To my late father, Hoshim Qodirov,
for his never-ending optimism

To my mother, Narziya Eshonqulova,
for her continuous moral support and prayers

To my wife, Nilufar,
for her support, love, patience, and dedication

To my children Hanifa, Humoyunbek, and Hamida,
for being curious and inspiring

At a time when so many scholars in the world are calculating, is it not desirable that some, who can, dream?

Rene Thom, mathematician

Table of Contents

Definitions

Autopoiesis refers to the "networks of productions of components that recursively, through their interactions, generate and realize the network that produces them and constitute, in the space in which they exist, the boundaries of the network as components that participate in the realization of the network" (Maturana, 1981, p.21). In the context of this investigation, autopoiesis means independent reproduction of meanings.

Communication is the holistic pattern of social interaction that comprises the following selections: information, utterance, and understanding (Luhmann, 1995). *Content of communication* refers to meanings created as the result of communicating (alternative terms are operating, interacting, observing) within the system. *Form of communication* is the result of the recursive application of a distinction to itself; communication that communicates about itself (Luhmann, 1995). In the context of this investigation, it indicates the sustainability of sustainability meaning-creation.

Distinction is the tendency of communicating meanings through referencing oppositional values, such as good/bad, true/false, sustainable/unsustainable (Levy, 1981; Spencer-Brown, 1969; Stern, 1995; Thompson & Hirschman, 1995).

Emergent is a quality that characterises a system. The system is emergent when its properties are not directly traceable in the system's elements. It means that the system's emergent qualities are irreducible to elementary relations, rather they are the result of multi-level, intensive interactions among the elements (Boccara, 2004; Eve, Horsfall, & Lee, 1997; Hofstadter, 1979; Juarrero, 1999).

Enacted environment is the manifestation of the external environment within the system, which represents a meaningful order constructed from complex social events (Weick, 1979).

External environment is a set of perturbations (social and natural events) that does not have a meaningful form per se (von Foerster, 2003).

Intentionality is the term borrowed from phenomenology. In the context of systems thinking, it refers to the systeming maxim that marketing actions imply recognition, understanding, and continuation of a particular system by a means of social communication. People learn to recognise and maintain systems in interaction and communication.

Marketing system is the unity of marketplace communications that differentiate the system in reference to the environment.

Meaning is actualised in "a surplus of references to other possibilities of experience and action" (Luhmann, 1995, p.60). In other words, meaning is a selection that is actualised within a horizon of other possible selections. Hence, not only is it a mental phenomenon, but also a systemic happening.

Observation is the active process of simplifying life-worlds, cutting distinctions, and reducing the environmental complexity into meaningful patterns; every communication embodies *self-observation*, as it delineates the self from the environment.

Purposeful expansion is an alternative concept to survival and adaptation. This concept means that a system's operation is self-regulatory. The system expands, i.e. comes forth via constructing and interpreting both its internal structure and the external environment at the same time. Alternatively, in human social behaviour purposefulness means the unity of ends and means. The means-ends dynamics is circular: ends are chosen in presupposition of means, whereas means are constructed according to ends (see Lindblom, 1958; 1959; 2001).

Survival as a general concept may denote various meanings depending on the context of use. In this work, the concept of survival represents its mainstream mechanical meaning, i.e. a system that is devoid of an internal purposeful character is shaped by external changes, and thus, becomes increasingly adapted to changing conditions.

Sustainability. Sustainability is broadly defined as meeting "the needs of the present without compromising the ability of future generations to meet their needs" (World Commission on Environment and Development, 1987, p.43). In marketing, the concept refers to the harmonious, undestructive relationship between a marketing system and its environment (van Dam & Apeldoorn, 1996). On the other hand, its meaning is nebulous (Schaefer & Crane, 2005). I concur with several researchers (Dolan, 2002; Goodin, 1999; Schaefer & Crane, 2005) who argue that sustainability is ambivalent if taken literally. However, its meaning can be investigated through *systeming* that explores how it is enacted within various contexts of marketing systems.

Systeming represents the complex of philosophical, methodological, and methodical assumptions and practices which conform to the original principles of systems thinking. I have chosen the term "systeming" to stress its broadness and dynamism in comparison to other alternatives. Systeming comprises all steps from clarifying logic to specifying research procedures. The aim was to isolate mechanical assumptions which crept into systems thinking. I found the terms such as approach, perspective, worldview, framework, or thinking to be restrictive in one or other aspects. For instance, the term "systeming approach" may denote a procedural aspect, whereas a philosophical aspect would remain excluded.

Value co-creation is the joint process of value formation among system agents, including consumers and producers (Prahalad & Ramaswamy, 2004a, 2004b; Vargo & Lusch, 2004).

Value is accepted to represent "an interactive relativistic preference experience" (Holbrook, 1994, p.27).

Chapter I: Sustainable Marketing Systems

Macromarketing

In June 5-8, 2006, the author joined an eccentric multinational group of marketing thinkers gathered in Queenstown, New Zealand, to convene a conference under the title *Macromarketing the Future of Marketing?* The general concern that was more or less shared by everyone present centered on the issue of re-introducing the macro-level thought into the marketing discipline on a broad basis. Professor Robert Nason (2006) resoundingly reinforced this in his introductory panel speech. He identified three limiting forces that needed to be addressed for ensuring the meaningful future of macromarketing:

a) the lack of independence from the managerial focused marketing discipline – the marginalization of macromarketing thought and analysis;
b) the expanding academic compartmentalization of knowledge – the loss of focus on the system;
c) the uncritical acceptance of the notion of market driven world consumption as sustainable in the future – unabated material consumption of the wealthy and emerging markets (Nason, 2006, p. 4)

Macromarketing issues were the focus of early marketing thought (Bartels, 1976; Fisk, 1981; Nason, 2006; Sheth, Gardner, & Garrett, 1988; Wilkie & Moore, 2003). Marketing gurus point out that classic mainstream marketing and macromarketing-in-the-present greatly overlap in terms of research interests (Nason, 2006; Sheth et al., 1988; Wilkie & Moore, 2003). As a matter of fact, the label "macromarketing" was introduced in the early 1980s to differentiate the tradition from micro-managerial marketing perspectives that had become mainstream since the mid-twentieth century (Fisk, 1981). However, a common view is that macro and micro-marketing perspectives are not exclusive, but complementary. A micro-problem can be studied from a macro-perspective, and vice versa (Shawyer & Nickels, 1981). The macro-perspective on vital marketing problems, especially, those of societal scope, is very important not only for managers, but also for consumers, policy-makers, and other stakeholders (Alderson, 1965; Bartels, 1970; Brown, Bell, & Carson, 1996; Crane & Desmond,

2002; Fisk, 1981; Sheth & Sisodia, 2005; Shultz II & Holbrook, 1999; Wilkie & Moore, 2003). Macromarketing research is multi-faceted. Listing all research directions in macromarketing is beyond the scope of this discussion. But several research areas are relevant in the context of the current investigation: marketing-society interactions (Emery & Trist, 1972; Fisk, 1971; Layton, 1981a; Schaefer, 2005; Sheth & Sisodia, 2005; Wilkie & Moore, 1999), marketing systems (Alderson, 1964; Dixon, 1991; Dixon & Wilkinson, 1982; Dowling, 1983; Fisk, 1967; Layton, 1981a, 1981b, 1989, 2006; Lindblom, 2001; Schaefer, 2005), marketing history (Bartels, 1976; Boulding, 1956; Shaw & Jones, 2005; Sheth et al., 1988; Wilkie & Moore, 2003), marketing future (Brown et al., 1996; Holbrook & Hullbert, 2002; Kitchen, 2003; Webster Jr., 1997), sustainable marketing and sustainable consumption (Dolan, 2002; Fuller, 1999; Hart & Milstein, 1999, 2003; Kilbourne, McDonagh, & Prothero, 1997; Peattie, 2001; Schaefer, 2005; van Dam & Apeldoorn, 1996), and consumer society and culture (Durning, 1992; Goodwin, Ackerman, & Kiron, 1997; Holt, 2002; Keat, Whiteley, & Abercrombie, 1994; Lee, 2000; Schor & Holt, 2000; Sherry, 2000; Thompson, Locander, & Pollio, 1989; Wernick, 1991).

An investigation that focuses on *marketing systems* in their wholeness pertains to the macromarketing domain (Fisk, 1981; Layton, 2006; White, 1981). Macromarketing is essentially about investigating marketing phenomena from the point of a systems perspective (Fisk, 1981; Hunt, 1981; Monieson, 1981; Shawyer & Nickels, 1981; White, 1981). In particular, Hunt (1981) states that:

> Macro-marketing refers to the study of (1) marketing systems, (2) the impact and consequence of marketing systems on society, and (3) the impact and consequence of society on marketing systems. (p.8)

Layton (2006) distinguishes between *a* marketing system and *the* marketing system. He points out that the marketing system represents an abstract generalisation of marketplace activities at broad national, global, and even theoretical levels, whereas a marketing system is taken as a specific set of market mechanisms which form in reference to a particular product or brand context. In other words, *the marketing system* becomes meaningful, when it is referenced *vis-à-vis* other general institutions in society such as economic, political, legal,

cultural systems, whereas *a marketing system* embodies differences among alternative product-related marketing systems.

Several important shifts in the understanding of marketing can be discerned in marketing theory and practice (Sheth & Sisodia, 2006). Important changes are a) a growing focus on social interactions and relationships in marketscapes (Gummesson, 1999; Varey, 2002b; Varey & Ballantyne, 2005); b) a shift toward the notion of value co-creation (Prahalad & Ramaswamy, 2004a, 2004b; Vargo & Lusch, 2004); and c) a move toward eco-system friendly and sustainable operations (Fuller, 1999; Hart & Milstein, 2003; Peattie, 2001; Polonsky & Mintu-Wimsatt, 1995; van Dam & Apeldoorn, 1996). The traditional (micro) concept of marketing is challenged by theorists, commentators, and critics, as being conducive to consumerist, wasteful, domination-minded, competitive, one-way, myopic, and eco-averse behaviour (Brown et al., 1996; Connolly & Prothero, 2003; Crane & Desmond, 2002; Dawson, 2003; Dolan, 2002; Varey, 2005b). Thus, companies pursuing socially responsible business face a dilemma of reconciling three crucial business elements: complexity of marketing systems, value/meaning co-creation, and sustainability.

It seems that a better form of marketing is *sustainable marketing* (Fuller, 1999; Peattie, 2001; van Dam & Apeldoorn, 1996). Researchers struggled to reconcile competition and self-interest based marketing ideologies and greening-sustainability motives (Fuller, 1999; Ginsberg & Bloom, 2004; Hart & Milstein, 2003; Kotler, 2004; Porter & Van Der Linde, 1995). Some researchers concluded that holistic re-analysis of people, markets, society, and environment is required to fully understand the perspectives of integration between marketing operations and sustainable development (Kilbourne et al., 1997; Peattie, 2001; Saren, 2000; Shultz II & Holbrook, 1999). Often the attempt was made to develop an account of how sustainable marketing should (not) be (Dolan, 2002; Hart & Milstein, 2003; Kilbourne et al., 1997; Schaefer, 2005; Schaefer & Crane, 2005). In their article on societal marketing and morality, Crane and Desmond (2002) argue that conceptualisation that seeks to develop a normative view of marketing is amoral and egoistic. They argue that instead of discussing what marketing should or should not be, one needs to focus on how discourse and meanings are

communicated in marketing systems. In this vein, this work seeks to explore meanings enacted in marketing systems.

Meanings of Sustainability

The purpose of this work is to to develop an interpretive theory of a marketing system, and its relation to the environment that is depicted in and shaped through interactive communicative acts of marketplace actors. Considering that the current work is essentially qualitative, based on reification of systems and their agency with tilt toward existentialism, interpretivism, and philosophical intellectualisation, the question the author would like to tackle is "*In what form (and how) is sustainability actualised in the operation of a marketing system?"*. The main phenomenon under focus is the process of how sustainability as *meaning* is enacted in operations of a marketing system. In the light of this, the following specific questions can be asked:

- What is the process of formation of a marketing system as a locus of meanings?
- How is sustainability enacted in the distinct domains of a marketing system, especially in the domains of production and consumption?
- How do marketplace actors communicate, understand, and construct the meanings of sustainability in a marketing system?
- What are the characteristics of a marketing system which make it conducive to sustainable development?

The point of academic interest lies in conceptual reconciliation of the concepts of marketing systems, society, and sustainable development. Specifically, the outcomes expected from this work a) offer an alternative view of marketing systems-society dynamics; b) provide insights into the operating of sustainable marketing systems; c) reveal the essence of self-referentiality in marketing systems; d) indicate the meanings dimension of marketing systems; and d) suggest a new perspective to interpreting communication in marketing systems.

In this work, marketing systems are conceptualised as *meaning* spaces. Traditionally, marketing systems are conceptualised in the following ways in the extant research: a) the economic form: production, distribution, and consumption mechanisms within a set national boundaries (Alderson, 1965; Layton, 1981a, 1981b, 1991; Wilkie & Moore, 1999); b) input-output and recursive feedback mechanisms at a micro-managerial level; specifically, aggregation of exchanges (Bagozzi, 1974; Dowling, 1983; Forrester, 1958; Reidenbach & Oliva, 1981); and c) a general phenomenon that unites cultural, socio-historical, and experiential aspects of society which affect marketplace behaviour (Bourdieu, 1984; Dreyfus & Rabinow, 1982; Holt, 1997; Livesey & Kearins, 2002; Scheurich & McKenzie, 2005; Thompson & Hirschman, 1995). None of these versions presents how meanings are created and communicated in a marketing system-as-whole. There is a lack of work on marketing systems as the locus of *meaning-creation*. Ironically, symbolism and meaning has an established tradition in marketing thought. It is recognised that marketing transactions involve not only physical exchanges, but also symbolic meaning-creation (Bagozzi, 1975a; Levy, 1959). In agreement with this view, Bagozzi (1974) identified several problems with the original concept of the marketing system as the aggregate of exchanges. Research suggested that the concept of exchange is devoid of a social and meaningful character (Bagozzi, 1974, 1975a, 1975b). Bagozzi noted that the concept of exchange could only be applied to situations where physical "stuff" and purely "positive value" were traded. This notion ignored various non-standard situations ranging from marketer deception to coercive and violent influence tactics to demarketing activities. Combinations of "positive, negative, or neutral actions" exercised by exchange actors were not considered (Bagozzi, 1974, p. 78). Bagozzi (1975a) conceptualised the total domain of marketing as the general background of relationships to suggest a meanings dimension. Furthermore, Holbrook (1999) argued that exchanges are consummated in parallel with value creation. He developed a typology of values which exist in the domain of marketing behaviour. Marketing behaviour in reference to marketing systems is a broad phenomenon that includes both marketer and consumer activity (Kotler & Levy, 1973). This change in emphasis opens up wide possibilities to focus on experiential and phenomenological tenets of marketing systems. One of the latest conceptual developments regarding meaningfulness in marketing systems is the service-

dominant logic of marketing (Vargo & Lusch, 2004). According to this theory, meanings (the service logic) rather than physical substance are considered to be dominant in markets.

Crane and Desmond (2002) address the problem of fundamental reconstruction of marketing on moral and ethical bases. They analysed the societal marketing concept that represented a more radical view than the traditional view of marketing. The attempt was to incorporate ethical considerations such as long-term consumer welfare, long-run consumer benefit, and society's wellbeing into traditional marketing decision-making processes. Crane and Desmond noted that almost no major conceptual progress had been made toward this direction since the early 1970s. They indicated that the field had since seen the rise of many non-traditional theories of marketing, namely social marketing, green marketing, ethical marketing, and cause-related marketing, the agenda of which tended to emphasise micro-managerial issues rather than macro-level problems. The concern was that societal marketing literature failed to contribute substantially to marketing theory and practice. They suggest that researchers need to refocus their attention from attempting to create normative articulation of what societal (sustainable) marketing should be toward developing a genuine understanding of discourses, value communication, and meanings that shape and inform marketing system actors' decisions. Crane and Desmond's suggestion that research needs to be directed toward understanding how meanings shape and evolve in the marketing/consumption locus predicts to some extent, and even lays out an agenda for the current work.

Although marketing systems research makes up a relatively significant part of macromarketing research, Wilkie and Moore (1999) suggest that research that utilises a broader macro-systemic perspective in studying "aggregate marketing systems" has almost disappeared from the mainstream marketing research. Moreover, the existing systems analyses of marketing have so far been essentially based on the deterministic, mechanical, and deductive-logical assumptions (Varey & Kadirov, 2006), even though the systems perspective has been developed to challenge these assumptions (von Bertalanffy, 1950). The constructivist source of marketing system dynamics – meanings – has been neglected. In this field (i.e.

macromarketing and marketing), there seems to be no comprehensive macro-analysis of meaning formation and evolution that takes marketing systems as a unit of work and draws broader schemes of conceptual implications, apart from some sociological research that is directed toward understanding cultural and sociological aspects of marketing (Applbaum, 2004). Paradoxically, the academic marketing research recognised the importance of meaning formation in marketing systems almost five decades ago (Levy, 1959). The macro-view of meaning/value communication and transformation in marketing exchange systems occasionally surfaced in several seminal marketing works (Bagozzi, 1975a; Prahalad & Ramaswamy, 2004b; Vargo & Lusch, 2004; Webster Jr., 1992). Some academic marketing research focused on the rise of meanings and their cultural interpretation in fragmented social loci, such as communities, consumption tribes, microcultures, and value systems (Holt, 1997; Kozinets, 1997, 1999; McAlexander, Schouten, & Koenig, 2002; Muniz Jr. & O'Guinn, 2001; Schouten & McAlexander, 1995; Thompson & Troester, 2002). This micro-cultural research, in contrast to the systeming approach advocated in this work, puts less emphasis on macro-implications to understand underlying marketing systems as a whole, and relatively neglects a moral transformational dimension. The marketing system has been the centre of focus of classic marketing research. This perspective perhaps will (should) become important in the future. Wilkie and Moore (1999) note that in the future "the aggregate marketing system should come to occupy a central position in research in the marketing field" (p.217).

Interpretive Method: Systeming

The formulation of both research problems and methods is the emergent result of operating within a research paradigm (Bateson, 1979; Kuhn, 1962). The logic of positivism would ask for step-by-step articulation of a research problem, research questions, hypotheses, relevant methods, and research outcomes (Anderson, 1983). However, a research process does not necessarily occur in such a linear sequence. A research problem cannot be understood independently from a research perspective, methods, and interpreted insights. A research method does not stand or exist prior to an interpretation process (Anderson, 1983; Schwandt, 2003; Thompson, Locander, & Pollio, 1990; Weick, 2001). Accordingly, except

the process of ordered reporting of the work, each aspect of this work is developed simultaneously through a holistic constructive observation.

In this work, a unique qualitative research approach, systeming for interpreting systemic communications, which is based on the work of several thinkers in the fields of sociology, anthropology, education, cybernetics, biology, logical mathematics, physics, and artificial intelligence is proposed (Bateson, 1991; Hofstadter, 1982; Luhmann, 1995; Maturana & Varela, 1992; von Foerster & Poerksen, 2001; von Glasersfeld, 1995). A common theme underlies research in the aforementioned fields. This theme is *systems*. This stream of systems research challenges the orthodox notions of systems conceptualisation. In a traditional sense, a system can be taken as an object that is separate from a subject, the characteristics of which are quantitatively approximated. In this sense, the systems perspective would mean the exploration, conceptualisation, and measurement of system attributes. Alternatively, a system can be taken as a social construction that comes forth in interaction among system actors. Systeming is based on the latter logic. Hence, systeming is better suited to observing systems, as positivistic methods tend to trivialise the concept to such extent that the essence of systems becomes unrecognisable (von Bertalanffy, 1950).

In this work, major philosophical (ontological, epistemological, methodological) assumptions behind systeming are provided. The model of systeming interpretation is developed and compared to existing frameworks. Specific procedures for interpretation of systems communication are also provided. This application of systeming to marketing is unique, as there seem to be no studies known to the author which take this perspective to investigate marketing. A version of systeming, Social Systems Theory (reviewed in the next section), was applied to society (Baecker, 1999; Luhmann, 1989, 1995, 2002), economic systems (Staubmann, 1997), legal systems (Luhmann, 2004), art (Sevanen, 2001), organisations (Baecker, 2006; Seidl & Becker, 2006), public relations (Holmstrom, 2005), and environmental movements (Japp, 1999; Luhmann, 1989).

The perspective taken to explore the nature of marketing systems is very important in creating new insights (Monieson, 1981; Wilkie & Moore, 1999). The

macromarketing literature specifically investigates issues pertaining to the relationship between the marketing system and the broader environment encompassing the entire natural and social world (Dowling, 1983; Reidenbach & Oliva, 1983; White, 1981). These macro-studies share a common feature: they attempt to analyse the impact of marketing decisions on the social-ecological domain of life by employing *distinctions* drawn between the marketing system and the corresponding environment. The distinctions are drawn in order to differentiate, and particularly, define the marketing system against what it is not. This process is implicit, and moreover, it is taken for granted, so the rationalistic-positivistic methods used in these undertakings fail to grasp the character and possible implications of this aspect. The result is usually a package of rationalised prescriptions about what a "good" marketing system should be (Crane & Desmond, 2002; Dolan, 2002). In this regard, Crane and Desmond (2002) pose a fair question: whose points of view and priorities, which appear as the distinctions, should we, researchers and observers, take into account? Alternatives include marketing managers, firms, state regulators, consumers, and pressure and interest groups. In contrast, systeming is based on *observing the observer*. The observer is the marketing system that draws distinctions about the self, thus reproducing its own difference from the self-defined version of the environment. Crane and Desmond (2002) refer to this kind of research process as "developing an understanding of the structures, meaning, and discourses which shape and explain marketing and consumption decision making" (p.548). In this context, the appropriate question to investigate would be: How does the marketing system proceed in determining its boundaries? The systeming approach rejects the practice of drawing boundaries through defining them in a purely analytical way; rather it focuses on the definition of boundaries enacted by a self-observing system. This constitutes the essence of systeming (Luhmann, 2004).

Knowledge enables action and living-in-action (Thompson et al., 1990; von Glasersfeld, 1995), while ignorance creates the illusion of "the" right action within marketing systems (von Foerster & Poerksen, 2001). Insights about a sustainable marketing system are expected to enlighten actors in the system about the conditions, processes, consequences, and self-referentiality of communicative acts. Hence, knowing can become equal to acting in order to create more action

options for both selves and others (von Foerster, 2003). Systeming interpretation of a sustainable marketing system attempts to reconcile two phenomena – marketing and society – thought so far to be in divergence and contradiction (Sheth & Sisodia, 2005). The systemic principles of such reconciliation can encourage society members to act wisely, while simply accepting to remain ignorant about these possibilities may lead to persistent dogmatism and inflexibility, and consequently, to self-destruction (Bateson, 1991; Sherry, 2000).

