What is Design for Meaning?

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Abstract

Considering the importance of meaning it is perhaps surprising to note the frequent lack of clarity about the matter in the design literature and in design practice. Concepts such as value, ideology, meaning, function, ritual, myth and metaphor are often used interchangeably, with important consequences in terms of possible misunderstanding. A review of key concepts in the discussion of artefact meaning has been performed, and several considerations of relevance to commercially active designers have been identified. The reflections are summarised as a framework which provides a tool for identifying key questions which should be answered. As part of the process of defining the framework of design for meaning the concept of “meaningfication” was established. The potential usefulness of the proposed framework is noted in relation to recent developments in the areas of value creation, business and branding.

Keywords: value, ideology, meaning, function, ritual, myth, metaphor, human centred design.

Introduction

The idea that design is a manner for making sense of things (Krippendorff,1989) is frequently discussed in professional circles, as is the idea that design involves doing philosophy with the hands (Wendt 2015). For many practicing designers the activity of design cannot be separated from the intended values and meanings of the artefact which is being designed.

Boradkar (2010) suggested that “design’s core mission is to fashion things so that we may have meaningful interactions with the world. Meanings are neither inherent properties of the things themselves, nor are they total fabrications of the human mind; they are suspended in the spaces between us and all that is around us. Meanings emerge and change continuously as people and things travel through their lives, constantly bumping into each other”.

Within market-driven economic systems the commercially active designers who develop artefacts for sale must consider the forms of value and meaning which a product, system or service may hold for its customers. It is frequently claimed that the value and meaning of a commercial offering is the actual basis of the business (Verganti, 2009). Experts from the branding sector usually concur, an often repeated statement being Aaker’s (2002) proposition that "if a brand is "packaged meaning", a slogan can be the ribbon that ties the package together and provides an extra touch".

Dittmar (2008) has suggested the “identity message of advertising” as the basis of many commercial activities (see Figure 1). In this model, economic activity is based on the promise of the transformative power of a new or additional meaning which the purchased product, system or service provides.

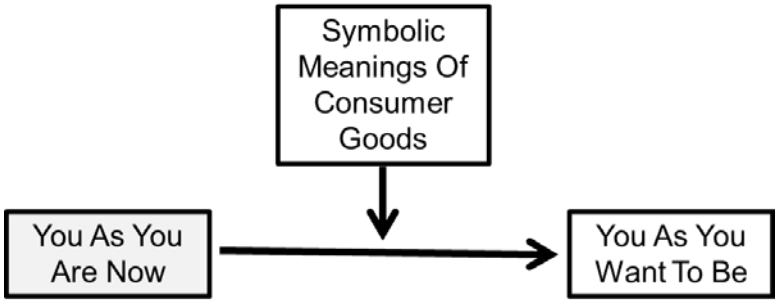

Figure 1) The identity message of advertising (adapted from Dittmar 2008).

If it is indeed true that much commercial activity is reducible to the relatively simple semiotic system described by Dittmar, then it is perhaps unsurprising that design philosophies such as human centred design should currently prove popular as ways of conceptualising, designing and evaluating the symbolic meanings involved. As described by Giacomin (2014), human centred design involves a hierarchy of considerations which places the meaning of the product (see Figure 2) at the crucial position at the top. Giacomin (2014) has described human centred design as the use of techniques which communicate, interact, empathise and stimulate the people involved, obtaining an understanding of their needs, desires and experiences which often transcends that which the people themselves actually realised.

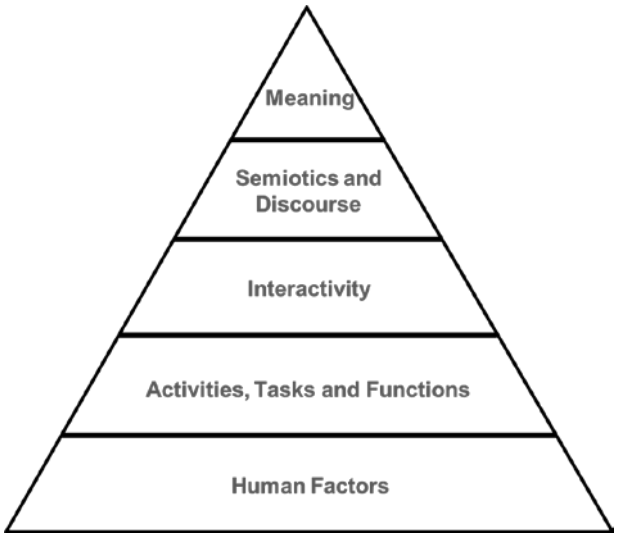

Figure 2) The human centred design pyramid (adapted from Giacomin 2014).

The material wealth of industrialised societies has in recent years lead to much debate about the meaning of designed artefacts, and about the role of meaning in the innovation processes of commercial enterprises. Numerous indicators point to a current glut of products, systems and services in people's lives, and to a trend of increased sophistication of selection on the part of the consumer (Wallman 2015). Consumers are claimed to increasingly favour purchases which are rich in emotions (Chapman 2005 ; Oatley et al. 2006), experiences (Schifferstein and Hekkert 2007 ; Shaw et al. 2010) and meaning (Dunne 2008 ; Wendt 2015). Further, many experts are pointing to meaning as perhaps the major driver of innovation at the current moment. Verganti (2009), for example, has suggested that steps forward in either the technological basis of a design or in its meaning can act as the launching point for "disruptive innovation" or "radical innovation".

Beyond the commercial considerations it can also be suggested that consideration of target meanings is important towards defining the long term role which an artefact will play in the life of its owner. The relational role of artefacts has been neatly expressed by Csikszentmihalyi and

Rochberg-Halton (1981) as “the objects which people use, despite their incredible diversity and sometimes contradictory usage, appear to be signs on a blueprint that represent the relation of man to himself, to his fellows, and to the universe”. In this view (see figure 3) artefacts are not simply functional tools, but are also relational mediators which shape the long term aims, objectives and behaviours of an individual or of a group.

