

THEORIZING THINGS: STATUS, PROBLEMS AND BENEFITS OF THE CRITICAL INTERPRETATION OF OBJECTS

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'There is an extraordinary lack of academic discussion pertaining to artefacts as objects, despite their pervasive presence as the context for modern life.' (Daniel Miller, 1987).

Things occupy significant portions of physical and symbolic space in our daily lives and yet their appearance in scholarly discourse is either infrequent or scattered across academic departments. Disciplines and areas of study such as industrial design, anthropology, material culture studies, engineering, philosophy, as well as media and cultural studies, do routinely examine, analyse and debate the significance of material objects, but the symbolic meanings and values ascribed to them vary widely within these branches of learning. Design studies, which has traditionally regarded objects in formal rather than social terms, can benefit by expanding its discourse to include a more socially- and culturally-rooted understanding of objects. This knowledge will serve to inform not only design studies but also other disciplines about the role of design in fashioning objects.

This essay presents an overview of how things are theorized in several disciplines, and aims to interrogate respective methodologies, promote dialogue, and suggest benefits for research as well as teaching across these fields. If objects are theorized more critically, design may become less instrumentally pragmatic, more informed by the social, political and economic concerns central to cultural and media studies. Similarly, armed with a better understanding of design, media and cultural studies might supplement its analysis of institutions, texts, audiences and technologies with a deeper consideration of technological objects and the processes of their evolution. Also, locating things within

theory locates the practices of design and production within a larger, social critique. And finally, this discourse will equip design studies with a more inclusive and robust conception of things, thereby strengthening its presence and authority in material culture studies.

CRITICAL THEORY

Max Horkheimer, often regarded as the pioneer of critical theory, also offers several suggestions that may be significant in creating a theory of objects. Critical theory could be described as 'a rigorous critical engagement with social and philosophical issues...aimed at the cross-

fertilization of research methods derived from the social sciences with a Marxist theoretical framework for conceptualizing social relations'. (Edgar and Sedgwick, 2002, p90-91).

Horkheimer (1972, p.188) offers three valuable suggestions.

1. Theory is 'The sum-total of propositions about a subject, the propositions being so linked with each other that a few are basic and the rest derive from these'. A theory of things should therefore be composed of a set of basic propositions that can help outline some of their fundamental meanings. These propositions can then be supplemented with a series of secondary ones to add detail and further develop the primary meanings.
2. 'The smaller the number of primary principles in comparison with the derivations, the more perfect the theory.' Hence, if possible, theories should be simple in their construction, but should allow application across a variety of object categories.
3. 'The real validity of the theory depends on the derived propositions being consonant with the actual facts. If experience and theory contradict each other, one of the two must be reexamined.' Empirical information should be gathered from the material world of things in order to support theoretical construction, and if the facts do not confirm the theory, it should be appropriately adjusted.

These fundamental premises should be considered in the creation of comprehensive theories of things.

THE MULTIPLE TERMS FOR THINGS

It is significant to define accurately the several terms (such as objects, things, commodities, gadgets, etc.) frequently used to describe physical goods. Though in common parlance they may be often employed to convey similar meanings, one may distinguish among them on

the basis of specific attributes and disciplinary approaches. The term 'artefact', often used in art and design and derived from Latin roots *arte* and *factum*, may be defined as something that is a result of artistic human labour. In archaeology, artefact may be used to refer to products of prehistoric or aboriginal craft to differentiate them from naturally produced ones. This may be contrasted with the term 'product' derived from Latin *productum*, which too refers to the end result of a process. Product is a term primarily employed in design (as in product design) and engineering (as in new product development), and the process being referred to is often mechanized. Inherent in this definition of products is the understanding that they exist in identical, multiple copies as they are manufactured in large quantities. A 'device' has its etymological roots in Old French *devis*, and signifies a thing created or adapted for a specific purpose. This term makes a reference to the technology embedded within it (mechanical, electronic, etc), which allows it to perform the particular tasks for which it is designed. 'Gadgets' are small tools that often possess an ingenious quality. Here, too, the presence of technology is foregrounded as a defining aspect of the thing. The term 'goods' finds usage largely in a commercial sense, and refers to merchandise, things that may be bought and sold, mostly in large quantities. 'Commodities' owe their linguistic roots to Latin *commoditas*, and their usage often amplifies not only their mercantile existence and economic function, but their presence in Marxist analysis as well. The word 'object' is derived from the Latin word *objectum* (noun form of *objectus*), which means to throw or put something before someone. In philosophy, object stands in opposition to subject, and is regularly discussed as the inanimate entity that exists distinct from people.

