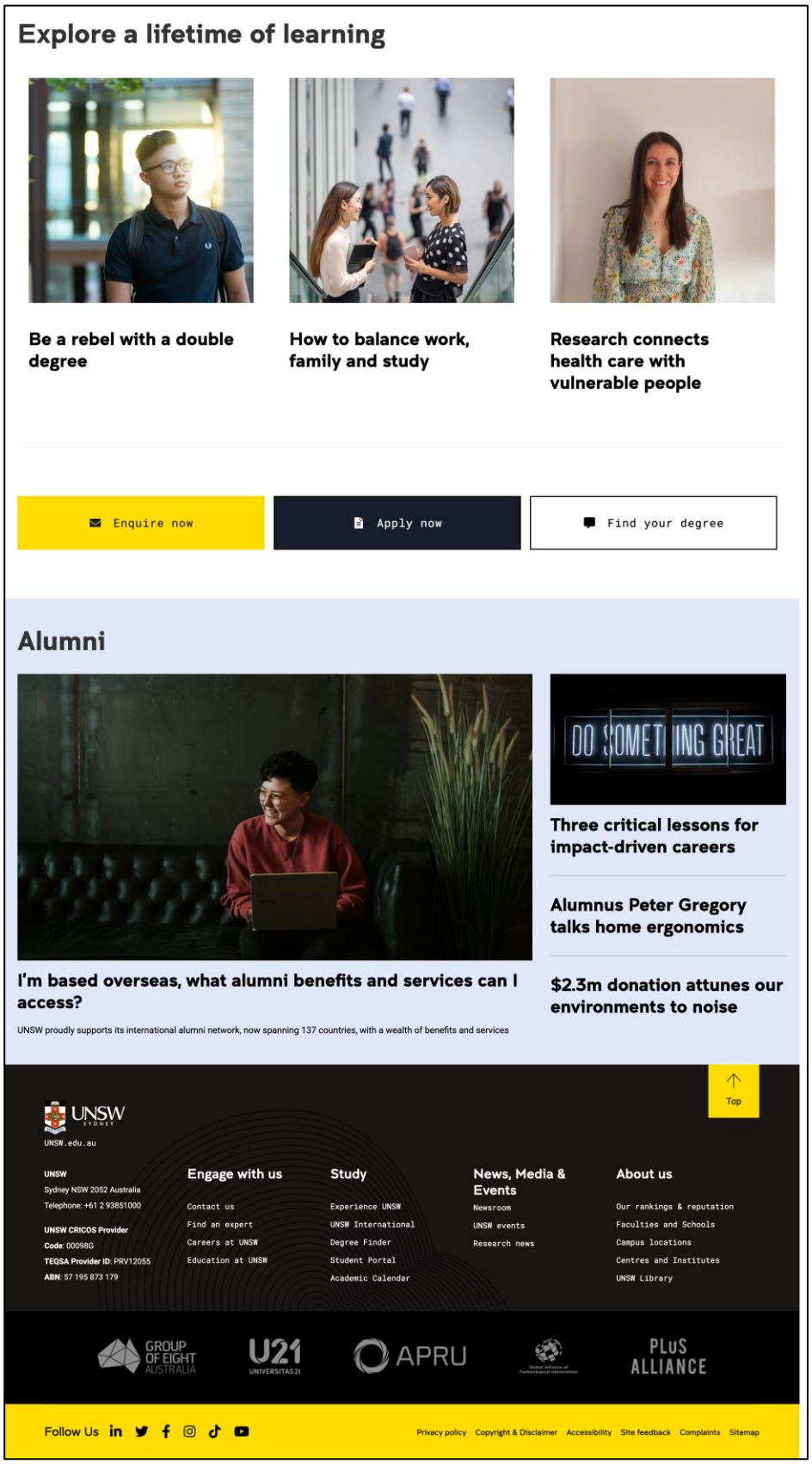


Figure .4 Homepage of UNSW Sydney website <*https://www.unsw.edu.au/*> (https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/), presented in three (arbitrary) parts

Appendix B Data set #3

Table .1 Historical versions of the UNSW homepage

	Date	Permalink
V1	**02 Dec 2000**	https://web.archive.org/web/20001202165400/unsw.edu.au/
	24 Mar 2004	https://web.archive.org/web/20040324154035/http://www.unsw.edu.au/
	31 Oct 2008	https://web.archive.org/web/20081031005852/http://www.unsw.edu.au/
V2	**24 Oct 2009**	https://web.archive.org/web/20091024040212/http://www.unsw.edu.au/
	17 Jul 2012	https://web.archive.org/web/20120717042139/http://www.unsw.edu.au/
	14 Jun 2015	https://web.archive.org/web/20150614095543/http://www.unsw.edu.au/
	08 Oct 2020	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
V3	**22 May 2021**	https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/

Key: **bold** shows the versions for detailed analysis in Chapter 7

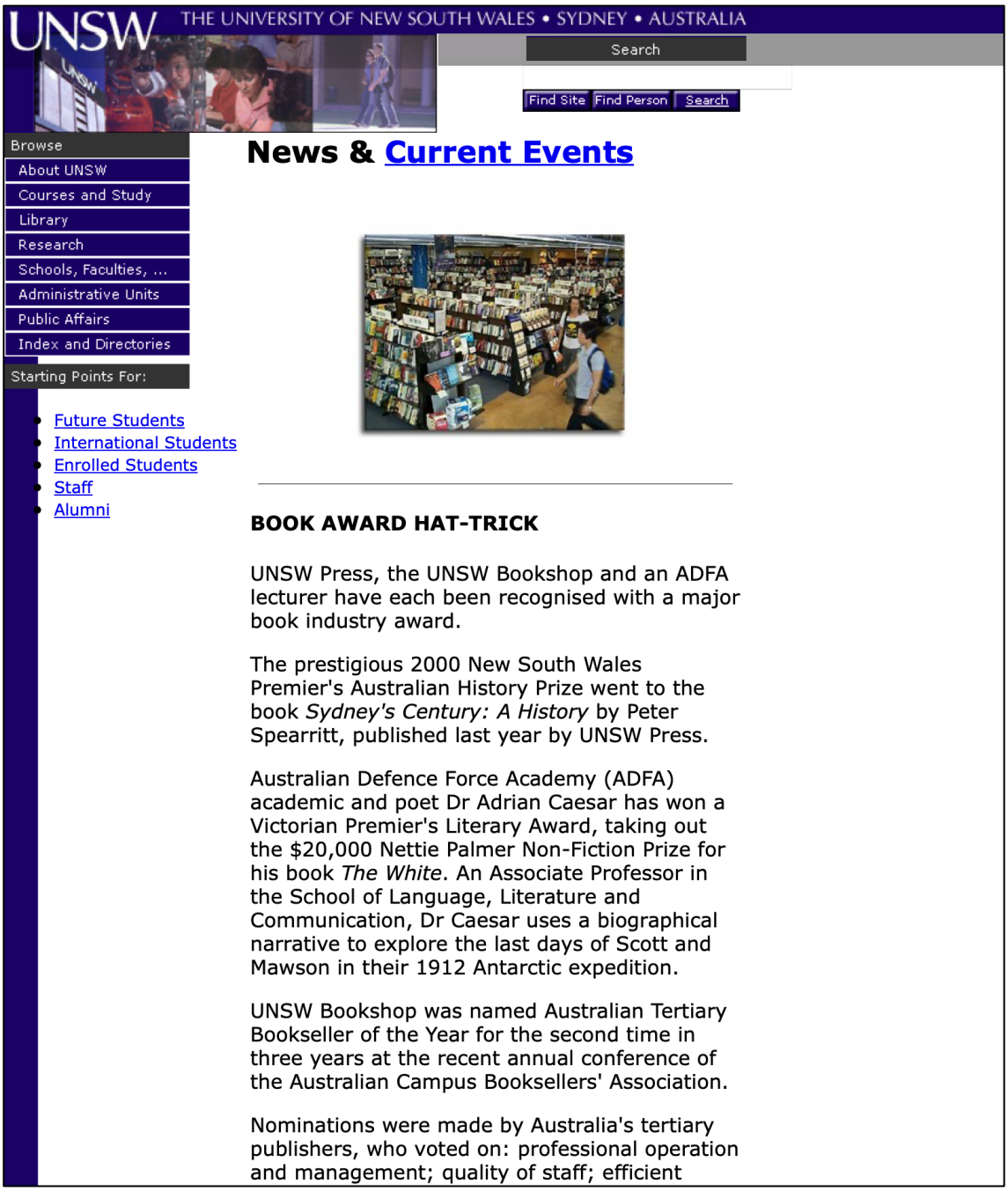

UNSW
THE UNIVERSITY OF NEW SOUTH WALES • SYDNEY • AUSTRALIA
Search
Find Site
Find Person
Search
Browse
About UNSW
Courses and Study
Library
Research
Schools, Faculties, ...
Administrative Units
Public Affairs
Index and Directories
Starting Points For:
Future Students
International Students
Enrolled Students
Staff
Alumni
News & Current Events
BOOK AWARD HAT-TRICK
UNSW Press, the UNSW Bookshop and an ADFA lecturer have each been recognised with a major book industry award.
The prestigious 2000 New South Wales Premier's Australian History Prize went to the book Sydney's Century: A History by Peter Spearritt, published last year by UNSW Press.
Australian Defence Force Academy (ADFA) academic and poet Dr Adrian Caesar has won a Victorian Premier's Literary Award, taking out the $20,000 Nettie Palmer Non-Fiction Prize for his book The White. An Associate Professor in the School of Language, Literature and Communication, Dr Caesar uses a biographical narrative to explore the last days of Scott and Mawson in their 1912 Antarctic expedition.
UNSW Bookshop was named Australian Tertiary Bookseller of the Year for the second time in three years at the recent annual conference of the Australian Campus Booksellers' Association.
Nominations were made by Australia's tertiary publishers, who voted on: professional operation and management; quality of staff; efficient

Figure .1 First version (V1) of the UNSW homepage, dated 2 December 2000 (https://web.archive.org/web/20001202165400/https://www.unsw.edu.au/), presented in two parts (viewport and 'below the fold')

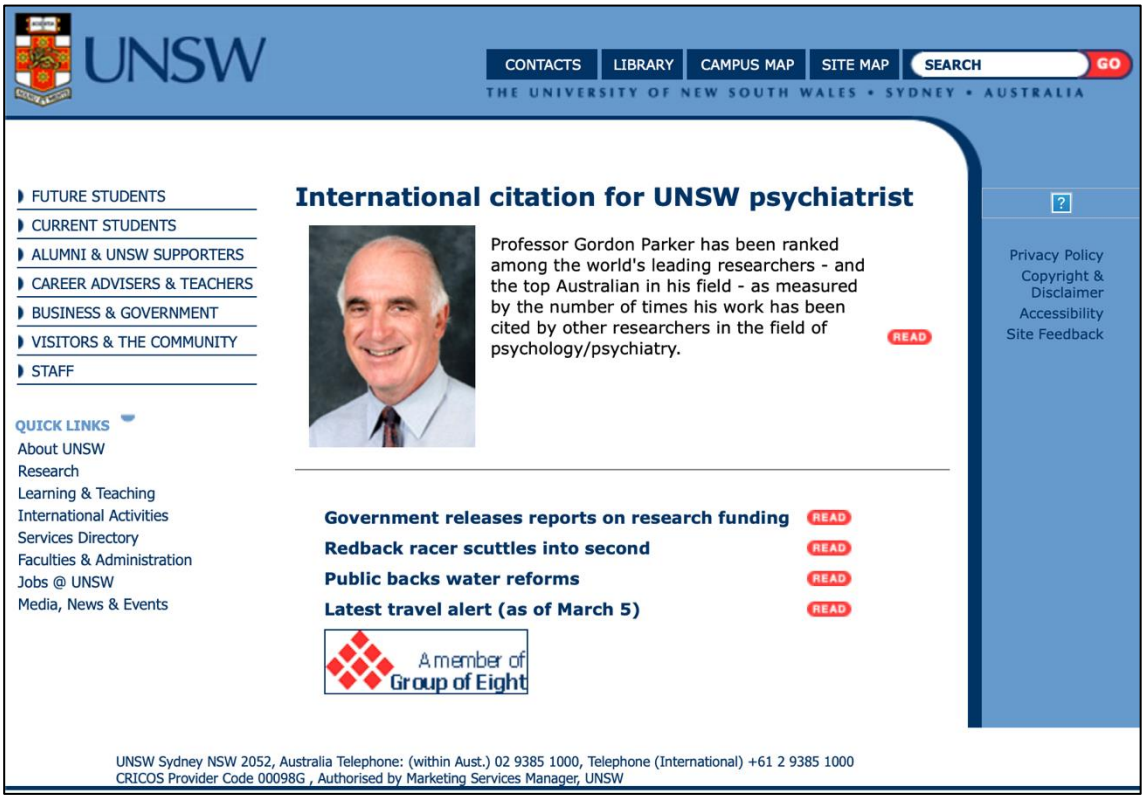


Figure .2 The UNSW homepage on 24 March 2004
(https://web.archive.org/web/20040324154035/http://www.unsw.edu.au/)