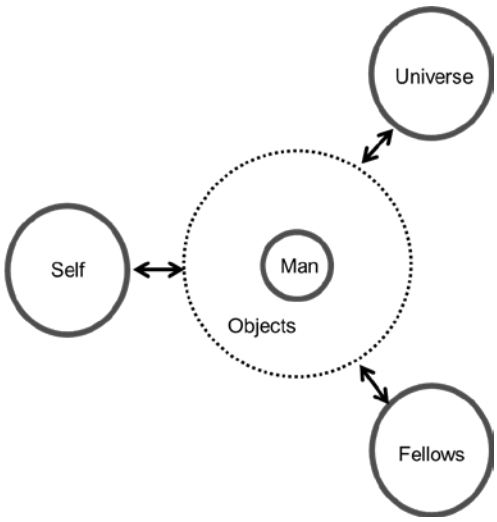

Figure 3) The relational role of artefacts (adapted from Csikszentmihalyi and Rochberg-Halton 1981)

Considering the importance of meaning it is perhaps surprising to note the frequent lack of clarity about these matters in design practice. In many websites and documents the word “meaning” is deployed without reference to the anticipated nature of the meaning and without reference to the individual involved. Further, terms such as value, ideology, meaning, function, ritual, myth and metaphor are often used interchangeably, with important practical consequences in terms of possible misunderstanding. In the words of Sudjic (2008) “design is the language that a society uses to create objects that reflect its purposes and its values. It can be used in ways that are manipulative and cynical, or creative and purposeful. Design is the language that helps to define, or perhaps to signal, value”. It would thus appear reasonable to ask that designers speak their language clearly.

The aim of this review is to draw distinctions between several concepts which are frequently used by designers. The objective is to clarify the individual definitions and to note the most obvious interrelations. The definitions of value, ideology, meaning, function, ritual, myth and metaphor were chosen for clarification. The choice was not the result of a scientific analysis of a linguistic or thematic type performed on a database, but, rather, the result of logical reflections upon the content of the research literature and upon the activities of commercially active designers.

The focus of the review was that of commercial design practice. Like any other form of human endeavour, design activity can be thought about in terms of any number of semiotic systems which are internally consistent and coherent. Aesthetics, function, creative process and several other lines of reasoning could each serve as the basis for discussing meaning. The approach taken here was to accept the importance of commercial viability and business practice. The criteria “do commercially active designers deploy the concept when describing their work ?” was applied when selecting materials.

The review is summarised by means of a framework which organises one possible sequence in which the various considerations might be dealt with, and which provides a tool for identifying key questions which should be answered by commercially active designers. The framework is intended as a holistic overview which can help to identify the most influential issues affecting the meaning of an artefact.

Value

For those designers who consider their activity to be mostly a form of self-expression, the value which may derive from the expressed thoughts and sentiments would be a source of great personal curiosity and self-reflection. For those designers who instead operate in a more commercially driven context, the value which the customers might identify in the artefact is a key commercial and economic consideration.

The search for an adequate definition of value dates back to at least Aristotle (Fleetwood,1997) who suggested the concepts of ‘‘use-value’’ and ‘‘exchange value’. One concept considers the functional characteristics of the artefact while the other reflects instead the social interactions involved in its distribution. Already in antiquity an artefact’s value was considered within the context of its cultural and economic eco-system, an approach which was to reach a high degree of sophistication in the 19th century work of Marx (1867).

Standard dictionaries of the English language (Oxford, Cambridge, Merriam-Webster and Collins) suggest that the noun form of the word “value” can express at least three possible concepts:

- the amount of money that can be received for something;
- how useful something is;
- the importance or worth of something for someone.

Considering the first of the concepts it can be noted that pricing based analysis of commercial transactions is a well explored area of economics. An example of this line of enquiry is the work of Monroe (2003) who suggested that buyer's perceptions of value are a trade-off between the quality or benefit on the one hand, and the sacrifice which is imagined to be associated with paying the established price on the other. For Monroe, the perceived value of an artefact is defined by a simple equation consisting of the perceived benefits in the numerator and the perceived sacrifice in the denominator.

Considering instead the second dictionary concept it can be observed that many studies have identified a functional or utilitarian dimension to human judgements of value. For example, Prentice (1987) notes that “if people were asked why they bought a personal computer or why they keep a diary, they would probably give answers that enumerate the functions these possessions service for them: the computer allows them to work more efficiently; the diary represents their personal values and identifies”. Functional considerations have been pervasive throughout human history, leading to all-inclusive philosophical and sociological theories such as utilitarianism which attempt to describe human agency and morality in terms of utility (Mill, 1863).

Considering the third dictionary concept it can be observed that the importance or worth which something holds for a given individual can be a complex construct. Zeithaml (1988) suggests that “a major difficulty in researching value is the variety of meanings of value held by consumers” and “building a model of value requires that the researcher understand which of many (at least of four) meanings are implicit in consumers' expressions of value”.

A further complication can be the nested nature of value chains. Gutman (1990) has suggested that “for highly involving choices, such as life insurance, automobiles, or housing, the role of values may be more obvious. But for less-involving consumer purchases where enduring involvement may be low, situational involvement may be high, thus the role of values may be less apparent”. Gutman cited the quenching of thirst, which upon first inspection is the satisfying of a physiological need, which places the values involved at the lowest level of a Maslow hierarchy of needs (Maslow,

1943). What at first appears to be a simple physiological need, however, can be driven, at least in part, by higher order Maslow needs such as personal identity or social interaction.

Several studies have defined systems of consumer value that a product, system or service may provide. Perhaps the most comprehensive is that of Holbrook (1999) which describes eight distinct types of consumer value: efficiency, excellence, status, esteem, play, aesthetics, ethics and spirituality.

Several studies have also defined systems for measuring the potentially more personal and intimate value of physical possessions. Richins (1994) described a scale of eleven considerations, or dimensions, which a possession might exhibit. Table 1 provides Richins' scale of values along with examples of supporting interviewee statements. It can be noted that in the English language the word "value" is commonly used to express a number of different roles which a possession can play in the life of a given person or in that of a given social group. While possibly of finite extent, "value" is nevertheless a complex construct with numerous dimensions.