Perhaps the most non-discipline specific and semantically expansive term is 'things.' Its label does

not amplify any one of its attributes, thereby facilitating multiple interpretations of more or less equal value.

However, that the terms 'objects' and 'things' may be used interchangeably is obvious in Dant's definition.

'Things are objects available to our senses as discrete and distinct entities which do not count as other beings or other objects' (Dant 1999, p11). Confessing that 'things' have effectively dodged an exacting definition in spite of the attention of philosophers, Attfield (2000) defines them as, 'Objects of human production and exchange with and through which people live their everyday existence.' I would like to propose a definition inspired by Kenneth Burke's perspective by incongruity that allows the amalgamation of seemingly opposing views. Burke (1984) explains perspective by incongruity as a creative strategy in which metaphors can be used to expose relationships between objects typically ignored in language. Therefore incongruous concepts such as material and immaterial or ordinary and extraordinary can be put together to create a new understanding. This incongruity is also evident in Marx's observation that, 'A commodity appears at first sight an extremely obvious, trivial thing. But its analysis brings out that it is a very strange thing, abounding in metaphysical subtleties and theological niceties' (1992, p41).

Things may be defined as physical entities that are fashioned by human and/or mechanical labour with material and immaterial dimensions with symbolic and utilitarian value, that signify art as well as technology, that possess multiple and fluid meanings, and that are at once ordinary and extraordinary. The purpose of this expansive definition is to clarify that things operate in everyday life as examples of physical substance while signifying symbolic meanings. Any theory of things needs to accommodate this multiplicity that is inherent in their existence.

THINGS AND THEORIES IN DESIGN RESEARCH

Within design research objects tend to be generally under-theorized and their social and cultural significance in everyday life scarcely examined in detail. It is clear, though, that if designers are to understand full import of their activities, this is an area that deserves further investigation through academic discourse. This paper attempts to create awareness of a lack in design studies and lays the foundation for the development of a theoretical means of critiquing the culture of objects.

This research attempts to bring to design:

- (a) A better understanding of how objects are theorized in other disciplines
- (b) A comprehensive and interdisciplinary understanding of the meanings of objects
- (c) A higher awareness of the role of objects as signifiers of culture, human relations and society
- (d) A better understanding of the social and cultural impact of industrial design activity
- (e) A pedagogical tool for use in design practice and design education.

Increasingly visible in the work of design scholars is the conviction that the meanings of objects should be situated not only within the context of design and manufacturing activity but also within the circumstance of social and cultural activity (Doordan, 1995; Forty, 1986; Sparke, 1987; Walsh, 1989; Woodham, 1997). In these publications, the examination of designed objects often reveals the influence of the social sciences, especially anthropology and cultural studies. Margolin (2002) advocates the recognition of design as a cultural practice, and lists these major areas of study it may address: design practice, design products, design discourse and metadiscourse. Research related to the theorization of things may be located under the category

of design products, which Margolin (2002, p253) explains as, a 'Study... that emphasizes the identity and interpretation of products'.

