

Design For Meaning

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Abstract

The increased material wealth of industrialised societies has in recent years lead to debate about the meaning of designed artefacts, and about the role of meaning in the innovation processes of businesses, governments and non-governmental organisations. Characteristics which are lower in the “Maslow Hierarchy Of Needs” such as safety, comfort and interactivity are increasingly seen as “minimum requirements” rather than areas which provide competitive advantage. Internationally there is a growing awareness that design can no longer concentrate on functionality or even interaction, but must focus instead strongly on matters of experience and meaning. The aim of this chapter is to present a review of the need for design for meaning and of developments in the field.

21st century changes in socio-cultural context

The sophistication of 21st century technologies and the complexity of 21st century social behaviours are reshaping the way people live and interact with designed artefacts (Norman 2023, Wallman 2015). For example, the integration of new ubiquitous technologies necessitates new behavioural approaches and new design methodologies (Follett, 2015; Amershi et al., 2019). Cultural, social, and environmental shifts have prompted anthropologists, designers, economists, psychologists and sociologists to reassess their approaches to shaping expectations and meanings in relation to commercially designed artefacts. (Douglas and Isherwood, 2021).

In the luxury automotive sector, for example, companies are adapting to people’s shifting sense of 'luxury', prompting a re-evaluation of their strategies (Stylidis et al., 2016). Once defined mainly by exclusivity, aesthetics and heritage, luxury now depends more on perceived quality and on strategic communication to resonate with people’s desires and support people’s sources of meaning. The current focus often lies on engaging people in value creation through human-centred design approaches (Gkatzidou et al., 2021).

Factors like the pandemic (Contreras-Contreras, 2023), the expansion of globally interconnected digital systems and the availability of IoT artefacts (Harper et al., 2008) have reshaped interactions beyond face-to-face encounters leading to expectations of more rapid and more personalised services (Saniuk et al., 2020). Artificial intelligence infiltrates homes through products like voice assistants, altering daily living environments and experiences (Spallazzo and Sciannamè, 2022). And technologies such as social robots (Dörrenbächer et al., 2022) and autonomous road vehicles (Giacomin, 2022) are acquiring new symbolic roles which influence the way people communicate, create identity, establish relationships and build rituals and habits.

Though often subtle rather than abrupt, the shifts are influencing behaviours and meanings (Stolley, 2005).

Designed artefacts often carry cultural and social meanings, underlining their non-neutrality (Krippendorff, 2006). And in a multicultural world there can be conflicting meaning systems which evolve within a community, shaping the meaning of the artefact over time (Wenger 1998). Several authors (Crilly et al. 2004, Krippendorff 2006, Sudjic 2008, Siefkes 2012) have highlighted how ambiguity can lead to personalised and contextualised meanings that differ from the designer's original intent. And others (Williamson 1978, Bal and Bryson 1991, Dourish 2001) have emphasised that an artefact's meaning lies primarily with the people who interact with it, not with the designer. Such divergences have in fact been verified by Ajovalasit and Giacomini (2019) who noted substantial differences in the meanings assigned to artefacts by designers on the one hand and by the general public on the other.

Given the ever-increasing complexity of our technologies and the ever-growing societal sophistication, it would appear that tools are needed in support of design activities for the purposes of conceiving, measuring and validating meanings.

Goals of the chapter

Despite the commercial, philosophical and sociological groundwork, ambiguity surrounds the term "meaning" in design practice. The term is often used without consideration of its exact nature or its individual components. And diverse theoretical perspectives exist in relation to its precise definition (Neuman 2006, Danesi 2007).

But despite the difficulties the meanings which people assign to their artefacts provide the answer to the key design question of why (Sinek, 2009). Thus, this chapter reviews the term "meaning". Business, economic, linguistic, cultural, psychological, and sociological perspectives are reviewed and key points are identified which are of relevance to design practice.

An operational definition of the term "meaning" in the context of designed artefacts is provided. And both a vocabulary of meaning and a Design For Meaning framework are presented. The chapter concludes with examples which illustrate the three main categories of meaning which are of greatest relevance to design.