Type of Value	**This possession is important to me because it…**
Utilitarian	… allows me to be efficient in my daily life or work … has a lot of practical usefulness … provides me freedom or independence
Enjoyment	… provides enjoyment, entertainment or relaxation … improves my mood … provides comfort or emotional security
Represents Interpersonal Ties	… reminds me of my relationship to a particular person … reminds me of my family of a group of people I belong to … represents my family heritage or history
Facilitates Interpersonal Ties	… allows me to spend time or share activities with other people
Self Expression	… allows me to express myself … expresses what is unique about me, different from others
Represents Achievement	… required a lot of effort to acquire or maintain … reminds me of my skills, achievements, or goals
Symbolises Personal History	… reminds me of my childhood … reminds me of particular events or places … is a record of my personal history
Financial Aspects	… is valuable in terms of money
Appearance Related	… is beautiful or attractive in appearance … improves my appearance or the way I look
Status	… has social prestige value, gives me social status … makes others think well of me
Spiritual	… provides a spiritual link to divine or higher forces

Table 1) Possession Rating Scales (adapted from Richins 1994).

Inspection of Richin's taxonomy finds "utilitarian" or "functional" value as the first type listed, possibly reflecting traditional design, engineering and marketing concerns regarding technological function. It is perhaps unsurprising that function should appear prominently in studies of value. A wealth of 20th century quotes such as Louis Sullivan's "form follows function" or Ferdinand Porsche's "design must be functional, and functionality must be translated into visual aesthetics without any reliance on gimmicks that have to be explained" have perhaps placed a cultural spotlight on the topic.

Perhaps less familiar are the conclusions drawn from numerous investigations in the field of product semantics, which suggest that for many artefacts the meaning matters more than the

function. This was captured by Krippendorff's (2006) axiom that "humans do not see and act on the physical qualities of things, but on what they mean to them". Such conclusions are supported by findings from other fields of endeavour such as the anthropologist Ian Hodder's (1985) well known description of the physical artefacts which are used by people as "symbols in action".

Inspection of Richin's taxonomy provides evidence of several types of meaning which deviate from what can be described as function. These further forms of value involve psychological, sociological or metaphysical considerations. And value types such as "personal history" or "spiritual" would appear at first glance to not be fully within the grasp of commercially active designers to influence.

Ideology

Standard dictionaries of the English language suggest that the word "ideology" can express at least three possible concepts:

- a set of beliefs characteristic of an individual or of a social group;
- a system of ideas which forms the basis of economic or political theory or policy;
- the science of ideas including the study of their origin and nature.

Ideologies were described by the anthropologist Clifford Geertz (1973) as ordered systems of complex cultural symbols, which represent reality and provide the maps which individuals and groups use to orientate themselves with respect to their society. This view was largely shared by Eagleton (1991) who suggested that "ideology, or culture, would here denote the whole complex of signifying practices and symbolic processes in a particular society, it would allude to the way individuals lived their social practices, rather than to those practices themselves, which would be the preserve of politics, economics, kinship theory and so on".

In the field of design Holt and Cameron (2010) have popularised the concept of "ideological opportunities". In their view societies involve systems of semiotic resources which can be brought into focus. They use the term "cultural code" to indicate a basic building block of a cultural system. The term is used to indicate anything which is capable of carrying a meaning which will be understood by members of a given group (Posner, 2003). Cultural codes can be words, images, symbols, routines, rituals, heroes, myths or any other source of information whose interpretation would be obvious within a specific culture or subculture. In Holt and Cameron's view the detection, decoding and exploitation of an interconnected set of cultural codes constitutes an ideological opportunity. Further, they have proposed that successful brands are successful, in large part, due to their systematic handling of cultural opportunities (see example of Figure 4).

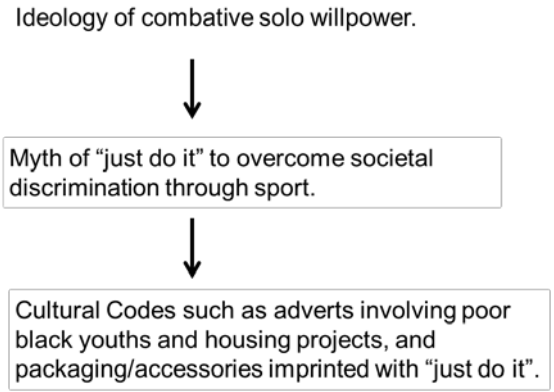

Figure 4) Example of Nike's cultural innovation (adapted from Holt and Cameron 2010).

Recent years have witnessed a growing trend of commercial enterprises mining and exploiting the available cultural resources. Ravasi et al. (2012) have noted that cultural resources are freely available to decode and interpret. In their view, value creation depends on “distinct organisational practices and processes for their systematic identification, development and integration with other organisational resources”.

Despite the growing importance of cultural opportunities in design, not all commercially active designers are fully engaged with the processes involved. Mayo (1993) has been stimulated to state that “...although some designers can accept their role as agents of ideology, often influenced without either their consent or knowledge, many find it necessary to believe the myth of omnipotence to be able to create”.

Meaning

Standard dictionaries of the English language suggest that the word “meaning” can express at least three possible concepts:

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

Early linguistic studies suggested that meaning is a form of belief which may lead to some action or effect. Grice (1957) stated that “perhaps we may sum up what is necessary for A to mean something by X as follows. A must intend to induce by X a belief in an audience, and he must also intend his utterance to be recognized as so intended”.

Sociological studies have however been less suggestive of a direct and immediate transmission of a belief. Social constructivists have usually maintained that language does not mirror reality, but instead creates it. In this view (Berger and Luckmann 1966) the transmission of a belief is dependent on the cultural system of the individuals involved. Reality is not an objective truth but instead a creation of the interaction between people. Meaning is thus a constructed and shared belief which is specific to a given culture at a given point in time.