Objects are

under-theorized in design research

For several reasons, a large volume of the discourse around objects exists in disciplines outside design. First, as a formal discipline, industrial design is relatively young and has not existed long enough to be able to build a comprehensive theoretical foundation; by contrast, allied disciplines such as architecture have a reasonably long history. Second, design has traditionally been concerned more with the production of things rather than their analysis and interpretation. Industrial design programmes in educational institutions have a commandingly larger number of skill-based and studio courses rather than critical/analytical ones. This emphasis on the teaching of design ability and skill has created the situation where students at the undergraduate level are mostly unfamiliar with the theories that could be used in the analysis of objects. Third, being a professional discipline, design has a much higher percentage of practitioners than theoreticians, a condition that directly contributes to the relative scarcity of published research within the discipline.

Understanding objects is one means of understanding culture

Through their ubiquitous presence in our material landscape, things press on us. They are present not only as visual and material elements of our environments, but they also serve as rudimentary components of our cultural lives. Inherently polysemic, they are utilitarian gadgets as much as they are frivolous excesses; they play a significant role in the formation of identity, and they are material embodiments of cultural practices. Just as archaeologists read ancient cultural practices in excavated artefacts, we can better

comprehend the consumptive nature of contemporary culture by analysing and interpreting things. One way of understanding this aspect of contemporary culture is to delineate the trajectory of the designed object. When viewed for their entire existence, objects make incredibly complex journeys from their origins as immaterial concepts in the minds of designers, inventors and engineers to their deaths into garbage bins or dispersal into recycling containers. As they interact with several stakeholders through this trajectory of production, distribution and consumption, they acquire and discard multiple meanings. Each one of these activities signifies a unique culture: that of design and manufacturing, of sharing and exchange, of possession and use, and of waste and abandonment. As Miller (1998, p20) writes so eloquently in his seminal essay *Why Some Things Matter*, such studies are a 'Highly effective means to enquire into the fundamental questions of what it is to be human within the diversity of culture'.

An incomplete understanding of objects

In the process of theorization, each discipline foregrounds specific aspects of the existence of objects. Though relevant and enlightening in themselves, each one of these disciplines provides only a partial reading of the object. And, though current research in design history and design studies reveals an increasing recognition of theories, methods and perspectives from the social sciences, disciplinary boundaries are far from permeable. In design, our present understanding of objects is only partial; it continues to be predominated more by aesthetic and technological rather than social and cultural concerns. However, the deficiency in our knowledge of things cannot be entirely attributed to the divisions among disciplines. The very multiplicity of the meanings of things that engenders such a diversity of reading also makes it difficult to create an inherently cohesive theoretical model for their interpretation and analysis.

Lack of a comprehensive theory or studying objects

The study of objects remains diverse in approach and 'eclectic in its methods. Approaches from history, archaeology, geography, design and literature are all equally acceptable contributions' (Miller 1998, p19). This diversity adds richness to the discourse, but also means that the scholarship tends to be scattered across disciplines. This situation has prohibited the development of a coherent theory for studying things grounded in a comprehensive array of concerns, methods, and approaches.

THE DISCOURSE OF THINGS IN DISCIPLINES OUTSIDE DESIGN

The following examination will clarify ideological positions adopted, methods used, examples of objects analysed and results sought by the scholars in disciplines that critique and interpret objects. As scholars often share theories and methods regardless of their designated academic

departments, examples of objects listed under a certain category may also be claimed by other disciplines. For example, though television is regularly studied under media and cultural studies, it may also appear under science and technology studies. By no means comprehensive in their descriptions, these synopses nonetheless constitute some of the key disciplinary ideas. Topical boundaries among these disciplines are permeable and elastic - the same Ur texts and scholars are often cross-referenced, modes of analysis and criticism (such as Marxist, rhetorical or semiotic) are often shared, as are emphases and viewpoints (such as consumption rather than production).