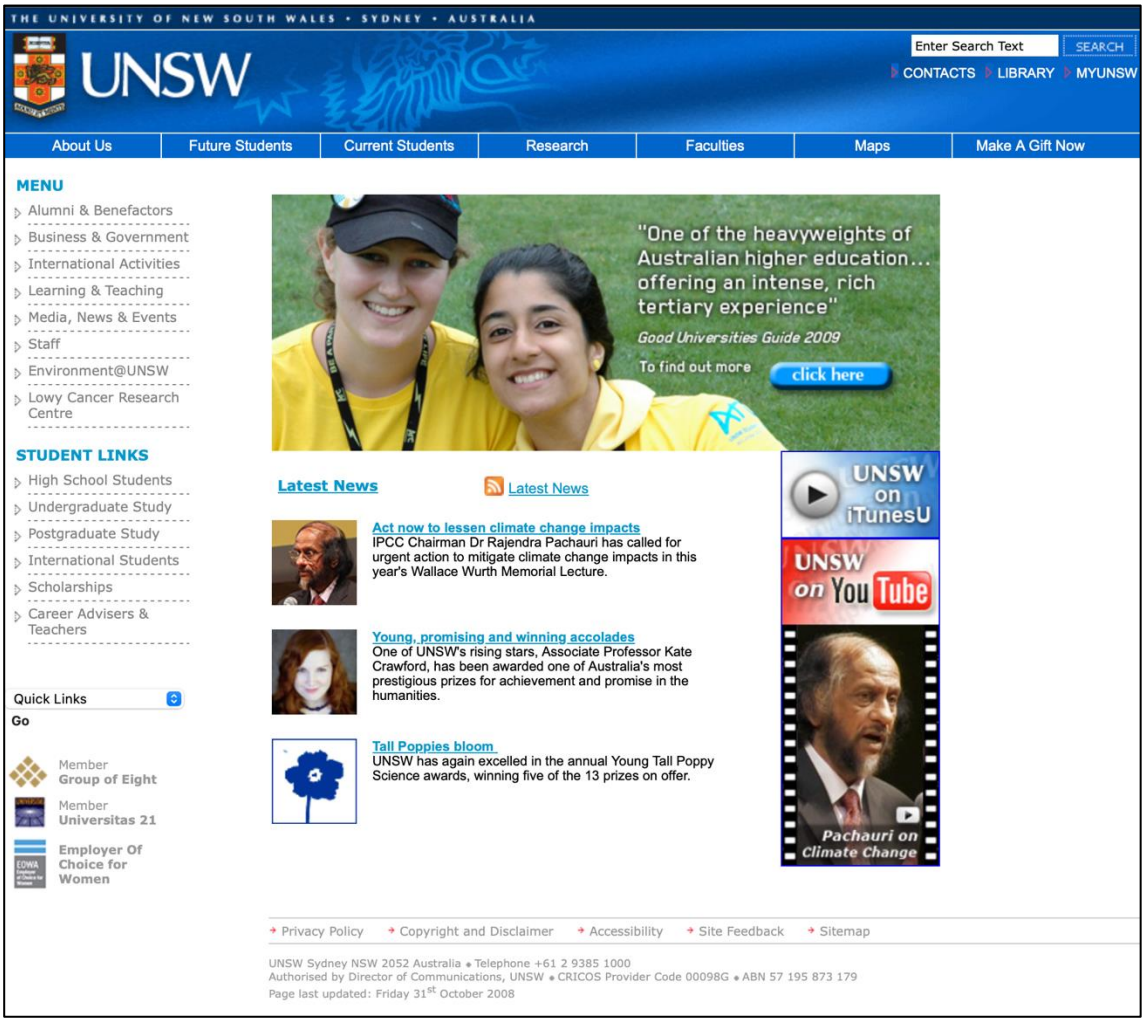


Figure .3 The UNSW homepage on 31 October 2008
(https://web.archive.org/web/20081031005852/https://www.unsw.edu.au/)

Figure .4 Second version (V2) of the UNSW homepage, dated 24 October 2009 (https://web.archive.org/web/20091024040212/https://www.unsw.edu.au/)

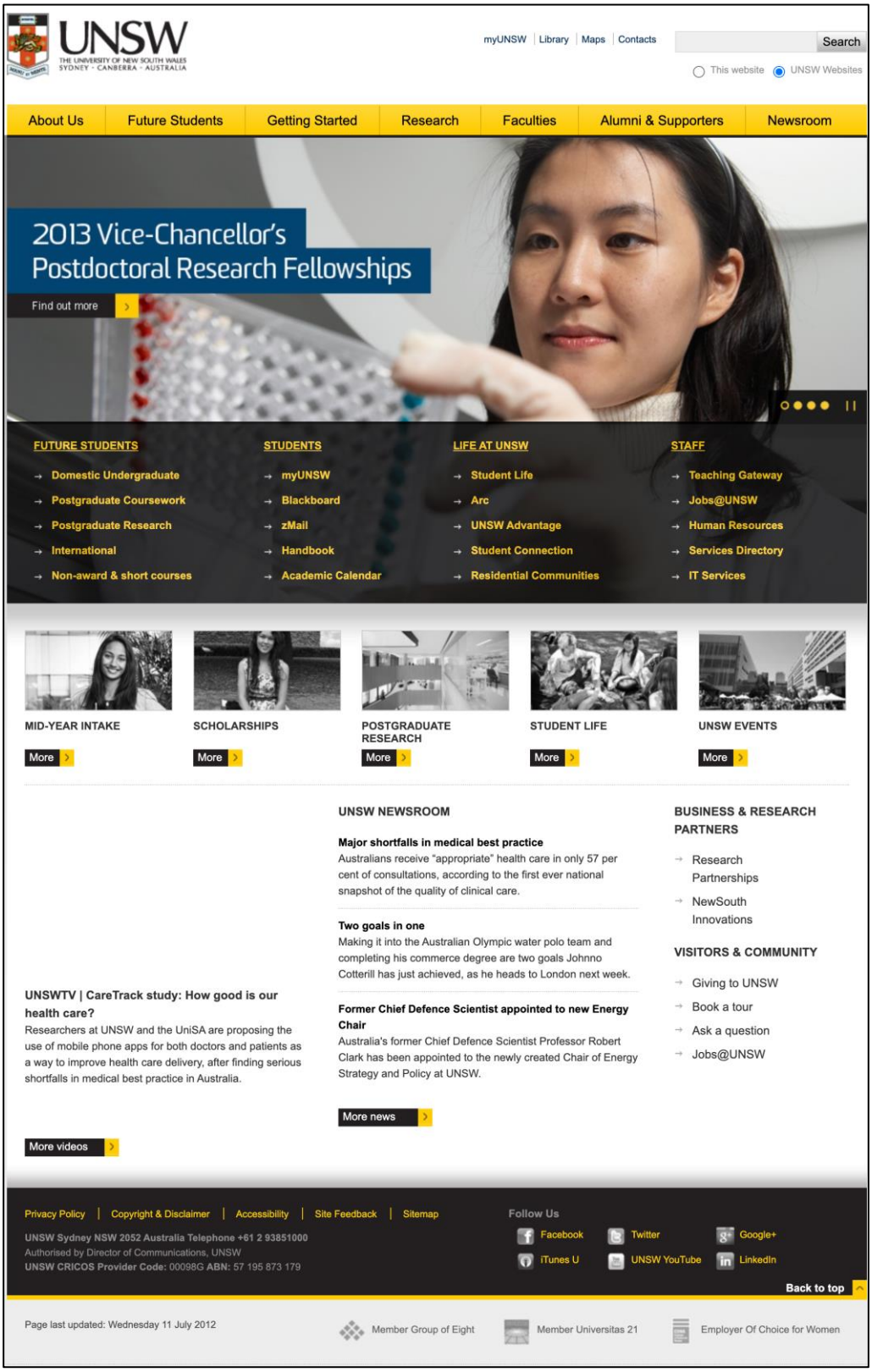


Figure .5 The UNSW homepage on 17 July 2012
(https://web.archive.org/web/20120717042139/https://www.unsw.edu.au/)

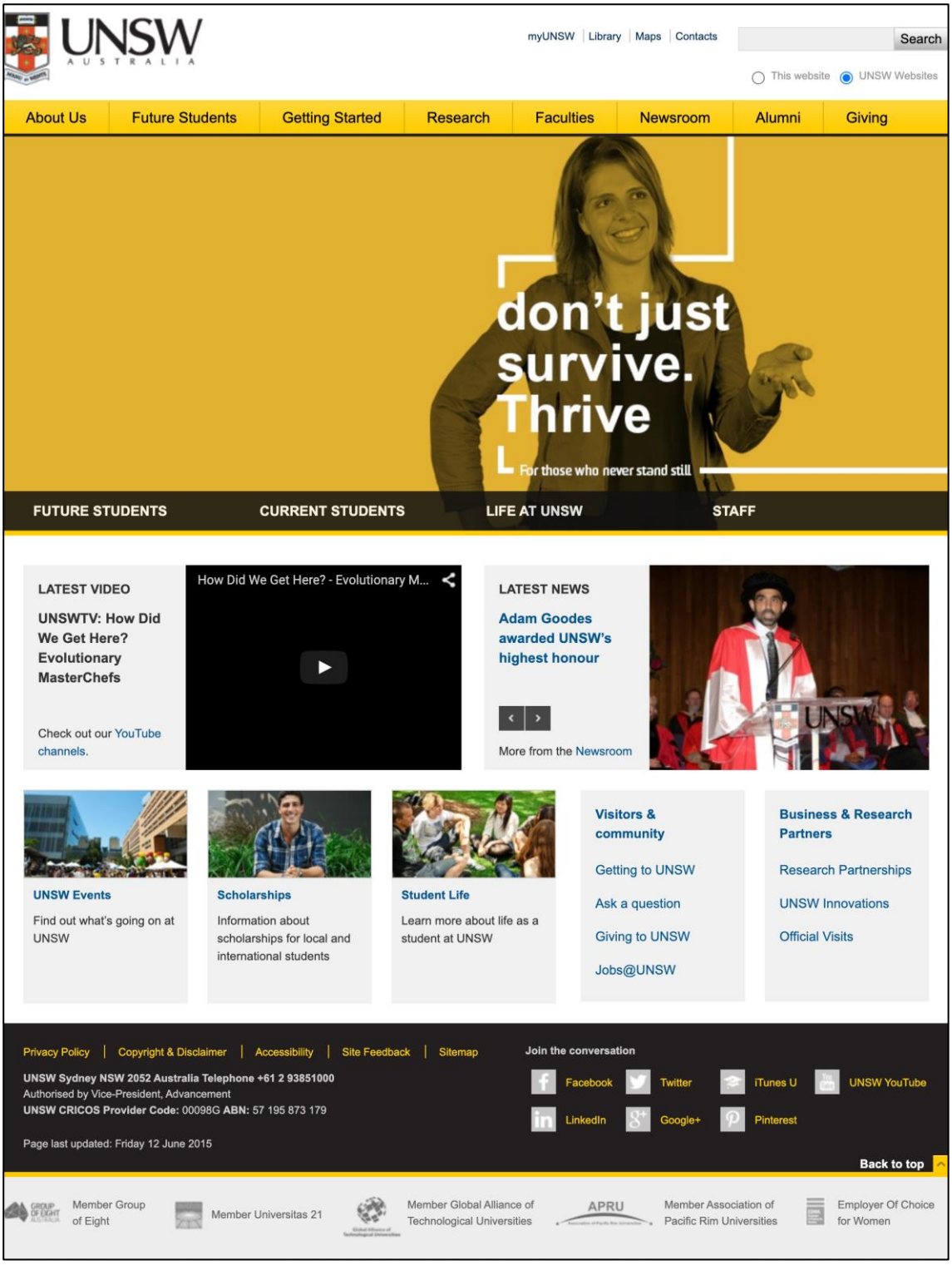


Figure .6 The UNSW homepage on 14 Jun 2015
(https://web.archive.org/web/20150614095543/unsw.edu.au/)