The meanings which customers associate with commercial products was analysed by Friedman and Lessig (1986) who noted 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”.

Fournier (1991) extended the logic by suggesting that consumer objects can be grouped according to the nature of the consumption experience so as to place them along a continuum extending from the utilitarian to the hedonic. Eight categories of consumer meaning were defined. They were objects of utility, action, appreciation, transition, childhood, ritual enhancement, personal identity and position or role.

Focussing not on the categories but instead on how a meaning is achieved in practice, Siefkes (2012) identified seven common routes to “semantisation”: function, style, metaphor, individual experiences, cultural allusions, connection to social groups and specific contexts such as collectables and subcultures

Adding further sophistication to the analysis of meaning in relation to designed artefacts, Krippendorff and Butter (2007) suggested that “key to our conception of meaning is the recognition that humans create their own worlds and distinguish among their artefacts not in physical terms but according to what they mean to them, including how they enter the communications about them. Our concept of meaning involves a second-order understanding of how others come to understand and interact with our designs”. These researchers distilled their views into four theories of meaning in relation to the artefacts of design.

- *A theory of meaning for artefacts in use* which accounts for how people understand and interact with their artefacts in their own terms and for their own reasons.

- *A theory of meaning for artefacts in language* which accounts for how artefacts also occur in conversations among people, not only in user interactions.

- *A theory of meaning for artefacts in their life cycle* which accounts for how an artefact undergoes transformations from its conception to its retirement, and in that process must enrol stakeholders to form networks through which it can travel with ease and direction.

- *A theory of meaning for ecologies of artefacts* which accounts for how different species of artefacts interact with one another, compete or cooperate, and form technological complexes.

The claims of sociologists regarding the constructed nature of meaning and its relativity to a given culture at a given point in time are supported by several studies of the meaning of artefacts. For example, research by Csikszentmihalyi and Rochberg-Halton (1981) has shown that meaning can change substantially as a function of age, gender or other demographic descriptors of the people involved. Further, studies such as those of Watson (2002) or Wallendorf and Arnould (1988) have shown that the meaning associated with an artefact can change substantially as a function of the cultural context in which the artefact is emerged.

Battistella et al. (2012) have further suggested that “from the investigation of the meaning creation phase, we found that meaning is located in three places: the culturally constituted world, the company business model and the individual customer/stakeholder”. This observation suggests the need for commercially active designers to satisfy at least three potentially divergent world views.

Function

Standard dictionaries of the English language suggest that the word “function” can express at least three possible concepts:

- the way something works or operates;

- a single basic operation performed by a computer;

- the natural purpose of something or the duty of a person.

Kelemen (1999) has suggested that “a fundamental aspect of adult thought is the teleological tendency to assume that objects exist for a purpose. When seeing an unfamiliar artefact or strange anatomical part on an animal, the first question an adult will usually ask is what’s that for?”.

Despite the naturalness with which humans speak of function, however, the exact definition and philosophical extent of the concept is notoriously difficult to pin down. Mahner and Bunge (2001) suggested that the word “...does not designate a single all-purpose concept... but in fact a plurality of function concepts”. Citing the hammer, they suggested that artefacts rarely have only a single

function. Further, they highlighted the impossibility of attributing functions to inanimate objects, stating that “technological design involves the intentions, purposes, or goals of rational agents. Therefore, artefacts may be said to have a purpose, in the sense that they have been designed according to some goal of some person. Thus, it is correct to speak of the proper function of an artefact, or even of its purpose, provided one adds that this is a function or purpose by proxy”.

The suggestion that the same artefact can have multiple functions was also made by Achinstein (1983) who divided the logical possibilities into three categories: design functions, use functions and service functions. Achinstein cited the example of a brick which would have been designed to be part of a wall, which can also be used habitually as a door stop, and on occasion might be used by a small individual to reach the doorbell.

The concept of function was highly influential in 20th century architecture and design. Typical of the mind-set are the words of the Bauhaus educator Hannes Meyer who stated (Wick and Grawe 2000) that "1. sex life, 2. sleeping habits, 3. pets, 4. gardening, 5. personal hygiene, 6. weather protection, 7. hygiene in the home, 8. car maintenance, 9. cooking, 10. heating, 11. exposure to the sun, 12. services - these are the only motives when building a house. We examine the daily routine of everyone who lives in the house and this gives us the functional diagram - the functional diagram and the economic programme are the determining principles of the building project".

Nevertheless, not all experts consider function to be the decisive factor in 20th century design. Speaking of architecture, Anderson (1987) declared that “no description of function, however thorough, is exhaustive of the functional characteristics of even relatively simple activities. The inadequacy of Hannes Meyer's few factors for determining a plan cannot be solved by adding more factors. No description of function, however thorough, will automatically translate into architectural form. The more thorough the description of function, the less likely that the description will hold true even for the duration of the design process”.

Engineers have traditionally been among the professionals who have energetically articulated function, an example being the “value engineering” approach (Miles, 2015) developed in the 1940s. Driven by wartime shortages, the approach balanced manufacturing performance characteristics (functions) against their associated economic cost. The functions were two-word statements consisting of a noun and a verb, which could be further subdivided into similar noun-verb statements of sub-function. The abstracting away from physical detail to the performed action provided a way of optimising manufacturing which avoided the pitfalls of individual component or operation complexity.

Function-based descriptions are today a staple of engineering design with several taxonomies of component or system function in use. One of the most influential is that of Pahl and Beitz (1988) which lists five types of function and three types of flow. A more recent and exhaustive taxonomy of engineering function is that of Stone and Wood (2000) which describes seven types of function, flow and model. Such taxonomies treat function as a simple mechanical relationship of an input to an output. As in manufacturing, these engineering design approaches abstract away from the individual component details, thus facilitating the understanding of the artefact as a whole.

Crilly (2010) has suggested that despite their popularity such transformational frames of reference do not adequately account for many common sense notions of function, such as those which people assign to fasteners, supports or guides. In everyday understanding, artefacts such as nails are said to have the function of maintaining a structure’s integrity despite having no transformational action. This issue was also noted by Maier and Fadel (2009) who suggested that “the concept of function also denotes action: the transformation of some input state to an output state. This presents a problem of description for objects which have an obvious use, but no active function transforming inputs to outputs”.