Anthropology

Of the four main branches of anthropology, archaeology and sociocultural anthropology are the two most directly involved in the interpretation of artefacts and cultures. Though traditionally associated with objects and practices of indigenous cultures and bygone civilizations, many anthropologists (Appadurai, 1986; McCracken, 1988; Miller, 2001) have turned their attention to the study of consumption and mass-produced, everyday objects in contemporary society. According to Berger (1992, p.47), 'The task of the anthropological analyst of material culture is to see the role that various objects play in the most important myths and rituals of specific cultures and subcultures and the manner in which all of these relate to dominant values and beliefs'. By viewing objects as cultural data, sociocultural anthropologists are able to better comprehend their meanings. They gather information over reasonably long periods of time using ethnographic research methods such as field observation and key informant interviewing. Using a wide array of research methods, anthropologists have more recently undertaken the examination of a growing variety of artefacts including interiors of barber shops, magazines, food, military vehicles, chairs and toys.

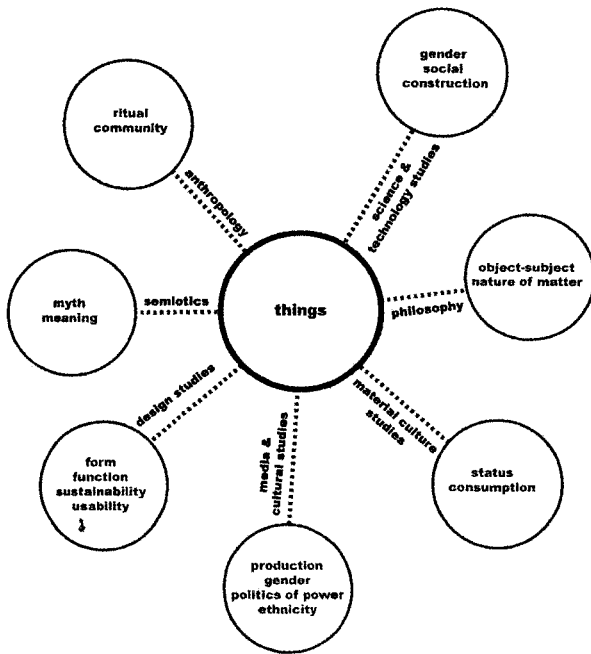


Figure 1. Disciplinary approaches to the study of things.

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Archaeology, on the other hand, may be defined as the scientific study of ancient cultures (typically preliterate) through the scrutiny of the artefacts left behind. In general, archaeologists use methodologies such as excavating, sampling, aerial photography, chemical and visual analysis, nuclear dating in order to understand the artefacts of their scrutiny. For example, if found at an archaeological site, lithics and projectile points used in spears can reveal invaluable information about how past cultures managed their natural resources, the skill levels of their toolmakers and their hunting habits. Therefore, pottery, jewelry, baskets, or their broken bits, become repositories of the practices of entire civilizations.

Media and cultural studies

Cultural studies is inherently multidisciplinary; it absorbs methodologies from various disciplines, and in its analysis, it situates a wide range of cultural products within the social issues of race, gender, ethnicity, and sexuality. According to Cavallaro (2001), cultural studies may be seen as 'A cluster of approaches which - especially since the 1970s - have prompted a radical reassessment of notions of meaning, history, identity, power, cultural production and cultural consumption.' Cultural studies scholars derive their ideologies and interpretive tools from critical theory, the origins of which can be traced back to the Frankfurt School. Recognition of the politics of power is central to media and cultural studies discourse, and its critique is often inspired by Marxism, feminism, structuralism, post-colonial studies and queer theory.

A good example of a cultural studies approach is a study of the Walkman introduced by Sony Corporation in 1979. In performing a 'cultural study' of the Walkman, du Gay *et al* (1997, p2) refer to it as, 'A typical cultural artefact and medium of modern culture'. They suggest that 'Through studying its "story" or "biography" one can learn a great

deal about the ways in which culture works in late-modern societies such as our own.' A more recent text by Bull (2000, p.10) furthers the study of the Walkman by providing an account that 'Draws Critical Theory together with a more ethnographic approach tied to an empirically orientated phenomenological methodology'. Both studies situate the object within structures of society, and draw from theories that contend with everyday life, urban environments, technology and consumption. Several other cultural theorists have examined the role of objects in society using specific case studies. In his work with subcultural groups in postwar Britain, Hebdige (1988) provides an in-depth analysis of the Mods and their fascination with the Italian motor scooters, the Vespas, manufactured by Piaggio. More notable is Hebdige's *Subculture: The Meaning of Style* (1979) because of its brilliant amalgamation of theory and ethnography to study the identity of objects and musical preferences of social groups. In general, these and other cultural studies of things heavily emphasize the importance of processes of consumption, unequivocally reject technological determinism and assert that meanings are generated in use.