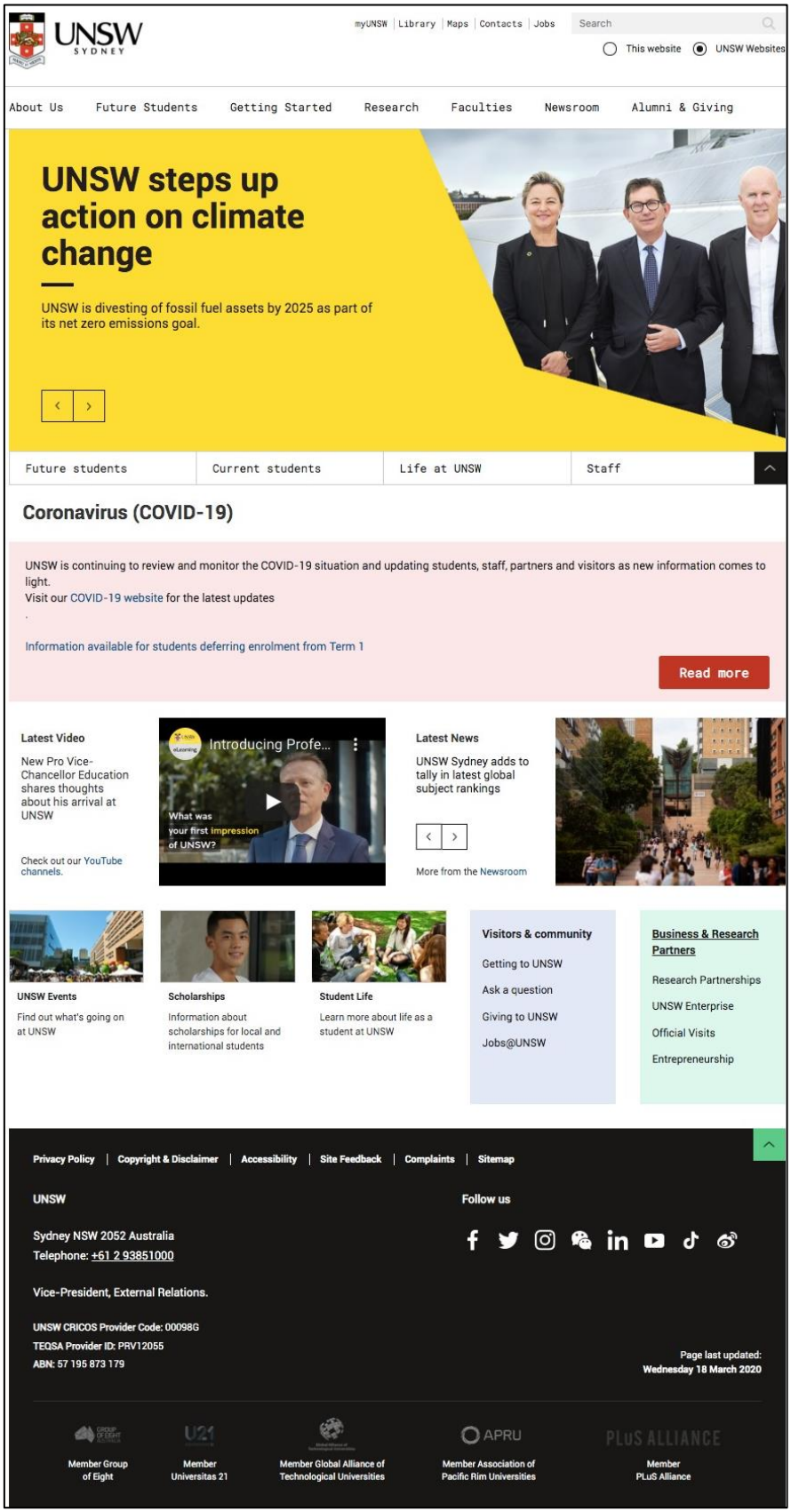
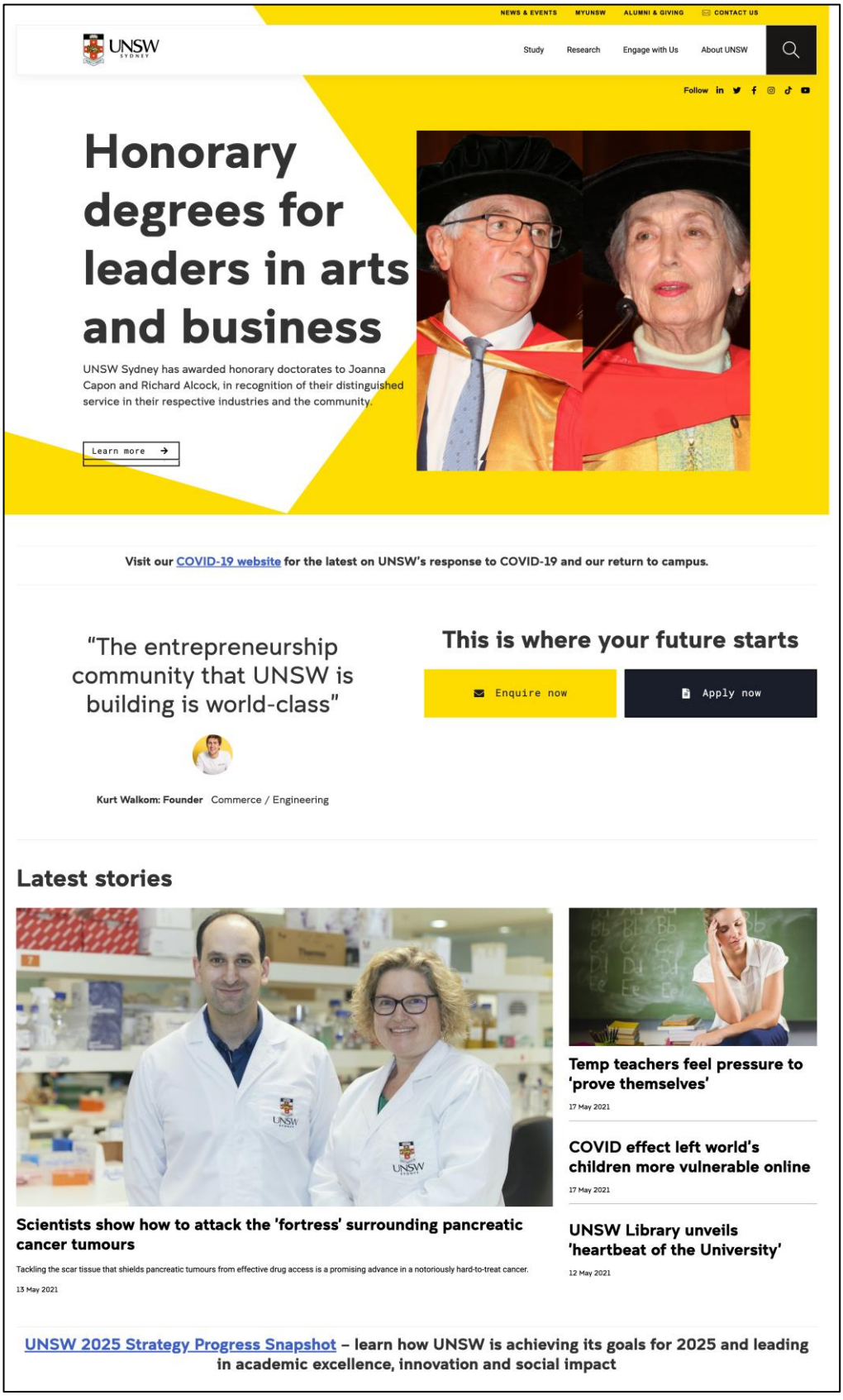


Figure .7 The UNSW homepage on 10 March 2020 (https://web.archive.org/web/20200310022758/http://www.unsw.edu.au/)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Research
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17 May 2021
COVID effect left world's children more vulnerable online
17 May 2021
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12 May 2021
UNSW 2025 Strategy Progress Snapshot – learn how UNSW is achieving its goals for 2025 and leading in academic excellence, innovation and social impact

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Mon **24** MAY

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Thu **27** MAY

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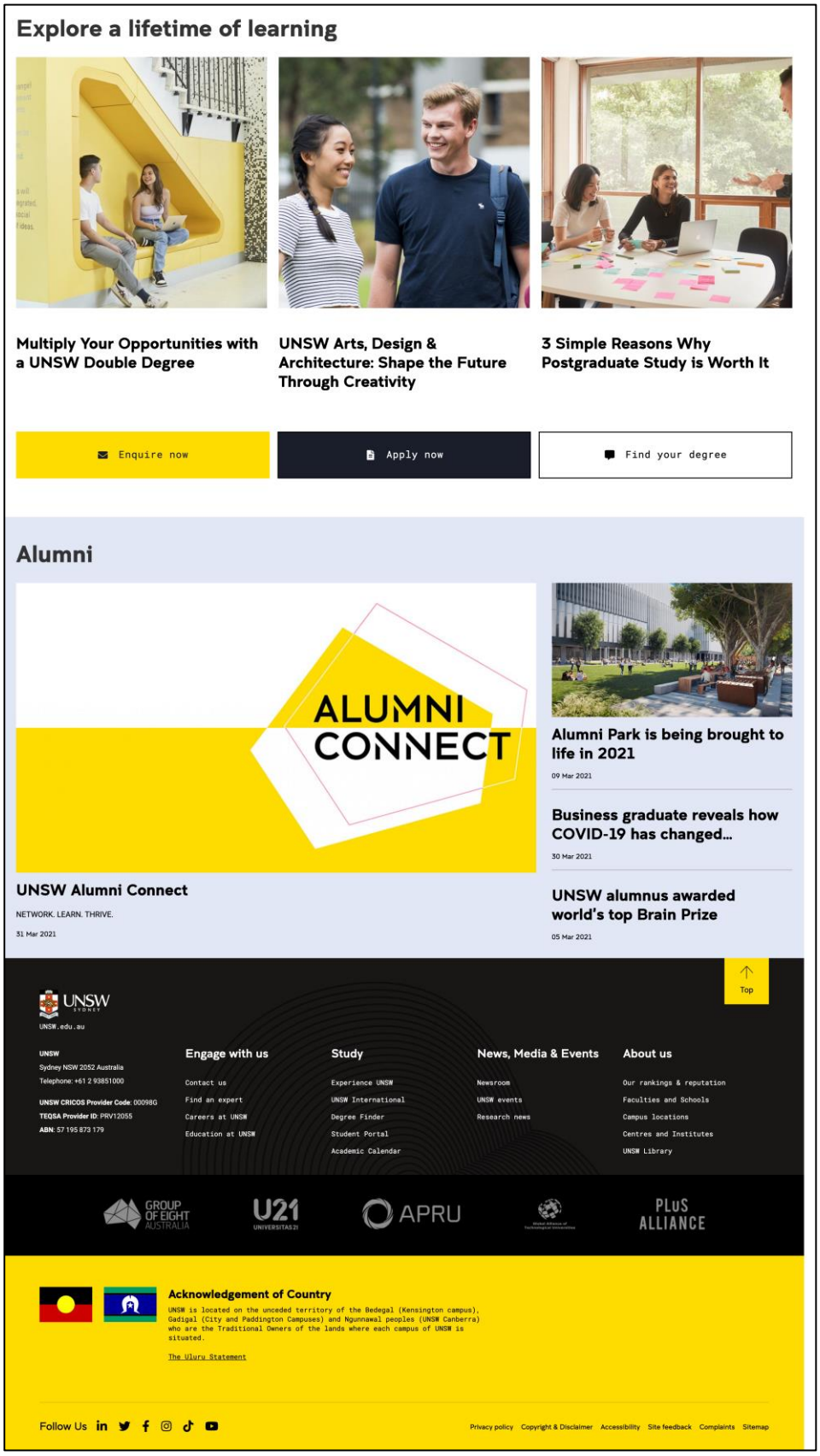


Figure .8 Third version (V3) of the UNSW homepage, dated 22 May 2021 (https://web.archive.org/web/20210522081258/https://www.unsw.edu.au/), presented in three arbitrary parts

Appendix C Annotation for data set #1

Table .1 Adapted annotation framework for the base layer

Code	Base unit	Description
T1	sentence	verbal unit that contains a Process (i.e., action or happening) realized by a verb
T2	deictic expression	explicit reference to other web pages of the same website (internal document deixis) or external sources (cross-platform document dexis), which is usually realized by (1) an adverb 'more' + noun (e.g., 'More information') or imperative and adverb more (e.g., 'Find out more')
T3	**horizontal** menu item	menu item displayed along a horizontal axis
T4	**vertical** menu item	menu item displayed along a vertical axis
T5	headline	title of a story/piece of news
T6	sentence fragment	incomplete sentence (other than a menu item or headline) that omits a verb
T7	**motto**	short phrase that expresses a core belief
T8	title	title of a layout unit, usually larger in size or emphasized by typographic means
T9	**date**	date including day/month/year or only a year
T10	**address**	business address
T11	**other business details**	business details, such as Commonwealth Register of Institutions and Courses for Overseas Students (CRICOS) Provider Code, Australian Business Number (ABN), Tertiary Education Quality and Standards Agency (TEQSA) Provider ID
T12	**phone number**	contact phone number
T13	captions of images **and videos**	recognizable text embedded in an image or video and not demarcated from it by framelines or color
T14	**name**	business name
P1	image	visual representations such as abstractions and photos of people and places
P2	**video**	dynamic visual media
P3	**logo**	symbol comprised of coat of arms and/or wordmark
D1	icon	visual symbol of a specific concept
D2	**separator**	vertical or horizontal lines that serve as delimiters between elements
D3	**box**	box (distinguished by frame or color) that usually has embedded text
D4	**line**	decorative line that serves no apparent functional purpose
D5	**social media icon**	official logos of social media platforms
	Key:	T1-14: text-typographic units P1-3: pictorial units D1-5: diagrammatic units

Bold shows adaptations to the original GeM-base

Table .2 Base unit frequencies in data set #1 in MAXQDA

Codes	Frequency
Codes total	580
T1	51
T2	12
T3	46
T4	90
T5	14
T6	39
T7	2
T8	56
T9	11
T10	3
T11	9
T12	3
T13	8
T14	9
P1	31
P2	2
P3	16
D1	
D1 > ➞	34
D1 > □	6
D1 > other	4
D1 > ✉	3
D1 > □	2
D1 > ⬆	1
D1 > ⬅	2
D1 > ✕	1
D1 > □	1
D2	22
D3	56
D4	19
D5	26