The difficulty with the physically transformative viewpoint is that it does not necessarily capture the human interpretation of what is occurring. Warell (1999) has suggested an alternative approach based on three classes of function: operative functions (transforming and controlling), structural functions (connecting and supporting) and usability functions (simplifying and exhorting). The approach combines engineering description with common sense notions of human interaction and interpretation.

Brown and Blessing (2005) have further noted that function-based reasoning tends to describe the behaviour of an artefact from the point of view of the designer, which is not necessarily the same as that of the user. They advocated the use of affordances (Norman, 1988) for describing an artefact. Along similar lines of reasoning, Maier and Fadel (2009) noted that "another difference between the concepts of function and affordance is the role of form. Whereas functions and functional decomposition are form independent (a variety of forms can perform the same function), affordances are form dependent. By definition, it is the form of artefacts that determines what they afford to specific users".

Ritual

Standard dictionaries of the English language suggest that the word "ritual" can express at least three possible concepts:

- a series of actions or a type of behaviour which is regularly and invariably followed by someone;
- a set of actions and sometimes words performed consistently and regularly, especially as part of a collective ceremony;
- a religious or solemn ceremony consisting of a series of actions performed according to a prescribed order.

Most definitions involve concepts communication. The anthropologist Rappaport (1971) has suggested that ritual "is a mode of communication distinguished from other modes of communication by its distinctive codes, namely conventionalised display". And Lukes (1975) has defined ritual to be "rule-governed activity of a symbolic character which draws the attention of its participants to objects of thought and feeling which they hold to be of special significance".

The religious studies scholar Bell (1997) has instead proposed a wider view based on cultural manipulation of symbols to suggest meaning. According to Bell the essence of ritual is not the action performed, but, rather, the symbolic meaning suggested. Six characteristics of ritual were proposed: formalism, traditionalism, disciplined invariance, rule-governance, sacral symbolism and performance.

Doty (2000) has drawn attention to the embodied nature of ritual acts by stating that "the human body itself constitutes an important means of communicating. Its postures, its inborn responses to stimuli, its moods and beauties, its positions in social intercourse: all these may be used in the communicative process and all are utilised in myths and rituals".

Fournier (1991) described ritual enhancers as objects which "are associated with habituated behaviours and personal rituals, serving as mediators of valued personal experiences. The meaning of ritual enhancers is highly dependent on context; apart from the ritual, the object has little or no significance to the user". Citing breakfast, Fournier suggested that "apart from this setting, the coffee and paper hold little meaning for the user. Within the setting however, the objects are highly personal and symbolic".

Rook (1985) highlighted the importance of ritual in commerce by noting that “ritual behaviour often involves the extensive exchange of goods and services which are often consumed at dramatic, ceremonial, or even solemn occasions”. Following the example of Levy (1978), Rook (1985) suggested five primary sources of ritualistic behaviour and meaning: cosmology, biology, individual aims and emotions, group learning and cultural values.

McCracken (1990) has suggested four types of ritual in relation to consumer goods: exchange rituals, possession rituals, grooming rituals and divestment rituals. According to McCraken, the behaviours provide a means for transferring meaning from one or more consumer goods to individuals.

Finally, it has frequently been emphasised that pre-existing rituals are not the only resource available to commercially active designers. The act of design itself often leads to artefacts which stimulate new ritualistic practices. Stephenson (2015) has suggested that rather than speak of ritual, which suggests something fixed and stable, it is preferable to speak instead of ritualisation, which is the process of stylisation and formalisation by which instrumental behaviour becomes symbolic and communicative. Many consumer products, systems and services can be claimed to formalise and stylise customer behaviour.

Myth

Standard dictionaries of the English language suggest that the word “myth” can express at least three possible concepts:

- 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.

Mircea Eliade (1963) suggested that a myth is a story which involves a feat so exceptional as to turn its subject into a superhuman figure. In this view myths are considered to be narratives which help people to make sense of origins, existence and future. For Eliade, myths “provide models of human behaviour and give meaning and value to life”.

Levi-Strauss (1955) emphasised the depth and complexity of myths. In his view (2013) all myths provide a logical model for overcoming contradictions or paradoxes, highlight universal characteristics of our social environment, reveal universal human cognitive processes and are holistic in nature.

One of the most complete descriptions of myth was that of Doty (2000) who suggested seventeen common characteristics. Of particular relevance to design practice are those of being stories, being culturally important, involving emotion, participation and conviction, and conveying the political and moral values of the culture.

The role of myths in helping to make sense of situations was the focus of Freilich et al. (1975) who suggested “given that a purpose must be assumed for myth, what is it? Myth's central purpose, I believe, is to provide certainty: to explain how things begin, how they end; to resolve paradoxes, dilemmas, and contradictions of all kinds”. In this view myths are navigational maps in story form.

Levy (1981) has suggested that “if we take the idea that myths are ways of organising perceptions of realities, of indirectly expressing paradoxical human concerns, they have consumer relevance because these realities and concerns affect people's daily lives. The issues of male/female,

nature/culture, and high/low, for example, are not reserved to story-telling occasions about kings and shepherdesses but are also being acted out in everyday behaviour". Levy and others have suggested the benefits of harnessing myths as rally points for design.

The leveraging of myths has been suggested to be of particular concern to those designers whose projects involve heritage brands. Dion and Borraz (2015) have noted that luxury brands create myths, particularly regarding the places which are at the heart of their history and identity. Further, they have suggested that luxury brands sacralise their institutions through rituals and myths in much the same manner as religions. For Dion and Borraz, a heritage brand which deviates substantially from its own myths does so at its own risk.

Metaphor

Standard dictionaries of the English language suggest that the word "metaphor" can express at least three possible concepts:

- an expression often found in literature that describes a person or object by referring to something that is considered to have similar characteristics to that person or object;
- a figure of speech in which a word or phrase is applied to an object or action that it does not literally denote, in order to imply a resemblance;
- a thing regarded as representative or symbolic of something else.