Material culture studies

Born out of anthropology, material culture studies may be recognized today as the one field of study that is wholly engaged with materiality and its significance in the social world. Scholars in this area have established that objects are worthy of study and their examination can help us understand associated cultural processes. In the late 1970s anthropologist Mary Douglas and economist Baron Isherwood proposed that goods are consumed not only for reasons of utility and status, but also to make 'Visible and stable the categories of culture' (1979, p59). In its socio-economic approach this book has accelerated the increasing attention seen in anthropology towards the study of goods

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and buying behaviours of their owners. In *The Social Life of Things* Appadurai (1986, p12) suggests that we should, 'Approach commodities as things in a certain situation, a situation that can characterise many different kinds of thing, at different points in their social lives'. He argues, as do cultural studies scholars, that one should take into account all the stages of the object's journey through its life: production, distribution and consumption. In another influential book, *Material Culture and Mass Consumption*, Daniel Miller (1994) develops the idea of consumption, referring to it as a positive force in the development of identity, hence reversing the usually negative critique found in Marxist analysis. It is also suggested through these and other more recent texts that our culture is progressively becoming a more material one and the study of consumption is particularly necessary to adjust the imbalance caused by the historical emphasis on production. These approaches do not view objects as signifiers of the alienation caused by modern life, but as markers of the processes by which we understand society and ourselves. As author of other groundbreaking texts such as *Material Cultures: Why Some Things Matter* (1997) and editor of the new *Journal of Material Culture*, Miller has established himself as a leading voice in material culture and has given tremendous impetus to this area of study. This work is particularly significant as it has dramatically recast consumption as a social tool used in the development of identity and a sense of self, presenting a perspective opposed to the traditional production-centric view. Material culture remains eclectic in approach and has begun to embrace various combinations of philosophical analysis, critical theory as well as ethnography.

Science and technology studies (STS)

An emerging group of scholars interested in the origins, nature and social significance of science and technology

have suggested that technology shapes society as much as it is shaped by it. 'What matters is not technology itself but the social and economic system in which it is embedded' (Winner 1999, p28). In its analysis of objects, this area of study urges us to avoid technological determinism in favour of a more socially informed reading of technology. 'The technological, instead of being a sphere separate from society, is part of what makes society possible - in other words, it is constitutive of society.' (MacKenzie and Wajcman 1999, p23) The study of science and technology has also engaged with feminism to show that gender identities should be taken into account for a full understanding of the social aspects of technology. Schwartz-Cowan's *More Work for Mother* (1983) was one of the earliest texts to open up an arena for a gender-based understanding of technology and technologists, fruitfully bringing together scholarship in sociology, science and technology studies and cultural studies. These perspectives have led to the development of a more holistic understanding of domestic technologies and products such as ovens, microwaves, refrigerators, shavers etc (Attfield, 2000; Cockburn, 1992; Schwartz-Cowan, 1983; Sparke, 1995). Bijker critiques specific material goods such as bicycles, Bakelite and bulbs (1995) through a framework called 'social construction of technology' that emphasizes the role played by people in technological progress. Just as scholarship in anthropology, material culture studies and semiotics has emphasized that objects have multiple, symbolic meanings, STS scholars have made it clear that our material world is socially constructed by users rather than by the intentions of engineers and designers. Researchers in this area often conduct extensive observations and use surveys, interviews and questionnaires in the homes of people to comprehend fully the relationship between the domestic and the technological.