Specifically, insights generated by this work can become useful in public policy on environmentalism and sustainability. A great amount of public funds and effort is spent to promote the use of sustainable products. Global and local climate policies reimpose externalities on manufacturers and consumers in a form of monetary payments or action limits. How effective are these policies in meeting the purpose of attaining sustainable development? Macromarketing insight into the interplay of meanings in a marketing system can enlighten these procedures to some extent. The environmental and climate policy would gain much if the essence and meanings of communicative acts pertaining to environmental sensitivities in the system on the part of publics, manufacturers, and consumers are taken into consideration. Potentially, a policy action that has lost touch with the environment and become an endless self-referential rhetoric may be avoided. Moreover, there are many government-sponsored or voluntary environmental programmes which undertake to change attitudes, thought patterns, and conscious structures of society members. Redirecting the attention from meanings which reside only in “psychic spaces” to meanings in systems operation can offer a number of potential improvements in conducting and managing such programmes effectively.

Chapter 2: What is a marketing system?

Tenets of Systems Thinking

In this chapter, my main aim is to develop a viable systems logic that enables enriched insights about marketing systems-environment relations. I maintain that the sustainability of marketing systems cannot be properly explained unless an adequate view on marketing systems is attained. In pursuing this agenda, the original foundations of systems thinking are first clarified. Then, the review of systems literature is presented. The aim of this review is not only to identify how marketing systems are conceptualised, but also to discuss various views on the relation of marketing systems and their environments. In essence, I show that the original tenets of systems thinking correspond to social constructivism rather than to positivist-Cartesian views, as is conventionally assumed. A researcher needs a broad coherent theoretical foundation as reference to accomplish the critical review of available literature. Therefore, the authentic tenets of systems thinking are to be clarified first. The original foundations of systems thinking is reflected in the following theories: General Systems Theory (von Bertalanffy, 1950), Social Systems Theory (Luhmann, 1995), and Theory of Autopoiesis (Maturana & Varela, 1980).

GST

General Systems Theory (GST) offers a loose framework to think systematically about systems (von Bertalanffy, 1950). The main principles of the theory are summarised in Table 2.1. GST is based on the notion of a *whole* that cannot be fully explained through reducing it into separate cause-effect relationships. GST posits that scientific investigations should be directed toward a phenomenon in its wholeness, unity, and organisation. Von Bertalanffy (1950) argued that problems would lose relevance if concepts and their relations were studied in isolation, whereas complex life problems appeared to be those of *organization* (p.134). He considered the perspective to be radically different to the analysis of isolated parts of phenomena, that is, deductive reasoning, which he called *the mechanistic worldview* (p.165).

Table 2.1 Main Principles of GST

Concepts	Description
Wholeness (gestalt)	A change at a basic level is the result of concerted changes of all elements in the system, and also changes in subordinate as well as supraordinate systems. Its essence cannot be deconstructed into separate linear relations.
Non-summative character	No system can be built up gradually, i.e. by bringing in a part at a time; rather it comes into existence as a whole.
Progressive segregation	The system is continually differentiated into irreplaceable parts.
Progressive centralisation	The system develops a leading central part around which other parts are re-organised.
Entropy (positive or negative)	Positive entropy is a progressive shift downwards in the level of internal complexity; *negative entropy* symbolises the effect of ever-increasing complexity in living systems.
Unity with the environment	The system dissolves into the environment, and thus ceases to exist.
Hierarchical order	An element of the system represents a system in itself, so there develops a hierarchy of systems.
Allometric growth	The growth rates of the system's parts are in a constant or variable proportion.
Homeostasis	The system strives to maintain a constant structural order.
True purposiveness	The system behaves in the present in such a manner as if it knows its final state that is to be attained in the future.
Equifinality	Equifinality represents the quality of two different systems which reach an analogous constant order in spite of having totally different conditions at the beginning of transformation.

Source: adapted from von Bertalanffy, 1950

The mechanistic worldview maintains that a system is constructed through the successive incorporation of element after element into the structure of a whole. Whereas, the systems perspective propounds the *non-summativity principle* (see Table 1) that asserts that the systems either come forth as a whole or they do not exist. This is the direct consequence of *progressive segregation* that is the process through which the system transforms from an "undifferentiated wholeness to differentiation of parts...the more parts are specialized in a certain direction, the more they are irreplaceable, and loss of parts leads to the breakdown of the whole system" (von Bertalanffy, 1950, p.148). However, it is thought that a particular part of the system could become its *centre* around which other parts are positioned. In line with this argument, some researchers argued that the essence of the system was encapsulated in the relative positioning of its parts rather than in the parts themselves (Angyal, 1969). GST postulates that systems are characterised by *negative entropy* (refer to Table 2.1) that signifies progressively

increasing internal complexity that shifts the system away from dissolution into a disorder. The process of dissolution, or in other words, disintegration of the system into parts, is called *attaining the unity with the environment* (refer to Table 2.1). The environment in this case is understood as chaos and disorder, so dissolution into chaos means extinction for systems. Von Bertalanffy (1950) suggested that the element of the system may be a system on its own at the subordinate level, whereas the whole system may represent a single element at the supraordinate level. The array of systems at different levels create a *hierarchical order* (refer to Table 2.1). GST assumes that the elements of the system grow proportionally, and that each part gets its proportion from the growth of the system according to its relative size in the system. There, could, however, emerge *positive allometry* when a part grows faster than other parts thus seizing more proportion of the system's growth, or *negative allometry* when the part's differential growth decreases. It was also suggested that systems must maintain *homeostasis* (defined in Table 2.1), a steady rate, regardless of continuous structural changes, internal dynamism, and in/out flow of substances. Systems are *closed* if there is no or minimum exchange with the environment or *open* if they import, process, and export substances from/to the environment.

Von Bertalanffy's (1950) view on the *purposeful* character of systems is rooted in his conviction that the system's current behaviour depends on its final state that is to be attained in the future. He opposed views that suggested that systems were passive, inert, mechanical, and void of purposefulness. During that time, the passive nature of systems was propounded by two streams of worldviews: Darwinism and Platonism. Darwinism suggested that stochastic environmental factors shaped organismic systems through the process of natural selection, a situation in which the system's behaviour and its evolution were seen to be controlled by random environmental changes. In parallel, Platonism saw the system to be controlled by *entelechies* (vital forces) which were not susceptible to scientific inquiry (Casti, 1991). In both accounts, the system is seen as a purposeless mass that is malleable rather than creative. In contrast, GST offers an alternative notion – a dynamic purposeful flow – which constructs the system. This process is called *true purposiveness* (refer to Table 2.1). True purposiveness symbolises the internal dynamism of the system. In Von Bertalanffy's (1950)

words, it depicts “the actual behavior [that] is determined by the foresight of the goal…It presupposes that the future goal is already present in thought, and directs the present action” (p.160). It was argued that this internal purpose would drive similar systems to achieve the same final state despite having various conditions at the beginning of transformation. This process is called *equifinality*.

Despite of GST’s self-dissociation from mechanical worldviews, it was criticised with regard to its technocratism, mechanicism, and dehumanism (Hoos, 1983; Lilienfeld, 1988). However, Hammond (2003) dismissed the critiques’ arguments, while demonstrating that the points of critique are relevant to GST’s application in different fields rather than to the original views of von Bertalanffy. Concurring with Hammond’s view, I note that Von Bertalanffy’s (1969) thoughts regarding complex systems bear close resemblance to the principles of social constructivism (Guba & Lincoln, 2005). Both GST and constructivist traditions critique mechanical assumptions which are based on the dualism of mind and body (Bateson, 1979). From the constructivist perspective, it is believed that social phenomena emerge as interactively constructed multiple (local and global) realities (Guba & Lincoln, 2005). In the same vein, GST propounds that the system purposefully creates the self and its surrounding world (von Bertalanffy, 1969). GST also posits that the elements of the system are not independent of the observer (von Bertalanffy, 1950). According to GST, the system’s element a) is a (sub)system that is not the linear aggregation of separate parts; b) has different characteristics than a whole; and c) is conceptually constructed.

In von Bertalanffy’s view, the mechanistic paradigms, such as positivism, behaviourism, including the theory of evolution, are the direct consequences of a wide dominance of utilitarian principles propounded in economics. In a stark contrast to these worldviews, he argues that human systems do not have to maximise or minimise particular utilities. Rather they purposefully construct symbols, meanings, and culture. Symbolic meanings are built by a means of drawing on the available horizon of meanings, and they are a product of evolving social, cultural, historical discourses, which become available through social interaction (Scheurich & McKenzie, 2005). In this sense, it is argued that the systems are socially (co)constructed. Von Bertalanffy’s philosophy shares much

ground with the foundations of social constructivism. This discussion indicates that GST is not a theory of (quantitative) deterministic mechanisms; rather it is the theory that accounts for the qualitative nature of humanistic meaning creation, symbolism, and interaction.

Social Systems Theory

In the field of sociology, Niklas Luhmann (1989, 1995, 2002) analysed society drawing on the insights from GST. In his seminal work, *Social Systems* (1995), he described GST as a paradigm shift in a "Kuhn's sense" (p.6). Luhmann noted that the shift of emphasis was from the dialectic of *wholes and parts* to that of *system and environment*. He contended that it was problematic to conceptualise how a part, a human being, would accommodate the concerns of a whole, i.e. human society. In his view, the difficulty with the logic – *a whole is more than the sum of its parts* – was to explain the process through which the wholeness, the sum of parts and that of extra substance, was comprehended and given priority at the level of parts. Luhmann's Social Systems Theory is based on the notion of *systems differentiation*, which depicts that the system differentiates itself from the environment by a means of reducing environmental complexity. The same system is thought to become the external environment for its subsystems in a manner as much complex and uncertain as its higher level environment. This means that systems actively construct both themselves and their relevant environments (Luhmann, 1995). Luhmann argues that the elements of the system are systems in themselves, and they may possibly belong to other systems too, when viewed from other perspectives. Thus, this picture of the systems universe does not resemble the straightforward notion of the hierarchy of systems; rather it is a world of *interconnected and interpenetrating systems* which dynamically differentiate from other systems. Luhmann (1995) insists that "systems can differentiate only by *self-reference*" (p.9). This means that social systems employ and build upon system-environment differences to create self-descriptions. Thus, the external environment with all its complexity is considered to be a necessary prerequisite for *self-observation*. Self-observation occurs when the system can segregate the self from the other, while both the self and the other remain a unique perspective of the system itself. The boundaries of the social system are thought to be differences in communication and created through the development of

meanings. Luhmann views *meaning* as the product of self-referential adaptation to the complexity of the external environment. Meaning is defined as "a surplus of references to other possibilities of experience and action" (Luhmann, 1995, p.60). In other words, meaning is thought to be a *selection* that is actualised within a horizon of other possible selections. The process of circulation of system-unique meanings is called a "self-referential closure" (p.9). Hence, social systems' closedness or openness is resolved with understanding the extent to which the system self-describes itself to be integrated or separated from the environment (Luhmann, 1995).

Social Systems Theory maintains that the basic operation through which the system is self-referenced is communication. The notion of communication here is seen as comprising interactive social actions (Varey, 2002a). Distinct from the mechanistic worldview, this theory rejects the traditional conduit metaphor in representing communication (Luhmann, 1995). The conduit metaphor implies that communication is the process of *transmission* of a message from a sender to a receiver (Krippendorff, 1993). In contrast, the act of communicating is conceptualised as being an interactive, co-creational, and appreciative process to construct common meanings and experiences (Krippendorff, 1993; Luhmann, 1992; Varey, 2002a, 2004). In this way, the interactive (social) aspect of communication becomes an independent whole at the supra(meta)-level, and this wholeness is not describable by a means of discrete utterances (social actions) at a sublevel (Luhmann, 1995). According to Luhmann, communication is not simply an exchange of messages; it is the very act of existing and living. Drawing parallels to Husserl's *transcendental phenomenology* (1970), Luhmann (2006) refers to communication as a process of distinction-actualisation that *carves out* a system from its environment. The idea is that communication rebuilds the system at each moment, and successive communications comprise a network which bears meaning, thereby providing the necessary conditions for the subsequent communications to follow.

Theory of Autopoiesis

The theory of Autopoiesis was originally proposed by Maturana and Varela (1980) in reference to biological systems, specifically, organic cells. The concept

of autopoiesis refers to the systems reproducing themselves through autonomous creation and maintenance of the self-reproducing mechanisms and structures. This theory was adapted by Luhmann (1995) into the description of autopoietic social systems. Luhmann (1995) argued that social systems, much like cells, self-reproduce themselves via networks of meanings. Moreover, it is suggested that social systems complete "autopoietic turns" (Luhmann, 1995, p.9) through which they become operationally closed in their self-referentiality. This means that no operation is imported from or exported to the environment. However, Luhmann emphasises that social systems are indirectly open to perturbations in other systems' communicative structures. This would mean that a social system can only enforce internal changes in its operative domain while being triggered by the unity of all changes in the external environment.

Maturana and Varela (1992) thought that the true purposeful character of systems was reflected in autopoiesis. They argued that Darwin's concepts of adaptation, natural selection, and the survival of fittest could not explain the evolution of autopoietic living systems. The concepts were thought to be relevant to mechanical systems which do not self-reproduce and are determined by external changes. In contrast, autopoietic systems are seen to be determined by their internal structure, purpose, and processes. For them, survival would mean the purposeful maintenance of cohesion as a unity. Since the environment was thought to be the result of a system's operations, the concept of surviving would not be meaningful from this system's internal perspective. Maturana and Varela note that if a living system exists, then it is adapted, and if it ceases to exist, then it is not. So adaptation is not to be understood in terms of greater or lesser degree. Consequently, their view implies that living systems do not behave as if they are maximising their chances of survival, but rather they are driven to maintain the wholeness and congruence of their autopoietic structures and processes.

Marketing System Conceptualizations

Macro Perspective

Skeleton of science. Boulding (1956) extolled GST as "the skeleton of science" that is the overarching theoretical framework which could foster cooperation

among various fields of scientific inquiry (p.208). He proposed a typology of systems as the units of analysis which he called "individuals" (p.201). The individuals, from the simplest to the most complex, were positioned as follows: (1) static structures, (2) dynamic systems, (3) mechanisms or cybernetic systems, (4) self-maintaining structures, (5) plant systems, (6) animal systems, (7) humans, (8) social organisations, and (9) transcendental systems. In business sciences, Boulding (1956) called for acceptance of more complex individuals for analyses. His concern was that many researchers were content with the lowest level of an individual. For instance, economics still remained as "the mechanics of utility and self-interest" (p.207). Boulding doubted the ability of simple mechanical models to represent complex interdependencies. Katz and Kahn (1966) argued that social organisations (including marketing systems) could be categorised as open systems just like biological organisms. They viewed a social organisation consisting of a wide range of behavioural patterns. In Katz and Kahn's view, the structure of social systems represents a loose network of dynamic actions. They thought that social networks were very flexible. Flexible systems expand enormously or disappear totally in short time intervals. This structural contingency is called "*radical temporalisation*" of elements by other researchers (Seidl & Becker, 2006, p.16). Katz and Kahn viewed social systems as "*contrived systems*" (p.33). Contrived systems are dynamically constructed and reshaped in a chaotic way. Both Boulding's (1956) and Katz and Kahn's (1966) ideas prove that systems thinking has originally stressed social relations rather than entities (e.g. individuals, firms) or substances (e.g. goods, exchanges). Although these authors did not dispute that the basic building blocks (elements) of systems are physical entities, they argued that *dynamic relations* between elements rather than the physicality of these elements must be analysed.

Unity of market action. William McInnes (1964) defined a market system as consisting of two elements – separations and relationships – which in combination generated market potential. Accordingly, the marketing system stood for a set of market-potential-actualisation-processes. In McInnes's view, the market behaviour of individuals driven by actualisation is not simply mechanistic. It is also driven by creativity, intuition, and emergent imagination. McInnes's conceptualisation is relevant to systems thinking, especially to von Bertalanffy's

notion of anamorphosis, in terms of viewing marketing as *creative action* and emphasising *emergent, deconstructible, and unique* patterns of market behaviour. Alderson (1964, 1965) proposed the *normative theory of marketing systems*. The normative theory defined marketing as the system of external relationships of "organised behavioral systems" (Alderson, 1964, p. 94). The major types of organised behavioural systems were households, firms, and public and educational institutions. Alderson stressed that marketing systems maintain a *steady rate* (homeostatic equilibrium) in operating. However, disbalance may occur when a system experiences a *systemic illness*. The goal of a behavioural system, as Alderson put it, is to avoid disbalances which endanger the system's survival within hostile environments. Here we can see the difference between McInnes's and Alderson's conceptualisations. Alderson stresses balance, or in other words, striving toward equilibrium, whereas McInnes supports the notion of dissipativity, striving away from equilibrium. Alderson (1964) advocated the *ecological* perspective of marketing. This perspective emphasises a balance between organised behavioural systems and the encompassing environment. Being akin to the discipline of ecology that studies relationships between organisms and their environment, the ecology of marketing (or the functionalist school) emphasised the task of improving the functions of organised behavioural systems vis-à-vis their external environments. Alderson's key argument was that marketing should normatively be exercised by a behavioural system in such a way that it does not compromise its survival odds within the larger systems which it was embedded in. A constant disbalance in the organised behavioural system causes damaging effects on its environment. Hence, marketing should become a force that serves the goal of *survival* rather than the purpose of eliciting narrowly defined (in terms of the monetary units of value) responses from people.

Kelley and Lazer (1962) advocated a *managerial approach* to systems analyses. They pointed out that the systems perspective allowed managers to detect and solve marketing problems more efficiently. They thought that the facets of marketing systems which were more manageable (e.g. marketing strategies or a marketing mix) must be focused on when solving marketing problems. In their view, the emphasis should be on the effective management of the marketing system with the purpose of ensuring the efficiency of a market participant's

actions. The marketing system was conceptualised as consisting of five elements: relationships, interactions, intentionality, environmental constraints, and marketing technology. The first element comprised relationships among market institutions and actors. The second element embraced market interactions among users and providers, including competition, cooperation, innovation, and power dynamics. The next element was the intentionality of marketing action, i.e. activities backed by deliberate objectives, intentions and beliefs. Kelley and Lazer stated that the legal, economic, and social constraints defined the boundaries of the system, whereas technology available for marketers mediated the content of market action. Later, Laser (1971) revised this model. The reviewed model consisted of the following components: people and activities, information, objectives and cultural symbols, institutional structures, control mechanisms, and technological environment.

Bagozzi (1974) proposed the theory of the *systems of exchange*. He revived the Aldersonian theory of organised behavioural system and applied it to the analysis of the dyadic nature of exchange processes. The exchange system was "a set of social actors, their relationships to each other, and the endogenous and exogenous variables affecting the behavior of social actors in those relationships" (Bagozzi, 1974, p.78). Bagozzi challenged Kotler's (1972) value exchange model that considers only ideal positive situations. In contrast, Bagozzi proposed the concept of an exchange system that comprised both positive and negative social actions employed by exchange parties in order to maximise their subjective expected utility. This theory is a significant step in recognising the fact that the concept of marketing systems should be able to explain the possibility of both positive and negative actions.

In turn, Dholakia and Dholakia (1982) suggested the view of marketing as a *system of three (sub)systems*: marketing as a system of institutions, marketing as a system of actions, and marketing as a system of ideas. Regarding the first component, the concept "institution" in the marketing context, if taken narrowly, means particular market participators, such as producers, agents, intermediaries, and consumer networks. Yet in general terms, institutions may refer to "a set of contexts, conditions and rules for economic transactions" (Arndt, 1981, p.37). The

second component, marketing as a system of actions, pinpoints the practical aspect of the system. Not only institutions, but also their functions, i.e. actual actions taken by market actors, must be considered as a part of the system. The third component represents the knowledge context of market behaviour, as marketing thought is an inherent part of the marketing system (Bartels, 1976; Shaw & Jones, 2005; Sheth et al., 1988; Wilkie & Moore, 2003). Although Dholakia and Dholakia's analysis is a substantial step toward arguing about the unity of action and thought, it lacks constructionist understanding of a fundamental relation between social communication and individual cognitive processes (Luhmann, 1995).

Several researchers quantified marketing systems within national borders (Layton, 1981a, 1981b, 1989, 1991; Pirog III, 1991; Sybrandy, Pirog III, & Tuninga, 1991; Sybrandy & Tuninga, 1991; Tuninga, 1991). Their objective was to measure the structure of marketing systems. A model of a marketing system comprised aggregate inter-industry trade flows (Layton, 1981a). Layton built the input-output model for the Australian marketing system based on the 1968 economic census data. Then he compared it to the analogous US marketing system model built by Cox, Goodman and Fichandler in 1947. The comparison revealed fundamental similarities and differences between two different structures. The main implication of the model was that it allowed the estimation of the volume of inter-industrial trade caused by a marginal increase in the final demand. The main contribution of the approach was that the marketing system was conceptualised as a set of transaction flows rather than the aggregate of institutions (Sybrandy et al., 1991). Several researchers explored the analytical implications of the model (Pirog III, 1991; Sybrandy et al., 1991; Sybrandy & Tuninga, 1991; Tuninga, 1991).

Anatomy of macro-marketing system. Gunn (1975) emphasised the meaningful, symbolic aspect of the system as he argued that an *ideology* is a moving force of the macro marketing system. The ideology was thought to be that of "competruism", meaning social, cultural, and institutional belief structures centred on the concept of true competition and laissez-faire (p.162). Gunn imagined the macro-marketing system to represent an *input-output mechanism* that processes

environmental resources for provisioning society. The system was thought to be controlled by a double force: firms' marketing strategies and government's market policy. These forces were thought to maintain a homeostatic balance between oversupply and undersupply in the system. The several aspects of Gunn's model need clarification. First, he did not provide mechanisms for how the ideology would structure the macro-marketing system. Second, he deemphasised the role of value and cultural meaning-creating capabilities on the part of system agents. Third, the nature of inputs and outputs was not specified, whereas the external environment was too fragmentalised and included contradictory factors. In the external environment, although the factors such as psychological, technological, sociological, and economic may represent distinct forces, the factors such as government policy, ideological factors, and political forces seem to be closely related. Moreover, marketing strategies were put in the environment, whereas they could be a part of the marketing system.