What does 'meaning' mean?

According to standard dictionaries of the English language the word "meaning" can express at least three concepts:

- the sense or signification of a word or sentence;
- the significance, purpose or underlying truth of something;
- the motive or intention of something.

In "The Measurement of Meaning" Osgood et al. (1957) highlighted the multifaceted nature of meaning across disciplines. They delineated linguistic, psychological, and

sociological meanings, each pertaining to different aspects of language, cognition, and behaviour.

Philosopher Mark Johnson (2007) discussed how meaning manifests as differences in experiences. And anthropologists (Diller et al. 2005) have suggested that “meaning is the sense we make of reality; assigning meaning to experience is how each of us creates the story of our life and its ultimate value and purpose”.

Lakoff and Johnson (1980) proposed that people recognise, categorise, and evaluate the personal or symbolic meaning of a designed artefact based on their own interpretations, memory retrievals, and learned associations. While Murphy (2023) added that people adopt different meanings which provide different options for action based on their categorisations of their lived experiences, and the importance which those experiences assumed. Richins (1994) supported such views by suggesting that people prioritise possessions reflecting personal relevance in achieving their intended goals.

Heskett (2002) has suggested that ‘significance’ in design explains how forms acquire meaning through usage and assigned roles, often becoming powerful symbols of habits and rituals. And Baudrillard (1968) went as far as to suggest that “people value objects not for what they do, or what they are made of, but for what they signify”.

Sociologists such as Csikszentmihalyi and Rochberg-Halton (1981) have emphasised that designed artefacts serve as more than functional tools, acting as relational mediators that influence the long-term aims, objectives, and behaviours of individuals or groups. The sociological meanings that artefacts play in communicating information about their owners has also been considered by Richins (1994) who noted that people are active participants in their communication system, choosing and valuing artefacts for their meaning within the cultural system. And Verganti (2011, p.384) suggested that “meaning represents the profound psychological and cultural reasons people use a product”.

Thus, neglecting the purely linguistic sense of the word “meaning”, it can be argued that people probably seek to answer two primary questions when assigning one or more meanings to a designed artefact: *“what is it?”* and *“what does it stand for?”*

Such an approach diverges from the ontological view of “meaning” as a universal entity attached to objects. Instead, it emphasises that the meanings of designed artefacts stem from their intentional use within specific contexts and communities (Zimmerman, 2009). The associations formed during interactions are collective and intersubjective (Dourish, 2001).

The operational definition of “meaning” which is adopted here is close to English language words like “motivation”, “goal”, “purpose”, “importance”, “value” and “significance”. The sense of the term which is adopted in this chapter involves the reasons why a person engages with something or someone, and the sense of purpose involved.

Categories of meaning in design

The meanings which people associate specifically with consumer products were analysed by Friedmann and Lessig (1986) who stated that “one can regard consumer behaviour as a continuum ranging from information processing to aesthetics consumption. On the one extreme we can see a logical, methodical information-processor using choice heuristics. At the other extreme we see the consumer aesthetically consuming based upon such feelings as fun, elation, and hedonic pleasure”.

And Fournier (1991) extended the logic by suggesting that consumer products can be grouped according to the nature of the consumption experience by placing them along the continuum from the utilitarian to the hedonic. He defined eight general categories of consumer meaning: utility, action, appreciation, transition, childhood, ritual enhancement, personal identity and position or role. Adopting a somewhat similar approach, Diller et al. (2005) suggested instead fifteen categories of meaning: accomplishment, beauty, creation, community, duty, enlightenment, freedom, harmony, justice, oneness, redemption, security, truth, validation and wonder.

Giacomin (2017) defined three categories of meaning for the artefacts of design. The category of "function" primarily focuses on how artefacts operate, serving practical purposes and providing capabilities. It encompasses situations where physical or informatic use is emphasised, with less regard for psychological or sociological factors. The category of “ritual” is instead mainly concerned with expressive and symbolic activity which the artefact allows or supports. Ritualistic meaning is about artefacts enabling interpersonal communication or engaging people in repeated intentional behaviours of symbolic value. The final category, that of “myth”, is about artefacts providing mostly symbolic meaning. This category does not necessarily require dedicated externally visible activity on the part of people, but instead involves the conveying of symbolism, metaphors and values on the part of the artefact.