Semiotics and product semantics

Though not defined as a discipline, semiotics deserves attention as a widely practised method that appears often in the analysis of objects. 'Semiotics is concerned with everything that can be taken as a sign. A sign is everything which can be taken as significantly substituting for something else'. (Eco, 1979) This definition by Eco outlines the primary concerns of semiotics with signs and the process of signification. Pioneered by Swiss linguist Ferdinand de Saussure and American pragmatist Charles Sanders Peirce, semiotics may be understood as an area of study as well as a method of analysis. As a method, it is widely used in the investigation and interpretation of the meanings of texts (which could include images, objects, as well as media). Of particular significance is the work done by French social critic Roland Barthes (1957), exemplified in his eloquently written *Mythologies* in which he theorizes things such as plastic, margarine, the Citroen DS, soap and other goods in circulation in France during the post-war years. His goal was to expose the myths surrounding these items, thereby uncovering their true meanings. Building upon Saussure's triad of the sign, signifier and signified, Barthes introduces the concept of myth, a second order semiological system that robs language of its primary meanings. In his discussion of polysemy, he unveils the ambiguous nature of the signifier to show that any given signifier may have multiple signifieds, suggesting that texts and objects can and do possess multiple meanings. His approach of decoding meanings of texts as well as non-textual objects and practices signalled a substantial shift in the way everyday objects were conceived in theory. Barthes set in motion a paradigm shift by assessing objects not only as social symbols but also as myths and signs.

Following Marx and Barthes, Baudrillard (1996, 1981) offers a cultural critique of the role of commodities in a consuming society by emphasizing symbolic and sign

values of form and function, the language of brands and the seductive and manipulative qualities of advertising. Though he relies on the foundation of a Marxist view of political economy, semiotics as well as sociology, his critique of objects is composed around linguistic rather than social structures. In his study of consumption, Jean Baudrillard locates objects simultaneously within semiotics and political economy. Marx viewed commodities from two distinct perspectives, which he referred to as use-value (utility) and exchange-value (tradability). Baudrillard overlays Marx's commodity system with structural semiotics by adding symbolic and sign value. The meanings of things, to him, depend entirely upon the process of signification - a table, for example, exists only if it is designated. In the early 1980s, several designers used semiotics as a stepping-stone towards the development of product semantics. It was defined as 'the study of the symbolic qualities of man-made forms in the cognitive and social contexts of their use and the application of the knowledge gained to objects of industrial design' (Krippendorff and Butter, 1989). Product semantics functioned as an analytical instrument and as a tool for generating new product forms. Its influence, however, was short lived; it was perceived as a style rather than a generative/interpretive method and it fell out of favour by the end of the 1980s.

SOME LIMITATIONS AND IMPACTS OF KEY IDEAS/DISCIPLINES

Though the framework of questions and methods that each discipline constructs to study things provides a unique perspective and helps uncover specific meanings, it may also operate as a bias and impede the generation of more comprehensive critiques. As anthropology typically examines social meanings generated by artefacts that have already entered circulation within specific social groups,

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it tends to focus more on processes of consumption (use) rather than production (design and manufacturing). And though with the growth of material culture studies anthropologists are expanding their field of study to include mass-manufactured goods in urban exchange systems, traditionally they have produced cultural critiques of the material possessions of indigenous and often isolated cultures through extended ethnographic research. Drawing upon Marxist theories, cultural studies scholars critique objects as products mediated by the political structures of society, in the process often exposing the hegemony of capitalist production. This approach, in turn, has been criticised as being heavily production-centric, because it treats humans as cultural dupes controlled by larger organizations. Although cultural studies does expose the heavy-handed strategies often employed by corporations, it fails to recognize the power exercised by consumers through choice. More recent studies, however, have acknowledged that consumption could be a form of self-development. Some texts have also explained acquisition of goods as stylistic resistance to dominant cultures, and as a means of undermining and subverting power structures rather than acquiescing to them. Scholars in material culture studies are often unfamiliar with processes of design and manufacturing that govern the characteristics of objects such as aesthetics, usability and price, and their analyses are hence limited to the meanings generated in consumption. Because of their interest in issues of ritualized practice, they tend to infrequently examine formal aspects of objects (such as form, colour and graphics) through a cultural lens. Similarly, science and technology studies scholars, in their emphasis on the social construction of technology, intentionally disregard the motivations of designers and manufacturers. Though invisible to users, these intentions are at least partially responsible for the