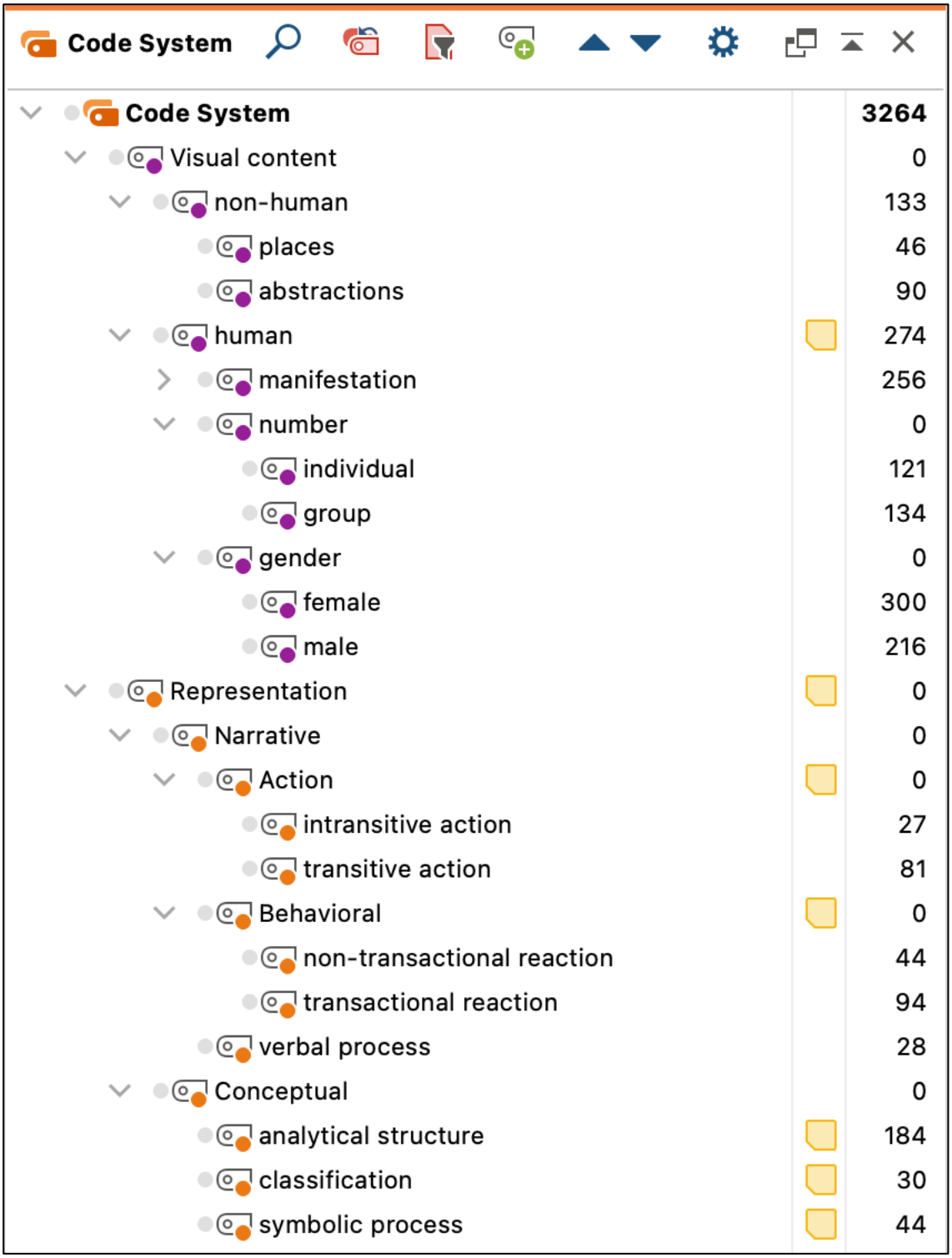
Appendix D Annotation for data set #2

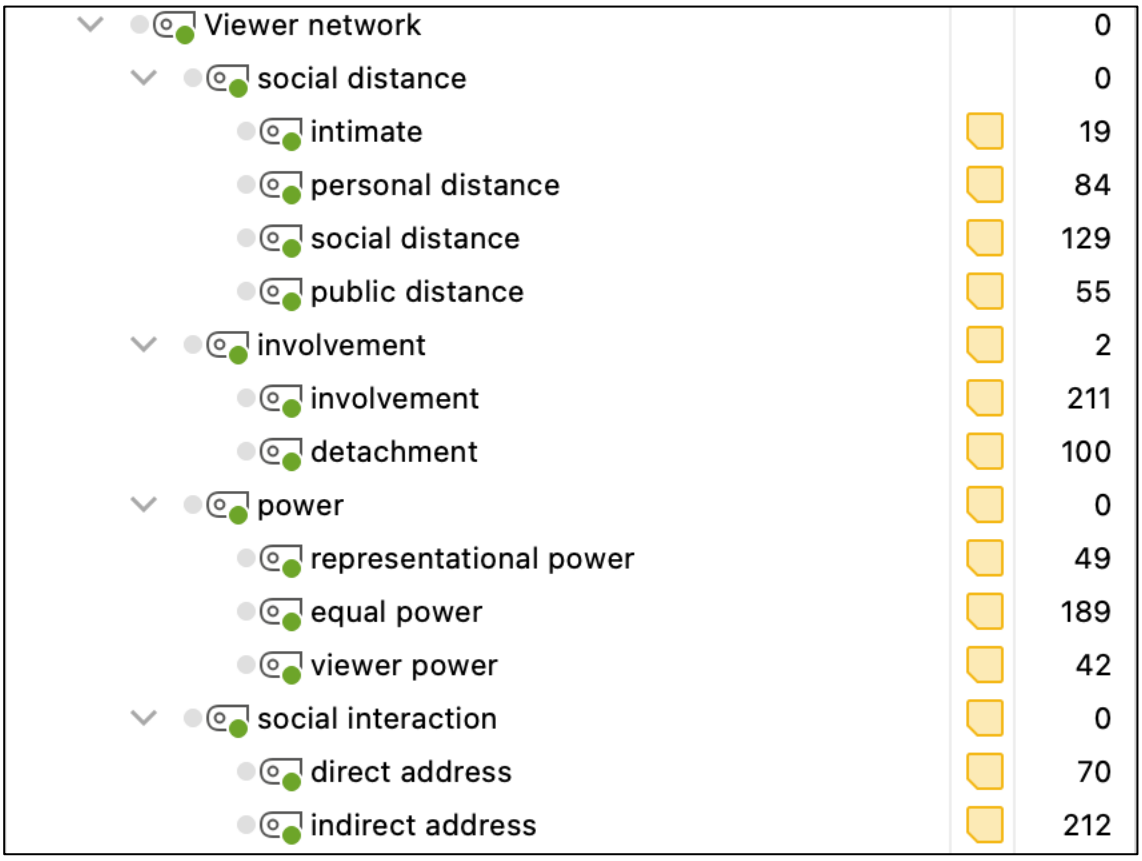
Table .1 Visual organizational identity coding schema and code frequencies

Code System	Frequency
Code System	3264
Visual content	
Visual content > non-human	133
Visual content > non-human > places	46
Visual content > non-human > abstractions	90
Visual content > human	274
Visual content > human > manifestation	
Visual content > human > manifestation > complete	241
Visual content > human > manifestation > metonymic	15
Visual content > human > number	
Visual content > human > number > individual	121
Visual content > human > number > group	134
Visual content > human > gender	
Visual content > human > gender > female	300
Visual content > human > gender > male	216
Representation	
Representation > Narrative	
Representation > Narrative > Action	
Representation > Narrative > Action > intransitive action	27
Representation > Narrative > Action > transitive action	81
Representation > Narrative > Behavioral	
Representation > Narrative > Behavioral > cognition	44
Representation > Narrative > Behavioral > transactional reaction	94
Representation > Narrative > verbal process	28
Representation > Conceptual	
Representation > Conceptual > analytical structure	184
Representation > Conceptual > classification	30
Representation > Conceptual > symbolic process	44
Viewer network	
Viewer network > social distance	

Viewer network > social distance > intimate	19
Viewer network > social distance > personal distance	84
Viewer network > social distance > social distance	129
Viewer network > social distance > public distance	55
Viewer network > social relation	
Viewer network > social relation > involvement	2
Viewer network > social relation > involvement > involvement	211
Viewer network > social relation > involvement > detachment	100
Viewer network > social relation > power	
Viewer network > social relation > power > representational power	49
Viewer network > social relation > power > equal power	189
Viewer network > social relation > power > viewer power	42
Viewer network > social interaction	
Viewer network > social interaction > direct address	70
Viewer network > social interaction > indirect address	212

Appendix Figure A.1 Visual organizational identity coding schema in MAXQDA

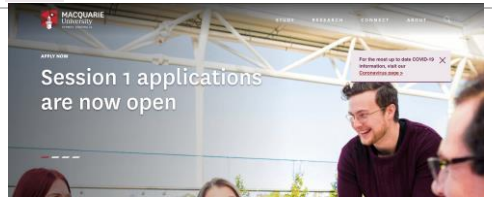



Viewer network 0
social distance 0
intimate 19
personal distance 84
social distance 129
public distance 55
involvement 2
involvement 211
detachment 100
power 0
representational power 49
equal power 189
viewer power 42
social interaction 0
direct address 70
indirect address 212

Appendix E Coded segments in data set #1

Appendix Table A.1 Macquarie University

Color	Identifier	Code	Segment	Interactivity	Redirection
●	u.06.001	D3	<box in black stretches horizontally>	haptically inaccessible	–
●	u.06.002	T3	Current students	click	https://web.archive.org/web/20201008063548/https://students.mq.edu.au/home
●	u.06.003	T3	Staff	click	https://web.archive.org/web/20201008063548/https://staff.mq.edu.au/home
●	u.06.004	T3	Alumni	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/alumni
●	u.06.005	T3	Library	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/campus-services-and-facilities/library
●	u.06.006	T3	Maps	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/contacts-and-maps/maps
●	u.06.007	T3	Contact	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/contact-us
●	u.06.008	P3		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/
●	u.06.009	T14		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/
●	u.06.010	T3	STUDY	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study

●	u.06.011	T3	RESEARCH	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research
●	u.06.012	T3	CONNECT	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect
●	u.06.013	T3	ABOUT	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about
●	u.06.014	D1 > □		click	drop-down search field shaded in semi-transparent black appears
●	u.06.015	D3	<box in light pink>	haptically inaccessible	–
●	u.06.016	T1	For the most up to date COVID-19 information, visit our Coronavirus page>	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/coronavirus-faqs
●	u.06.017	T2	Coronavirus page		https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/coronavirus-faqs
	u.06.018	D1 > ✕		click	closes the window
●	u.06.019	P1		haptically inaccessible	–
●	u.06.020	T1	APPLY NOW	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/how-to-apply
●	u.06.021	T8	Session 1 applications are now open	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/how-to-apply
●	u.06.022	D1 > ➞		click	the featured story changes (in-carousel navigation)
●	u.06.023	D1 > ➞		click	the featured story changes (in-carousel navigation)
●	u.06.024	D1 > ➞		click	the featured story changes (in-carousel navigation)
●	u.06.025	D1 > ➞		click	the featured story changes (in-carousel navigation)

●	u.06.026	D3	<box in white extending horizontally>	type-in	–
●	u.06.027	T8	Search for courses	type-in	–
●	u.06.028	D1 > □		click	page corresponding the inquiry
●	u.06.029	D3	<box in deep red>	haptically inaccessible	–
●	u.06.030		Explore an area of study	haptically inaccessible	–
●	u.06.031	T4	Business	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/business/_
●	u.06.032	T4	Law	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/law/_
●	u.06.033	T4	Arts and social sciences	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/arts-and-social-sciences/_
●	u.06.034	T4	Media, communications and performing arts	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/media-communications-and-performing-arts/_
●	u.06.035	T4	Education	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/education/_
●	u.06.036	T4	Science	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/science/_
●	u.06.037	T4	Information technologies	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/information-technologies/_
●	u.06.038	T4	Psychology and cognitive science	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/psychology-and-cognitive-science/_
●	u.06.039	T4	Engineering	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/engineering/_
●	u.06.040	T4	Medicine and health	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/medicine-and-health/_
●	u.06.041	T4	Languages and linguistics	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/languages-and-linguistics/_
●	u.06.042	T4	Security, intelligence and criminology	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/security-intelligence-and-criminology/_

●	u.06.043		How to apply	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/how-to-apply
●	u.06.044	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/how-to-apply
●	u.06.045		Scholarships	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/scholarships
●	u.06.046	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/scholarships
●	u.06.047		Entry pathways	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/high-school-students/getting-into-university/macquarie-entry
●	u.06.048	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/high-school-students/getting-into-university/macquarie-entry
●	u.06.049		Higher degree research	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/phd-and-research-degrees
●	u.06.050	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/phd-and-research-degrees
●	u.06.051	T8	Why Macquarie	haptically inaccessible	–
	u.06.052	P1		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability/learning-for-life
●	u.06.053	D2		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability/learning-for-life
●	u.06.054	T6	Practical experience integrated into your degree	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability/learning-for-life

●	u.06.055	P1		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/double-degrees
●	u.06.056	D2		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/double-degrees
●	u.06.057	T6	Explore your interests with our double degrees	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course/double-degrees
●	u.06.058	P1		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability
●	u.06.059	D2		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability
●	u.06.060	T6	Industry-responsive degrees equip you with in-demand skills	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/employability
●	u.06.061	P1		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-campus/facilities

●	u.06.062	D2		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-campus/facilities
●	u.06.063	T6	World-leading facilities that enhance your learning experience	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-campus/facilities
	u.06.064	D1 > other		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.065	T6	Ranked among the top 1% of universities in the world	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.066	D1 > other		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.067	T6	#9 in Australia for employability (QS Graduate Employability Rankings, 2020)	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.068	D1 > other		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.069	T6	Australia’s best employability program 2017 AFR Higher Ed Awards	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings

●	u.06.070	D1 > other		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.071	T6	300+ industry partners on campus and within our innovation precinct	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/our-reputation/facts-and-rankings
●	u.06.072	D3	<box in charcoal stretches horizontally>	haptically inaccessible	–
●	u.06.073	T8	Research with impact	haptically inaccessible	–
●	u.06.074	D1 > ←		click	the featured story changes (in-carousel navigation)
●	u.06.075	P3		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Is-your-boss-an-avocado-leader-COVID-19s-surprise-bonus-for-workers
●	u.06.076	D2		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Is-your-boss-an-avocado-leader-COVID-19s-surprise-bonus-for-workers
●	u.06.077	T6	MACQUARIE BUSINESS SCHOOL	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Is-your-boss-an-avocado-leader-COVID-19s-surprise-bonus-for-workers
●	u.06.078	T5	Is your boss an 'avocado leader?' COVID-19's surprise bonus for workers	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Is-your-boss-an-avocado-leader-COVID-19s-surprise-bonus-for-workers