A vocabulary of meaning in design

Research by Ajovalasit and Giacomin (2024) has established a linguistic vocabulary for constructing interview questions, questionnaires, and other ethnographic and co-design elements in relation to meaning. An analysis was performed of the contents of the major online dictionaries of the English language, of the WordNet lexical database, and of several of the major English language corpuses. By means of frequency counting, thematic coding and the use of natural language processing algorithms a series of macro-components of the construct of meaning were identified globally, and then separated into the individual components of function, ritual and myth.

This yielded 355 semantically related words and phrases and three dominant thematic groups within each category of meaning. The thematic groups ‘purpose and intention’, ‘operation’ and ‘action’ were closely associated with the concept of function. The thematic groups ‘ceremonial’, ‘habitual’ and ‘spiritual’ were closely associated with ritual. And the thematic groups ‘belief and story’, ‘fiction’ and ‘symbolism’ were closely associated with myth. Table 1 presents a summary of the results by bringing together the major dictionary definitions, the values which are implied by those definitions, the

macro-components which were identified by the analysis and Diller et al.'s (2005) fifteen core meanings.

Table 1 – Categories of meaning described in terms of major dictionary definitions, implied values and the thematic groups as found in Ajovalasit and Giacomini (2024) alongside Diller et al. (2005) core meanings.

Meaning category	Dictionary definition	Value expressed	Thematic groups of meanings	Relevance to Diller's core meanings
Function	<ul style="list-style-type: none"> the way something works or operates; the natural purpose of something or the duty of a person. 	Functional/utilitarian value	<ul style="list-style-type: none"> purpose and intention operation action 	<ul style="list-style-type: none"> Accomplishment Duty Security Validation
Ritual	<ul style="list-style-type: none"> a series of actions or a type of behaviour which is regularly and invariably followed by someone; a set of fixed actions and sometimes words performed consistently and regularly, especially as part of a ceremony or collectively. 	Symbolic intrinsic value	<ul style="list-style-type: none"> ceremonial habitual spiritual 	<ul style="list-style-type: none"> Creation Community Harmony Oneness Redemption Truth
Myth	<ul style="list-style-type: none"> a traditional story, especially one concerning the early history of a people or explaining a natural or social phenomenon; an idealised, exaggerated or fictitious conception of a thing or person; a widely held but false belief or idea. 	Social and iconic value	<ul style="list-style-type: none"> belief and story fiction symbolism 	<ul style="list-style-type: none"> Beauty Community Enlightenment Freedom Justice Truth Wonder

A design for meaning framework

Research suggests that people prioritise meanings alongside the functional benefits when shaping self-identity and worldview (Ravasi and Rindova, 2008). Holt and Cameron (2010) have for example argued that "functional benefits are social constructs, not objective facts as often assumed by economists and engineers." When people assign symbolic and social values to artefacts they perceive them as possessing enhanced functionality, quality, and trustworthiness. Barthes (1973) argued that meaning and function are connected, with function itself carrying symbolic value. In fashion, function often serves as a myth, justifying the existence of seemingly superfluous objects (Chapman, 2005). Given the polysemic nature of meaning, a framework for conceiving, measuring and validating meanings can prove useful to designers.

In fact, when considering design, innovation and strategy, Barden (2013) has suggested that successful innovation always requires a goal-based strategy which ensures relevance and provides clear signals of meaning. He argued that the meaning which a signal triggers should never be arbitrary. It should instead always be the result of the shared associations between signals and goals which evolve through social

interactions within a community. As shown in Figure 1 a brand/artefact strategy should align with consumer goals and the signals conveying meaning should activate the intended mental concepts and goals in the mind of the consumers.