Entropy and negentropy in marketing systems. Reidenbach and Oliva (1983) explored the nature of the effects marketing could have on life systems. They saw the marketing system as an open system within the closed global environmental system. Their analysis was based on the laws of thermodynamics, i.e. the notions of entropy and negative entropy (negentropy). Marketing's two-fold effect was conceptualised. On the one hand, marketing boosted living standards causing negentropy at the micro-level. On the other hand, it intensified unsustainable behaviour causing increase in entropy at the macro-level. Reidenbach and Oliva conducted an indifference analysis to demonstrate a tradeoff between the economic measure of well-being and global sustainability. They insisted that marketers should realise the transforming aspect of consumer behaviour that is depicted in transforming goods into waste. They argued that products are never consumed fully, but transformed into pollution. The conclusion was that marketers' task list must include "synchronising, maintaining, and even reducing and destroying demand" (Reidenbach & Oliva, 1983, p.39). Reidenbach and Oliva thought that the conventional conjecture that citizens must *consume* their way out of social and economic crises was implausible, because high consumption rates correlated with the high level of toxic waste generation. It was thought that increasing consumption may lead toward deepening social and ecological crises.

Therefore, material consumption was not to be viewed as a panacea for mismanagement of society. Two concerns arise from the discussion unfolded above. First, the notions of global entropy and marketing negentropy may represent anthropocentric understandings pertinent to rather a small proportion of the planet's population. Is marketing's effect conducive to putting the welfare of people at odds with the ecological health of the global environment? Economic, social, sociological, and psychological literature insists that human well-being is strongly linked to global and social welfare (Varey, 2005b).

Dixon and Wilkinson (1982) linked the concept of marketing systems to the *behavioural theory*. For them, the marketing system represented the behaviour of individuals (groups) who were engaged in marketing activities. The study of behaviour entails thinking about psychological aspects of the system. Therefore, Dixon and Wilkinson analysed the marketing system employing the *planning model* of behaviour that emphasised rational thought structures of market participants. It was considered that the market behaviour of individuals was a rational process which consisted of two clearly delineated stages: planning and implementation. The marketing system's objective was thought to be that of satisfaction, whereas dissatisfaction with the outcome led to reconsideration of plans accepted previously. Though this approach renders the task of analysis of marketing systems much easier, it has failed to recognise the emergent nature of social interaction.

Scientific marketing. "Predatory" was the very word used by Thorstein Veblen, a scholar who coined the term *conspicuous consumption.* He described the feudal society based on the total superiority of a class of people over the majority in terms of access to and use of material resources (Veblen, 1899/2007). Veblen noted that a similar predatory attitude, although skillfully concealed, was still being exercised by a class of wealthy investors through the use of "marketing" techniques. Marketing became a force of influencing citizens in order to change their consumption habits in a way that would maximise marketers' profits. He saw marketing as a means of class-coercion that he called *salesmanship*. It was different to *workmanship* that was regarded as the process of real value-creation. Veblen thought that competition among corporations was equal to feudal rivalry

to gain domination over more resources and people, while research and innovation was akin to the search for new weaponry. The social consequences, as he argued, were small financial benefits and comforts to a limited group, and very heavy social and environmental losses for social masses. Veblen suggested that such populistic claims as improved life standards for laypeople did not hold water for a great proportion of humanity. Veblen expressed a concern that if goods produced and marketed wasted more effort, time, and material than they would save, how could one talk about efficiency?

Dawson (2003) extended Veblen's analysis to contemporary social contexts. He argued that marketing represented "a systematic effort by agents of the rich to use corporate resources and management to coerce the non-rich into off-the-job habits that make the rich richer" (p.6). Dawson saw marketing to be the technology of human behaviour modification. He called it the "engineering of off-the job habits" that is distinct, but comparable to the engineering of "on-the-job habits" that stems from the Taylor's perspective on management (Taylor, 1967). *Scientific marketing,* as opposed to Taylor's *scientific management,* is a suitable term to describe Dawson's view of the marketing system. The corporate employees and managers were seen as the agents of the rich, whose personal goals were deliberately put in line with the objective of their patrons to get richer. Dawson suggested that marketing became the method of nurturing unjust, dominating relationships in markets, where corporations exercised great power due to an unlimited access to information, expertise, and knowledge, whereas product users had a limited access to corporate decision-making. Dawson claimed that the available evidence suggested that corporate communications were deliberately used to plant the seeds of impairment regarding many life concepts. For example, well-being was consistently promoted to be about material possessions. Thus, his conclusion was that weak social infrastructure that is unable to contend corporate dominative ambitions was the result of a marketing assault on culture and traditional lifestyles. In the light of Dawson's analysis, the marketing system emerges as a set of promotional tools of totalitarian dominance that serves the interests of upper social classes to secure and maximise their level of income. However, here lies the paradox of this kind of analysis – it is based on the view that the ultimate justice would be the redistribution of income, thus recognising

that well-being is confined to material wealth, while diligently criticising materialism and the promotion of materialism implemented by big businesses. As the high levels of monetary income fail to bring happiness (de Graaf, Wann, & Naylor, 2005; Durning, 1992; Frank, 2000; Schor & Holt, 2000; Scitovsky, 1976), how successful would a new marketing system directed at "fair" redistribution of income be in making people happier and healthier? Is marketing really about the redistribution of capital among classes?

Micro Perspective

Forrester's (1958) view on the system was a micro-approach, because he attributed systemic properties to a firm's operations that he calls flows. The firm represented a small unified system where "the flows of information, materials, manpower, capital equipment, and money set up forces to determine the basic tendency toward growth, fluctuations and decline" (Forrester, 1958, p.52). Forrester argued that a manager's task was to deal with the flows in an integrative way in order to bring about realisation of broader systemic goals, e.g. public interests. He predicted that executives would increasingly deal with "the basis for wise operating decisions", i.e. solving societal problems rather than daily routine operations (p.66). Their job would become that of "the responsible manager" who is engaged in "a thoughtful process of weighing the past and present" to serve causes of social welfare (p.66). Forrester thought that the marketing system is a part of organisational flow. Hence this flow should link the interests of a small system (the firm) and the broader system (society).

According to several researchers the marketing system consists of process and structure (Dixon, 1991; Emery & Trist, 1965; Emery & Trist, 1972). The *process* refers to procedures by which the system attracts inputs and turns them into outputs, whereas the *structure* implies the totality of interdependent relations among system elements. Emery and Trist (1960) defined the marketing system as an enterprise that transforms outputs into inputs through internal technological processes. This system consists of two components: internal and social. The internal component is a technological process, whereas the social component denotes the system's relation to external factors, including inputs and outputs. Emery and Trist saw the system's environment as comprising four types of

relationships. They were L_{11} (relationships within the system), $L_{1\rightarrow2}$ (relationships between the system and the environment dominated by the system), $L_{2\rightarrow1}$ (relationships between the system and the environment dominated by the environment), L_{22} (intra-environmental relationships) (Emery & Trist, 1965). Emery and Trist thought that the primary task of the marketing system was to position itself within the environment in such a way so that the optimal level of growth is attained. Lewis and Erickson (1969) developed a view of a marketing system depicted in a set of marketing functions. They define a marketing system as an ongoing process of servicing demand. They noted that although the marketing system was open in its essence, it could be in inadvertent transition to closedness, because of narrow-minded managerial efforts. Lewis and Erickson insightfully combined functional analysis and systems logic, and developed a general framework (Table 2.2).

Table 2.2 Synthesis of Functional and Systems Approaches

Functional View: Marketing	**Systems View: Marketing System**	**Elements (essence)**
	A. Objects	
Functions	Output Objects	Obtain and service demand
Activities	Input Objects	Advertising, personal selling, sales promotion, warehousing, inventory, marketing research, finance, general administration
Synergy	Process	The set of actions that combines the inputs of marketing in order to obtain the desired output
	Feedback-Control	Marketing Research and General Administration
	Restrictions	External: government, competition, customer, etc. Internal: goals, policy, financial, etc.
	B. Attributes	Characterize the objects of a system, making possible the assignment of a value and a dimensional description
	C. Relationships	
	Functional	Object relationships which are indispensable to each other
	Complementary	Not indispensable to each other but when combined the effect is synergistic and interactive and positively foster the system
	Redundant	No effect on results: quantitative, qualitative
	Contradictory	Where the effects on results is negative: quantitative, qualitative

Source: adapted from Lewis and Erickson, 1969

The framework outlines the following elements a) the output objects: obtaining and servicing demand; b) the input objects, e.g. marketing functions such as

advertising, personal selling, warehousing, and marketing research. Additionally, the systems approach comprised c) the process combining all functions; d) a feedback-control linking the system and the environment; and e) restrictions governing the potentialities of actions within the system. The crucial feature of the framework is that it defines such important features of the marketing system as the attributes and typology of relationships within the system. The attributes are the meta-descriptions of objects within the system which are assigned certain value. The typology of relationships comprised functional, complementary, redundant, and contradictory relationships.

Kast and Rosenzweig (1974) reviewed the systems literature to date and identified several flaws with the application of the systems approach. The problems were grouped into three domains: literal thinking, convenient practicality, and confusion about system effectiveness. First, literal anthropomorphism – relating the parts of biological organisms to the structural parts of organisations – was identified as one of the flaws. It was noted that the bodily structure of bio-organisms was often used as a literal analogy for complex social phenomena. Kast and Rosenzweig argued that social systems have a looser structure and contain parts that have an ability to exercise free will. This cannot be said about biological organisms. Social organisations consist of highly variable behaviour of free-willed subjects. Second, convenient practicality was described as the practice of choosing the simplified view of complex phenomena for straightforward analytical purposes. This included such practices as judging closed systems to be always bad, opting deliberately for the lower levels of subsystem analysis, and focusing on few relationships while leaving a whole picture untackled. Finally, Kast and Rosenzweig argued that there was confusion about system effectiveness, some stressing the capacity to survive, and others pointing to the extent to which organisations serve society. However, if the principle of allometric growth is recalled, then both survival and societal service converges into a unified meaning, as serving a supra-system may increase the odds for general survival.

Reidenbach and Oliva (1981) applied Miller's General Living Systems Theory (1978) to conceptualise a marketing system at a firm's level. Reidenbach and Oliva (1981) took marketing to be a subsystem, which mainly dealt with

information exchange and processing within an organisation. Out of a big number of subsystems ascribed by Miller to living systems, eight were thought to be relevant to the marketing function. Accordingly, the marketing system was comparable to a set of subsystems which were divided into two sections: demand-servicing and demand-creating. The demand-servicing section comprised four subsystems: ingestor (procurement), distributor (logistics), matter-energy storage (storage systems), and decider (marketing management). The demand-creating section of the organisation included an input transducer, decoder, encoder, and output transducer. The input transducer was parallel to the function of market intelligence and monitoring, the decoder to the analysis and interpretation of market data, the encoder to the development of internal and external communication, and the output transducer to the generation of marketing communication.

Dowling (1983) studied the dynamics of marketing evolution. He thought that knowledge gained about the character of the evolution was helpful in identifying the possible directions of marketing development in the future. Dowling defined marketing systems as “a complex social mechanism for coordinating production, distribution, and consumption decisions” (p.22). He stressed the role of marketing as a “complex homeostatic mechanism” to mediate between a business enterprise and its environment (p.24). This view corresponds to the idea that marketing is a smaller subsystem along with other subsystems within the larger system of a firm. In Dowling’s work, the marketing system’s purpose was seen as promoting adaptation to environmental changes. An important insight this study gave was that the higher level of relevant uncertainty attributed to the environment corresponds to the higher level of consumer care and social responsibility. In other words, the effect specifies conditions for the emergence of a greater emphasis on interaction, dialogue, and value co-creation among society members. Dowling (1983) stressed a dynamic relation between the processes of progressive segregation and progressive systematisation. He contended that the marketing system has undergone the process of progressive segregation to become more complex. Dowling noted that the different schools of marketing thought made marketing the field of science consisting of a full array of separate subdisciplines, e.g. consumer behaviour, macromarketing, and marketing research. Progressive

systematisation was observed in the attempts to construct the general theory of marketing, the macroscopic synthesis of marketing thoughts. Dowling noted that the evolution of marketing occurred in line with the evolution of marketing management philosophies (Table 2.3).

Table 2.3 Evolution of Marketing

Degree of Environmental Influence	*Important system/environment connections*	*Marketing management philosophies*	*Goal of the Enterprise (Success through)*
Low	L_{11}, $L_{2\rightarrow1}$	Product Concept	Quality Products
Low	L_{11}, $L_{1\rightarrow2}$, $L_{2\rightarrow1}$	Selling Concept	Sales Volume
Medium	L_{11}, $L_{1\rightarrow2}$, $L_{2\rightarrow1}$, L_{22}	Marketing Concept	Long-run Customer Satisfaction
High	L_{11}, $L_{1\rightarrow2}$, $L_{2\rightarrow1}$, L_{22}	Societal Marketing Concept	Long-run Customer Satisfaction and Public Welfare

Source: Dowling, 1983

Table 2.3 shows that the evolution of marketing concepts happened in line with the increasing degree of recognition of environmental influences. The evolution follows the path of the much popularised marketing concepts (Keith, 1960; Kotler, 1972, 1994). Dowling suggested that as environmental complexity grew, businesses realised the importance of long-term societal welfare and consumer relationships. In the following part of the chapter, I develop an alternative conceptual logic of marketing systems that is more compatible with the tenets of original systems thinking. The logic consists of a set of proposed insights.

Alternative Conceptual Logic

Complexity and Understanding

A complex interdependence between the system's elements, is at the core of marketing systems (Meade II & Nason, 1991). Grasping the essence of the marketing system to the full extent through the conventional reductionist approaches is impossible, as researchers note that this kind of complexity "has proven to be an extraordinarily difficult concept to express mathematically in a

generalizable way" (Meade II & Nason, 1991, p.72). Specifically, Dixon (1991) gave a thorough historical account of early attempts to conceptualise an economic perspective on recursive interdependence by the prominent economists, namely François Quesnay, Karl Marx, Leon Walras, and Wassily Leontief. Dixon observed that these researchers attempt was to develop the systemic view of the abstracted state of a national economy. However, because these analyses emphasised only the static and tangible elements, they failed to recognise the important aspects of *marketing-system-in-operation*. The main problem which Dixon recognised in these studies was a tendency to overemphasise the material sources of a value-creation process. In the process of searching for marketing in these classic analyses, Dixon came to the conclusion that "only when production is seen as the transformation of inputs into *satisfaction* rather than into material attributes can the place of marketing activities come within the scope of analytical effort" (Dixon, 1991, p.17). This view reflects my work that a purely mechanistic and rationalistic emphasis is problematic with regard to reflecting the complex nature of marketing systems. Considering that the domain of marketing systems can conditionally be divided into production and consumption loci, a similar critique in respect to the conception of consumption processes was advanced by several researchers (Dolan, 2002; Schaefer & Crane, 2005). The orthodox conceptions of sustainable consumption are seen as too "static, individualistic, and rationalistic" (Dolan, 2002, p.170), while other alternative conceptions which emphasise the social side of marketing systems are more or less ignored as far as conceptualisation is concerned (Bagozzi, 2000).

The complexity and chaos theories, which are newly emerging in the field of physical and social sciences, challenge the validity of research results that spring from the assumptions based on a static and passive nature of the systems (Eve et al., 1997; Peitgen, Jürgens, & Saupe, 2004). On the contrary, intense complexity and dynamism found in marketing systems (also in the physical, biological, and other social systems) suggests that these systems' essence is far from being deterministic. The complex systems are *unpredictable, non-deducible, and non-aggregative*. System dynamics are unpredictable owing to the non-linearity of behaviour and the fact that a causal chain is unrecoverable to the extent that Wittgenstein's "meaninglessness" becomes an appropriate term to describe

attempts to derive the initial conditions of systemic cause-effect interactions (Eve et al., 1997; Wittgenstein, 1963). The relevant findings in the fields of mathematics, biology, psychology, philosophy, and social sciences (communications, anthropology, and sociology) show that complex systems are emergent, because the theoretical conceptualisation of a higher-order phenomenon cannot be deduced from laws derived at the level of their components (Luhmann, 1995; Mihata, 1997; Staubmann, 1997; Varey, 2002a). Likewise, the complex social systems are non-aggregative, because, a) compositional elements are not inter-substitutable or/and easily inter-replaceable; b) interaction among the elements is of high intensity; c) the quality of the system is not retainable by de-constructing, and then re-aggregating the elements; and d) the quality of the system is not retainable by addition and subtraction of an element one at a time (Smith, 1997). Besides, researchers differentiate between explanation (erklaren) and understanding (verstehen) (Hirschman, 1986; Hudson & Ozanne, 1988). *Explanation* is geared toward identifying universal laws that underlie the observed events. It is believed that the universal laws would allow researchers to approximate the trends of future events (Anderson, 1983). In contrast, *understanding* is not the end product of research, but a continuous process of sensemaking (Hudson & Ozanne, 1988). Hudson and Ozanne equate understanding to verstehen. *Verstehen* refers to "grasping the shared meanings within a culture of language, contexts, roles, rituals, gestures, arts and so on" (Hudson & Ozanne, 1988, p.510). Hudson and Ozanne argue that verstehen is dynamic and directed toward grasping meaning that is existential.

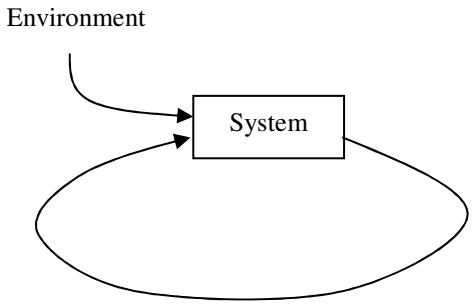
> *Proposed Insight 1: A marketing system is a complex, interactive, non-linear, unpredictable, non-deducible, and non-aggregative whole that is to be understood rather than merely explained.*

Self-referential Recursivity

Another feature of complex and emergent systems is their inherent self-referential nature (Hofstadter, 1979; Schaefer, 2005). Self-reference occurs when the system includes itself in its every operation and observation (Schaefer, 2005). The self-reference of systems is a major reason why they develop highly emergent, chaotic, and complexity-driven structures (von Foerster, 2003). In contrast, a majority of

marketing models are based on linear analysis methods. The linear analysis would rely on the assumption that predicted changes in the system would not depend on its current state of operations but rather on an earlier, initial fixed state. For example, an incremental input of a factor to the system is expected to cause a proportional change in the output, while the ratio of these changes remains independent of how much it has already been changed. In this way a linear system could be forced indefinitely into a certain direction. As a matter of fact, real complex systems, and in some situations even simple systems, are rarely linear (Feigenbaum, 2004). Moreover, the future trends of self-referential systems are hardly predictable in a linear way. Heinz von Foerster (2003) argues that the self-referential systems are *unreliable* (not predictable), as they take their own (self-referenced) state as an input factor at each operational turn. At any phase of development, the unreliable system's end point merges into its original starting point (condition) that by this time has been changed to incorporate enactment of the last changes in the environment (Baecker, 2006). This dynamic can be seen in the Figure 2.1.

Figure 2.1 Self-referential System



Source: adapted from Baecker, 2006

The system's condition depends on its own state and the contribution from the environment. However, the system does not merely copy the environmental turbulence directly into its structure, rather it attempts to interpret the environmental changes by transforming them into resonance at the level of systemic operations (Daft & Weick, 1984; Weick, 1979, 2001). This process is called *enactment* (Weick, 1979). Enactment is not simply cognitive perception and interpretation of the environment rather it is the reflection of the environment

that resonates through active operation and meaning creation. The enacted environment is co-created within the system and it is the result of interaction among environmental events, the systems' own actions, and other systems' influences (Baecker, 2006; Luhmann, 1995; Stern, Thompson, & Arnould, 1998).

Proposed Insight 2: A marketing system is self-referential and the environment is enacted.

Macro-micro Paradox

Some of the literature (e.g. Alderson, 1965; Dowling, 1983; Gunn, 1975; Kelly and Lazer, 1962; Reidenbach and Oliva, 1981; Wilkie and Moore, 1999) view marketing systems through the *whole versus parts* prism. This tradition remains since the advocacy of functionalism by Alderson (1965), in the paradigm of which the behaviour of systems is a direct derivative of lower level element interactions. For instance, Alderson (1965) assumed that changes in the marketing system can be predicted by examining the patterns of interactions among organised behaviour systems. To solve the problem of how parts at the micro-level grasp holism at the macro level, Alderson (1964) introduced the concept of a *control group*, i.e. a representative systemic part that operates within the organised behaviour system. The control group of the organised behaviour system was thought to be that very "magic force" that was able to link *local* to *universal* by a means of power and communication. Moreover, the whole versus parts understanding is strongly associated with *methodological individualism*, as emphasis is on individual agents (parts) who make up a whole (McClamrock, 1995). Though many researchers would agree that the marketing system is not just a simple collection of individuals or institutions (Sheth et al., 1988), an implicit assumption would be that a certain kind of behaviour is inherent and fixed in system actors. In this sense, conceptually constructed paradoxes such as the tragedy of the commons, the prisoner's dilemma, which are strikingly similar in reflecting the macro-micro problem, are being reiterated, investigated, and analysed *ad infinitum* (Kilbourne et al., 1997; Palmer, 2000; Shultz II & Holbrook, 1999). The mega-division of the systems analyses into the macro and the micro parts, which has been partly disclosed by this literature review, indicates the difficulty and confusion that various researchers had in reconciliation of parts into a whole. I suppose that the

main problem that burdened the researchers was to understand how micro-marketing behaviour at a business unit level, largely directed at growth and profit-making, could be equated (transformed) to the macro-marketing behaviour which is conventionally directed toward social welfare and environmental health at the societal level. The deterministic solution such as that some part of a system would take control and "speak" on behalf of others was criticised by Luhmann (1995), who considers it to be a conceptual tautology. In contrast, the "difference" logic has been proposed (Bateson, 1979). This logic emphasises a difference that causes a network of differences. Following this logic, Luhmann (1995) built the theory of self-differentiating systems. This theory approaches the dilemma from a totally different cut-through. A totality of factors, such as individuals (institutions), their intentions and cognitive worlds, actions and behaviour, are left out of the system within the environment, while arguing that the social system (which marketing is to be a kind of) is constructed through the reduction of aforementioned complexity into communication.

> *Proposed Insight 3: Marketing systems represent "difference". The macro-micro paradox is resolved in self-differentiation through which the system reduces the complexity of the environment by a means of internal difference-making operations.*

Input-output Fallacy

The input-output schema, although useful, is a reductionist and relatively mechanistic way of thinking. Arguments to support this view are as follows. First, in the input-output schema, the reality is artificially deconstructed into the three parts: input-provider, systemic structure, and output-receiver (Emery & Trist, 1960; Gunn, 1975; Luhmann, 1995). However, the nature of inputs and outputs may not correspond to systemic structure. The *inputs* and *outputs* domains accept elements from psychic, social, and ecological systems, whereas the system essentially consists of difference-making operations. Analysing all elements at the same level creates the problem of incommensurability between the elements. Second, the effect of an additional unit of incoming input is thought to cause a respective proportional change in output, the view that contradicts systemic axioms such as complexity, the butterfly effect, equifinality, and purposefulness.