material (and hence cultural) forms of technology. In treating objects as texts, semioticians are often limited by techniques of 'reading', and if unaided by other methods, they may generate critiques that are incomplete or one-dimensional. Although semiotics has been tremendously influential in a variety of disciplines including cultural studies and design, it has also been critiqued as being an analytical practice rather than a theory, and as being elitist because of the belief held by some that it is applicable to all things. The critique centers around the fact that the meanings of objects cannot simply be read using linguistic structures without understanding how the objects themselves are produced, distributed, shared, consumed and discarded. A theory of things should attempt to transcend these constraints that disciplinary boundaries tend to construct, so that we may fully understand the social significance of materiality in all its complexity and multiplicity.

It is clear that the groundbreaking ideas and books mentioned earlier have led to several adjustments in the academic conception of things. One area that has emerged to authoritatively claim the study of objects as its primary goal is material culture studies. Though there is disagreement whether or not material culture may be referred to as a discipline, it is quickly gaining the status of a discipline in its own right apart from anthropology and has definitely progressed beyond a field of study. The new *Journal of Material Culture* testifies to this growing interest and establishment. The study of media technologies and media objects has led to an increased awareness of cultural studies across several academic departments in universities, including design. Graduate courses in design increasingly include cultural texts in their syllabi and in design practice, there is a greater awareness of the culturally determined meanings of products. There is no doubt that more ethnographic research is being conducted in design than

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ever before, and this reflects a realization that in order to design products that are meaningful to people it is pertinent to see them as culturally produced items rather than as expressions of form and function. This steadily increasing interest in theorizing the process and products of design has led to the birth of important journals such as *Design Studies* in the late 1970s, *Design Issues* and the *Journal of Design History* in the 1980s, and *The Design Journal* in the 1990s. These journals not only reflect the growing maturity of the discipline, they have also established design as a professional and scholarly endeavour. A significant shift has also occurred in the way consumption is conceptualized - it is perceived more as a non-alienating practice that casts consumers as active creators of collective and subjective meanings rather than as powerless individual labourers. This approach has changed the academic meanings ascribed to things and has partially balanced the more production-centric, traditional Marxist analyses.

**THE PROBLEMS OF THEORIZING
FOR DESIGN RESEARCH**

The process of theorizing things is confronted with a series of challenges. The enormous quantity and staggering variety of objects represents the first challenge. Can a single theory be expansive enough to encompass this magnitude? Second, is it possible for a theory to accommodate all possible meanings and interpretations of objects, and if not, where should the boundaries be drawn to limit the discourse? And third, how does the theorist avoid problems of fetishism in this process? If unresolved, these problems will hinder the development of adequately viable theories of things.

**The diversity and specificity
of materiality**

It is important that any theory of things accounts for the prodigious diversity of materiality which includes

everything from toothpicks to computers. If this diversity is categorized into product types (such as furniture, automobiles, consumer electronics), it is equally important that a theory also accommodates the specific products contained within each of the categories (such as the Eames lounge chair, the Volkswagen Beetle, the iPod, etc). As Miller (1994) suggests, 'The generality of materiality, that is any attempt to construct general theories of the material quality of artefacts, commodities, aesthetic forms and so forth, must be complemented by another strategy that looks to the specificity of material domains and the way form itself is employed to become the fabric of cultural worlds.' Though the iPod from Apple Computer can be situated within the category of all mp3 players, it also stands apart as a significant, iconic product with unique meanings outside the general category. A theory should be able to highlight the meanings of objects that are associated with the product category as well as those that differentiate it from the rest.