●	u.06.079	P3		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Cancer-survivors-need-workplace-flexibility-new-study
●	u.06.080	D2	[redacted]	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Cancer-survivors-need-workplace-flexibility-new-study
●	u.06.081	T6	MACQUARIE BUSINESS SCHOOL	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Cancer-survivors-need-workplace-flexibility-new-study
●	u.06.082	T5	Cancer survivors need workplace flexibility: new study	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Cancer-survivors-need-workplace-flexibility-new-study
●	u.06.083	P3		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/please-explain/october-2020/please-explain-can-you-really-make-friends-wtih-an-octopus
●	u.06.084	D2	[redacted]	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/please-explain/october-2020/please-explain-can-you-really-make-friends-wtih-an-octopus
●	u.06.085	T6	FACULTY OF SCIENCE AND ENGINEERING	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/please-explain/october-2020/please-explain-can-you-really-make-friends-wtih-an-octopus
●	u.06.086	T5	Cancer survivors need workplace flexibility: new study	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/please-explain/october-2020/please-explain-can-you-really-make-friends-wtih-an-octopus

●	u.06.087	P3		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Game-of-Thrones-in-the-wild-how-rivalry-could-make-animals-smarter
●	u.06.088	D2		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Game-of-Thrones-in-the-wild-how-rivalry-could-make-animals-smarter
●	u.06.089	T6	FACULTY OF SCIENCE AND ENGINEERING	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Game-of-Thrones-in-the-wild-how-rivalry-could-make-animals-smarter
●	u.06.090	T5	Cancer survivors need workplace flexibility: new study	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/article/october-2020/Game-of-Thrones-in-the-wild-how-rivalry-could-make-animals-smarter
●	u.06.091	D1 > ➞		click	the featured story changes (in-carousel navigation)
●	u.06.092	T2	Visit The Lighthouse for more	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/
●	u.06.093	D1 > ➞		click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/
●	u.06.094	D3	<box in sand stretches horizontally>	haptically inaccessible	–
●	u.06.095	D3	<box in white>	haptically inaccessible	–

●	u.06.096	P1		haptically inaccessible	–
●	u.06.097	T8	Collaborate with us	haptically inaccessible	–
●	u.06.098	T8	For researchers	haptically inaccessible	–
●	u.06.099	T1	From the inner workings of the cell to outer space, Macquarie researchers are finding creative answers to real-world problems.	haptically inaccessible	–
●	u.06.100	T6	Find a researcher	click	https://web.archive.org/web/20201008063548/https://researchers.mq.edu.au/
●	u.06.101	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://researchers.mq.edu.au/
●	u.06.102	T6	Research centres, groups & facilities	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/research-centres-groups-and-facilities
●	u.06.103	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/research-centres-groups-and-facilities
●	u.06.104	T6	Research expertise	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/research-expertise
●	u.06.105	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research/research-expertise
	u.06.106	D3	<box in white>	haptically inaccessible	–

●	u.06.107	P1		haptically inaccessible	–
●	u.06.108	T8	For partners	haptically inaccessible	–
●	u.06.109	T1	As a hub of inspired thinking, Macquarie University maintains mutually beneficial connections with an array of partners.	haptically inaccessible	–
●	u.06.110	T6	Partnering with Macquarie	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/partnerships
●	u.06.111	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/partnerships
●	u.06.112	T6	Industry & business collaboration	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/partnerships/Industry-and-business-collaboration
●	u.06.113	D1 > ➞	→	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/partnerships/Industry-and-business-collaboration
●	u.06.114	T6	Supporting the University	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/supporting-the-university
	u.06.115	D1 > ➞	→	click	
●	u.06.116	D3	<box in charcoal stretches horizontally>	haptically inaccessible	
●	u.06.117	P3		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/

•	u.06.118	T14		click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/
•	u.06.119	T7	YOU to the power of us	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/2019/you-to-the-power-of-us
•	u.06.120	T8	Quick links	haptically inaccessible	–
•	u.06.121	T4	Find a course	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/find-a-course
•	u.06.122	T4	How to apply	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/how-to-apply
•	u.06.123	T4	Admissions and enrolment	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/accept-and-enrol
•	u.06.124	T4	Scholarships	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/scholarships
•	u.06.125	T4	Entry pathways	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/admissions/entry-requirements/domestic/macquarie-entry
•	u.06.126	T4	Getting to Macquarie	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/contacts-and-maps/getting-to-macquarie
•	u.06.127	T4	Events	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/events/
•	u.06.128	T8	Information for	haptically inaccessible	–
•	u.06.129	T4	Future students	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study
•	u.06.130	T4	Researchers	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/research
•	u.06.131	T4	Industry collaborations	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect
•	u.06.132	T4	Careers	click	https://web.archive.org/web/20201008063548/http://jobs.mq.edu.au/cw/en/listing/
•	u.06.133	T4	Donations	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/connect/supporting-the-university

•	u.06.134	T4	Media	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/news-and-events/news/information-for-media
•	u.06.135	T4	Parents	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/study/why-study-here/information-for-parents
•	u.06.136	T8	Faculties	haptically inaccessible	–
•	u.06.137	T4	Faculty of Arts	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/faculty-of-arts
•	u.06.138	T4	Macquarie Business School	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business
•	u.06.139	T4	Faculty of Medicine, Health and Human Sciences	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/about-the-university/faculties-and-departments/medicine-and-health-sciences
•	u.06.140	T4	Faculty of Science and Engineering	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/faculty-of-science-and-engineering
•	u.06.141	T4	Faculties, departments and centres	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/about-the-university/faculties-and-departments
•	u.06.142	T8	Media	haptically inaccessible	–
•	u.06.143	T4	News	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/newsroom/
•	u.06.144	T4	Leading Lights podcast	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/podcasts
•	u.06.145	T4	The Lighthouse	click	https://web.archive.org/web/20201008063548/https://lighthouse.mq.edu.au/

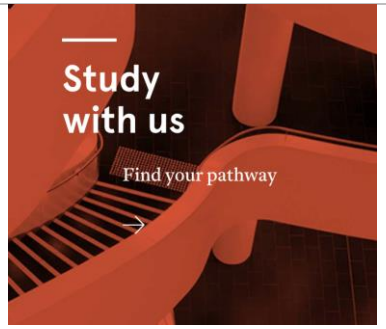
●	u.06.146	T4	Big History	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/bighistory
●	u.06.147	T4	Ignite	click	https://web.archive.org/web/20201008063548/https://ignite.mq.edu.au/
●	u.06.148	T8	Main campus	haptically inaccessible	–
●	u.06.149	T10	Macquarie University Sydney, NSW 2109	haptically inaccessible	–
●	u.06.150	T12	+61 (2) 9850 7111	haptically inaccessible	–
●	u.06.151	T8	City campus	haptically inaccessible	–
●	u.06.152	T10	Angel Place Lvl 24, 123 Pitt Street Sydney, NSW 2000	haptically inaccessible	–
●	u.06.153	T12	+61 (2) 9234 1700	haptically inaccessible	–
●	u.06.154	T8	Follow us	haptically inaccessible	–
●	u.06.155	D5		click	https://web.archive.org/web/20201008063548/https://www.facebook.com/macquarieuni/
●	u.06.156	D5		click	https://web.archive.org/web/20201008063548/https://twitter.com/Macquarie_Uni
●	u.06.157	D5		click	https://web.archive.org/web/20201008063548/https://www.youtube.com/user/MacquarieUniversity
●	u.06.158	D5		click	https://web.archive.org/web/20201008063548/https://www.linkedin.com/school/macquarie-university/?originalSubdomain=au
●	u.06.159	D5		click	https://web.archive.org/web/20201008063548/https://www.instagram.com/macquarieuni/?hl=en

●	u.06.160	T14	Macquarie University	haptically inaccessible	–
●	u.06.161	D2	|	haptically inaccessible	–
●	u.06.162	T11	CRICOS Provider 00002J	haptically inaccessible	–
●	u.06.163	D2	|	haptically inaccessible	–
●	u.06.164	T11	ABN 90 952 801 237	haptically inaccessible	–
●	u.06.165	T3	Disclaimer	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/copyright-disclaimer
●	u.06.166	D2	|	haptically inaccessible	–
●	u.06.167	T3	Privacy	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/about-the-university/governance/privacy
●	u.06.168	D2	|	haptically inaccessible	–
●	u.06.169	T3	Accessibility	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/accessibility
●	u.06.170	D2	|	haptically inaccessible	–
●	u.06.171	T3	Contact us	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/contact-us
●	u.06.172	D2	|	haptically inaccessible	–
●	u.06.173	T3	Campus map	click	https://web.archive.org/web/20201008063548/https://www.mq.edu.au/about/contacts-and-maps/maps

Table A.2 The University of Sydney

Color	Identifier	Code	Segment	Interactivity	Redirection
●	u.10.001	D3	<box in charcoal stretches horizontally>	haptically inaccessible	–
●	u.10.002	T3	Library	click	https://web.archive.org/web/20201008064428/https://library.sydney.edu.au/
●	u.10.003	T3	Current students	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/students/home.html
●	u.10.004	T3	Staff intranet	click	https://web.archive.org/web/20201008064428/https://intranet.sydney.edu.au/
●	u.10.005	T3	Give	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/give.html
●	u.10.006	P3		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/home.html
●	u.10.007	T14	THE UNIVERSITY OF SYDNEY	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/home.html
●	u.10.008	T3	Study	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
●	u.10.009	T3	Research	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/research.html
●	u.10.010	T3	Engage with us	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage.html
●	u.10.011	T3	About us	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us.html
●	u.10.012	T3	News & opinion	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/news-opinion/news.html
●	u.10.013	D1 > □		click	drop-down search field shaded in semi-transparent red appears

●	u.10.014	D3	<box in red>	haptically inaccessible	–
●	u.10.015	D4	|	haptically inaccessible	–
●	u.10.016	T8	Join our virtual events	haptically inaccessible	–
●	u.10.017	T1	Discover why we are 1st in Australia for graduate employability	haptically inaccessible	–
●	u.10.018	T1	Register now	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students.html
●	u.10.019	D1 > ➞		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students.html
●	u.10.020	D4	_	haptically inaccessible	–
●	u.10.021	P1		haptically inaccessible	–
●	u.10.022	D3	<box in charcoal stretches horizontally>	haptically inaccessible	–
●	u.10.023	T8	Covid-19 updates: Supporting our community	haptically inaccessible	_
●	u.10.024	D3	<box in red>	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/coronavirus-infection-university-of-sydney-advice.html
●	u.10.025	T2	More information	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/coronavirus-infection-university-of-sydney-advice.html

●	u.10.026	D3	<box in charcoal stretches horizontally>	haptically inaccessible	–
●	u.10.027	T8	Find a course	haptically inaccessible	–
●	u.10.028	D3	<box in white outline>	click	type-in
●	u.10.029	T1	Search for courses	click	type-in
●	u.10.030	D3	<box in red>	click	redirection to the corresponding query
●	u.10.031	T1	Search	click	redirection to the corresponding query
●	u.10.032	D1 > □		click	redirection to the corresponding query
●	u.10.033	P1		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
●	u.10.034	D4	_	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
	u.10.035	T8	Study with us	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
	u.10.036	T1	Find your pathway	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
●	u.10.037	D1 > ➞		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study.html
●	u.10.038	D4	_	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/industry-business-partnerships.html
●	u.10.039	T8	Collaborate with us	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/industry-business-partnerships.html

●	u.10.040	T1	Work with our researchers to tackle wicked problems	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/industry-business-partnerships.html
●	u.10.041	D1 > ➞	→	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/industry-business-partnerships.html
●	u.10.042	D3	<box in grey stretches horizontally>	haptically inaccessible	–
●	u.10.043	D4	_	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/alumni.html
●	u.10.044	T8	Alumni	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/alumni.html
●	u.10.045		News, events and volunteer opportunities	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/alumni.html
●	u.10.046	D1 > ➞	→	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/engage/alumni.html
●	u.10.047	P1		haptically inaccessible	–
●	u.10.048	D3	<box in grey stretches horizontally>	haptically inaccessible	–
●	u.10.049	D2	<horizontal line in black>	haptically inaccessible	–
	u.10.050	T6	University_	haptically inaccessible	–

●	u.10.051	P2		click	in-window video plays
●	u.10.052	T8	Explore our university in 360°	haptically inaccessible	–
●	u.10.053	D1		haptically inaccessible	–
●	u.10.054	T2	See our campus through a student's eyes.	click	
●	u.10.055	T6	Event_	haptically inaccessible	–
●	u.10.056	D3		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students/undergraduate/experience-sydney.html
●	u.10.057	D4	|	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students/undergraduate/experience-sydney.html
●	u.10.058	T1	Experience Sydney	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students/undergraduate/experience-sydney.html

●	u.10.059	T1	Join us on campus 6-9 October	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students/undergraduate/experience-sydney.html
●	u.10.060	D4	_	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/study/events-for-prospective-students/undergraduate/experience-sydney.html
●	u.10.061	D1	▲	haptically inaccessible	–
●	u.10.062	T1	For Year 12 students, Experience Sydney is an exclusive on-campus event led by our current students.	haptically inaccessible	–
●	u.10.063	T8	News & opinion	haptically inaccessible	–
●	u.10.064	D2	<horizontal line in black>	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.065	T6	News_	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.066	T9	29 September 2020	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.067	P1		click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html

●	u.10.068	D2	<horizontal line in black>	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.069	T5	Eleven Eureka Prize finalists	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.070	T1	Eleven University of Sydney individuals and groups have been named as Eureka Prize finalists in recognition of their excellent scientific research, leadership and engagement.	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.071	D1 > ➞	→	click	https://web.archive.org/web/20201023025810/https://www.sydney.edu.au/news-opinion/news/2020/09/29/eleven-eureka-prize-finalists.html
●	u.10.072	D2	<horizontal line in black>	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.073	T6	News_	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.074	T9	28 September 2020	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.075	P1		click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html