Finally, external observers (researchers) enforce their views on the system, while totally ignoring self-referential descriptions developed by the system itself. The alternative logic would suggest that the input-output schema exists just for the external observer, but not for the autopoietically constructed system. The more complex the system, the more complex its environment, and the environment constructed by the system appears as a unified entity, rather than being divided into separate domains such as input-source and output-receiver (Luhmann, 1995).

> *Proposed Insight 4: A marketing system constructs and references itself as a unity, and in the same way, it self-referentially constructs and observes its environment as a unity.*

Survival versus True Purposiveness

Mechanical theories can only predict irreversible entropy: however, the observations of social and living systems indicate negentropy, i.e. ever-increasing complexity (Prigogine, 2003; von Bertalanffy, 1969). Related to *whole versus parts* thinking, the notion of *survival* is based on mechanistic assumptions. The main assumption behind the concept of survival is that those living systems which synchronically adapt to changes in hostile environments would endure (Alderson, 1964; Boulding, 1956; Dowling, 1983; Kast & Rosenzweig, 1974; Layton, 1989; Reidenbach & Oliva, 1981, 1983; von Bertalanffy, 1950; White, 1981). This assumption is rooted in conviction that everything is the product of random effects, and that nothing can self-regulate but be regulated through external forces. Von Bertalanffy (1972) considered the concept of differential reproduction (survival of the fittest) as a "circuitous argument", or a mere tautology, as he thought that a self-reproducing system must have functioned fully even before entering a competition (p.409). He argued that the systems did not survive through conformity with the environment, but rather through *anamorphosis*, that is developing highly complex and disassociated structures. In the case of societal relations, anamorphosis would mean creativity, originality, irregularity, and eccentricism. For instance, some researchers argued that the Nature favours the *wisest* (sporadic and flexible) systems rather than the "fittest" (Salk, 1973). However, if the environment and the system (self) are both meaningfully constructed through the system's operations, then the metaphor of surviving *in* the

environment seems to be inappropriate (Maturana & Varela, 1992). In other words, living systems (including marketing systems) purposefully construct their environments. Hence, they do not need to adapt to them in order to live (operate existentially). In contrast, it is proposed that marketing systems must demonstrate true purposiveness, that is, the internal quality of maintaining creative existence through active operations (von Bertalanffy, 1950). Metaphorically, a tree has its final form. The true purpose of any part of a plant (roots, seeds, branches) would be to evolve into a whole tree, as if this form is programmed in advance. This process is called *vitality* by biological scientists (Casti, 1991). So what is the essence of vital process in marketing systems? No research gives any indication on the purposeful character of marketing systems *per se*. Most researchers tend to see marketing in terms of an ad hoc collection of its parts (like roots, seeds, branches). Hence, this question remains open: what is the functional purpose of a marketing system? How is this related to sustainability?

> *Proposed Insight 5: A marketing system is driven by true purposiveness rather than survival.*

Uncertainty and Wisdom

Dowling's work (1983) pointed toward the particular qualities of marketing systems which enable construction of the volatile, turbulent, uncertain nature of the environment. This way, systems direct complex self-differentiation by a means of enacting more interaction, communication, and integration (Luhmann, 1995). Further, research in social psychology (e.g. Ardelt, 2004; Baltes & Staudinger, 2000, 1996; Salk, 1973; Sternberg, 1990; Surowiecki, 2004) shows that the role of uncertainty-recognition is important in *wise* decision-making. Baltes and Staudinger (2000) explore the concept of wisdom, and conclude that the ability to recognise relative unpredictability (indeterminacy) is one of the elements which should be included in the construct of wisdom. The uncertainty-recognition positively correlates with wise decision making (Baltes & Staudinger, 2000, 1996; Staudinger & Baltes, 1996; Staudinger & Pasupathi, 2003). Moreover, ethical marketing actions are focused on people, especially, on maintaining social relations with them (Laczniak & Murphy, 2006). To sum up, I argue that the constructive recognition and management of uncertainty leads to the

preference for integrative relationships, which could become a basis for the generation of ethical and sustainable behaviour.

> *Proposed Insight 6: A marketing system that can enact the environmental uncertainty into its own network of operations to a greater extent can possibly succeed in attaining sustainable existence.*

Marketing System Elements

The concept of communication is proposed as the basic element of social systems (Luhmann, 1992, 1995). Communication is the emergent product of interactive social relationships (Varey, 2002a; Vickers, 1983). Communication is neither a thought nor a physical element rather it is a difference that is capable of making a difference (Bateson, 1991).

> *Proposed Insight 7: Marketing systems consist of communications.*

Communication can be seen in terms of actions performed by agents. However, communication does not discern between the roles such as producer and consumer, provider and user, or seller and buyer. These are all active communicators, so the identity of a communicator is not fixed to a particular way of communicating. Luhmann (1995) differentiates between action and communication. An action is shaped in an anticipation of others' action. This phenomenon refers to "double contingency" (Luhmann, 1995, p.103). Double contingency occurs when an ego acts in anticipation of an alter's action, while the alter acts in anticipation of the ego's action (Parsons, 1977). This circularity does not allow clear delineation of discrete actions. The beginning and end of actions are not discernable (Bateson, 1991). Action-in-reference-to-action is *interaction* and it represents social communication. Hence, communication has distinct properties *vis-à-vis* communication-composing discrete actions (von Bertalanffy, 1969). One needs to examine a bigger picture, i.e. how actions and operations are linked to each other. Also, communications never persist in time. They are contrived and temporal (Katz & Kahn, 1966; Seidl & Becker, 2006). Therefore, the marketing system is driven to regeneration (autopoiesis); it is fully reconstructed at each occurrence (Luhmann, 1995).

Proposed Insight 8: Communications within marketing systems are characterised by the following aspects: a) their unique function in society, which is represented in the maintenance of expectations of value acquisition through marketing action; b) valuation, that is, the application of binary coding "value versus non-value" to each marketplace event.

Various forms of social systems have been discussed in the sociology literature (Luhmann, 1995, 2004; Seidl & Becker, 2006). This literature shows that a political system operates with a distinction power/not-power, whereas a legal system distinguishes between legal and illegal. An economic system is based on a distinction payment/non-payment (Luhmann, 1989). In contrast, the locus of meanings for marketing systems is the dimension value/non-value (Holbrook, 1994; Prahalad & Ramaswamy, 2004b; Vargo & Lusch, 2004). A marketing system operation cuts the locus of meanings into value/non-value sides. For instance, sustainable value/non-sustainable value is one of the options (Dolan, 2002). The establishment of non-value is deemed equally important to identifying value within the system. For example, a sustainability discourse, that is initiated, developed, and maintained by corporations, agents, and publics, emphasise (an ecological) *value* of hybrid car technology. However, in this context the discussion is also extended at identifying the *non-value* status of other automobile technologies. Without the attribution of unsustainability (non-value) to the other automobile technologies, the discourse on the value of hybrid car (alternative fuel) technologies would not find its logical extension within this particular marketing system.

Unity of Difference

Taking into account the aspects of marketing systems discussed so far, the following definition of a marketing system is proposed.

Proposed Insight 9: A marketing system is the unity of difference between a marketing system and an environment depicted in marketing communications.

The definition reflects the self-referential character of marketing systems. The concept “unity of difference” suggests that both the marketing system and the environment are a unified occurrence (Luhmann, 1995, p.20). An alternative understanding of the *unity* is the concept of meta-communication (Bateson, 1991). The system consists of smaller systems. Meta-communication is the product of communicative interaction among systems, but it is not taken as a straightforward aggregation of them. The meta-wholeness of a marketing system is built upon two main concepts: differentiation and potentiality. A marketing system sustains its difference *vis-à-vis* other types of systems, which in unity make up the environment. Differentiation is repeated at each level. Not only a unique difference, but also the horizon of potentiality, is actively developed. For any differential communication, the potential paths of development are instantly created and maintained within the system (Luhmann, 1995). In each of its reappearances, marketing systems go further selecting among alternative differentiations. This means that autopoiesis never repeats itself exactly, but a kind of a developmental drift can be discerned. The system that keeps a wider horizon becomes more robust than one with limited potentiality.

Chapter 3: Interpreting Marketing Systems

Three Levels of Research Paradigm

In the preceding chapter, I proposed a conceptual framework that can provide unique insights into a relation between a marketing system and the environment. In this chapter, I argue that the concept of a sustainable marketing system can only be understood through interpreting a marketing system's enactment of sustainability meanings. This argument is grounded in a particular worldview, a set of interlinked assumptions about social and life events. This chapter introduces systeming as the philosophical, methodological, and methodical basis for *interpreting meanings of marketplace communications*. The discussion of systeming unfolds as follows. Foremost, the three levels of developing an interpretive basis are discussed. These levels are a) philosophy; b) an interpretive model; and c) interpretive procedures.

Systeming Philosophy

Systeming draws from research on the systemic nature of observation and operation in physical, biological, social, linguistic, and even logical entities (Bateson, 1979, 1991; Eve et al., 1997; Luhmann, 1995, 2006; Maturana, 1981; Maturana & Varela, 1992; Peitgen et al., 2004; Varela, Thompson, & Rosch, 1991; von Bertalanffy, 1950; von Foerster, 2003; Wittgenstein, 1963). In fact, systems-as-concept is one of the most exploited concepts in the academic research across diverse fields. This concept comes to represent a broad range of phenomena such as a physical mechanism (Boulding, 1956), a cell or a biological organism (Maturana & Varela, 1992), an individual and his mental structures (Capra, 1997; Varela et al., 1991; von Foerster, 2003), an organisation or a company (Daft & Weick, 1984; Dowling, 1983; Reidenbach & Oliva, 1981), social organisation (Taylor, 2006; Vickers, 1983), a formalised body of knowledge (Hofstadter, 1979; Whitehead & Russell, 1927), culture (Bateson, 1991), language (Wittgenstein, 1963), and interactive behaviour (Alderson, 1964; Bateson, 1979; Varey, 2002b). The systeming worldview can be explained by

attending to several issues that confront each research paradigm (Lincoln & Guba, 2003). The major issues are ontology, epistemology, and methodology. Also, there are a number of practical issues (e.g. inquiry aim, nature of knowledge) that are to be evaluated in respect to the position of systeming among other research paradigms (Guba & Lincoln, 2005; Lincoln & Guba, 2003). The major axioms derived from this synthesis are presented in Table 3.1 in comparison to the axioms of other perspectives, which have been described by Guba and Lincoln (2005).

Table 3.1 Metaphysics of Alternative Inquiry Paradigms

Item	***Positivism (P), Postpositivism(PP)***	***Constructivism***	***Systeming***
Ontology	P: naïve realism PP: critical realism	relativism	systemism
Epistemology	P: dualist/ objectivist; findings true PP: modified dualist/ objectivist; critical tradition	transactional/ subjectivist; created findings	relational/ systemist; enacted findings
Methodology	P: experimental/ manipulative; verification of hypotheses; quantitative methods PP: modified experimental/ manipulative; critical multiplism; falsification of hypotheses	hermeneutical/ dialectical	second-order observation
Inquiry aim	explanation: prediction and control	understanding: reconstruction	distinguishing: systems transcendence
Nature of knowledge	P: verified hypotheses established as facts and laws PP: nonfalsified hypotheses are probable facts and laws	individual and collective reconstructions coalescing around consensus	knowledge of self-reference
Knowledge accumulation	accretion – "building blocks" adding to "edifice of knowledge"; generalisations and cause-effect linkages	more informed and sophisticated reconstructions; vicarious experience	wisdom; self scrutiny
Goodness or quality criteria	internal and external validity, reliability, and objectivity	trustworthiness and authenticity	inter-system coherence; enabling; knowledge redundancy; aesthetic seduction
Ethics	extrinsic; tilt toward deception	intrinsic; process tilt toward revelation; special problems	existential; tilt toward attraction

Source: adapted from Guba and Lincoln, 2005

Ontology

Systeming delineates the world as the complex of relations that comes into existence in intra- and inter-system spaces. It is assumed that only the holistic systemic mode of *operating-in-being* makes apprehension of various realities possible. Yet this apprehension is a simplified version of the *unknown* that is being apprehended. This approach, which I call "systemism", is based on the idea that a reality is the product of the totality of changes which are uniquely enacted within a system. The "world" comes forth (Maturana & Varela, 1992), computed (von Foerster, 2003), differentiated (Bateson, 1979), severed (Fichte, 1970; Spencer-Brown, 1969), distinctioned (Luhmann, 1995), invented (von Foerster & Poerksen, 2001) through interactions among system elements. Although the essence of a systemic element is not determinate in these various views, it is the unity of relations and differences among these elements that brings forth a world in its complexity of various forms (Bateson, 1979; Spencer-Brown, 1969). The elements create differences, and these differences create *the difference* (Bateson, 1979). This meta-difference is deemed to be the essence of a reality.

In contrast, *positivism* postulates the existence of real objects, while relations among them are considered to be a consequence of their reality. Systemism takes *relations* rather than real entities to be the primary bases of systemic realities. Accordingly, the object is not an object per se; it is rendered entitative via unique *relational positioning* in reference to related entities within a common system (Angyal, 1969). A systemic entity is deemed meaningful in difference, namely when it is positioned in the background of other entities. In contrast, *constructivism* recognises the role of individual consciousnesses in constructing global and local realities. Constructivism holds that multiple realities can be constructed in interactions between a) individual minds; b) individual minds and objects. This idea underlies the concept of co-created realities (Guba & Lincoln, 2005). Although systemism generally concurs with the concept, its perspective is broader in scope than the concept of co-creation because (1) systemism assumes that a co-created reality is brought forth not only among individuals, and essentially their consciousnesses, but also among the various forms of being (e.g. parts of cells, organisms, organisations, theories, languages, logic etc.); (2) co-creative interaction occurs within the system's context; the system becomes

meaningful in relation to other systems, rather than being meaningful in itself; (3) higher-order, meta-interactions among local co-creative interactions are also considered; (4) it is maintained that a reality reflected within the system is just one of many trivial pictures of complexity that is reflected by many other parallel and non-parallel systems at the same time.

Systeming neither confirms nor ignores the existence of the "real" reality. In this sense, it manoeuvres in relation to two "chimeras" of ontological assumptions: realism and solipsism (Maturana & Varela, 1992). Realism accepts the existence of the "real" reality which can be apprehended, while the weaker notions of realism (in the case of postpositivism and critical theory) maintain that the nature of the reality depends on the extent of perfection of inquiry tools and values. Solipsism is the claim that everything is the product of mind (Poerksen, 2004). If naïve realism and solipsism are taken as the extreme points in an imagined ontological continuum, constructivism may occupy the middle point with the view of created and co-created local realities. Some systems researchers tend to identify themselves as radical constructivists, thus suggesting a position for systems thinking in between constructivism and solipsism (von Glasersfeld, 1995). However, other systeming gurus posit the question differently. They argue that mapping the perspective onto the ontological map makes this perspective vulnerable to "the doctrine of ontological existents", which is about steering a discussion into the assumption of outer-world existence (von Foerster & Poerksen, 2001, p.26). The formulas such as "it is…", "this is…", "there is…" are thought to denote the "real reality", while systems thinking re-directs the attention to the contrived, contingent, non-trivial, and existential realities about which only systems can enact something, if anything. Systeming approaches both relativism (the rejection of realism) and realism (the rejection of relativism) indifferently, as both options imply relating, and thus constructing the self, in reference to other parallel paradigms. Therefore, the realism-relativism debate in itself becomes a meta-system from which systeming disassociates itself. Participating and taking sides would mean that systeming becomes a part of the "ontological existent" doctrine. Instead, systeming accepts that a reality becomes equated to communing as a unity (system), especially, acting and existing in harmonised *communing* (von Foerster, 2003). However, systemism is linked with constructivism in many

aspects. For instance, for both perspectives, *antiessentialism* is a main characteristic (Schwandt, 1994). Accordingly, the world is not composed of preexisting *facts.* Instead, they are "the product of complicated discursive practices" (Schwandt, 1994, p.125). However, differing from constructivism, systemism maintains that *the essential* is either *brought forth* or *dissolved* depending on a switch in existential intentionality toward relevant systems. Perhaps the fundamental uniqueness of systemism is that it stresses the difference of systems from the environment. Systemism emphasises that the facts of the world are the product of systems-in-operation, while the world stands for a reality created within the system.

Epistemology

It is somewhat limiting to analyse systeming by the means of conventional categories such as subject, object, and the process of knowing, when the perspective refuses to talk this type of language (Poerksen, 2004). Under systeming, knowing is not considered to be dualistic and static which symbolise that a subject passively accepts information about an object. Neither is it *transactional*, which means that a subject and an object interact to create information. Knowing is seen as acting. A system "knows" when it is able to operate and maintain its unity (Maturana & Varela, 1992). In other words, knowing is *existential*, it is a mode of being. Systems do not *transact* with each other, or with the environment. They *enact* information through relating themselves to changes in other systems. Systems are sensitive to a difference in the environment. However, this difference does not cause a linear difference within the system, rather it triggers the whole system of differences-causing-differences (Bateson, 1979). Knowing then becomes the complex operation of a system that brings forth a reality, which is only relevant to this system and is a result of relation to other systems. Knowing requires relation, therefore it is *relational*. The *relation* triggers a closed network of operations and computations within a system, so systemic knowing is both relative (subjectivist) and autonomous (objectivist) at the same time. I name this view a *systemist epistemology*. This epistemology is based on the difference between two theories: the *confirmation theory* and the *correlation theory* (von Foerster, 2003). The confirmation theory postulates the reality is intersubjectively certifiable, i.e. in

naïve terms, an individual confirms the hunch of another one that *this object* really is *this* object (Hunt, 1993). Constructivism, and in general, relativism, recognises various limits to the possibility of an inter-subjective verifiability of phenomena (Anderson, 1983). The systeming framework offers the correlation theory, that holds that a system, *in correlation* to other systems, generates an experience, which allows the system to delineate an object, and invent the object's character in action (von Foerster, 2003). What is the result of knowing? Here again the distinction "true/not true" is rejected. The traditional philosophy of truth is based on the correspondence between thought and being (Hunt, 2003). The systeming perspective refuses to participate in the discussion about the extent of correspondence of cognitive maps to the something objectively ideal, such as "the territory" (Bateson, 1979; von Foerster & Poerksen, 2001). Rather an emphasis is shifted toward analysing the *consequences* of knowledge operations. The *consequence* theory of epistemology proclaims that one needs to be aware of the implications of enforcing a systemic enactment as the only "true" enactment. The truth is considered to be the "invention of a liar", who precipitates "truth wars" in order to convert others to his/her point of view, the process of which has disastrous consequences to humanity in general (von Foerster & Poerksen, 2001, p.30). The system must be aware of a number of options in enacting a reality, and act in harmony in relation to other enacted realities.

Methodology

According to logical positivism, universal statements (hypotheses) are accepted as being true if they can be verified through empirical tests (Anderson, 1983). Later, the principle of verification has been changed into that of gradual confirmation (logical empiricism). Popper (1962) argued for falsificationism, which is underlined by the process of "conjectures and refutations" (p.46). It is assumed that universal claims should be tentatively accepted, if they cannot be falsified by empirical tests and experiments. What is implicit in this idea is that the explanatory statements based on causal and deductive hypotheses would be able to address any kind of research problem. This is refuted by systeming (von Foerster, 2003). The refutation proceeds by asking a simple question about whether falsificationism can falsify itself. In other words, what is the capacity of the approach to see its blind spot? Accepting that positivism and postpositivism

are based on logical explanations, certain problems and phenomena would not be seen, because they cannot be explained logically (e.g. self-referential recursivity). Thus, this set of methods cannot address their own blindness. This is called "second-order deficiency" (von Foerster, 2003, p.284). Similarly, it is argued that mechanical methods create trivial worlds, problems, and corresponding solutions. The solutions to trivial problems might not be germane to the essence of social life, which might be full of contradictions, paradoxes, and illogicalities (Bateson, 1979; Luhmann, 1989, 1995; von Foerster, 2003). Systeming is guided by a method that allows for *second-order observation*. What is the second-order observation? It is to observe an observing system (Luhmann, 1995; von Foerster, 2003). Systems do first-order observation. The researcher observes this observation. Von Foerster (2003) argues that systeming does not pose a question of whether the properties of an observer *should enter* (or not enter) the interpretation of observation. Is relevant knowledge objective or subjective? Subjectivists and their opposition, objectivists, are seen to be immersed into a trivial discussion. Instead, an alternative question would query the properties of a first-order observer (von Foerster, 2003). A system observes the self, and produces information on its own properties when it operates (Luhmann, 1995; Maturana & Varela, 1992). In this sense, operation is self-observation. So, in systeming, the properties, motives, and character of self-observing systems are studied. Thus, it can be concluded that the second-order observation is the observation of systems' self-observation.

Practical Issues

Research goals. Foremost, a *research inquiry's aim and goals* are addressed when comparing various research paradigms (Guba & Lincoln, 2005). The positivist strives to develop an explanation that accounts for observed differences in the states of phenomena. These explanations are considered to be universally true, and utilised in predicting and approximating the future perturbations. The critical theory's goal is to critique imbalances in social interactions, and transform the current situation into a better one. Differing from this, the constructivist approach is to develop empathic understanding of the underlying meanings, motives, culture, and language in human behaviour (Hudson & Ozanne, 1988). A positivistic explanation is about discovering generalisations, while a constructivist

understanding is an ongoing project of interpretations, and re-interpretations. Positivists would see a rational understanding as a result of inquiry, while constructivists would see it as a process (Hirschman, 1986; Hudson & Ozanne, 1988). Yet again, systeming considers the explanation-understanding discussion to be the self-referring reduction of complexity. In contrast, systeming's overriding goal is to distinguish systems, their self-reference, and operations. Once one is able to construct a system and its privileged operational patterns, then one will be able to see the blind spots of these systems. One will also see the operations of alternative systems. The purpose is to distinguish the systemic patterns of social life, living experiences and practices, and suggest the ways of improving a systemic existence. So transcendence beyond the grips of a single "dogmatic" systemic operation is emphasised. The transcendence is systems transcendence. An agent is a researcher, who relates the self to various systems, thereby transcending the frames of a dominant one thus increasing the options and possibilities of action for the self (von Foerster & Poerksen, 2001). The assumption here is that people's actions are implicated in certain dogmatic systems, which are often taken for granted. Bateson (1991) explains how actions, thoughts, rituals, and social routines become ingrained into a purposeful structure of systems. They transform from "software", contingent actions, into "hardware", the identity of a system, that is, they turn rigid.