The difficulty of drawing boundaries
In the construction of a theory of things, the difficulty lies in ensuring that all relevant interpretations of objects are included while excluding concerns not of relevance to design studies. This question leads to a larger and more significant one: can boundaries be constructed around a theory of things to incorporate all of its pertinent readings? Assuming that this is indeed possible, the task is then to precisely demarcate the boundaries within which a theory of things should limit itself, and to clearly specify what is outside its purview. To be effective, theorization should address all attributes of things that influence their existence and meaning in relation to people, other things, and the environment. The attributes of direct significance to design are corporeal, ephemeral, economic, social, technological, cultural, and political.

Tendency towards fetishism

Fetishism may be defined as a process in which people attribute human qualities to objects and develop obsessive attachments to them. It has been suggested that the study of materiality itself is a form of fetishism. Are we, through this process of analysis and theorization truly able to understand our culture and ourselves more clearly, or are we ultimately reducing objects to mere fetishes? Subjecting things simply to the gaze, or reducing them to 'text', 'art' or 'semiotic' may amount to mere fetishism (Miller 1994, p9). According to Marx, fetishism only helps to reproduce capitalism, turns commodities into strange things, and leads to a situation where 'things are personified and persons objectified' (Edgar and Sedgwick 2002, p72). Recent studies in material culture (Appadurai, 1986; Attfield, 2000; Miller, 1994; Dant, 1999), however, have questioned the Marxist interpretation of fetishism as an alienating, destructive practice. Instead, fetishism is critiqued as being a narrow and incomplete analysis of the practice of consumption. Such consumption-based approaches treat objects as integral elements of cultural life and emphasize that their values surpass mere use and exchange. This perspective validates the study of consumption and the theorization of objects as a necessary interpretive activity aimed at creating a more comprehensive understanding of things and therefore of people, society and culture.

BENEFITS OF THEORIZING

The limited time available for research and the pressure to reduce time-to-market often minimizes the attention devoted to critical analysis in industrial design practice. The response to under-theorization can take the form of a new comprehensive theory that draws from several disciplines, addresses the existing problems, locates things within a larger social critique and expands the discourse

of design. In spite of the impediments that may face this task, it is a worthy exercise with several benefits to design. Locating objects within theory can not only advance design's understanding of the material world but it can galvanize its self-reflexivity. Theoretical knowledge can be used prior to the conceptualization of a new product to steer the design, or after its launch to study impact. Were designers to embark on projects with some knowledge of a critical theory of things, they may find a better means of understanding the impact of their design actions. Its application also extends toward the redesigns of products that may be due for a new version or for those that may have failed after introduction. Theories of things can also perform an invaluable pedagogical function. As students learn about the creative process at undergraduate levels in industrial design, such a theoretical approach can provide them with a vantage point from which to understand the social and cultural role of objects in society. The research that students typically conduct during studio assignments can be supplemented by and organised on the basis of theory. Similarly, graduate and postgraduate students in design can employ theories of things as a means of analysing the role of objects in society.

Just as the process of theorizing things needs to draw from several disciplines, its benefits can extend across disciplines as well. Scholars in media and cultural studies can supplement their analyses of the production of media forms with knowledge of design processes. Anthropology and material culture, in their study of everyday life and culture, can gain a better understanding of the role played by design and designed goods in processes of fetishization, exchange and consumption. Theories of things generated within design can complement and build upon those in science and technology studies such as actor-network theory, social construction of technology (SCOT) and so on,

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further advancing the increasing engagement between STS and design. The growing literature in design, evidenced by the increasing number of journals and critical texts, signifies a maturing of the discipline. Scholarly endeavours directed toward the theoretical interpretation of material things can only advance this process. The several benefits listed of theorising things will contribute to the richness, robustness, diversity, and growth of the field of design studies, as well as other areas of inquiry aligned with the study of things.

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