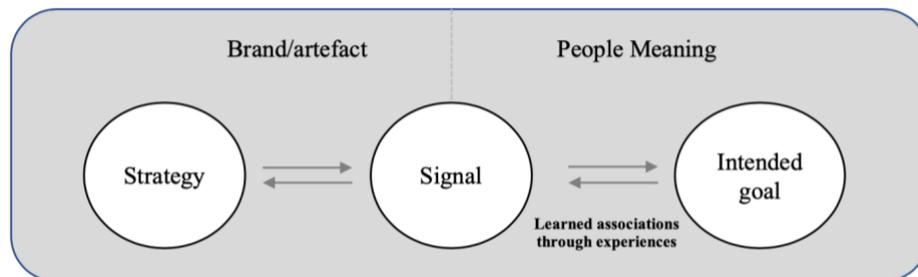


Figure 1 – Meaning construct: translating strategy of designed artefacts into signals that activate people intended goals (adapted from Barden, 2013).

Giacomin (2017) has proposed the "Design For Meaning" framework of Figure 2 which can serve as a reference for commercially active designers when dealing with such matters.

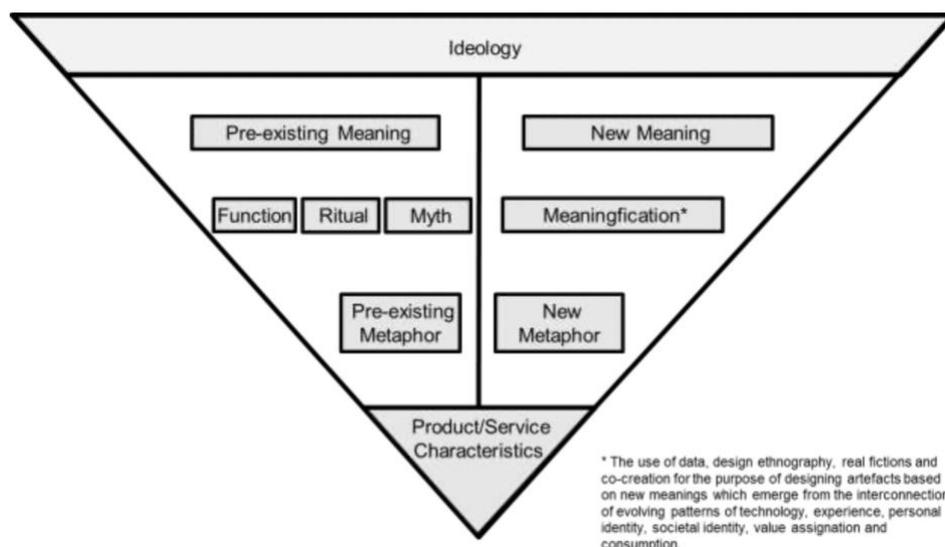


Figure 2–The Design For Meaning framework (reproduced from Giacomin 2017)

The framework can help designers to clarify, decide upon and communicate:

- the relevant corporate or brand ideology;
- the exact form of value which people are expected to perceive;
- the exact form of meaning which people are expected to perceive;
- the adherence required to an existing function, ritual or myth;
- the opportunity or need to define a new function, ritual or myth due to technological or societal change;
- the exact focal metaphor of the artefact;
- the physical, informatic and manufacturing specifications of the artefact.

The framework emphasises the need in the early stages of a design process to decide whether the new design should adhere to existing meanings and metaphors which have traditionally been associated with the technology or with the brand. Or, instead, disruptively attempt new meanings and metaphors which will likely distinguish the artefact from existing offerings. The need to invest time and effort towards the development of desired new meanings is emphasised in the framework by the presence of the term “meaningfication” which has been operationally defined as “the use of data, design ethnography, real fictions and co-creation for the purpose of designing artefacts based on new meanings which emerge from the interconnection of evolving patterns of technology, experience, personal identity, societal identity, value assignation and consumption.”

Examples of functional, ritualistic and mythical meanings

The examples discussed below can help to illustrate how artefacts of design can have functional, ritualistic or mythical meanings. Or, in some cases, mixtures of the three basic categories. While some of the examples prioritise function, others gain significance through personal associations, rituals or symbolism.