Metaphor is a manner for making a comparison of some type between objects, people or ideas. Most frequently the comparison is between something simple or familiar on the one hand and something more complex or unfamiliar on the other. Possibly the most frequently cited description of metaphor is that of Black (1955) which consists of seven formal requirements:

- a metaphorical statement has two distinct subjects a "principal" subject and a "subsidiary" one;
- these subjects are often best regarded as "systems of things" rather than "things";
- the metaphor works by applying to the principal subject a system of "associated implications" characteristic of the subsidiary subject;
- these implications usually consist of "commonplaces" about the subsidiary subject, but may, in suitable cases, consist of deviant implications established ad hoc by the writer;
- the metaphor selects, emphasises, suppresses, and organises features of the principal subject by implying statements about it that normally apply to the subsidiary subject;
- this involves shifts in meaning of words belonging to the same family or system as the metaphorical expression; and some of these shifts, though not all, may be metaphorical transfers;
- there is, in general, no simple "ground" for the necessary shifts of meaning - no blanket reason why some metaphors work and others fail.

Metaphors can be classified according to the nature of the comparison being made between the principal (or target) concept and the subsidiary (or source) concept. The most extensive analysis of linguistic metaphors is that of Lakoff and Johnson (1980) who defined three major categories: ontological, orientational and structural.

An ontological metaphor is one in which something abstract such as an idea or an emotion is compared to something more concrete such as a substance, object or person. Phrases such as “he is in love” or “life cheated him” are examples of ontological metaphors.

An orientational metaphor involves instead a spatial arrangement such as up-and-down, front-and-back or in-and-out. Orientational metaphors assign direction and allude to priority, thus they serve to organise concepts. As Lakoff and Johnson noted, many concepts such as good, bad, happy, sad, positive and negative are orientated. In most languages for example the word happy is associated with the upward direction while sad is associated with the downward direction, as in the phrase “I am in high spirits” or “I fell into depression”.

A structural metaphor is one in which a complex concept is described in terms of a simpler concept in order to provide an intuitive way of thinking about the complex concept. Structural metaphors act as focussing tools. A phrase such as “argument is war” is an example in which it is suggested that the concept of “argument” can be thought about or analysed in a similar manner to that of “war”.

The importance of metaphor in design was noted by Casakin (2007) who suggested that “design is a complex and ill-structured activity, where problems cannot be solved through the application of algorithms or operators”. In Casakin’s view, metaphors guide reasoning and assist designers to think unconventionally by helping to capture important concepts, goals and requirements.

The role of metaphor in the design of tangible user interfaces was investigated by Celentano and Dubois (2014) who defined three measures of transfer from a source concept to a target interface: coherence, coverage and compliance. Coherence was defined as the degree of transfer of both the structural arrangement and its functional capabilities. Coverage was instead defined as the number of source characteristics which are achieved in the target interface. The third criteria, compliance, was defined as the degree to which the affordances which people perceived from the interface were of the same type as those which people would expect from the metaphor source.

In relation to computer interfaces in general, Carroll and Mack (1999) suggested that well communicated metaphors stimulate the user’s active self-generation of a mental model of the interface as shown in Figure 5. These researchers highlighted the ability of design metaphors to draw a user’s attention to the most critical elements of the interface.

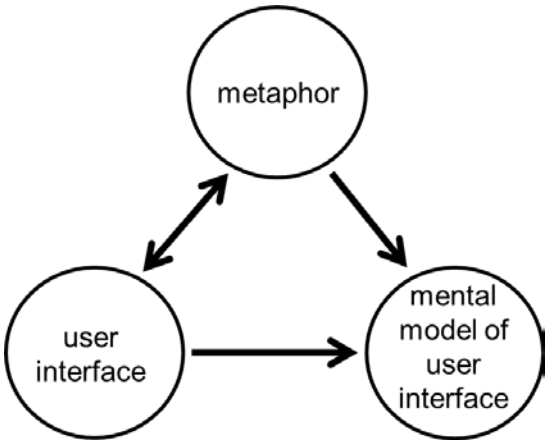

Figure 5) Metaphor as a mediator of the mental model of a computer interface (adapted from Carroll and Mack, 1999).

Focussing on product design, Cila et al. (2014) have suggested two characteristics which can be considered when searching for metaphor sources: salience and relatedness. In their view

“salience” refers to the purity of the structure which the source offers. Choosing the automotive tyre as the metaphor source for the automotive steering interface can be considered an example of such purity. The shape and motion are simple, and the relationship between the shape and motion would be expected to be obvious to most people. Designing a round steering wheel which is rotated to control the direction of the car is thus an obvious choice of a “salient” metaphor. In the view of Cila et al. (2014) the term “relatedness” refers instead to the conceptual closeness between the chosen source and the target artefact. A metaphor source such as an automobile would be close to a target artefact of a van, but relatively far from an artefact such as a chair or lamp.

Designing for Meaning

The preceding sections have reviewed the literature relative to the most frequent considerations which arise during any process which involves designing an artefact with its meaning in mind. The designer would be expected to clarify, decide upon and communicate the following at some point in the process:

- the relevant corporate or brand ideology;
- the form of value which the customer is anticipated to derive from the artefact;
- the meaning which the artefact is anticipated to provide or facilitate for the customer;
- the adherence between the artefact and some existing function, ritual or myth;
- the opportunity or need to define a new function, ritual or myth due to technological or societal change;
- the focal metaphor of the artefact;
- the physical, informatic and manufacturing specifications of the artefact.

While not exhaustive of all possible considerations, discussion of the above would be expected to provide a minimum amount of clarity regarding the meaning of many common artefacts. These considerations can be thought of as a set of questions which require answers, and as neatly stated by the sociologist Karl Mannheim (1936) “behind every definite question and answer is implicitly or explicitly to be found a model of how fruitful thinking can be carried on”.