●	u.10.076	D2	<horizontal line in black>	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.077	T5	More than fiscal stimulus: an alternate plan to reboot the economy	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.078	T1	Assembled by the Sydney Policy Lab, businesses, community groups, unions and academics have unitied to propose an alternative economic strategy and future for Australia.	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.079	D1 > ➞	→	click	https://web.archive.org/web/20201020010737/https://www.sydney.edu.au/news-opinion/news/2020/09/28/can-australia-reshape-its-economy-after-covid-19-.html
●	u.10.080	D2	<horizontal line in black>	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.081	T6	News_	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.082	T9	24 September 2020	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.083	P1		click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html

●	u.10.084	D2	<horizontal line in black>	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.085	T5	University of Sydney to advance COVID-19 DNA vaccine to human trials	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.086	T1	The University of Sydney is testing a novel DNA-based COVID-19 vaccine to human trials	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.087	D1 > ➞	→	click	https://web.archive.org/web/20201008104908/https://www.sydney.edu.au/news-opinion/news/2020/09/24/university-of-sydney-to-advance-covid-19-dna-vaccine-to--human-t.html
●	u.10.088	T2	We acknowledge the tradition of custodianship and law of the Country on which the University of Sydney campuses stand. We pay our respects to those who have cared and continue to care for Country.	click	https://web.archive.org/web/20201008064428/https://sydney.edu.au/about-us/vision-and-values/aboriginal-and-torres-strait-islander-participation.html
●	u.10.089	D3	<box in red stretches horizontally>	haptically inaccessible	–
●	u.10.090	D4	|	haptically inaccessible	–
●	u.10.091	P3		haptically inaccessible	–
●	u.10.092	T14		haptically inaccessible	–
●	u.10.093	D5		click	https://web.archive.org/web/20201008064428/https://twitter.com/sydney_uni
●	u.10.094	D5		click	https://web.archive.org/web/20201008064428/https://www.facebook.com/sydneyuni

●	u.10.095	D5		click	https://web.archive.org/web/20201008064428/https://instagram.com/sydney_uni/
●	u.10.096	D5		click	https://web.archive.org/web/20201008064428/https://www.youtube.com/user/uniofsydney
●	u.10.097	T6	Follow us_	haptically inaccessible	–
●	u.10.098	T7	Leadership for good starts here	haptically inaccessible	–
●	u.10.099	D4	–	haptically inaccessible	–
●	u.10.100	T8	Media	haptically inaccessible	–
●	u.10.101	T4	News	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/news-opinion/news.html
●	u.10.102	T4	Find an expert	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/news-opinion/find-an-expert.html
●	u.10.103	T4	Media contacts	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/news-opinion/media-contacts.html
●	u.10.104	T8	Student links	haptically inaccessible	–
●	u.10.105	T4	How to log in to University systems	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/students/log-in-to-university-systems.html
●	u.10.106	T4	Key dates	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/students/key-dates.html
●	u.10.107	T4	Class timetables	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/students/timetables.html
●	u.10.108	T4	Policies	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/policies/
●	u.10.109	T8	About us	haptically inaccessible	–
●	u.10.110	T4	Our rankings	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/our-world-rankings.html

●	u.10.111	T4	Faculties and schools	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/faculties-and-schools.html
●	u.10.112	T4	Centers and institutes	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/research/centres.html
●	u.10.113	T4	Campus locations	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/campuses/campus-locations.html
●	u.10.114	T8	Connect	haptically inaccessible	–
●	u.10.115	T4	Contact us	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/contact-us.html
●	u.10.116	T4	Find a staff member	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/governance-and-structure/staff-directory.html
●	u.10.117	T4	Careers at Sydney	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/careers-at-sydney.html
●	u.10.118	T4	Event calendar	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/news-opinion/events.html
●	u.10.119	T4	Emergencies and personal safety	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/campuses/emergencies-and-personal-safety.html
●	u.10.120	T6	Member of	haptically inaccessible	–
●	u.10.121	P3		click	https://web.archive.org/web/20201008064428/https://go8.edu.au/
●	u.10.122	P3		click	https://web.archive.org/web/20201008064428/https://apru.org/
●	u.10.123	P3		click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/about-us/vision-and-values/diversity/gender-equity.html#sage
●	u.10.124	D2	<horizontal line>	haptically inaccessible	–
●	u.10.125	T3	Disclaimer	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/disclaimer.html

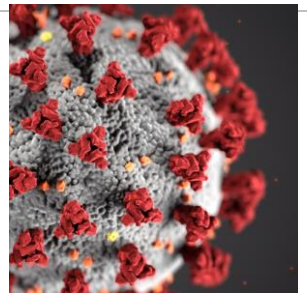
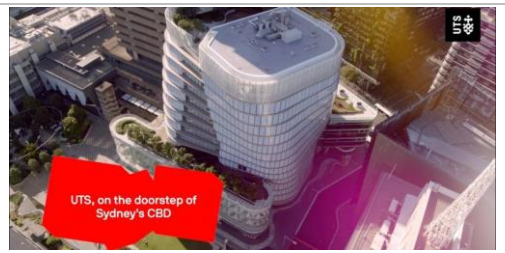
●	u.10.126	T3	Privacy	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/privacy-statement.html
●	u.10.127	T3	Accessibility	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/accessibility.html
●	u.10.128	T3	Website feedback	click	https://web.archive.org/web/20201008064428/https://www.sydney.edu.au/website-feedback.html
●	u.10.129	T11	ABN: 15 211 513 464	haptically inaccessible	–
●	u.10.130	T11	CRICOS Number: 00026A	haptically inaccessible	–
●	u.10.131	T11	TEQSA: PRV12057	haptically inaccessible	–

Table A.3 University of Technology Sydney

Color	Identifier	Code	Segment	Interactivity	Redirection
●	u.11.001	P3		click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/
●	u.11.002	T14	UTS	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/
●	u.11.003	D1 > ➞		click	drop-down search field window opens
●	u.11.004	D3	<box in black stretches horizontally>	haptically inaccessible	–
●	u.11.005	T3	Future students	click	https://web.archive.org/web/20200929145209/https://www.uts.edu.au/future-students
●	u.11.006	T3	Current students	click	https://web.archive.org/web/20200929094241/https://www.uts.edu.au/current-students
●	u.11.007	T3	Research and teaching	click	https://web.archive.org/web/20201022183155/https://www.uts.edu.au/research-and-teaching
●	u.11.008	T3	Partners and community	click	https://web.archive.org/web/20201001095409/https://www.uts.edu.au/partners-and-community
●	u.11.009	P1		haptically inaccessible	–
●	u.11.010	D3	<box in dark grey>	haptically inaccessible	–
●	u.11.011	T5	Going with the flow	haptically inaccessible	–

●	u.11.012	T1	UTS teams up with Flow Systems in an Australian-first recycled water partnership.	haptically inaccessible	–
●	u.11.013	D3	<box in black>	click	https://web.archive.org/web/20201028033434/https://www.uts.edu.au/news/campus-community/going-flow
	u.11.014	T1	Read more	click	https://web.archive.org/web/20201028033434/https://www.uts.edu.au/news/campus-community/going-flow
●	u.11.015	D3	<box in black>	click	the featured story changes (in-carousel navigation)
●	u.11.016	D1 > ←			the featured story changes (in-carousel navigation)
●	u.11.017	D3	<box in black>	click	the featured story changes (in-carousel navigation)
●	u.11.018	D1 > →		click	the featured story changes (in-carousel navigation)
●	u.11.019	D3	<box in blue>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/postgraduate/find-right-course/events-and-info-sessions
	u.11.020	T8	UTS Postgraduate online events	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/postgraduate/find-right-course/events-and-info-sessions
●	u.11.021	D3	<box in white>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/postgraduate/find-right-course/events-and-info-sessions
	u.11.022	T1	Register now	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/postgraduate/find-right-course/events-and-info-sessions
●	u.11.023	D3	<box in white>	click	https://web.archive.org/web/20201008080715/https://open.uts.edu.au/uts-open/course-types/?utm_source=referral&utm_medium=uts-homepage&utm_campaign=inventyou-uts-homepage-sep20

●	u.11.024	P1		click	https://web.archive.org/web/20201008080715/https://open.uts.edu.au/uts-open/course-types/?utm_source=referral&utm_medium=uts-homepage&utm_campaign=inventyou-uts-homepage-sep21
●	u.11.025	T8	UTS open	click	https://web.archive.org/web/20201008080715/https://open.uts.edu.au/uts-open/course-types/?utm_source=referral&utm_medium=uts-homepage&utm_campaign=inventyou-uts-homepage-sep22
●	u.11.026	T1	Explore microcredentials and short courses	click	https://web.archive.org/web/20201008080715/https://open.uts.edu.au/uts-open/course-types/?utm_source=referral&utm_medium=uts-homepage&utm_campaign=inventyou-uts-homepage-sep23
●	u.11.027	D3	<box in mid grey>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/autumn-session-courses/autumn-2021-applications-now-open
●	u.11.028	T8	Apply now for Autumn 2021	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/autumn-session-courses/autumn-2021-applications-now-open
●	u.11.029	D3	<box in red>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/uts-ratings-and-rankings
●	u.11.030	T8	No. 1 UTS ranked Australia's #1 youngest* uni		https://web.archive.org/web/20201008080715/https://www.uts.edu.au/uts-ratings-and-rankings
●	u.11.031	D3	<box in dark grey>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information
	u.11.032	T8	Coronavirus update	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information

●	u.11.033	T1	Keep up-to-date with the latest advice on coronavirus and how UTS is responding.	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information
●	u.11.034	P1		click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-students/news/coronavirus-and-international-travel-information
●	u.11.035	P2		click	in-window video plays
●	u.11.036	T13	UTS, on the doorstep of Sydney's CBD	click	in-window video plays
●	u.11.037	D3	<box in light grey>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/about-our-campus/news/future-focused-uts-campus
●	u.11.038	T8	Welcome to the UTS campus	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/about-our-campus/news/future-focused-uts-campus
●	u.11.039	T1	See the state-of-the-art facilities available to our students, staff and partners.	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/about-our-campus/news/future-focused-uts-campus
●	u.11.040	D3	<box in blue>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/alumni-and-supporters/news/trailblazing-graduates-recognised-2020-uts-alumni-awards

●	u.11.041	T8	Introducing the winners of the 2020 UTS Alumni Awards	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/alumni-and-supporters/news/trailblazing-graduates-recognised-2020-uts-alumni-awards
●	u.11.042	T1	From everyone's favourite Yellow Wiggle Emma Watkins to business and community leader George Savvides AM, meet this year's stellar line-up.	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/alumni-and-supporters/news/trailblazing-graduates-recognised-2020-uts-alumni-awards
●	u.11.043	P1			https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/alumni-and-supporters/news/trailblazing-graduates-recognised-2020-uts-alumni-awards
●	u.11.044	D3	<box in dark grey>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/initiatives/entrepreneurship/uts-startups
●	u.11.045	T8	UTS Startups	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/initiatives/entrepreneurship/uts-startups
●	u.11.046	T1	Join us for inspiration, support, or to get started!	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/partners-and-community/initiatives/entrepreneurship/uts-startups
●	u.11.047	P1		click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/indigenous-australians

●	u.11.048	T8	Indigenous Australians	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/indigenous-australians
●	u.11.049	D3	<box in red>	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/international
●	u.11.050	T8	International students	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/future-students/international
●	u.11.051	D3	<box in black stretches horizontally>	haptically inaccessible	–
●	u.11.052	T8	About UTS	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about
●	u.11.053	T4	The University	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/university
●	u.11.054	T4	Campus maps	click	https://web.archive.org/web/20201008080715/http://maps.uts.edu.au/
●	u.11.055	T4	UTS governance	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/uts-governance
●	u.11.056	T4	Faculties	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/faculties
●	u.11.057	T4	Privacy statement	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/privacy-statement-footer
●	u.11.058	T4	Accessibility	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/utsweb-statements/accessibility-statement
●	u.11.059	T4	Disclaimer	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/utsweb-statements/disclaimer
●	u.11.060	T8	Library	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/uts-library-1
●	u.11.061	T4	Search catalogue	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/library-catalogue
●	u.11.062	T4	What's on	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/uts-library-whats
●	u.11.063	T4	Help and resources	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/library-help
●	u.11.064	T8	Staff	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/staff

●	u.11.065	T4	Staff Connect	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/staff-connect
●	u.11.066	T4	Webmail	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/webmail
●	u.11.067	T4	Staff Directory	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/staff-directory
●	u.11.068	T4	Jobs at UTS	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-vacancies
●	u.11.069	T8	Contact us	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/about/contacts/uts-contacts
●	u.11.070	T4	Student and public enquiries	click	https://web.archive.org/web/20201008080715/https://www.uts.edu.au/current-students/managing-your-course/ask-uts
●	u.11.071	D5		click	https://web.archive.org/web/20201008080715/http://facebook.com/UTSEngage
●	u.11.072	D5		click	https://web.archive.org/web/20201008080715/https://twitter.com/utsengage
●	u.11.073	D5		click	https://web.archive.org/web/20201008080715/http://instagram.com/utsengage
●	u.11.074	D5		click	https://web.archive.org/web/20201008080715/http://youtube.com/user/utschannel
●	u.11.075	D5		click	https://web.archive.org/web/20201008080715/http://linkedin.com/company/166678
●	u.11.076		Copyright UTS	haptically inaccessible	–
●	u.11.077	D4	–	haptically inaccessible	–
●	u.11.078	T11	CRICOS Provider No: 00099F	haptically inaccessible	–
●	u.11.079	D4	–	haptically inaccessible	–
●	u.11.080	T9	06 October 2020 09:55 AM	haptically inaccessible	–