The nature of knowledge. Another practical issue is the *nature of knowledge* (Guba & Lincoln, 2005). Systeming provides the knowledge of self-reference (Luhmann, 1995). Self-reference is recognised when observation shows that systems include themselves into what they indicate by operations. The self-reference is considered to be the "destroyer" of a common linear logic (Hofstadter, 1979; Whitehead & Russell, 1927). As any first-order (positivism, constructivism, critical theory) observation is predominantly based on developing logical descriptions, the illogicality (self-reference) tends to be systematically removed within these frames of thinking (Luhmann, 1995). A self-referential insight into social action is simply non-existent in such research paradigms, except when it is attributed to the consciousness of "subjects" (Thompson et al., 1989; Thompson et al., 1990). However, everything, including phenomenological consciousness, needs to be richly described through narration and language.

Considering that the narrative is about ordering the universe and experiences (Polkinghorne, 1988), the fact of self-reference is left out of argumentation as it represents a case of disorder.

Self-reference is a social and relational phenomenon. It is at the core of existing and operating socially (Bateson, 1979, 1991). Although the linear ordering of experiences fail to communicate meaningfully the essence of self-reference in systems, several systeming analytical tools: the qualitative calculus (Spencer-Brown, 1969), the calculus for self-reference (Varela, 1975), and the inclusion-representation schema (Hofstadter, 1979) deal with the issue. Nevertheless, when one attempts to express the self-reference in narration, one must face the paradoxicality of meaning-creation. In consequence, the knowledge of self-reference is relegated from mainstream research which became the locus of linear logic construction (Hofstadter, 1979). The systeming analysis, instead, may put the self-reference back into the analysis of social structures.

In the positivistic paradigm, the knowledge is assumed to be accumulated through gradual contribution to the edifice of knowledge (Guba & Lincoln, 2005). It is assumed that knowledge constitutes a set of real representations of the world, while "gaps" in this kind of representational "mosaic" continually need to be filled by new research. In contrast, knowledge is less "real" in the constructivist paradigm, and it is assumed to be enhanced through improvements in the extent of creativity and viability of local/social constructions. Hence, enhanced sophistication and flexibility in constructing the world according to socio-cultural contexts is thought to be a substantial contribution to a body of knowledge (Guba & Lincoln, 2005). The review of literature on systeming indicates that this perspective encourages *the knower* to the increase in acuity and the accumulation of experience regarding a) the acts of *relating* in a *context* of relations; b) *self*-reference; c) *blind* spots and rigid action *frames* in operating and communicating; d) the *ethical* consequences of communication; e) *macro-micro* and logical typing transformation; f) systems *transcendence;* and *g) complexity* of the environment (Hofstadter, 1979). I maintain that these concepts can be summarised in a single concept – wisdom. In systeming, the accumulation of knowledge is about attaining a relevant wisdom of life (Salk, 1973; Surowiecki, 2004; Weick, 1979).

However, wisdom is a very complex concept (Baltes & Staudinger, 2000; Kadirov & Varey, 2005; Small, 2004; Sternberg & Jordan, 2005). Five aspects relate wisdom to systeming. First, self-reference has long been considered to be a basis of knowledge for wise people and philosophers since the rise of ancient Hellenic, Eastern, and Middle Eastern cultures (Luhmann, 1989). Second, wisdom is seen to be about being mindful of the fundamental uncertainty and complexity in the world (Baltes & Staudinger, 1996; Weick, 1979). Third, research indicates that evolutionary dynamics, natural and social selection trends, and survival odds appear to privilege systems with *wise* rather than linear adaptational structures (Bateson, 1991; Salk, 1973). Fourth, not only procedural and substantive knowledge generated intra-systems, but also the knowledge of contexts, logical levels, and forms constructed in inter-systems is considered to be an aspect of wisdom (Ardelt, 2004; Hofstadter, 1979; Kunzmann & Baltes, 2003; Sternberg & Jordan, 2005). Fifth, systeming opposes mechanical, Newtonian, and Cartesian constructions, and in this, it is identical to the *wisdom versus rationalism* debate (Bateson, 1979; Luhmann, 1989, 2002). Finally, systeming is inherently ethical, as it re-instates self-responsibility in making choices. Any action, be it morally negative or positive, is the self-referential operation of a particular system. Systeming avoids the attribution of problems to other parties. Thus, virtues and vices are considered to be relational, systemic, and not fixed in individuals (Bateson, 1991; Luhmann, 1989; von Foerster & Poerksen, 2001).

Quality criteria. The next practical issue that needs to be considered is the *goodness or quality criteria* of the paradigm (Guba & Lincoln, 2005). Several questions need to be answered in this respect. They are:

1. How do we know whether to have confidence in the findings?
2. How do we know the degree to which the findings apply in other contexts?
3. How do we know the findings would be repeated if the study could be replicated in essentially the same way?
4. How do we know the degree to which the findings emerge from the context and the respondents and not solely from the researcher (Lincoln & Guba, 1985)?

The positivist perspective offers the criteria of internal validity, external validity, reliability, and objectivity, respectively, to answer these questions. The relevant

criteria proposed by constructivism are credibility, transferability, dependability, and conformability (Wallendorf & Belk, 1989).

In systeming, the first criterion that parallels the notions of internal validity and credibility is *inter-system coherence* (Poerksen, 2004). Intersystem coherence refers to the extent to which systemic realities are coherently enacted within a research project that is a system in itself. The relation between systems under research focus and a research system represents *inter-systemic interaction*, and both are closed in their self-referentiality (Luhmann, 1995). Hence, these systems pose complexity to each other. A researcher can deal neither with point-to-point enactment, which parallels with the concept of internal validity, nor with the aggregates of enactments, which parallels achieving credibility by a means of representing the social through the analysis of discrete consciousnesses. Creative transformation within the research system is expected, through which the aspects of systems under focus are transformed into a set of a researcher's interrelated views. How can adequacy in this *system interpenetration* (Luhmann, 1995) be assured in this case? Several issues must be attended:

a) a research issue is to be analysed in the intersection of several systems rather than a single system, the process which would enable the confirmation of the extent to which the issue is deemed meaningful to the systems under focus;
b) the research system is to be kept passive, so it does not enforce its own distinctions to the systems under the study;
c) the complexity of studied systems is to be reduced to holistic structures rather than cause-effect fractions;
d) the created (enacted) knowledge is to allow the system to continue its autopoiesis; the research system must maintain its continuation.

Regarding the last point in the list, the concept of systemic "rightness and adoption" can also be proposed (Goodman, 1984). Rightness is a broader concept than validity, and refers to the act of "fitting into a context or discourse or standing complex of other symbols" (p.158). Consequently, the systemic rightness of insights created by an investigation can be judged according to their "fitting

and working" in the context of the systems under focus (Goodman, 1984, p. 158). Adoption means the acceptance of systemic operations as a research starting point. Accordingly, initial systemic constructions (e.g. concepts, routines, and processes) are adopted as a stepping stone into the analysis. Then emergent conceptualisation is assessed "not in order to arrive at truth about something already made but in order to make something right – to construct something that works cognitively, that fits together and handles new cases, that may implement further inquiry and invention" (Goodman, 1984, p.163).

Another criterion to assess the goodness of generated insights is the *measure of enabling*. The knowledge of systems is to be assessed according to the extent to which it enables enlightened operation, i.e. action with a bigger "degree of freedom". In this sense, von Foerster (2003) suggests that acting, the researcher's operation, should increase the number of options for others. Knowledge should not limit, rather it should emancipate action from the grip of dominant systems. However, knowledge is simply a suggestion to act, the illumination of alternative paths. It is not a claim for truth and enforcement along this valid essence. Therefore, it is assumed that enlightenment is attained when generated insights shed light on the extensive range of available options of acting within the systems, which otherwise remain unseen. Knowledge is acting and living (von Glasersfeld, 1995) that communicates ways to circumvent the myopic nature of the systems. The potential to accomplish such tasks is what is assessed.

The issue of applicability of findings in other contexts is resolved through assessing *knowledge redundancy* in systeming (Luhmann, 1995; von Foerster, 2003). The objective is to construct and enact the conceptual forms of recursive dynamics, which apply to systems, a) at the same level; b) at sub-levels; and c) at supra-levels. For instance, if a particular social interaction is fitted into a certain conceptual model, then the applicability of this model to other contexts of interactions needs to be assessed. Also, the same construction may be applied to the interaction of the contexts of interactions, i.e. a meta-level (Peitgen et al., 2004). What is applicable at sub-systems (individuals) may also be applicable to supra-level systems, i.e. interactions and the interaction of interactions. The extent of knowledge redundancy shows how a conceptual model can separately describe

the system, its elements, subsystems, and the environment at the same time. The model would represent a *fractal* which is the same pattern seen regardless of zooming in and out of systemic structures (Peitgen et al., 2004). The third question of replicability of research findings presupposes positivistic values. The emergence and contingency of the research system is less likely to be repeated in an exact manner. However, generated wisdom is not a substantive knowledge. It is an ephemeral feeling of aesthetic rightness. Maturana and Varela (1980) discuss *aesthetic seduction*. The manner in which to arrive at systemic insights cannot be transferred. The fourth question in regard to objectivity is taken to be inadequate within systeming. This is based on the impossibility (nonsensicality) of the dynamics "subjective versus objective" in the systems paradigm (von Foerster, 2003). The researcher will never be able to create (enact) *the social* by being confined to his/her mental structures only (Varela et al., 1991). Any research proposition is the enactment of a system, in which the researcher situates him/herself socially. Maturana and Varela (1992) argue that "anything said is said by an observer", while von Foerster (2003) adds that "anything said is said to an observer" (p.283). In systeming, the observer is a social system that observes the self. So the result of observation is neither subjective nor objective. In contrast, it is an active state of being and acting, bringing forth the world, on the part of the system, which reduces the complexity of the environmental challenges it faces. Moreover, this last issue is the direct consequence of the first one, systemic coherence, so the quality of the process depends on the extent to which the research system is able to enact differences in the systems under inquiry.

The role of values. The next practical issue that needs to be considered is the *role of values in inquiry*. The positivist and postpositivist paradigms are based on the claims of being "value free" (Guba & Lincoln, 1994), while the critical and constructivist theories stress the central role of values in research. The systeming perspective once again disassociates itself from "value/no value" debate through the observation of the paradoxicality of valuing. The guiding question asks how valuable the operation of valuing/no valuing is. The observer rather than an operation is observed which represents a second-order observation. For instance, the consequences of dogmatic attitudes to truth/falsity may be observed or the extent of morality of bad/good distinctions may be judged. It is argued that the

observer can never be able to remove the self and his/her discriminating valuations from his/her observations, while anything communicated tells a great deal about the observer and his/her values (self-reference) rather than about the outer reality. However, the directions of valuation are not taken as indispensable, fundamental, and natural, as in the constructivist paradigm, but very contingent and paradoxical. The meaning of values arises from the unity of difference. Both good and bad are not apprehensible without their relation to each other. Value is specifically fitted to the system's purpose. Thus, systeming calls for awareness of the valuation of valuing operations.

Systeming as Method

The description of the systeming philosophy and the systeming model are simply an initial step toward conducting interpretation. They comprise the theoretical background of systeming methodology, whereas concrete practical procedures must also be developed. The systeming method in this work is specifically developed to address the special case of the sustainable marketing system problem. This is the *sustainable mobility* problem. Therefore, in developing the systeming method, I first discuss the overall rationale of focusing on sustainable mobility issues depicted in the production and consumption of hybrid cars. The domain of hybrid-car-related practices is the context of systeming observation. I discuss why this context is important with regard to the research problem. Next, I describe how data are retrieved for the current study. Specifically, I focus on such issues as interaction artifacts, netnography, data collection, selection, and the nature of data. Then, I discuss particular interpretive procedures.

Sustainable Mobility

Some researchers argue that there exists a positive relationship between mobility enhancement and living standards (Gersovitz, 1989; Jacoby, 1998). Mobility is considered to be one of the main factors in improving the living standards of the world population, and thus overall sustainability (Gersovitz, 1989; Jacoby, 1998; World Business Council for Sustainable Development, 2004). Researchers believe that the problem of substantial enhancement of mobility is resolved in ongoing interactions between vehicle providers and users, namely, in the domain of the

marketing system (Bickers, 1999; de Haan, Mueller, & Peters, 2006; Kadirov & Varey, 2007; Kirsch, 1997). The role of both production and usage of the means of personal mobility in the life of a human being has grown substantially in the last century (World Business Council for Sustainable Development, 2004). The mutual relation between automobile marketing systems and society is enormous. For instance, it is estimated that there are approximately 700 million vehicles worldwide, which may increase up to billion units in the next decade ("Driving Trends", 2007). The key issues in sustainable mobility are access to transportation means, financial outlay, travel time, reliability, safety, security, transport emissions, impact on eco-systems, the level of transportation noise, resource use, and land use (World Business Council for Sustainable Development, 2004). The World Business Council for Sustainable Development (WBCSD) (2004) estimates that personal transport activity (kilometers traveled) worldwide will grow by 1.7% per year in the next fifty years. In the same period, the total worldwide transport-related fuel use for all modes of vehicles will increase from 2.1 to 5 trillion (10^{12}) litres gasoline-equivalent per year. For light duty vehicles, it is expected that energy efficiency per vehicle unit will improve by merely 18% by 2050, which will not be enough to offset 123% increase in total transport activity in the same period (World Business Council for Sustainable Development, 2004). The amount of the light-duty-vehicle-related greenhouse gas emissions is expected to rise from 2.9 to 3 gigatonnes carbon dioxide (CO_2)-equivalent per year. Some suggest that a litre of petrol which weighs about 0.6 kilograms, when burned, enters to a chemical reaction with oxygen in the air to result in approximately 2 kilograms of CO_2 ("Global Warming", 2007). Moreover, the World Health Organisation (2004) estimates that more than 1.2 million people die annually in road accidents, whereas 7.8 million get seriously injured. These statistics about the massive role of automobiles in human society can be extended ad infinitum. However, this is beyond the main purpose of this work. The argument is that mobility as a life issue occupies a significant share of human activity, and thus that of the marketing system. However, recent trends in mobility development cannot be considered sustainable (World Business Council for Sustainable Development, 2004). How sustainable should mobility be? This question exhibits one of the great dilemmas of modern society. The *sustainable mobility dilemma* stands for a situation in which a tension exists between the increasing needs for mobility and the long-

term environmental and societal health. Sustainable mobility is defined as "the ability to meet the needs of society to move freely, gain access, communicate, trade, and establish relationships without sacrificing other essential human/ecological values, today or in the future" (World Business Council for Sustainable Development, 2004, p. 2).

Adopting Initial Observation Point: Context of Observation

In the vein of Goodman's (1984) perspective of rightness and adoption, the systeming analysis must start with the adoption of an arbitrary point in a marketing system. In this analysis, this arbitrary point is represented by the *category of hybrid cars*. The system has come into existence as the result of an innovative move by Toyota Motor Corporation in 1999 to introduce the first hybrid car brand – Prius ("History", 2007). Currently, the third generation of Priuses is on the roads. The competitors, Honda, Ford, General Motors, and DaimlerChrysler, have jumped onto a hybrid bandwagon by developing their own versions of hybrid car brands (Halliday, 2006). The brands proliferated; and at the time of analysis (March 2007) one would have a choice of a few hybrid car brands such as Toyota Prius, Toyota Camry Hybrid, Lexus GS 450h, Honda Civic Hybrid, Honda Insight Hybrid, Honda Accord Hybrid (compacts and sedans); Ford Escape Hybrid, Lexus RX 400h, Toyota Highlander Hybrid, Mercury Mariner, Saturn Vue Green Line (sport utility vehicles); Chevrolet Silverado, GMC Sierra (trucks). It is expected that in two or three years these ranks will be augmented by Nissan Altima, Hyundai Accent, Honda Fit, Chevy Malibu, Chevrolet Tahoe, GMC Yukon, Porsche Cayenne, Dodge Ram ("Cars", 2007). Hybrid cars are considered to be the paragon of sustainable mobility (Byrne & Polonsky, 2001; Fiscbetti, 2005; Train & Sonnier, 2003; Wolcott, 2005). Many experts consider hybrid cars as a first (partial) step toward solving the sustainable mobility dilemma, and especially ecological problems (Berman, 2006). Sustainability and hybrid cars are often invoked together (Byrne & Polonsky, 2001; Rubach, 2006; Saad, 2006). In many layers of society, namely politics, legislation, economy, science, and folk culture, the popular distinction that is discussed in reference to hybrid cars is that of sustainability. This means that the discussion – communication – is directed toward why hybrids should be considered sustainable (e.g. green, ecological) versus unsustainable, and vice

versa (Commercial Carrier, 2006; Marketing Week, 2006; Robinson, 2006; Solheim, 2006; Stewart, 2006; Wall Street Journal, 2005). Marketers are employing this distinction. For instance, Toyota Motor Corporation has launched a US$ 60m advertising campaign to promote Prius and its other hybrid brands as the only robust solution to sustainability problems (Economist, 2005). Mainstream public policy has also become involved. For instance, some US states offer tax incentives and an exclusive access to high occupancy vehicle lines (HOV) for hybrid cars. Some EU countries (e.g. Netherlands) offer tax breaks for buying a hybrid car (Environment Daily, 2006). Recognition by third parties reinforces a sustainability distinction too. For example, in 2005 Toyota was awarded the status of "Top 3" in the 2005 Global 100 Most Sustainable Companies in the World list. This list is compiled by an industry watchdog group called Corporate Knights and Innovest Strategic Value Advisors. The list includes 100 large companies around the world, which demonstrate "the strongest sustainability performance among their peers" and the ability to manage "the environmental, social and governance (ESG) risks and opportunities they face" (CKISVA, 2005). Moreover, a Geneva-based organisation, Covalence, releases the annual ethical ranking of multinational companies across ten major industrial sectors. In Ethical Ranking 2005, Toyota Motor Corporation was found to be a leader in the nominations of the Best Ethical score and the Best Ethical Progress in the automobiles sector. This shows that introduction and proliferation of the hybrid technology has substantially affected Toyota Corporation's sustainability image on the part of stakeholders. The product attribute "hybrid" represents the *category* of cars rather than a particular brand. Indeed, there was time when Prius was the only hybrid car brand in the market. In that case, the reference to brand community would have been relevant (McAlexander et al., 2002; Muniz Jr. & O'Guinn, 2001; Schau & Muniz Jr., 2002). Currently, there are more than a dozen hybrid car brands which represent different corporations. The hybrid car marketing system comprises communications relevant to all brands, corporations, consumers, and stakeholders. Consequently, this work is not limited to a particular brand, but the product category. Hence, when this study refers to a hybrid vehicle it does not necessarily have to be Toyota Prius; the reference includes a large range of hybrid brands produced by different corporations. I do not delineate the system along the lines of brand differences. This is justified by the fact that human activity is organised

through cultural similarities and differences rather than product attributes (Schouten & McAlexander, 1995; Yankelovich & Meer, 2006). In contrast, brand community is possible when only a single brand can signify relevant ethos, shared beliefs, values, and rituals (Muniz Jr. & O'Guinn, 2001). However, when many brands are used as an interchangeable cultural artifact, then it is a communicative action that takes a centre stage (McAlexander et al., 2002). Brands recede into the background, whereas a product category becomes significant in representing cultural communication. Schouten and McAlexander (1995) refer to "subculture of consumption" in an identical situation (p.43). The *subculture of consumption* signifies "a distinctive subgroup of society that self-selects on the basis of a shared commitment to a particular product class, brand, or consumption activity" (p.43). However, I emphasise the concept of a *marketing system*. The concept of the marketing system is more relevant in the context of systeming investigation because a) not only the demand side, but also the supply side, including intermediaries and agents, determine the nature of the subculture; b) not only self-selection, but also self-observation is an important characteristic of the phenomenon; and c) communing (shared commitment) is resolved in communication.

Retrieving Data: Interaction Artifacts

Interaction artifacts. To conceptualise the hybrid car marketing system, an empirical context that is realised in communications of system agents (e.g. company employees, marketing managers, consumers, and stakeholders) is to be explored. In this work, I use the method of reifying *interaction artifacts* (Kadirov & Varey, 2005, 2007). Interaction artifacts refer to "traces and sediments" left from communicative interactions that take place within the marketing system. The interaction artifact could be in any form. Bateson (1991) argues that the data that represent the "complex pattern of events occurred" cannot be treated statistically (p.40). The statistical approach is based on random or representative samples, whereas social artifacts represent unique momentary cases, which are devoid of continual progress. The systeming method is directed at reifying the context (form) of communication. The unique characteristic of the systeming method is that data are not considered to be communication *per se*. Data do not contain information, specifically, communication. Communication is re-constructed. The

result is the systeming re-construction of the system's communication, which can be traced in interaction artifacts. Communication can only be observed retrospectively (Luhmann, 1995). I would add that it can only be *traced* retrospectively rather than discovered in full. The assumption of traces would mean that they must be re-constructed, whereas assuming the existence of ready information would suggest that it will be discovered. Systeming emphasises the former perspective.

The purpose is to observe the self-observation of the system. This observation becomes documented in the form of text, which is stored in different media. For the purpose of reporting, any observation (of behavior, action, artifacts etc.) is reduced into a textual form. The systeming method observes the constructors of the text, and from this retrieves the characteristics of the constructor. So, it is particularly important that data are not constructed under the researcher's direct influence. The textual data should represent observations of systemic agents. Consequently, textual artifacts are recognised, retrieved, ordered, and utilised in a story construction process about a particular marketing system.

Systeming as netnography. Systeming offers potential to work on the various types of textual and observational data. However, the data must comprise the descriptions of the system agents (self-descriptions) which are not affected by intrusive research actions. In the case of a hybrid car marketing system, the systeming method is used in conjunction with netnography (Kozinets, 1998b, 2002b; Langer & Beckmann, 2005). Netnography refers to "qualitative research methodology that adapts ethnographic research techniques to study the cultures and communities that are emerging through computer-mediated communications" (Kozinets, 2002b, p.62). The systems studied through netnography are not simply "virtual" and/or "less real" because of the locus of interaction - the Internet – they refer to situated live social organisations (Kozinets, 1998a). Netnography enables an unobtrusive observation of the "naturally situated consumer behavior" (Kozinets, 2002b, p.62). A challenge is to access communicative interactions without creating an additional "researcher-respondent" context. An obvious intrusion of the researcher into the space of communication creates irrecoverable deviations in otherwise free-flowing contexts. Kozinets (2002b) argues that such

data collection methods as market-oriented ethnography, in-depth interviews, and focus groups are too obtrusive, artificial, and decontextualising. In contrast, netnography can totally be unobtrusive. This feature of the technique fits the purpose of the observation of self-observation.

Sources and data collection. The empirical content of this work came from online sources. The hybrid car marketing system was arbitrarily divided into two mega-domains: marketers and consumers. The former domain included the sources that project *the perspective of corporations and their value networks,* while the latter comprised the sources which indicate *the perspective of consumers*. The communicative interaction reflected in both the marketers' and the consumers' domains were observed during eighteen months from October 2005 to March 2007. During this period these sources were followed and their content downloaded.