Reflection upon the findings of Richins (1994) and others suggests that the value assigned to an artefact by an individual or by a group can be of a type which may be beyond the designer’s ability to control. Value types such as “represents interpersonal ties”, “symbolises personal history” or “spiritual” can sometimes be facilitated by the artefact’s design, but are often personal in nature. Reflection upon the findings of Fournier (1991) and others suggests that also the meaning assigned to an artefact by an individual or by a group can be of a type which is beyond the designer’s ability to control. Meaning types such as “objects of appreciation”, “objects of transition” and “objects of personal identity” are often personal in nature.

For current purposes a judgement has been made that while the value of many artefacts can be highly personal, the meaning of those same artefacts is often highly sociological in nature, thus more within the control of the designer. The position being proposed here is that a commercially active designer will most likely find it easier to design for the meaning of an artefact than for the possible value which it might eventually hold for its owner.

Figure 6 collects and orders the issues which designers should consider at some point in the design process if meaning is to be prioritised. For simplicity of use the diagram has been organised with the starting point being the corporate or brand ideology (Hatch and Schultz 2008) and the terminating point being the final product, system or service specifications. While the design processes adopted by different businesses can proceed in either direction (top down or bottom up) it is anticipated that many organisations might ask the questions moving downwards due to the need to maintain brand coherence. Figure 6 is proposed as a general framework of design for meaning, with the term framework being applied in weak form to indicate an ordered collection of issues to consider.

The diagram of Figure 6 is subdivided into two sections in relation to the fundamental consideration of whether the artefact should adhere to an existing technological or societal stereotype or, instead, whether there is the opportunity or the need to define a new function, ritual or myth due to technological or societal change.

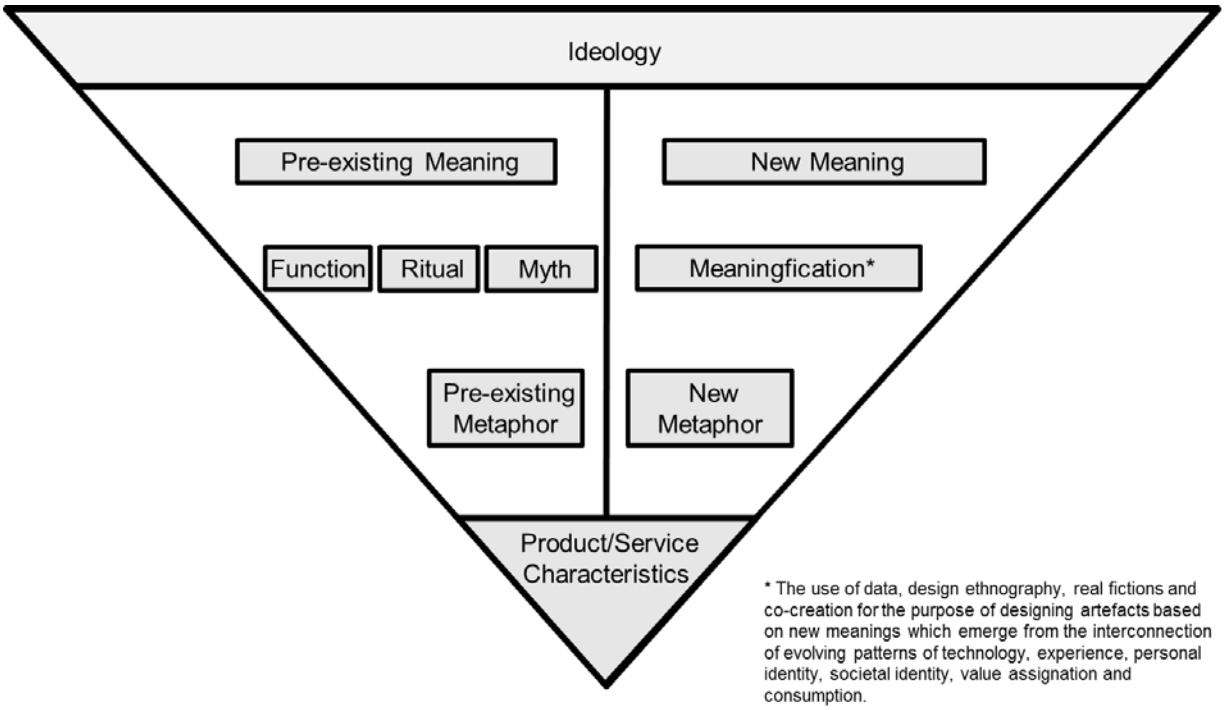

Figure 6) Framework of design for meaning.

For many fast moving consumer goods, home goods, office goods, vehicles, transport systems and elements of the built environment a deviation from an existing function, ritual or myth can be problematic. Human beings are often labelled “creatures of habit” with some justification, thus deviation from generally accepted norms and practices is a step which must be considered carefully by any commercially active designer. Deviation from an existing function, ritual or myth can on occasion even place the designer in violation of a standard, city ordinance or law. A particular case is that of “heritage brands” whose relationship with new technologies and new societal trends can sometimes prove problematic due to the need to identify new ways of maintaining and communicating the previous values and meanings.

Rather than referencing an existing meaning, there are a growing number of instances in which a business opportunity can only be achieved by exploiting a new technological capability or a new cultural code. Such cases of disruptive innovation (Bower and Christensen 1995 ; Clayton 1997) or radical innovation (Dahlin and Behrens 2005 ; Norman and Verganti 2014) are premised on the possibility of defining a new meaning for the potential customers. In such cases, the new meaning

must be articulated and the associated conversational capital (Cesvet et al. 2009) must be established.

The process of ideation, articulation and concrete manifestation of new meanings has traditionally been the dominion of the designer. Design consultancies often perform specifically this role. Increasingly, however, the process has been widened, resourced, professionalised and rendered more systematic. There is increasing evidence of the growth of what might be termed “meaningfication” in business practice. An extension of the concept of “cultural opportunities” defined by Holt and Cameron (2010), “meaningfication” can be 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.”