●	u.11.081	T1	The page is authorised by Deputy Vice-Chancellor and Vice-President (Corporate Services).	haptically inaccessible	–

Table A.4 UNSW Sydney

Color	Identifier	Code	Segment	Interactivity	Redirection
●	u.13.001	P3		click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.002	T14	UNSW SYDNEY	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.003	D3	<box in white stretching horizontally>	haptically inaccessible	–
●	u.13.004	T3	News & Event	click	https://web.archive.org/web/20201008064442/https://newsroom.unsw.edu.au/
●	u.13.005	T4	myUNSW	click	https://web.archive.org/web/20201008064442/https://my.unsw.edu.au/
●	u.13.006	T5	Alumni & Giving	click	https://web.archive.org/web/20201008064442/https://www.alumni.giving.unsw.edu.au/
●	u.13.007	D1 > ✉		click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/contacts
●	u.13.008	T3	Contact Us	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/contacts
●	u.13.009	T3	Study	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/study
●	u.13.010	T3	Research	click	https://web.archive.org/web/20201008064442/https://research.unsw.edu.au/
●	u.13.011	T3	Engage with Us	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.012	T3	About UNSW	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/about-us

●	u.13.013	D3	<box in black>	click	drop-down search field shaded in semi-transparent black appears
●	u.13.014	D1 > □		click	drop-down search field shaded in semi-transparent black appears
●	u.13.015	T8	Follow	haptically inaccessible	–
●	u.13.016	D5		click	https://web.archive.org/web/20201008064442/https://www.linkedin.com/school/unsw
●	u.13.017	D5		click	https://web.archive.org/web/20201008064442/https://twitter.com/unsw
●	u.13.018	D5		click	https://web.archive.org/web/20201008064442/https://www.facebook.com/unsw
●	u.13.019	D5		click	https://web.archive.org/web/20201008064442/https://www.instagram.com/unsw
●	u.13.020	D5		click	https://web.archive.org/web/20201008064442/https://www.tiktok.com/@unswsydney
●	u.13.021	D5		click	https://web.archive.org/web/20201008064442/http://www.youtube.com/unsw
●	u.13.022	T8	Students shaping future cities	haptically inaccessible	–
●	u.13.023	T1	See the best work of Built Environment students in the 2020 Luminosity virtual reality showcase	haptically inaccessible	–
●	u.13.024	D3	<box in white with black outline>	click	https://web.archive.org/web/20201008064442/https://luminocity.unsw.edu.au/
	u.13.025		Visit the exhibition	click	https://web.archive.org/web/20201008064442/https://luminocity.unsw.edu.au/
●	u.13.026	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://luminocity.unsw.edu.au/

●	u.13.027	P1		haptically inaccessible	–
●	u.13.028	T13	2020 Luminocity	haptically inaccessible	–
●	u.13.029	T13	Shaping Future Cities	haptically inaccessible	–
●	u.13.030	T13	Construction management & prosperity	haptically inaccessible	–
●	u.13.031	T13	Interior architecture	haptically inaccessible	–
●	u.13.032	T13	Design with purpose from Room to Region	haptically inaccessible	–
●	u.13.033	T13	Computational design	haptically inaccessible	–
●	u.13.034	T1	"My double degree challenged me to think outside of the box."	haptically inaccessible	–
●	u.13.035	P1		haptically inaccessible	–

●	u.13.036	T8	Cheyenne Bardos	haptically inaccessible	–
●	u.13.037	T8	Commerce / Media	haptically inaccessible	–
●	u.13.038	T8	This is where your future starts	haptically inaccessible	–
●	u.13.039	D3	<box in yellow>	click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
●	u.13.040	D1 > ✉		click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
	u.13.041	T1	Enquire now	click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
●	u.13.042	D3	<box in black>	click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
●	u.13.043	D1 > □		click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
	u.13.044	T1	Apply now	click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
●	u.13.045	D2	<horizontal line>	haptically inaccessible	–
●	u.13.046	T8	Latest stories	haptically inaccessible	–
●	u.13.047	P1		click	https://web.archive.org/web/20201029040903/https://newsroom.unsw.edu.au/news/general/betty-and-arnold-receive-new-robot-hand-thanks-unsw-student
●	u.13.048	T5	Betty and Arnold receive new robot hand thanks to UNSW student	click	https://web.archive.org/web/20201029040903/https://newsroom.unsw.edu.au/news/general/betty-and-arnold-receive-new-robot-hand-thanks-unsw-student

●	u.13.049	T1	A UNSW student building one of the world's most advanced robotic hands for use on construction sites.	click	https://web.archive.org/web/20201029040903/https://newsroom.unsw.edu.au/news/general/betty-and-arnold-receive-new-robot-hand-thanks-unsw-student
●	u.13.050	T9	25 Sept 2020	click	https://web.archive.org/web/20201029040903/https://newsroom.unsw.edu.au/news/general/betty-and-arnold-receive-new-robot-hand-thanks-unsw-student
●	u.13.051	P1		click	https://web.archive.org/web/20201004215830/https://newsroom.unsw.edu.au/news/general/st-george-illawarra-dragons-player-tristan-sailor-ready-design-his-future-unsw
●	u.13.052	T5	St George-Illawarra Dragons player Tristan Sailor ready to…	click	https://web.archive.org/web/20201004215830/https://newsroom.unsw.edu.au/news/general/st-george-illawarra-dragons-player-tristan-sailor-ready-design-his-future-unsw
●	u.13.053	T9	24 September 2020	click	https://web.archive.org/web/20201004215830/https://newsroom.unsw.edu.au/news/general/st-george-illawarra-dragons-player-tristan-sailor-ready-design-his-future-unsw
●	u.13.054	D2	<horizontal line>	click	https://web.archive.org/web/20201004215830/https://newsroom.unsw.edu.au/news/general/st-george-illawarra-dragons-player-tristan-sailor-ready-design-his-future-unsw
●	u.13.055	T5	Treating our elderly people ethically and with transparency	click	https://web.archive.org/web/20201005024606/https://newsroom.unsw.edu.au/news/general/treating-our-elderly-people-ethically-and-transparency
●	u.13.056	T9	23 September 2020	click	https://web.archive.org/web/20201005024606/https://newsroom.unsw.edu.au/news/general/treating-our-elderly-people-ethically-and-transparency
●	u.13.057	D2	<horizontal line>	click	https://web.archive.org/web/20201005024606/https://newsroom.unsw.edu.au/news/general/treating-our-elderly-people-ethically-and-transparency
●	u.13.058	T5	Landmark release sees bilbies return to Sturt National Park in…	click	https://web.archive.org/web/20201005024606/https://newsroom.unsw.edu.au/news/science-tech/landmark-release-sees-bilbies-return-sturt-national-park-nsw

●	u.13.059	T9	24 September 2020	click	https://web.archive.org/web/20201005024606/https://newsroom.unsw.edu.au/news/science-tech/landmark-release-sees-bilbies-return-sturt-national-park-nsw
●	u.13.060	D2	<horizontal line>	haptically inaccessible	–
●	u.13.061	T8	Experience UNSW	haptically inaccessible	–
●	u.13.062	D3	<box in yellow stretches vertically>	click	https://web.archive.org/web/20201008064442/http://www.360tour.unsw.edu.au/
●	u.13.063	T8	Explore our beautiful campus	click	https://web.archive.org/web/20201008064442/http://www.360tour.unsw.edu.au/
●	u.13.064	T1	Take a virtual tour	click	https://web.archive.org/web/20201008064442/http://www.360tour.unsw.edu.au/
●	u.13.065	D1 > ➞		click	https://web.archive.org/web/20201008064442/http://www.360tour.unsw.edu.au/
●	u.13.066	P1		click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/
●	u.13.067	D3	<box in white stretches vertically>	click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/
●	u.13.068	T8	Put down your books!	click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/

●	u.13.069	T1	Discover the rich experiences we offer outside the classroom	click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/
	u.13.070	T1	Find out more	click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/
●	u.13.071	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://www.arc.unsw.edu.au/
●	u.13.072	D3	<box in faded purple stretches vertically>	click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.073	T8	Coronavirus and your safety	click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.074	T1	UNSW is monitoring the COVID-19 situation and providing regular updates	click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.075	T1	Find out more	click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.076	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.077	D2	horizontal line	click	https://web.archive.org/web/20201008064442/https://www.covid-19.unsw.edu.au/
●	u.13.078	T8	Scholarships. For the brightest minds	click	https://web.archive.org/web/20201008064442/https://www.news.futurestudents.unsw.edu.au/scholarships-brightest-minds
●	u.13.079	T1	Our scholarships and awards empower students to achieve their goarls	click	https://web.archive.org/web/20201008064442/https://www.news.futurestudents.unsw.edu.au/scholarships-brightest-minds
●	u.13.080	T1	Find out more	click	https://web.archive.org/web/20201008064442/https://www.news.futurestudents.unsw.edu.au/scholarships-brightest-minds
●	u.13.081	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://www.news.futurestudents.unsw.edu.au/scholarships-brightest-minds
●	u.13.082	D3	<box in faded purple stretches vertically>	click	https://web.archive.org/web/20201008064442/https://www.youtube.com/watch?v=sT5f3jHYCgY&feature=youtu.be
●	u.13.083	T8	What's different about UNSW?	click	https://web.archive.org/web/20201008064442/https://www.youtube.com/watch?v=sT5f3jHYCgY&feature=youtu.be

●	u.13.084	T1	We're not afraid of being different – in fact, we encourage it	click	https://web.archive.org/web/20201008064442/https://www.youtube.com/watch?v=sT5f3jHYCgY&feature=youtu.be
●	u.13.085	T1	Find out more	click	https://web.archive.org/web/20201008064442/https://www.youtube.com/watch?v=sT5f3jHYCgY&feature=youtu.be
●	u.13.086	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://www.youtube.com/watch?v=sT5f3jHYCgY&feature=youtu.be
●	u.13.087	D3	<box in yellow stretches vertically>	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.088	T8	What can we learn while being apart?	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.089	T1	Talks from UNSW thinkers on everything from asteroids to Anzac buiscuits	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.090		Watch the talks	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.091	D1 > ➞		click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.092	P1		click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/what-can-we-learn-while-we-are-apart
●	u.13.093	T8	Key dates	haptically inaccessible	–
●	u.13.094	D3	<box in yellow>	click	https://web.archive.org/web/20201028022613/https://www.events.unsw.edu.au/event/livestream-unswfromhome-conversation-series
●	u.13.095	T9	Tue 13 OCT		https://web.archive.org/web/20201028022613/https://www.events.unsw.edu.au/event/livestream-unswfromhome-conversation-series
●	u.13.096	T6	Livestream discussions	haptically inaccessible	–

●	u.13.097	T6	Art, architecture, design	click	https://web.archive.org/web/20201028022613/https://www.events.unsw.edu.au/event/livestream-unswfromhome-conversation-series
●	u.13.098	T1	Get tickets	click	https://web.archive.org/web/20201028022613/https://www.events.unsw.edu.au/event/livestream-unswfromhome-conversation-series
●	u.13.099	D1 > ➞	→	click	https://web.archive.org/web/20201028022613/https://www.events.unsw.edu.au/event/livestream-unswfromhome-conversation-series
●	u.13.100	D3	<box in yellow>	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/livestream-using-sunshine-power-planet
●	u.13.101	T9	Tue 13 OCT	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/livestream-using-sunshine-power-planet
●	u.13.102	T6	Livestream with Scientia professor Rose Amal	haptically inaccessible	–
●	u.13.103	T6	The future of solar	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/livestream-using-sunshine-power-planet
●	u.13.104	T1	Get tickets	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/livestream-using-sunshine-power-planet
●	u.13.105	D1 > ➞	→	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/event/livestream-using-sunshine-power-planet
●	u.13.106	D3	<box in yellow>	click	https://web.archive.org/web/20200923201125/https://events.unsw.edu.au/event/livestream-how-ai-can-promote-inclusive-prosperity
●	u.13.107	T9	Tue 13 OCT	click	https://web.archive.org/web/20200923201125/https://events.unsw.edu.au/event/livestream-how-ai-can-promote-inclusive-prosperity
●	u.13.108	T6	Livestream discussion with Professor Frank Pasqual	haptically inaccessible	–
●	u.13.109	T6	AI and prosperity	click	https://web.archive.org/web/20200923201125/https://events.unsw.edu.au/event/livestream-how-ai-can-promote-inclusive-prosperity
●	u.13.110	T1	Get tickets	click	https://web.archive.org/web/20200923201125/https://events.unsw.edu.au/event/livestream-how-ai-can-promote-inclusive-prosperity
●	u.13.111	D1 > ➞	→	click	https://web.archive.org/web/20200923201125/https://events.unsw.edu.au/event/livestream-how-ai-can-promote-inclusive-prosperity
●	u.13.112	D3	<box in white with black outline>	click	drop-down window with more dates opens
	u.13.113	T1	Show more	click	drop-down window with more dates opens

●	u.13.114	D2	horizontal line	haptically inaccessible	–
	u.13.115	T8	Explore a lifetime of learning	haptically inaccessible	–
●	u.13.116	P1		click	https://web.archive.org/web/20201006045304/https://www.newsfuturestudents.unsw.edu.au/be-rebel-double-degree
●	u.13.117	T1	Be a rebel with a double degree	click	https://web.archive.org/web/20201006045304/https://www.newsfuturestudents.unsw.edu.au/be-rebel-double-degree
●	u.13.118	P1		click	https://web.archive.org/web/20201006045345/https://www.newsfuturestudents.unsw.edu.au/how-balance-work-family-study
●	u.13.119	T1	How to balance work, family and study	click	https://web.archive.org/web/20201006045345/https://www.newsfuturestudents.unsw.edu.au/how-balance-work-family-study