The sample within the domain of marketers included several current hybrid car manufacturing corporations. These were Toyota Motor Corporation, Honda Motor Corporation, Ford Motor Company, and General Motors (GM) Corporation. It should be noted that this sample does not equate to a marketing *system*, or to be more precise, to a *subsystem* in both physical and conceptual terms. The objective of the work is to construct appropriate conceptualisation of how sustainability is enacted within the (*sub)system of communication*. In order to accomplish this task, textual data which represent communication by these entities were collected. This included corporate environmental reports, the content of corporate websites, and corporate generated news and PR stories (see Appendix 3). I maintain that the texts generated by corporations are not the territory but maps which represent communicative acts. The data downloaded from these sources are interaction artifacts which are directed at, reference, and converse with, implicit partners (stakeholders) within the broader discourse on sustainability (Porter, 2005).

The volume of downloaded text from the marketer domain amounted to 946 pages of single-spaced, ten-point font. This comprises 209 pages from Ford, 299 pages from GM, 237 pages from Honda, and 186 pages from Toyota affiliated sources. The volume of downloaded data represented a huge base of corporate utterances;

this included a large volume of statistical, technological, technical, and descriptive information.

Communicative interaction in the consumer domain was traced in so-called "computer-mediated environments" (Kozinets, 1998b, 1999; Muniz & O'Guinn, 2001). The consumer communication was retrieved from the online forums and weblog sections of several Internet website dungeons: hybridcars.com, priuschat.com, greenhybrid.com, autoblog.com, and greencarcongress.com. Hybridcars.com is owned and maintained by Bradley Berman, an independent researcher of hybrid car markets, and it is considered as concurrently a web journal, an online community, and a market research organisation. It had 1,167 registered members, who created 916 threads, and posted more than 8,700 messages to December 2006. Priuschat.com features 18,187 registered members, who have made more than 341,000 online postings to date. It is assumed that according to the "1% rule" there could be from eight to ten times more visitors than members. The "1% rule" suggests that merely 1% of online population start a certain online group, whereas just 10% of them interact actively, and 90% of the user population simply comes in and out of the website to track discussions (Arthur, 2006). The countries represented as shown in the members map were USA, Japan, Australia, UK, Greece, Italy, Portugal, Netherlands, Belgium, Switzerland, Sweden, Norway, and Finland. The other domain, Greenhybrid.com is owned by a private entrepreneur Jason Siegel. The number of members is 7,535, who have posted more than 101,000 messages on 10,494 topics to March 2007. The unique feature of the website is that it allows the visitors to report the fuel efficiency readouts from their hybrid cars. All the sources enable visitors to chat, discuss and express their views freely, and most of the content is presented in an unedited form, and then archived.

The principle of operation of forums and weblogs is identical. In forums, discussions are organised by threads, the topics of discussion, whereas in weblogs they are organised by discrete contributions of main authors. A thread can be created by any forum member, whereas a contribution in the weblog is under the control of a weblog author. However, both forums and weblogs represent an interactive discourse domain, as threads and topics can be commented on by any

member, and even by domain guests. For example, each weblog provides a possibility of commentary on a posted item, so a data source turns into a very long chain of interactive discussion. The list of downloaded threads and weblogs is given in Appendix 4. The total volume of downloaded text from the consumer discourse domains amounted to 3,173 pages of single-spaced, ten-point font which represents 7,387 postings containing 1,317 distinct user names and e-mail addresses (message posters). These postings have attracted at least 259,313 page views from the online user community.

Nature of data. It should be noted, however, that text *per se* is a complex object of interpretation (Schwandt, 2003; Thompson, 1997). In a textual form, several contexts and layers can be distinguished. Kozinets (2002b) states that two types of data are collected in online contexts: 1) data copied directly from online conversations; and 2) the researcher's observation of online behaviour and meanings. A person relates a story about his experience. This very act may happen either in an online discourse or a physical context. Also, people can talk about their online experiences *vis-à-vis* physical world experiences. This can also be related in either physical or online contexts. In turn, the researcher observing the Internet can describe a) an online system; or b) a communicative system that is being observed via online conversations. In the former case, the researcher observes how people interact through computer mediation. In the latter the researcher observes how a system observes itself through description. The systeming method emphasises the latter case. Narratives related through a computer medium may be identical to narratives mediated in the process of physical conversations. For instance, in-depth interviews and focus groups are methods that require the physical presence of participants. In the context of these studies, the researcher ignores the context of the interview or the focus group study, and directs his/her attention to the content of conversation. The interview situation in itself, a newly created conversation context, encompasses researcher-participant interactions. The effect of these interactions on the participant's constructions and meaning-creation is usually ignored. Similarly, the systeming method directs attention to the content of online discussions, while maintaining awareness of limitations with regard to textual, context impoverished, and computer-mediated descriptions. Thus, the content of online conversation is about

acts that happen in physical contexts. These acts, in turn, happen in reference to other interactions, including online discourses. The question arises with regard to which layer of communicative acts must be observed. This depends on the purpose of the work. The purpose of this work is not to observe a system that emerges as a result of online interaction, although it plays a significant role in the system's formation. Systeming looks beyond the online behaviour of individuals, where contexts, descriptions, and actions relate to the situated hybrid car marketing and consuming experiences. In comparison, the researcher studying consumer satisfaction via focus group interviews discards the context of a focus group setting. Similarly, the researcher studying the hybrid car marketing system does not observe online interaction *per se*, rather he/she observes the related context of hybrid car usage. This means that, within systeming, netnography-as-online-behaviour-tracking is only helpful as far as data collection is concerned.

Data Analysis

The volume of the downloaded data was overwhelming. Information overload is one of important problems that needs to be dealt with prudence in this situation (Kozinets, 2002b). The systeming method is not to be confused with conversation analysis (Allen & Guy, 1974; Perakyla, 2005; Prevignano & Thibault, 2003). Conversation analysis is an empirical research method that studies both the qualitative and quantitative characteristics of interaction patterns (e.g. turn taking, utterance, and talk sequences) and such practices as telling and receiving news, making assessments, and arguing (Perakyla, 2005). In contrast, the objective in this work is not to describe meticulously either the quantitative attributes of the data set or a meaning represented in a turn of conversation. The data are taken as the ethos of a system's self-reference. They are synthesised to gain insight into the underlying system that has been self-referencing through communicating. This process is sometimes called the contextualisation of textual data (Brown et al., 2003; Kozinets, 2002b).

To accomplish the task of analysis and synthesis in an efficient way, I used the qualitative data analysis software QSR NVivo 2.0. This software allows document storing, document manipulation, node (theme) creation and manipulation, data linking, modeling, displaying and searching (Gibbs, 2002). The first step was to

transform textual data into an appropriate textual format. The documents were transferred into .rtf or .txt extension files. The documents were ordered and distinct identifying tags applied. This allowed tracking any part of a selected text into the original source. The chunks of text which were assessed as representing holistic communicative acts were assigned into distinctive categories. These categories were classified into bigger themes, which were relevant to my research objectives (Spiggle, 1994). The interpretation of these themes and their meaning in the bigger context of systemic dynamics was informed by the systeming model and method. The themes were not taken as stand-alone theoretical categories which project the reality, rather they played a role of symbolic marks and narrative forms, which underline the boundaries of the system (Polkinghorne, 1988). I used the themes to derive a meaningful story about the system. It should be realised that the result of such an endeavour is a narrative form that meaningfully re-constructs the system under investigation.

Interpretation

The systeming interpretive process is not easily described in a step-by-step logical manner. This process is more emergent than planned. Through immersion into the contexts and meanings of discourses, and sense-making via NVivo, I allowed a more philosophical, intellectually constructive, impressionistic, and *macro* rather micro interpretation to emerge from the data. I identified recurrent and repeating communicative forms and compared them to the underlying premises of the systeming model of interpretation. In this process, findings led me to stretch the boundaries of original expectations about the system, and thus, construct new insights. Several research techniques were of help. These were communication analysis, distinction identification, re-entry description, and logical level tracking.

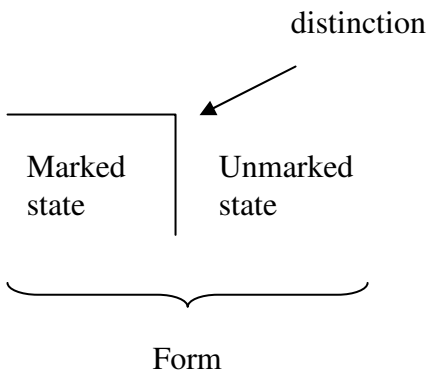
Communication analysis. The system is taken as the unity of communications. A particular communication can also be taken as a system in itself. Luhmann (1992) indicated that communication could be reified through recognition of the unity of three elements: information, utterance, and understanding. Information is a particular differential selected from among available information alternatives, whereas utterance is a particular mode of communication chosen among alternative communicative forms. Understanding is an active process of

distinguishing between information and utterance that links a communication to other communications. For example, an agent in the system makes an observation about him/herself recycling some materials. Here, a series of actions which is observed as "recycling" constitutes utterance. Also, the act of self-observation is utterance too, because it is one of this agent's operations. The label "recycling" connotes care for the ecological environment. So environmentalism is the information that bestows meaning to discrete acts in this particular situation. Information can be uttered by many ways, e.g. acting, languaging, narrating, observing (Czarniawska-Joerges, 1998; Czarniawska-Joerges & Gagliardi, 2003; Livesey, 2001; Porter, 2005). Depending on the systemic context, various types of information can be attributed to the same series of acts. For instance, this series represents recycling in the context of environmentalism, whereas it can also be hailed as "cost pruning" in the context of profit maximisation or "compliance" in the context of public policy regulation or even "ethical marketing" when they exceed policy expectations. Interacting agents must understand information, utterance, and also the difference between them in order to actualise communication as a whole. Therefore, understanding becomes a key that finalises communicated meanings (Luhmann, 1995). Understanding is manifested in an ability by the agent to continue similar utterance-information combinations.

Distinction identification. The system observes its own systemic nature by a means of distinctions (Cooren, Taylor, & Van Every, 2005; Luhmann, 1992, 2002; Spencer-Brown, 1969). The main point of reference would be to observe latent distinctions operated by the system, and watch how these distinctions unfold within the "languaging" operations of interacting agents. The observation of distinctions is straightforward. The main premise is that any operation including communicative acts is based on cutting and imitating distinctions (Baecker, 2006, 1999; Luhmann, 2006). The distinction cuts an operative space into binary, opposite values such as true/false, bad/good, beautiful/ugly. For example, if a corporation states that such-and-such brand achieves that many kilometers per litre of petrol, then the distinction employed is that of *fuel efficient* versus *non-efficient*. A communication is the imitation of some other distinctions. Even an original distinction must first be considered as the imitation of the self that has been alienated (Luhmann, 2006; Tarde, 1969). Spencer-Brown (1969)

developed a qualitative calculus that allowed formalising and displaying the self-referential operations of distinction makers. He suggested using a mark called *a symbol of distinction* that divided the space into two states: marked and unmarked (see Figure 3.1).

Figure 3.1 Symbol of Distinction and Its Observed Form



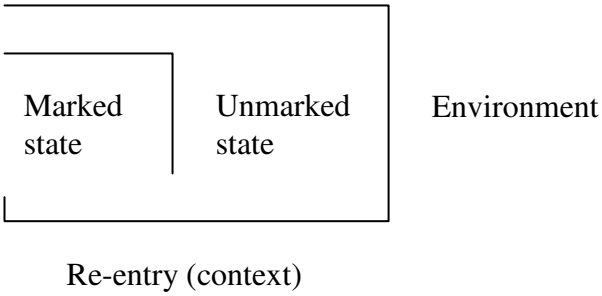
Source: adapted from Baecker, 2006

The distinction-maker doing "distinctioning" only observes a marked state. The second order observation indicates the form of the distinction, which includes both the marked and the unmarked states and the operation of distinctioning. In the case of the aforementioned example, the corporation stresses the level of fuel efficiency of a particular car model. This utterance is marking the *fuel-efficient* side of the distinction, whereas the second-order observation indicates that the reference is to *non-efficient* models, which recede into background and bestow meaning to this communication. Moreover, the distinction of fuel efficient versus non-efficient is distinctioning of a certain system of operation that is being copied by the corporation. In the context of a different system, the corporation can, for instance, resort to a distinction *strong* versus *weak* engine power.

Re-entry description. A manner in which the system applies an operated distinction onto the self can also be observed, and possible contradictions and implications arising from this operation be investigated (Baecker, 2006, 1999; Luhmann, 2002). In other words, the form is *re-entered* into the form, or the distinction into the distinctioning operation. This self-reference is impossible to treat either logically or mathematically, as it causes all kinds of paradoxes of self-

reference. Re-entry is not easy to describe in a logical manner, but it can be displayed symbolically through Spencer-Brown's qualitative calculus (Figure 3.2).

Figure3.2. Symbol of Re-entry



Source: Spencer-Brown, 1969

Luhmann (2002) argues that re-entry symbolises the mechanism of serially nested communications, in which communications refer to other communications. The cascade of re-entries indicates a process of how a communication takes another communication as a point of reference. Communications link to other communications through re-entering them into their space of indication, while this cascade of operations remains inside the system. The environment is not known inside the system but through the re-entry of distinctions. This instance allows the distinguishing of two types of the environment: internal and external. The environment referenced inside the system as the unmarked state represents the internal environment, while the external environment depicts what is differentially left out from the context of re-entry. For instance, in the previously mentioned case of the communicating corporation, the distinction efficient/inefficient can be re-entered (observed) as being a unique context of the system. This means that the corporation references the self as an entity that is communicating about fuel efficiency. However, this context is different to other available contexts in the environment. Re-entry suggests exploring the issue of how efficient/inefficient the selected context is *vis-à-vis* other contexts. The re-entry description is about explicitly stating that which has already been implicitly contained in communication (Luhmann, 2006). A communication is capable of referencing

other communications, and at the same time becoming a topic of subsequent communications.

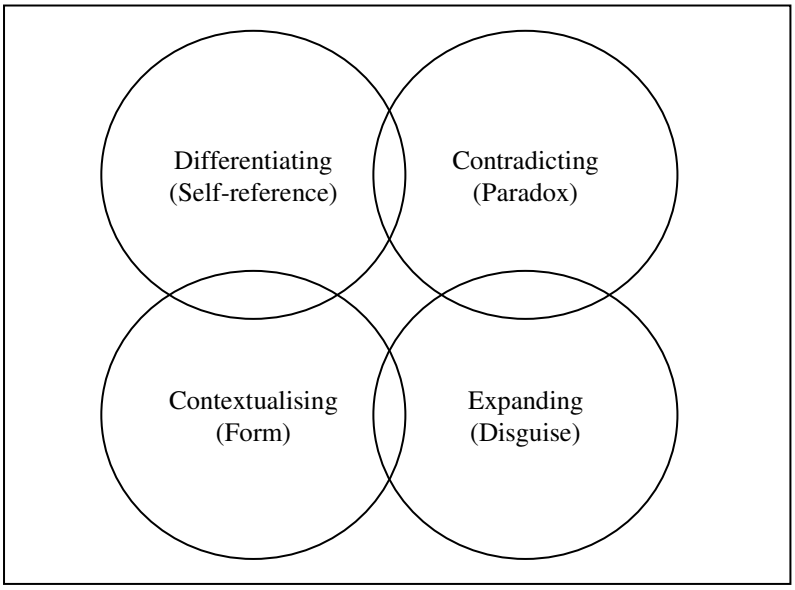
Logical level tracking. A contradictory character of communication can be understood via observing community operations from a *meta-level*, the level which is one step removed from the level of operating. The meta-level is the locus of *observing the observer*, that is, second-order observation (Luhmann, 1995; von Foerster, 2003). Bateson (1991) gave a particular importance to distinguishing between communications at a basic level and a meta-level. Bateson warned against a trap of "logical typing error" that ruins Bertrand Russell's theory of types (p.60). The theory of types is based on the idea that a class of names (e.g. objects, communications) cannot be a member of itself. A meta-class comprises basic elements. But a logical order requires that the meta-class be kept separate and not confused as a basic element. Similarly, meta-communication encompasses a set of basic-level communications. However, meta-communication must not include itself as a basic communication. Meta-communication and inclusive communication do not share identical qualities. For instance, the corporation engages in a range of communicative acts such as designing and producing green products, recycling, cutting emissions, saving energy, innovating etc. At this level, these acts are given meaning through comparison to each other based on their differences and similarities. The corporation may engage in meta-communication through reporting these acts as sustainable. The meta-meta-communication would state that this corporate reporting is transparent, realistic, and that it manifests care about the environment (Livesey & Kearins, 2002). The matter becomes more complex when all these communications are considered at the same level. Corporate reporting cannot be "sustainable" in the same sense as a basic communicative act, although it is the report that is constructing sustainability meaning. The logical question is about how sustainable this kind of "sustainability" is (Dolan, 2002).

Chapter 4: Subsystem of Marketer Communication

Crystallisation I

This chapter presents the systeming interpretation of the *(sub)system of hybrid car manufacturer communications*. This subsystem is referenced as *SMC* or *the system* hereafter. SMC represents the network of successive linked communications initiated by hybrid car manufacturers and their extended value-chain partners in relevant context(s) of operation. The research objective is to conceptualise the process of meaning enactment in the system. In this section, data retrieved from marketer discourse domains are used to illustrate the character of a meaning-creation process in a complex communicative system. I use the term "crystallisation" to depict the interplay of meaning enactments (Denzin & Lincoln, 2005). The crystallisation symbolises the system that emerges in various meaning contexts which is reminiscent of light's diverse deflections in a crystal's structure (Figure 4.1).

Figure 4.1 Meaning Flows in the Marketer Subsystem



The figure shows that SMC comes forth as a series of *meaning-flows*. Four distinct meaning flows are observed that are called differentiating,

contextualising, contradicting, and expanding. Here I am using the verbs in the gerund form to connote the active character of the system. Systeming views the system as a flow of activity. Hence, SMC is formed in continuous differentiating or contextualising rather than in a discrete "differentiation" or "contextualisation". *Differentiating* is a general pattern observed in the self-observation of corporations that actualise a unique system in characterising themselves and their environment. The corporations as observers exhibit uniformity in referencing the self in the background of a constructed outer reality. This observing brings forth the system that is unique, ordered, and different to complexity. *Contextualising* is a pattern of meaning-creation in various interaction contexts. A set of interlinked contexts reveals the meaning *form* of the system. The corporations actualise the form to create internal complexity – the same event with diverse meanings – which is constructed consistently in every turn of observation. *Contradicting* is an aspect of meaningfulness. The corporations create meanings by emphasising a positive value that simultaneously references a negative value. Although they insist in an observation content that their actions are sustainable, the form of observation contradicts the content. This paradox is disguised through e*xpanding*. Expanding is accomplished through maintaining decision premises, constructing a functional hierarchy, re-defining a temporal space, and diffusing identical communications.

Self-reference

The corporate environmental reports and other information sources such as corporate websites observe corporate activities and position them within the constructed picture of surrounding realities. One would expect creativity in this respect, which means that very idiosyncratic "corporate worlds" would be communicated regarding sustainable development. However, views expressed in the reports end up constructing very standard, consistent, and synchronised communications. I shall demonstrate this in several examples. My argument is that corporations are acting (operating and observing) to actualise a single common system of meanings, SMC, the characteristics of which are evident in observed self-observations.

The reports start with the introduction of a context that is critical for stable meaning-creation. A typical message can be in this form:

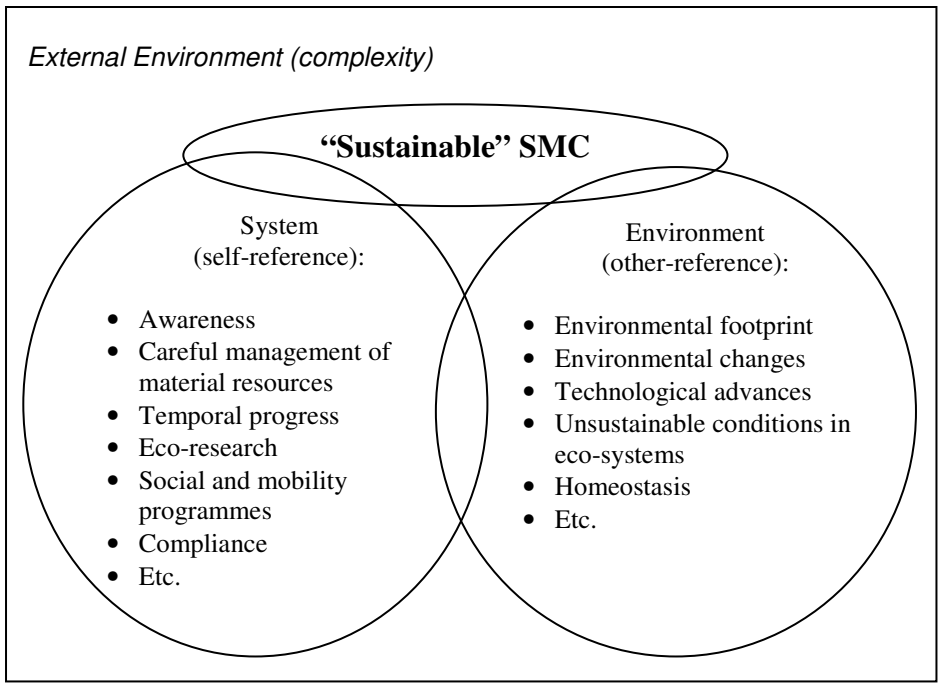
> We have changed the name of this report from the Ford Corporate Citizenship Report to the Ford Sustainability Report, reflecting an evolution in our thinking. (Ford Motor Company, 2005, p.1)

The change of emphasis mentioned in the passage is not simply the "evolution" in the company's "thinking" (p.1). This change means that the system as social interaction between corporations and their stakeholders has been shifted. These opening words in the environmental report by Ford Corporation signal the context of further interaction. Here differentiation occurs: utterance that comes next is given meaning according to the *sustainability* context, whereas other contexts are simply alienated. Consider an example from Toyota Corporation:

> Sustainability [is] Toyota's everyday commitment to the future. Every day, all over the world, Toyota acts on policies to make it an eco-friendly corporation – and a welcome presence in society (Toyota New Zealand, 2005, para 1).

Future is complex. The complexity of interaction with stakeholders in the future, especially, must be reduced into a coherent meaning. Sustainability becomes a common context and theme of such interaction. The context both sets boundaries and provides opportunities. The corporation signals the reduced form of complexity, so successive meaning-creation happens within the boundaries of this sustainability-related domain. Also this domain has to be ambivalent to allow some extent of creativity in terms of acting. Sustainability can have various shades of meaning in the system. The process of meaning-variation can be seen in the fractal formation of the system. The fractal structure of SMC emerges through internal transposition that references constructed self *vis-à-vis* constructed environment. Sustainability becomes information when it is depicted in various factors in the environment. At the same time, the concept becomes utterance when corporation observes its own activities in the light of this concept. The meaningfulness of identity is formed in linking the two sides of communication (Figure 4.2).