When a designer identifies an opportunity which interconnects several previously unrelated technological and societal codes, and articulates one or more product, system or service concepts which address the opportunity, the process can be described as one of “meaningfication”.

Commercial artefacts which are the result of meaningfication include products from the wearables sector which combine the initially unrelated topics of “micro-computer”, “fashion accessory” and “health awareness”. Recent examples of smartshoe, fitness tracker, hearware and biovest are artefacts of meaningfication which are developing into established stereotypes. In time the new business opportunities can develop into societally recognised functions, rituals or myths, but have been initially launched as hybrids involving previously unrelated technological and societal codes.

Commercial services which are the result of meaningfication include examples from the online marketplace sector which combine the initially unrelated topics of “estate agency”, “travel agency” and “social network”. Recent taxi, home and other access-economy services are examples of meaningfication and radical innovation in which the interconnection of previously unrelated technological and societal codes lead to new ways of thinking by the consumer. A fundamental characteristic of meaningfication as defined here, which is shared with the concept of radical innovation, is that the customer is implicitly invited to think differently about the opportunities and value propositions which are on offer.

As an example of one possible use of the ordered collection of issues provided by the framework of Figure 6, a hypothetical business may perform an ethnographic survey of customer views as part of an initiative to develop a product which introduces a new material, sensor or algorithm. In such a case the ethnographic activity is likely to identify several interactions which can each be classified into one of the three basic forms of meaning defined by the framework (function, ritual or myth). Comparison of the capabilities of the new material, sensor or algorithm to the forms of meaning would suggest whether an existing product meaning can be leveraged or whether instead further time and effort must be directed towards the definition and validation of possible new meanings (meaningfication). The need to decide whether an opportunity is most consistent with an existing meaning or instead with a new meaning is a key feature of the framework, and a key business concern. In addition, integrating the full set of issues defined by the framework of Figure 6 into each stage of the design process adopted by the hypothetical business would logically be expected to increase the probability of finalising design metaphors which are consistent with the brand characteristics and with the brand values.

Discussion

A review was performed of key concepts involved in design for meaning, and several considerations of relevance to commercially active designers were suggested. The proposed summary framework contains several familiar concepts which are discussed in design circles, and

should be viewed as means for bringing issues into focus and for stimulating clarifying conversations at any point in a given design process.

Perhaps the least obvious aspect of the framework is the choice of items which are proposed as bridges between the global meaning of an artefact and the specific metaphor which is deployed by the designer. Three main forms of pre-existing meaning are included in the framework. Each involves thinking and dialogue which focuses mainly, though not exclusively, on one specific consideration to optimise.

The category of “function” is intended to include all those questions which relate to the most obvious physical or informatic use of the artefact. The category is meant to reflect those cases in which some use is acting as the focus of attention, with less attention being paid to psychological or sociological considerations. The category of “ritual” is intended to include all those questions which relate to the role which the artefact can play within the repetitive actions or consistent behaviours of the customer. The category is meant to reflect all those situations in which the meaning of the artefact is closely related to action of a symbolic nature. The category of “myth” is intended to include all those questions which relate to the most obvious role which the artefact can play within the metaphysical life of the customer. The category is meant to reflect all those situations in which the meaning of the artefact is mainly symbolic, thus not necessarily requiring dedicated externally visible activity on the part of the customer.

While other categorisations are of course possible, function, ritual and myth cover a spectrum from the purely instrumental to the purely symbolic. They also align closely with three of the four categories of value defined by Smith and Colgate (2007) of functional/instrumental, experiential/hedonic, symbolic/expressive and cost/sacrifice. The categories of function, ritual and myth also align closely with the three brand value types suggested by Park et al. (1986) of functional, experiential and symbolic.

When the opportunity to design a new artefact arises, the term “meaningfication” was defined to express the nature of the questions being asked and the innovation being achieved. It is not unreasonable to consider the concept of meaningfication as an extension of the concept of “cultural strategy” defined by Holt and Cameron (2010). In their view “cultural strategy” is a process involving the mapping of a given area of cultural orthodoxy, followed by the identifying of social disruptions which can be crafted into an ideological opportunity. Holt and Cameron clarified their point of view by stating that “cultural innovation is not about futuring or brainstorming pie-in-the-sky visions of what may come to be in ten years. Rather, successful innovations repurpose existing ideologies, myths, and cultural codes which have already been embraced by some people, however dated or marginal - to address the ideological opportunity”.

The concept of meaningfication can be thought of as extending “cultural strategy” by integrating functional and utilitarian meanings, and by noting opportunities for co-creation. As defined here, the concept of meaningfication is not prescriptive in terms of the methodologies to adopt, thus it leaves ample room for the deployment of approaches such as real fictions (Dunne, 2008), collaborative organisations (Manzini, 2015) and crowdsourcing (Brabham, 2013).

The potential usefulness of the proposed framework can be extrapolated from the observations of Ravasi et al. (2012) who noted that “the cultural perspective on value creation calls for a fundamental rethinking of the system of activities a firm engages in, e.g. how to involve designers in product development, how to manage new types of knowledge stocks…it also draws attention to the fact that the collective construction of the meanings that surround symbols and artefacts makes some of the cultural resources that producers use only partly under their control. Value creation and appropriation in such resources may depend more on skilful use and dynamic updating than on control and protection of intellectual property”.

The potential usefulness of the proposed framework is also suggested by the growing popularity of business and branding tools which involve the evaluation of value and meaning. For example, the business model canvas of Osterwalder and Pigneur (2010) requires definition of the “value propositions” which are the basis of the business. In another example, the human centred business index (Hallin et al. 2016) which rates businesses on their track record of “moving beyond sustainability and leading with purpose, empathy, systems-approach and resilience” includes the evaluation of “purpose” among its four criteria.

In the current exposition no specific mode of deployment has been recommended for the framework beyond its use in compactly summarising the considerations involved. Modes of deployment have however been suggested which range from simple “issue checklist” to formal “strategy definition tool”. Detailed treatment of the applicability of the framework and detailed examples of meaningfication processes are an ongoing topic of research and are the subject of upcoming publications.

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