●	u.13.120	P1		click	https://web.archive.org/web/20201006045312/https://med.unsw.edu.au/news-events/news/using-social-media-connect-people-physical-activity
●	u.13.121	T1	Research connects health care with vulnerable people	click	https://web.archive.org/web/20201006045312/https://med.unsw.edu.au/news-events/news/using-social-media-connect-people-physical-activity
●	u.13.122	D2	horizontal line	haptically inaccessible	–
	u.13.123	D3	<box in yellow>	click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
●	u.13.124	D1 > ✉		click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
	u.13.125	T1	Enquire now	click	https://web.archive.org/web/20201008064442/https://www.futurestudents.unsw.edu.au/ask-question
●	u.13.126	D3	<box in black>	click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
	u.13.127	D1 > □		click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
	u.13.128	T1	Apply now	click	https://web.archive.org/web/20201008064442/https://applyonline.unsw.edu.au/
●	u.13.129	D3	<box in white with black outline>	click	https://web.archive.org/web/20201008064442/https://degrees.unsw.edu.au/
●	u.13.130	D1 > □		click	https://web.archive.org/web/20201008064442/https://degrees.unsw.edu.au/
	u.13.131	T1	Find your degree	click	https://web.archive.org/web/20201008064442/https://degrees.unsw.edu.au/

●	u.13.132	D3	<box in faded purple stretches horizontally>	haptically inaccessible	–
●	u.13.133	T8	Alumni	haptically inaccessible	–
●	u.13.134	P1		click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/im-based-overseas-what-benefits-services-can-i-access
●	u.13.135	T1	I'm based overseas, what alumni benefits and services can I access	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/im-based-overseas-what-benefits-services-can-i-access
●	u.13.136	T1	UNSW proudly supports its international alumni network, now spanning 137 countries, with a wealth of benefits and services	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/im-based-overseas-what-benefits-services-can-i-access
●	u.13.137	P1		click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/three-critical-lessons-building-impact-driven-career
●	u.13.138	T1	Three critical lessons for impact-driven careers	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/three-critical-lessons-building-impact-driven-career
●	u.13.139	D2	horizontal line	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/three-critical-lessons-building-impact-driven-career

	u.13.140	T1	Alumnus Peter Gregory talks home ergonomics	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/alumnus-peter-gregory-talks-home-ergonomics-how-does-your-workstation-measure
●	u.13.141	D2	horizontal line	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/alumnus-peter-gregory-talks-home-ergonomics-how-does-your-workstation-measure
	u.13.142	T1	$2.3m donation attunes our environment to noise	click	https://web.archive.org/web/20201005024606/https://www.alumni.giving.unsw.edu.au/designing-sound-23m-donated-ensure-future-built-environments-are-attuned-impacts-noise
●	u.13.143	D3	<box in dark grey stretches horizontally>	haptically inaccessible	–
●	u.13.144	P3		click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.145	T14		click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.146	T2	UNSW.edu.au	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/
●	u.13.147	T10	UNSW Sydney NSW 2052 Australia	haptically inaccessible	–
●	u.13.148	T12	Telephone: +61 2 93851000	haptically inaccessible	–
●	u.13.149	T11	UNSW CRICOS Provider Code: 00098G	haptically inaccessible	–
●	u.13.150	T11	TEQSA Provider ID: PRV12055	haptically inaccessible	–
●	u.13.151	T11	ABN: 57 195 873 179	haptically inaccessible	–

•	u.13.152	T8	Engage with us	haptically inaccessible	–
•	u.13.153	T4	Contact us	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/contacts
•	u.13.154	T4	Find an expert	click	https://web.archive.org/web/20201008064442/https://newsroom.unsw.edu.au/find-an-expert
•	u.13.155	T4	Careers at UNSW	click	https://web.archive.org/web/20201008064442/https://external-careers.jobs.unsw.edu.au/en/listing
•	u.13.156	T4	Education at UNSW	click	https://web.archive.org/web/20201008064442/https://www.education.unsw.edu.au/
•	u.13.157	T8	Study	haptically inaccessible	–
•	u.13.158	T4	Experience UNSW	click	https://web.archive.org/web/20201008064442/https://www.experience.futurestudents.unsw.edu.au/
•	u.13.159	T4	UNSW International	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/study
•	u.13.160	T4	Degree Finder	click	https://web.archive.org/web/20201008064442/https://degrees.unsw.edu.au/
•	u.13.161	T4	Student Portal	click	https://web.archive.org/web/20201008064442/https://my.unsw.edu.au/
•	u.13.162	T4	Academic Calendar	click	https://web.archive.org/web/20201008064442/https://student.unsw.edu.au/calendar
•	u.13.163	T8	News, Media & Events	haptically inaccessible	–
•	u.13.164	T4	Newsroom	click	https://web.archive.org/web/20201008064442/https://www.newsroom.unsw.edu.au/
•	u.13.165	T4	UNSW events	click	https://web.archive.org/web/20201008064442/https://www.events.unsw.edu.au/
•	u.13.166	T4	Research news	click	https://web.archive.org/web/20201008064442/https://research.unsw.edu.au/researcher-news-stories
•	u.13.167	T8	About us	haptically inaccessible	–
•	u.13.168	T4	Our rankings & reputation	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/about-us/university/reputation

●	u.13.169	T4	Faculties & Schools	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/faculties
●	u.13.170	T4	Campus locations	click	https://web.archive.org/web/20201008064442/https://www.unswglobal.unsw.edu.au/programs-courses/campus-locations
●	u.13.171	T4	Centers and Institutes	click	https://web.archive.org/web/20201008064442/https://research.unsw.edu.au/unsw-centres-and-institutes
●	u.13.172	T4	UNSW Library	click	https://web.archive.org/web/20201008064442/https://www.library.unsw.edu.au/
●	u.13.173	D3	<box in yellow>	click	changes location of the web user to the viewport
●	u.13.174	D1 > ⬆		click	changes location of the web user to the viewport
●	u.13.175		Top	click	changes location of the web user to the viewport
●	u.13.176	D3	<box in black stretches horizontally>	haptically inaccessible	–
●	u.13.177	P3		click	https://web.archive.org/web/20201009002359/https://universitas21.com/
●	u.13.178	P3		click	https://web.archive.org/web/20201009002359/https://universitas21.com/
●	u.13.179	P3		click	https://web.archive.org/web/20201010132024/https://apru.org/
●	u.13.180	P3		click	https://web.archive.org/web/20201009234822/http://globaltechalliance.org/
●	u.13.181	P3		click	https://web.archive.org/web/20201004012051/https://www.plusalliance.org/

●	u.13.182	D3	<box in yellow stretches horizontally>	haptically inaccessible	–
	u.13.183	T8	Follow Us	haptically inaccessible	–
●	u.13.184	D5		click	https://web.archive.org/web/20201008064442/https://www.linkedin.com/school/unsw
●	u.13.185	D5		click	https://web.archive.org/web/20201008064442/https://twitter.com/unsw
●	u.13.186	D5		click	https://web.archive.org/web/20201008064442/https://www.facebook.com/unsw
●	u.13.187	D5		click	https://web.archive.org/web/20201008064442/https://www.instagram.com/unsw
●	u.13.188	D5		click	https://web.archive.org/web/20201008064442/https://www.tiktok.com/@unswsydney
●	u.13.189	D5		click	https://web.archive.org/web/20201008064442/http://www.youtube.com/unsw
●	u.13.190	T3	Privacy policy	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/privacy
●	u.13.191	T3	Copyright & Disclaimer	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/copyright-disclaimer
●	u.13.192	T3	Accessibility	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/accessibility
●	u.13.193	T3	Site feedback	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/unsw-website-feedback
●	u.13.194	T3	Complaints	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/complaints
●	u.13.195	T3	Sitemap	click	https://web.archive.org/web/20201008064442/https://www.unsw.edu.au/sitemap

Appendix F Coded segments data set #2

Table A.1 Macquarie University's homepage

Color	Parent code	Code	Subcode	Secondary subcode	Frequency
●	Visual content	non-human	_	_	19
●	Visual content	non-human	places		5
●	Visual content	non-human	abstractions	_	15
●	Visual content	human	_	_	79
●	Visual content	human	manifestation	complete	77
●	Visual content	human	manifestation	metonymic	3
●	Visual content	human	number	individual	33
●	Visual content	human	number	group	47
●	Visual content	human	gender	female	107
●	Visual content	human	gender	male	90
●	Representation	narrative	action	intransitive action	6
●	Representation	narrative	action	transitive action	19
●	Representation	behavioral	non-transactional reaction	_	16
●	Representation	behavioral	transactional reaction	_	27
●	Representation	verbal process	_	_	3
●	Representation	conceptual	analytical structure	_	37
●	Representation	conceptual	classification	_	18
●	Representation	conceptual	symbolic process	_	9
●	Viewer network	social distance	intimate	_	11
●	Viewer network	social distance	personal	_	35

●	Viewer network	social distance	social	_	33
●	Viewer network	social distance	public	_	10
●	Viewer network	involvement	involvement	_	75
●	Viewer network	involvement	detachment	_	26
●	Viewer network	power	representational power	_	12
●	Viewer network	power	equal power	_	66
●	Viewer network	power	viewer power	_	11
●	Viewer network	social interaction	direct address	_	29
●	Viewer network	social interaction	indirect address	_	61

Table A.2 The University of Sydney's homepage

Color	Parent code	Code	Subcode	Secondary subcode	Frequency
●	Visual content	non-human	_	_	44
●	Visual content	non-human	places		27
●	Visual content	non-human	abstractions	_	17
●	Visual content	human	_	_	62
●	Visual content	human	manifestation	complete	45
●	Visual content	human	manifestation	metonymic	5
●	Visual content	human	number	individual	18
●	Visual content	human	number	group	29
●	Visual content	human	gender	female	54
●	Visual content	human	gender	male	35
●	Representation	narrative	action	intransitive action	13
●	Representation	narrative	action	transitive action	21
●	Representation	behavioral	non-transactional reaction	_	1
●	Representation	behavioral	transactional reaction	_	19
●	Representation	verbal process	_	_	12
●	Representation	conceptual	analytical structure	_	38
●	Representation	conceptual	classification	_	2
●	Representation	conceptual	symbolic process	_	7
●	Viewer network	social distance	intimate	_	1
●	Viewer network	social distance	personal	_	8
●	Viewer network	social distance	social	_	24
●	Viewer network	social distance	public	_	27
●	Viewer network	involvement	involvement	_	29

●	Viewer network	involvement	detachment	_	38
●	Viewer network	power	representational power	_	5
●	Viewer network	power	equal power	_	35
●	Viewer network	power	viewer power	_	18
●	Viewer network	social interaction	direct address	_	0
●	Viewer network	social interaction	indirect address	_	59

Table A.3 The University of Technology Sydney's homepage

Color	Parent code	Code	Subcode	Secondary subcode	Frequency
●	Visual content	non-human	_	_	29
●	Visual content	non-human	places		9
●	Visual content	non-human	abstractions	_	21
●	Visual content	human	_	_	68
●	Visual content	human	manifestation	complete	65
●	Visual content	human	manifestation	metonymic	4
●	Visual content	human	number	individual	38
●	Visual content	human	number	group	28
●	Visual content	human	gender	female	73
●	Visual content	human	gender	male	51
●	Representation	narrative	action	intransitive action	3
●	Representation	narrative	action	transitive action	33
●	Representation	behavioral	non-transactional reaction	_	15
●	Representation	behavioral	transactional reaction	_	26
●	Representation	verbal process	_	_	8
●	Representation	conceptual	analytical structure	_	48
●	Representation	conceptual	classification	_	1
●	Representation	conceptual	symbolic process	_	8
●	Viewer network	social distance	intimate	_	3
●	Viewer network	social distance	personal	_	24
●	Viewer network	social distance	social	_	39
●	Viewer network	social distance	public	_	7
●	Viewer network	involvement	involvement	_	58

●	Viewer network	involvement	detachment	_	16
●	Viewer network	power	representational power	_	17
●	Viewer network	power	equal power	_	42
●	Viewer network	power	viewer power	_	9
●	Viewer network	social interaction	direct address	_	18
●	Viewer network	social interaction	indirect address	_	49

Table A.4 The UNSW Sydney's homepage

Color	Parent code	Code	Subcode	Secondary subcode	Frequency
●	Visual content	non-human	_	_	41
●	Visual content	non-human	places		5
●	Visual content	non-human	abstractions	_	37
●	Visual content	human	_	_	65
●	Visual content	human	manifestation	complete	54
●	Visual content	human	manifestation	metonymic	3
●	Visual content	human	number	individual	32
●	Visual content	human	number	group	30
●	Visual content	human	gender	female	66
●	Visual content	human	gender	male	40
●	Representation	narrative	action	intransitive action	5
●	Representation	narrative	action	transitive action	8
●	Representation	behavioral	non-transactional reaction	_	12
●	Representation	behavioral	transactional reaction	_	22
●	Representation	verbal process	_	_	5
●	Representation	conceptual	analytical structure	_	61
●	Representation	conceptual	classification	_	9
●	Representation	conceptual	symbolic process	_	20
●	Viewer network	social distance	intimate	_	4
●	Viewer network	social distance	personal	_	17
●	Viewer network	social distance	social	_	33
●	Viewer network	social distance	public	_	11
●	Viewer network	involvement	involvement	_	49

●	Viewer network	involvement	detachment	_	20
●	Viewer network	power	representational power	_	15
●	Viewer network	power	equal power	_	46
●	Viewer network	power	viewer power	_	4
●	Viewer network	social interaction	direct address	_	23
●	Viewer network	social interaction	indirect address	_	43