Figure 4.2 Fractal Formation of the System



The first fractal is in an observed content in which self-reference constructs the view of corporation and the other reference builds the particular view of environment. The second fractal is depicted in dialectical construction of the overall systemic identity labelled Sustainable SMC, which symbolises the self-ascribed sustainability that is different to complex environment. The two sides of the first fractal do not exist independently, rather they define each other. The observed self includes utterance categories. I have identified several categories such as awareness of impact, temporal progress, material resource management, eco-research, social and mobility programmes, and compliance. The observed environment comprises information categories such as environmental footprint, environmental change, technological advance, unsustainable conditions in eco-systems, and homeostasis. When communicative acts elaborate on an aspect from the *system* side, meaning is created when they are linked to *the environment.* This process corresponds to Baecker's (2006) explanation that system formation is only possible when the system can distinguish between self-identity and other-identity. The process indicates that SMC is self-referential (Luhmann, 1995; Maturana, 1981; Schaefer, 2005), since the system recreates itself and its view of the environment within the very network of self-observation.

For instance, the most recurring pattern in self-observation of corporations was about stressing the automobile industry's colossal effect on society. The magnitude of an "environmental footprint" (Hart & Milstein, 1999) generated by car manufacturing, marketing, and use is conveyed in the example of the following passages from the environmental reports:

> The sheer scale of our industry is enormous. In the United States, the auto industry is responsible for 6.6 million jobs, which is about 5 percent of all private-sector jobs and nearly 4 percent of Gross Domestic Product. No other single industry is more linked to U.S. manufacturing strength or generates more retail business and employment. The U.S. auto industry purchases 60 percent of all the rubber and about 30 percent of all the aluminum, iron and stainless steel used in the United States. (Ford Motor Company, 2005, p.3)

Corporations pinpoint the problem of their own perverse effect on the natural/social environment. This particular operation suggests that SMC consolidates in observing a difference between *awareness of* and *ignoring* the system's own environmental footprint. Awareness is depicted in a *minute management* of material and natural resources:

> We will make efforts to recycle materials and conserve resources and energy at every stage of our products' life cycle from research, design, production and sales, to services and disposal. We will make every effort to minimize and find appropriate methods to dispose of waste and contaminants that are produced through the use of our products, and in every stage of life cycle of these products. (Honda Motor Company LTD., 2005, p.12)

Important information underlines the passage – the current condition of ecosystems is *not sustainable* – the idea which runs behind reflected actions, including future action commitments. In its current form, this observation takes for granted that the audience addressed is deeply concerned about ensuing ecological crises. Therefore, actions and commitments regarding the management of resources appear to be prudent. This prudence or meaningfulness is self-referential, as it is completely constructed within the system. Within the system side in Figure 4.2, *temporal progress* identifies patterns through which communications refer to changes that occur with the flow of time. The temporal progress – a *past-present-future* continuum - is plotted to depict the development from the least sustainable to the most sustainable condition:

> Honda has long been engaged in environmental conservation, aggressively undertaking measures suitable for the time. In the 1990s, amid the increasing momentum toward environmental conservation and the acceleration of environmental measures all over the world, we improved our organizational structure and system step by step. (Honda Motors Company website, 2005, para 6)

In the passage, the temporal progress is seen as the natural reaction to growing *unsustainable conditions* and *technological changes* respectively. The system regulates which factor is emphasised and when it is emphasised. Therefore, current environmental conditions are often constructed as "unsustainable" or as in progressive transition to unsustainability. Technological changes are attributed with a quality of "positive environmental impact" to connote the technocratic character of sustainability progress. These constructs are meaningful selections, and they are the selections which belong in this particular system.

Form of the System

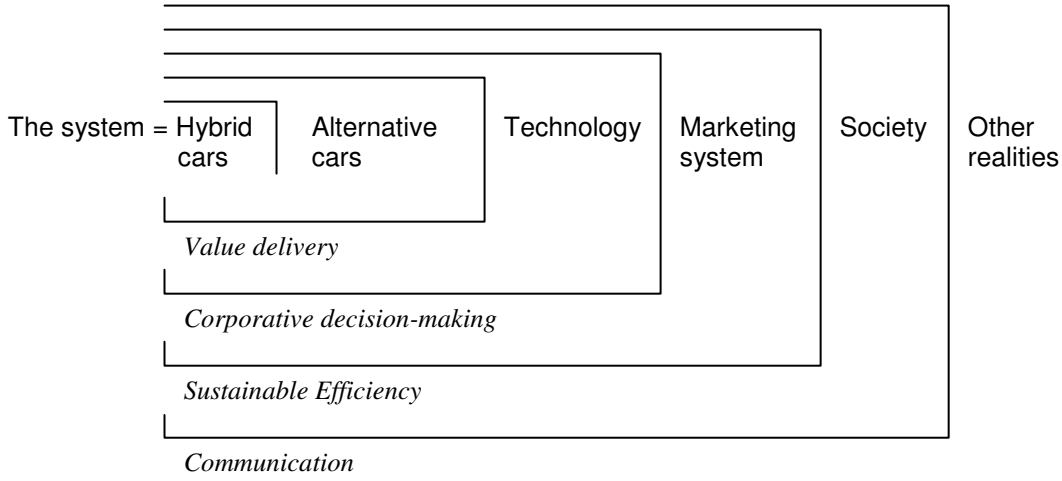
General Form

The form of the system refers to a nested pattern of contextualised self-observations. The Form contains three components: a) communicative acts by SMC's participants, i.e. first-order observers; b) communications by self-observers, i.e. second-order observers; c) contexts, in which these two types of communications occur, which, in turn, become re-entered into the level of original communication, thus necessitating the next level of a context, and so on. This analysis is based on the model of *the form of a firm* proposed by Baecker (2006). The resulting Form is presented in Figure 4.3.

The distinction of a product category, here it is *hybrid cars*, is initially introduced. The first distinction provides the initial point of observation. The hybrid car represents a set of complex environmental perturbations as long as the ontological aspect of the object is concerned. Its meaning is not fixed. Therefore, emphasising simply a tangible (material) aspect of the product is not sufficient in understanding its meaning. The form demonstrates that this example of "goods", state-of-art technology, has various "service-dominant logics" depending on

context(s) enacted in the system (Vargo & Lusch, 2004, p.7). Vargo and Lusch (2004) argued that goods are inherently service-based, i.e. their symbolism dominated their physicality. The form shows that the meaning of a good is not single and universal. On the contrary, the product's meaning (its symbolic logic) can be multifaceted depending on the contexts of social interaction.

Figure 4.3 Form of the System



To show the interplay of meanings, five distinctions and four re-entries are described. The hybrid car's meaning is reified through the following contextualisations: 1) the hybrid car is a unique set of workplace injunctions; 2) the hybrid car is the most suitable current selection from among similar car technologies; these two distinctions are considered as a core value delivery process; 3) the hybrid car is the consequence of modern technological process; value delivery and technology are unified as the context of corporative decision-making; 4) the hybrid car is a sustainable option generated within the marketing system that is driven to sustainable efficiency; and 5) the hybrid car is an epitome of the rational sustainability that is attained in current society. The last re-entry posits that society is communication, so the hybrid car can also be understood as a societal communication that is distinguished from other realities.

Hybrid Car

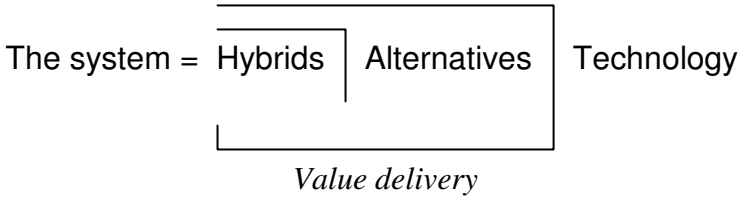
Why has this product become a paragon of sustainable action in the industry? The description above tells nothing but the principle of the product's operation. For

on-ground employees, designers, managers, suppliers, dealers, and other agents operating at the first-order of SMC, the hybrid car is simply part of daily routine. These communicators are guided by a set of discrete injunctions that references the product category (Casti, 1991). For instance, the corporations' public relation officers *promote* the hybrid car, whereas the research and development staff *invents* hybrid car technology improvements, engineering *enhances* its environmental performance; environmental committees *audit* life-cycle impacts of the vehicle and so on. The injunctions specify who does what in what conditions. The whole needs to be fragmented into actions in order to be observed. Thus, the holism of value, sustainability, is severed within the system (Fichte, 1970). First-order observers are "condemned" to work with and within *severed realities*. Reflecting on a similar phenomenon, but in a different context, Giddens (1991) describes the paradoxical nature of the dynamics of self-emancipation. In his view, in the context of dominant social systems, the self has to progress toward the ideal – the emancipated self – through self-reflection and life-politics depicted in a finite set of existential actions. These actions reference a transcendental concept, the ideal self, but can never reach it. Thus, the project of the reflexive self fails to find its completion. My interpretation of systemic identity in this study differs slightly from Gidden's view. Although the holistic concept is what bestows a unique identity to the system, The first-order observers have the ability to reflect on their first-order communication. This is exhibited in viewing hybrid-car-related-acts within the background of alternative products, e.g. fuel-efficient car technologies the corporations are able and considering to offer. The hybrid car acquires a distinct meaning when it is observed as a figure in the background of alternative fuel efficient car technologies. The product category is not the set of injunctions anymore. It is a current prudent choice that enables continuation of communications, and thus, the autopoiesis of the system.

The alternative technologies SMC is currently able, and will be able to offer in the near future are many, including such vehicle categories as compact cars, diesel vehicles, natural gas vehicles, dual (biologic) fuel vehicles, fuel cell vehicles, flexible fuel vehicles, and plug-in electric vehicles. The hybrid car's value as being environmentally friendly is deduced from this horizon of selection. In this, the system loses its flexibility, as it distinguishes only those sustainable routines which can be defined within the alternative assortment horizon. The corporations

can only hope to create products which do not challenge the boundaries of this horizon. The hybrid car and the alternatives are in the domain of *value delivery* (Figure 4.4). Value delivery comprises the first distinction (hybrids/alternative technologies) and is different to *technology,* the next level of context.

Figure 4.4 The Form of SMC Marked by the Domain of Value Delivery



Corporations believe that hybrid cars are a good response for modern demand in the marketplace which stresses high fuel economy, less emission, and driving comfort in combination:

> Since fiscal 2003, Honda had been promoting the earlier compliance of all its models with the 2005 exhaust emissions standards and made all the models comply with the standards. Honda is promoting the approval of its models as "three-star low emission vehicles" and "four-star low emission vehicles." …For the hybrid model Insight, which provides both high fuel economy and the joy of driving, Honda adopted an engine under-cover to improve the car's aerodynamic performance. At the same time, the IMA system was improved. As a result, the Insight's fuel economy was improved from 35.0 km/R* to 36.0 km/R, achieving the world's highest class performance in fuel economy. (Honda Motor Company LTD., 2005, p.26)

The corporation believes that value is delivered to consumers by means of the product. For this reason, the view of "rational" consumers must be maintained. Rational consumers would choose products which supposedly maximise value criteria (Schaefer & Crane, 2005), i.e. here fuel economy, ecological performance and driving comfort. In this context, the hybrid car is seen as a vehicle (both in literal and metaphoric sense) of sustainable value delivery.

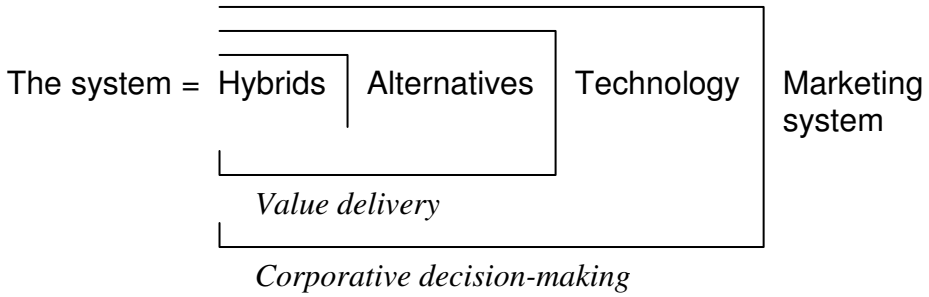
The meaning-creation occurs when the *value delivery* context is positioned in the environment that is referenced as *technology*. The former is about such processes as product conception, design and development, production, promotion, sales, and

after-sales services, whereas the latter domain includes all the actions above augmented by corporate social responsibility actions.

Technology

Technology refers to "all kinds of ways of making sure that we can do what we want to do… [including] material access to resources, knowledge of procedures, technologies, availability of people to do the job and ways to convince society that you are doing what you are doing in the proper way" (Baecker, 2006, p. 129). Technology is a corporate activity domain that comprises the value delivery context, and also, corporate citizenship issues, social responsibility action, sustainability programmes, ethical and moral policy, facility greening initiatives, energy saving and recycling activities. In reference to technology, the hybrid car attains another level of meaning. It is seen as the inevitable consequence of sustainable technology that is available to a firm. The hybrid car becomes the paragon and manifestation of corporate social responsibility.

Figure 4.5 The Form of the System Marked by the Domain of Corporation



Corporative decision-making indicates the flow of managerial activity that can be communicated in terms of manipulating technical factors in hybrid car production and marketing. Also, the picture of a responsible manager, who is engaged in serving the cause of social welfare can be stressed (Forrester, 1958; Gronroos, 1990; Laczniak & Murphy, 2006; Varey, 2002b). The form shows that both notions are used in the system's communication: the former as the internal reference *vis-à-vis* the technology and the latter as the external reference toward societal sensitivities. However, the ideal of both technical and social perspectives is not easily achieved. It is quite likely that some communications violate both. This kind of violation is used as a basis of self-critique and opportunity to generate more communication:

> CO_2 emissions attributed to energy use in the production domain came to 467,600 CO2-tons in fiscal 2004, up 5.1% from the previous year's level (445,000 CO_2-tons)…These results were mainly due to increase in production, the influence of the weather, and the implementation of measures…(Honda Motor Company LTD., 2005, p.35).

The hybrid car is taken as the necessary and natural consequence of corporative decision processes that complies with the current level of technology. This aspect differentiates the necessary causality in the fact of the availability of the hybrid car offer in the market from complex indeterminate non-causal states, which underpin this market situation. As Toyota Corporation explains (advertises), its *hybrid synergy drive* technology has been inspired by two causes: the drive to attain high performance (the depiction of technological sensitivity) and the passion for environmental welfare (the depiction of social sensitivity). This account eliminates any reference to uncertainty. The non-trivial machine (the self-referencing system) transforms into the trivial, grounded, and definitive structure of cause-effect relationships.

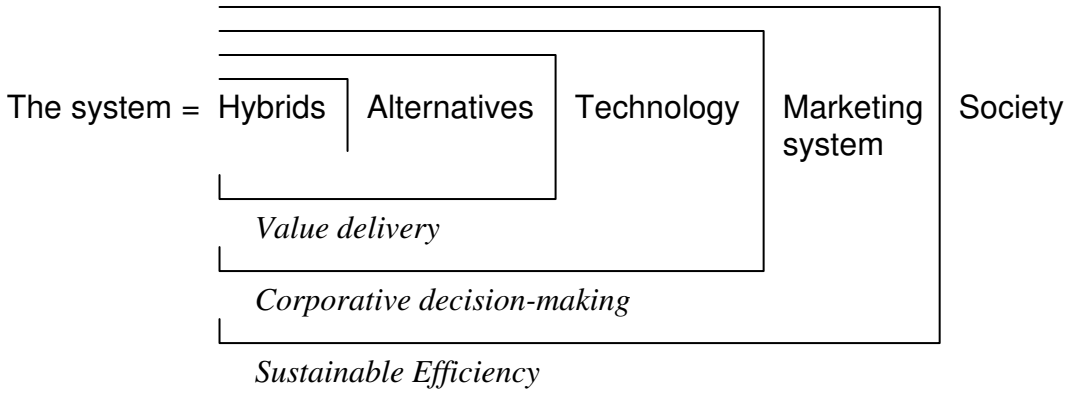
Marketing System

A corporation positions itself within the general context of the marketing system. This means that it differentiates itself from other socio-technological systems within these boundaries. The marketing system introduces the general frame of reference that allows the meaningful construction of corporative communication within societal boundaries. The corporation attuned to its marketing context builds its communication in reference to the general maxim of marketing: organisations should function to maintain value expectations. This is done by generating and keeping promises (Gronroos, 1996). The marketing system context creates some certainty by promoting particular expectations with regard to the ways of organising the sustainable value delivery process. The context brings into the horizon of attention such notions as value, markets, profits, positioning, segmentation, customers, and exchange. The code imposed by the marketing system (value/non-value), specifically, the distinction sustainable value/unsustainable value in this case, puts formidable constraints on the functioning of corporations.

Society

The marketing system operates within society. However, the marketing system can be viewed in various forms from the perspective of society. For instance, marketing systems are differentiated by the typology of goods, the domain (production, consumption, intermediaries), the temporal factor (retroscapes, current, post-modern), the geographical factor (national, global markets), and so on. The marketing system differentiates itself from other systems. It establishes itself within the society as the nexus of power that promotes efficiency that is sustainable. Efficiency is the domain which is re-entered to the original conversation (Figure 4.6).

Figure 4.6 The Form of the System Marked by the Domain of Efficiency



The procedures in the marketing system are implicitly laden by the pressure of the perceived level of efficiency. The application of this distinction is total: any procedure is either efficient or inefficient. This assessment is repeated in every level of communication: the hybrid car should offer fuel-efficiency; the alternative technologies are introduced into the market only if they are assessed as efficient; recycling and energy saving procedures are initiated because they promise increase in material and energy efficiency; and so on. Society will develop the expectation that any social action must be reflected within the marketing system in the light of this distinction. The concept of sustainability that is more transcendental rather than rational (Luhmann, 1989) cannot escape the assessment. For the marketing system, sustainable operations must be efficient; otherwise they are not considered appealing by the corporations.

The form of the system delivers the message: the hybrid car is the result of the drive for sustainable efficiency that is uniquely communicated in society. Society is considered as social communication, which is distinguished from other types of reality (Baecker, 2006; Luhmann, 1995, 2006). In this sense, the form demonstrates that the hybrid car is a mode of social communication, and in this the product's identity is different from anything else in the reality (Figure 4.2).

Contradicting

Corporations evaluate changes apprehended in their horizon of self-observation. Their valuation dissects a systemic space into binary states. However, self-referential valuation involves a contradiction by default (Casti, 1991; Gödel, 1986/1929-1974; Hofstadter, 1979; Whitehead & Russell, 1927). A paradox emerges if value is re-entered into the self-referential focus of the system. In SMC, valuation is unique: it cuts an observed space into sustainable and unsustainable patterns. Contradicting happens when events observed are labelled as being either sustainable or unsustainable. The question arises whether this act in itself can be a subject of valuing. The system contradicts the self-essence if it considers sustainable/unsustainable valuing to be always sustainable. The valuing act cannot be unsustainable, as this may ruin the logic of valuing. Valuing, however, indicates one of the values explicitly, whereas the other one is referenced implicitly. As it was observed in the form, sustainability is not realised in its holism and ambiguity, rather it is transformed into operationally-defined, system-specific communication. The sustainable is the self-descriptive state which is posited in reference to the unsustainable. For example, the Toyota Corporation emphasises three key areas of sustainability: *reducing, recycling, and reusing*. These concepts are constructed in action, but they would not attain their intended meaning unless they are contrasted to their negative side. The act of observing these concepts dialectically, for example, as recycling versus non-recycling, is a communicative act in itself. This act constitutes the system and defines the context of corporate sustainability. But how is this particular way of acting evaluated? SMC contradicts its valuing convention when it simply accepts this acting as being simply sustainable by default. The emergence of the sustainable/ unsustainable communication can be seen in Table 4.1. The table shows that

unsustainable events become information and provide meaningfulness to corporate actions (utterances). In this context, utterances are those processes in which corporations engage in such domains as *safety, impact, efficiency, and diffusion*, while information resides in the background seen as the set of deviations from environmental and social sustainability. Corporative utterances are directed into the following streams: *the hybrid car, alternative cars, technology,* and *the marketing system*. The synergy between utterances and information, which are chosen among many possibilities, represent the understanding through which communications that differentiate sustainable/unsustainable actions come into existence within the system.