Google Maps exemplifies artefacts with functional meaning since:

- it offers a useful, usable and convenient and natural way to search for information;
- It allows a natural behaviour to operate with maps data with its drag-able interface;
- It allows for an efficient use promoting the sense of confidence for people.

The wearable Fitbit activity tracker exemplifies instead artefacts with both functional and ritualistic meanings since:

- it elicits the purpose of wearing on wrist, turning every step into data connecting them to people goal in an explicit way;
- it operates with relevant features that help people think with the evidence of data;
- it adheres to sequences of actions that foster motivation, rewards, and goal attainment, irrespective of an individual's fitness level or experience.

Self-care coaching apps such as the award-winning Fabulous promote healthy behaviours via largely ritualistic meanings. Tian et al. (2018) have for example suggested that:

- engaging in a ritual enhancing people perception of control over their calorie consumption and their selection of nutritious foods;
- provides people with a prevailing ceremonial storyline of aspiring to become the ultimate, healthiest, and most formidable version of oneself, akin to an elite athlete bringing a symbolic value to people;
- The app encourages people to adopt consistent habits over time to reinforce their healthy behaviours.

A typical automobile for personal use is an example of an artefact which has both a functional meaning as transportation and a mythical meaning as an expression of the

lifestyle and identity of its owner. Urry (2004) has for example argued that from the early 20th century onwards automobiles have been:

- the major item of individual consumption after housing which provides status to its owner/user;
- the dominant culture that sustains major discourses of what constitutes the good life, what is necessary for an appropriate citizenship of mobility and which provides literary and artistic images and symbols;
- the quintessential manufactured object produced by the leading industrial sectors and the iconic firms within 20th-century capitalism.

And, finally, a Teddy Bear (Solomon, 1990) is an example of an artefact which has a largely mythical meaning for its owner since it:

- suggests a world that looks a great deal safer and more innocent than our own;
- recalls loveable storyworld characters such as Winnie-the-Pooh;
- helps people to revisit their childhoods, escaping the burdens of adult responsibilities.

Conclusions

This chapter has noted a series of 21st century changes in technology, society and culture which are affecting people's perceptions of designed artefacts. Several voices from the research literature have been cited in relation to the changes and to the need to design artefacts differently.

Explicitly and implicitly it has been argued that product characteristics which are situated lower in Maslow's 'hierarchy of needs' (Maslow, 1943) such as safety, comfort and interactivity are increasingly perceived as minimum requirements rather than sources of competitive advantage. A position which is supported by the work of professionals such as Almquist et al. (2016) who proposed an updated hierarchy composed of the four macro-categories of functional, emotional, life-changing and social impact.

This chapter has reviewed a number of well-known interpretations of the meaning of meaning. And has proposed one in particular which has for some years now served as the basis for the work of this chapter's authors. And the results were summarised of a recent analysis by the authors which established a linguistic vocabulary for constructing interview questions, questionnaires, and other ethnographic and co-design elements in relation to meaning. The recent analyses were performed based on the contents of major online dictionaries of the English language, of the WordNet lexical database, and of several of the major English language corpuses. By means of frequency counting, thematic coding and the use of natural language processing algorithms a series of macro-components of the construct of meaning were identified globally, and when separated into the individual components of function, ritual and myth.

And this chapter has presented a "Design For Meaning" framework which emphasises the need to decide whether a new design is to adhere to existing meanings and metaphors which have traditionally been associated with the technology or with the

brand. Or, instead, to disruptively attempt new meanings and metaphors which will likely distinguish the artefact from existing offerings. Finally, this chapter has provided a small number of examples which can help to illustrate how different artefacts can have different meanings for their owners and users.

In conclusion, this chapter has argued the need for an increased attention and emphasis on the part of designers to the conceiving, measuring and validating of meaning. In the 21st century people are demanding more from their products, systems and services. And in many cases what the people are requesting is more meaning. Going forward it may prove wise to integrate tools which deal expressly with meaning into the design processes of many artefacts. For example, as Max Tegmark (2017) has suggested, "it's not our Universe giving meaning to conscious beings, but conscious beings giving meaning to our Universe."

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