Table 4.1 Emergence of Sustainable/Unsustainable Communication within SMC

Sustainability Domains	**SMC utterances**				**Society (information)**
	Hybrid car	Alternative technologies	Technology	Marketing System	
Safety	*Improving driver safety*	*Striving for maximum safety*	*Improving employee safety*	*Achieving balance between efficiency and safety*	*Risks and uncertainties: road accidents; traffic congestions; workplace accidents; global mobility imbalances*
Impact	*Reducing harmful fuel emissions*	*Striving for zero emissions*	*Reducing harmful facility and production emissions*	*Attaining efficient emission reductions*	*Ecological problems: deteriorating atmosphere; the ozone-layer problem; global warming; increasing landfill, corporate footprint etc.*
	Recycling parts and end-of-life vehicles	*100% recyclable vehicles*	*Recycling materials, waste and containers*	*Constructing efficient recycling network*	
Efficiency	*Improving fuel efficiency*	*Searching for alternative fuels*	*Saving energy and materials in value chains*	*Attaining growth and survival*	*Increasing cost of natural resources; global turbulence; regional conflicts*
Diffusion	*Promoting new versions of hybrids*	*Setting-up networks of cooperation to promote alternative concepts*	*Administering social and environmental programmes*	*Effective corporate citizenship*	*Ignorance and apathy about environmental issues; erosion of traditional community and culture, values, and ethics; destructive globalisation*

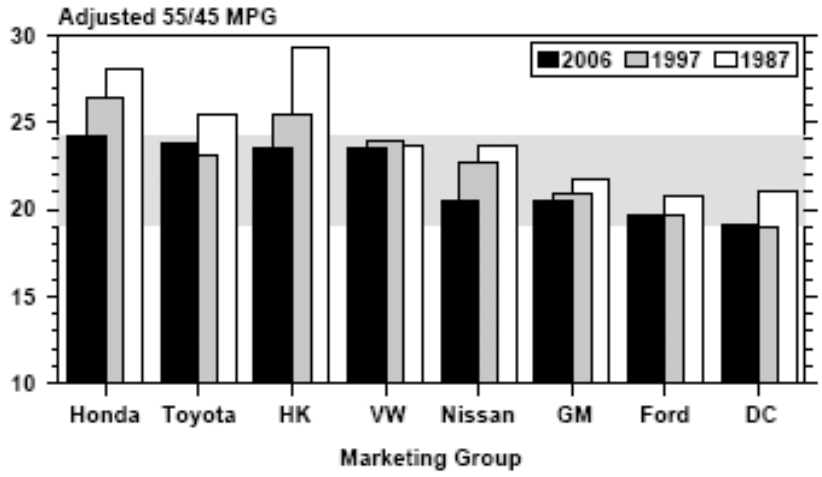
The table shows the general picture of communicating in the system, which is interpreted straightforwardly. However, the synthesis of the picture, and its background, i.e. the unity of differences reveals the paradox: the referenced domain (*unsustainable constructs*) "comfortably sits" within the activated domain of *the sustainable*, and offers a possible definition of what is happening in the system. To become understood as sustainable, communication needs to function as sustainable and not unsustainable; otherwise its inherent meaning within the system gets blurred. Thus, unsustainable becomes a part of the self-reflection based on the concept of sustainability. This is better understood via the following example. It appears that the only condition for a corporation to register a progress in attaining sustainability within a certain period is to construct itself in a very unsustainable position at the beginning:

> As a result, CO_2 emissions decreased by 29,000 tons in FY2004, achieving the reduction goal. However, an increase in the volume of production and a shift of production sites to distant locations increased the total transportation volume and distance, resulting in a total CO_2 emission volume of 285,000 tons. (Toyota Motor Corporation, 2005, p.36)

As follows from the example, the corporations cannot self-reference themselves as being sustainable or in a state of struggling to achieve sustainability unless a major unsustainable condition is attributed to their own operation. The condition is that deviations from sustainability should be seen as being continuously managed and curbed, which indicates to the dynamic nature of developing the self-definition. This event invokes a question: Does the system that cannot (is reluctant to) observe and define its own unsustainability have any prospect of being considered sustainable? Alternatively, is being unsustainable the necessary condition of becoming sustainable? The manifestation of the paradox is evident in the following example. Corporations claim that the hybrid car brands (e.g. Prius, HCH, Silverado, Sierra, Escape Hybrid) offer substantial improvements in fuel-efficiency. The meaningful difference is maintained only if inefficient vehicle categories are in place as a point of reference. Were the traditional vehicle technologies to become more efficient, the hybrid car appeal would vanish. In consequence, SMC ceases to exist. It does not mean that the hybrid cars would disappear from the market, rather it means that SMC (including all actions, meanings, and networks) that is built on the logic of differentiating what is

sustainable from what is not sustainable would stop its meaningful operation. SMC would have to turn to other differentiating bases. Thus, the system finds itself in a constant struggle (contradiction) in introducing both "sustainable" and "unsustainable" value offerings. Hence, in contradiction to the common perception that the value of a sustainable offer is reduced or mitigated by an unsustainable one, SMC operates by means of enlarging a fuel-efficiency chasm between models. The latest report by United States Environmental Protection Agency (EPA) not only supports this view, but also provides detailed information on the historical dynamics of the phenomenon (EPA, 2006). In stark contrast to the corporations' claims that fuel-efficiency has been improving in the last years, EPA reports that fuel-economy for all model light-duty vehicles (passenger cars, wagons, sport utility vehicles, vans and pickups) remained constant (!) for almost eighteen years. The current level 21.0 mpg (miles per gallon) is the same as in 1994, and less (!) than that (22.1 mpg) in 1988. Moreover, all marketing groups (Toyota, Honda, Hyundai-Kia, Volkswagen, GM, Nissan, Ford, and DaimlerChrysler) reported an almost steady decrease in the average fuel efficiency since 1987 (Figure 4.7).

Figure 4.7 Fuel Efficiency Data for Three Base Years by Marketing Groups in the Light-Duty Automobile Industry



Source: EPA, 2006

Two trends are visible in Figure 4.7. First, differences in average fuel efficiency among the groups are stabilising and narrowing down. Second, the level of fuel efficiency is steadily decreasing for most members. The first trend indicates the

tendency of solidifying, when the system gets reorganised (progressive centralisation) around the unique meaning of value. This also is the indication of increasing importance for the sustainable/unsustainable (in this case in the form of fuel efficient/fuel wasting) distinction being operated within the system. The second trend is very controversial and taken as an example of hypocrisy by some commentators. The average level of fuel efficiency has actually been decreasing for the last eighteen years amid communications by the corporations that sustainability has historically been, and is now the main prerogative of corporative action.

Expanding the Paradox

Contradictions created are made indiscernible in the operative level of corporations through expansion (moving away from an entropy point). Expanding is the purposeful behaviour of a system, which is depicted in becoming as dynamically different and meaningfully organised as possible in comparison to the outer complexity. Systeming interpretation distinguishes the following strategies of expansion used in SMC: hierarchical expansion, functional expansion, and temporal expansion.

Hierarchical Expansion

The paradox is removed if a growing number of levels is incorporated into the hierarchy of meaning, so the unity of the difference is hardly detected (Hofstadter, 1979). Operating at two levels – the basic and meta-level at the same time – is prohibited. Bertrand Russell has used this technique to maintain consistency in the logic of a formal mathematical system (Casti, 1991; Whitehead & Russell, 1927). In the same vein, I argue that SMC develops the hierarchy of meanings which distance it away from collapsing back into its own paradox. For example, addition of a level is observed when the maxim "*sustainable is sustainable*" is transformed into the description "the set of saving, reusing, and reducing acts is sustainable". The next expanded level would focus on specific actions in the context of saving, reusing, and reducing, e.g. Honda is recycling the bumpers of disposed vehicles.

Several hierarchical patterns are distinguished. This includes decision premises. A *decision premise* refers to a structure of communicative flows, within which a communication takes preceding communications as a premise that is deemed to be established, unchangeable, and correct (Seidl & Becker, 2006). Consequently, past communications are not questioned, and are taken for granted to serve as a basis for the following communications. SMC operates on the basis of such decision premises as *heuristics, appreciative routines, and a decision-maker fiction.*

> GM approaches the application of new technology to its vehicles with two simple and direct principles in mind: [1] GM needs to offer vehicles that people want to buy. Only if people buy new technologies in large volume will they become affordable and achieve the company's business objectives. [2] GM must meet its basic business objectives. Technology cannot be sustained if it must be heavily subsidized. (General Motors Corporation, 2005, pp. 4-3)

In the passage above GM is explaining why the corporation was too slow in adopting hybrid technology. Two heuristics are mentioned: innovation must be in high demand and it must not be subsidised. *Heuristics* are decision patterns crystallised over time (Strauss & Corbin, 1998). These are the practices of managers that become programmes to tell what routine to follow at what situations (Luhmann, 2004). Heuristics are strategies to deal with complexity in an efficient way; however, they may not always be effective. For instance, the story of success of Toyota and Honda in introducing hybrids to word-wide markets and other corporations following suit shows how these heuristics have not been particularly appropriate. Heuristics are "rules of thumb" that direct and simplify decision-making and action. In this sense, they are the approximations to the complex state of constructed realities and the perceived history of action:

> …as evidenced in such ways as their amenability to continuing kaizen (improvements)…[Toyota] also believes that it is important to conduct continual and constant follow-ups. (Toyota Motor Corporation, 2005, p. 58)

Historically established assumptions about the consequences and the meaning of action are thoroughly maintained in articulation:

> They [Honda employees] continuously try to improve their activities based on the PDCA (Plan, Do, Check, and Act) cycle. (Honda Motors Company profile, 2005, para 91).

Toyota and Honda assume that a communication which sticks to a kaizen or PDCA rule respectively is a successful one. For communications which follow from this point on, it would be impossible to step out of the system to challenge the prudence of this programming. Kaizen or PDCA cycle goes on to incorporate more and more communications: however, someone who is doing, for example, planning within the process, would not be able to plan the process itself. Actions directed toward kaizen or PDCA are unlikely to transcend the basic premise. The premise remains constant, while follow-up actions work according to this premise. In this, communications are limited, and thus, regulated by the system. Relevant to this, Hamel and Prahalad (1994) discuss "managerial frames" – the patterns of previous successful managing behaviour – which transform into dogmatically followed formulas and programmes as time passes. The successful heuristics of the past are not necessarily relevant in the present, as systems evolve abruptly (Salk, 1973). I argue that heuristics are rooted in the systemic dynamics of meaningfulness, as the purposeful expansion of a system is impossible without basic premises for communicating.

The other type of decision premise is an *appreciative routine*. The appreciative routine is a way by which the system constructs its environment. Appreciation is developed through active interaction when the system engages unities apprehended as other than self (Vickers, 1983). This process is developed in the form of enactment, which involves continuous interpretation of changes (Weick, 1979). The appreciative routine is existential. Existence and interpretation are not different steps in the reality of the system, but the different sides of the same coin. The system exists to interpret, and it interprets (appreciates) to exist. Here, I will discuss ways through which corporations appreciate the consumer of the hybrid car. The notion of customers, who are considered as rational "choosers" is offered (Schaefer & Crane, 2005, p. 79). Consumers are perceived as rational decision-makers driven by individual choice patterns. Why must this view be maintained? Schaefer and Crane offer their explanation of this fact by arguing that in this way "no fundamental challenge to market-based economic and political systems" is exhibited (p.82). I concur with this explanation in broad lines. I argue that SMC

eliminates any threats to its autopoiesis. Alternative thinking may pose a threat to the existence of the system by revealing the paradox of used distinctions. For example, the interpretive routine of seeing consumers as driven by hedonism undermines the prudence of the concept of sustainable consumption as used by the system (Dolan, 2002; Schaefer & Crane, 2005). The concept of hedonistic consumption suggests that excessive and non-rational consumption is good for consumers' well being. Therefore, the enforcement of sustainable consumption view would restrict the well being of citizens. The mechanistic account of consumption has a trivial connotation, so there could be no doubt that it represents the product (enactment) of the self-defined trivial structure of the system. Regarding the issue of trivialisation, several studies explored alternative perspectives through which a marketing system could observe and define itself (Dolan, 2002; Kilbourne et al., 1997; Schaefer & Crane, 2005). Schaefer and Crane (2005) maintain the possibility of activation of two alternative views of consumption in this context – the trivialised (mechanical) view and the enriched cultural view – along with the advantages and disadvantages of the views, and also the parties who would support/oppose these views. Dolan (2002) argues that although the latter view provides a more robust explanation, the former approach "effectively decontextualises" the macro-essence of the enriched approach (p.170). Dolan thinks that the macro-view is made "fit" into a micro-context. This effect is what is meant by trivialization.

Functional expansion

Observers deal with sustainability at the functional level of the system, which means that it is considered as a sum of discrete operations. Particularly, its enactment within the system does not come as a full description, rather the sustainable value is constructed via structured sets of injunctions (Hofstadter, 1979; Spencer-Brown, 1969; Wittgenstein, 1963) which represent a programmed indication to act in a certain way. Value is simply taken as a macro-problem that should be functionally differentiated in the system's operation. This could be observed as a particular case of the general rule of trivialisation (Baecker, 2006). In this respect, Luhmann (1989) said that:

> …the general rule of beginning from reference problems and looking for their functional equivalents can be seen, to a greater extent, as a generalizable principle that accepts unity (a transcendental whole) as a problem, i.e. only for the sake of the difference that can be created through it. (p. 136)

This rule can be seen in the self-observation of corporations, where sustainability is accepted as the general problem to be handled, and its notion is used to create distinctions in functions. Capitalising on the advantages of the software Nvivo 2.0 such as text labelling, searching, and ordering, I have collected the examples of functions which best illustrate the system's strive toward sustainability. The functions are interpreted as difference, whereas these differences are posited in reference to each other. The meaning of a single example could only be understood when it was compared to other similar functions. The functional categories identified were: *emission management (reduce); recycling activities (recycle); material and energy efficiency enhancement (reuse); safety enhancement; planning, design and technology (PDT); product externality management (PEM); and local impact management (LIM).* The patterns of functions are broad, and in some areas they overlap. Although the complexity of the relation between the system and its environment is not easily mapped, this is not seen as a limiting problem. Quite to the contrary, messiness in the flows of communication indicates a contingent and chaotic structure, through which the existence of the system comes into the foreground. A discrete act stands out as the *utterance* which takes other actions as background *information*. While each utterance represents a first-order activity, the information becomes the result of second-order self-observation. The interrelatedness of the actions indicates the flow of communication. *Emission management* is the most frequently recurring pattern. The types of emission observed were greenhouse gases (nitrogen oxide, methane, carbon dioxide, carbon monoxide, hydrocarbons), CFC-12, sulphur dioxide, the substances of concern (lead, mercury, cadmium, and hexavalent chromium), volatile organic compounds in paint solvents, and industrial oils. The corporation observes only those emissions that can actively be engaged with. Hence, the system's "the emission" is not a static substance, but it is an active process. Corporations not only *reduce* the emission, but also *prevent, detect, monitor, control, isolate,* and *reuse* it. In this context, the emission represents only those substances which can be manipulated. This means that the non-emission

emissions are overlooked. For example, new compound materials which are free of the emission can be introduced, while it is not of concern if these new compounds could have other types of harmful substances because of their non-observability. The question thus arises if the system is able to observe its own blind spot, i.e. its ignorance of both the emission and the non-emission. This system keeps silence in this regard, hence, seeing/not seeing distinction is not activated in subsequent communications (Luhmann, 1994). Beyond this, the expected condition of society in the future – *the zero-emission society* – is the concept that gives meaning to emission-managing operations. The zero-emission society only becomes possible when the selective definition of harmful emission and the silence about ignorance are kept constant.

The prototype "*recycling as efficiency improvement*" is used often, while the "*recycling as safety enhancement*" is underemployed. This pattern could suggest that either recycling activities are unable to contribute to the enhancement of social/individual traffic safety or the system has not figured out yet to make a full use of this prototype to create a sustainable value. Moreover, sustainability actions do not always have a positive contribution. Certainly, the negative sides of the phenomena are silenced by SMC. So an empty cell may suggest that the activity has a potential to harm the cause. For example, the impact of new car bumpers produced from recycled substances on safety goes without a mention.
The system explores opportunities to generate more innovative communications. In the case of the empty cell "recycling as safety enhancement", the introduction of an account of how recycling could contribute to social/individual safety may become an innovative advancement for any agent.

Temporal Expansion

SMC attains credibility through ordering its communications along a temporal continuum. The system develops its own timeframe to create the temporal meaning of communications. SMC's time flows at a different pace than that of the environment. The system develops an "internal clock" that registers the time flow for various aspects of the system:

> But what really hits home is that "shifting landscape" part. This industry has always been about as dynamic and fast-paced as you can imagine. And it seems even more so these days. I would submit that no facet of this business is shifting and evolving as quickly as advanced technology and alternative propulsion. (General Motors website, 2006, para 11)

The meaning of sustainable activities would not be brought forth without the internal registration of time. While the environment is complex and its pace of turbulence is uncertain (Dowling, 1983; Emery & Trist, 1965), it is the system that filters down this complexity into structured internal temporality. This is, in a sense, unavoidable, as communications have to occur in a successive manner, so the temporality is the condition for the existence of the system (Luhmann, 1995). While actions are taken as happening one-after-another in the present, the sense of a time continuum is created inside the system, which differentiates the system from its environment. This is done through *bringing the past or the future into the present*.

The past, a set of historical events, is transformed into the *past-in-the-present*. The system orders constructively all the past events into a narrative that is made meaningful with regard to the current value. The past-in-the-present strategy is maintained by a means of creating narratives, which plot self-referential history. *Emplotment* refers to interpretation that gives a particular meaningful shape to the flow of history (Polkinghorne, 1988). The meaningful narrative told by the self-descriptive entity, the system, contains a plot that has been built for realisation of the current value. Obviously, the plot is never static, it adapts to the context of communications.

In the report, Honda appears as an original sustainable unity that has a long history of sustainable action. Actions are just actions in the face of historical evolution, i.e. they do not bear meaning in themselves. The self-observing entity, Honda, selectively constructs particular milestones in the meaningful narrative of environmental action. Consequently, in present emergence, the system seizes a control of the past, and thus the future, because future communications are ordered in reference to the past. Thus, the past is not given. It is constructed in reference to the value of the system. The *present* state of the system guides both *the past and the future* of the system. This is the power of self-reference.

For example, Toyota in its recent print advertisement of a new Lexus hybrid model on the pages of *The Economist* magazine (2006), declares that the introduction of the model has become "a true milestone" in the coupled history of transportation and luxury. In this Lexus nexus, the historical timeline for transportation reads as follows: completion of the transcontinental railroad (1869), invention of first gas-powered automobile (1892), a successful test of the first motor airplane (1903), invention of a cruise control system (1945), commencement of a bullet train service (1964), a flight of the space shuttle Columbia (1981), completion of a channel tunnel linking the UK and France (1994), introduction of a hybrid vehicle (1997), and finally, introduction of a luxury hybrid vehicle (2006). The events linked to the advent of luxury were the debut of tuxedo in New York (1886), production of a first cultured pearl (1893), introduction of a fountain pen (1924), invention of a jacuzzi bath (1968), introduction of Lexus automobile brand (1989), opening of the signature hotel St Regis in Aspen, CO., and finally the introduction of a luxury hybrid vehicle (2006). The ad suggests that the latest achievements in transportation and luxury have found their completion in the new model of Lexus hybrid. The noteworthy point in this narrative is that the events mentioned appear not to be related between each other to any great extent, but aligned in reference to the latest current point in the history, the existence of the new car model. This point is what that gives meaning to the overall system of plotted events.

In a similar manner, the future is also brought to the present. This happens when communications attain meaning in reference to future events. For example, the role of the zero-emission society concept in driving communication regarding the management of emissions was mentioned earlier. In the same manner, the idea of the recycling-based society is often invoked to guide recycling activities:

> In Japan and indeed throughout the world, people are keenly moving towards the establishment of recycling societies. Honda, ahead of many others, has been implementing diverse environmental projects. In the future we intend to conduct research to establish our projected visions to enable us to steadily move towards realizing a true recycling society. (Honda Motors Company profile, 2005, para 102)

The future, in its various present enactments, is also conceptualised as a *hydrogen economy* (to emphasise fuel-cell technology), the *zero-landfill state*, the *sustainable mobility society,* the *ultimate eco-car domain,* the *dream of sustainability,* the *century of the environment,* the *harmonious co-existence*, and so on. The future becomes meaningful, because it adapts to present activities. At the same time, the present becomes meaningful, because it references the future, especially, a particular vision of it. Furthermore, this enables SMC to develop a self-critique. The-future-in-the-present creates a gap between the present state and the expected one in the future. This self-referential chasm enables the system to steer and stabilise the flow of communication. The gap needs to be preserved at all times. The contradiction is never solved, because once solved, it stops being a systemic problem. The system finds itself under a continuous pressure to create contradictions by positing the future into the present.

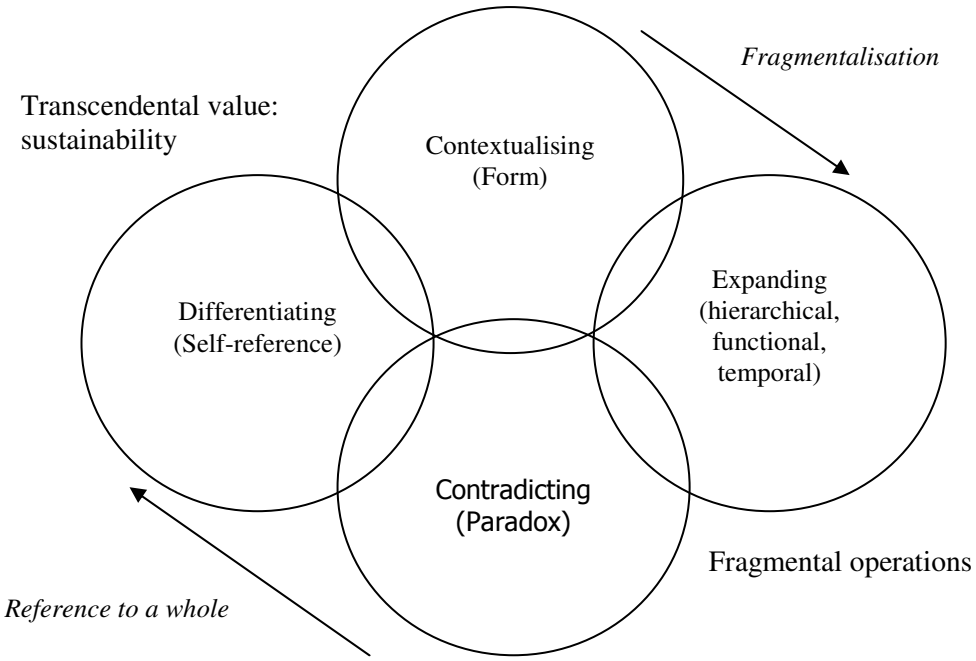
Summary

To summarise the interpretation, I present a snapshot of the dynamic state of the system, the systeming crystallisation (Figure 4.8). The systeming crystallisation illustrates the general view of the system's purposeful character. It does not claim universality. While recognising that the theory should be simple but not simplistic, it simply conveys the fragmental picture of highly complex social patterns. Particular caution needs to be exercised so that the crystallisation is not taken as the connotation of a cause-effect mechanism. The systeming crystallisation depicts the process through which SMC emerges as a coherent whole. SMC's emergence is purposeful, intrinsic, and its character is not governed by external forces. This emergence happens as expansion from within via meaning transformation. The meaning transformation is represented by differentiating, contextualising, contradicting, and expanding (Figure 4.8).

Differentiating constructs the ordered view of the self and the environment within the system. The environment enacted is the inherent part of the system. It is within the system rather than without. Contextualising symbolises the purposeful flow of meaning-construction within multi-layered spaces. The system comes forth as the cascade of contexts in which observed events are mirrored in various meanings.

Because of these basic-to-meta contextualisations, communicating equals to contradicting. The fragmented operations at the initially adopted context contradict communicating at meta-contexts.

Figure 4.8 SMC's Purposeful Expansion



Contradictions are expanded hierarchically, functionally, temporally, and communicatively. In the figure, the downstream flow (from the transcendental value to fragmental operations) and the upstream flow (from fragmental operations to the transcendental value) represent the main directions along which the meaning transformation occurs. In other words, the meaning transformation happens when sustainability as a transcendental concept is enacted as fragmental operations within SMC. Also, meaning is acquired when discrete operations reference sustainability as the guiding value. The system cannot function without the transcendental concept. However, the concept is enacted in fragmented forms, because communications can only convey the severed enactment of a whole (Fichte, 1970; Luhmann, 1995, 2006; Spencer-Brown, 1969). The system differentiates itself from external complexity and expands from within as a complex structure.

Chapter 5: Subsystem of Consumption Practices

Crystallisation II

In this chapter, the (sub)system under focus is *the system of hybrid car consumption practices and communications* identified as *SCC* or *the system* hereafter. The guiding research question remains identical to that of the preceding chapter: how does the system enact sustainability meanings? The resulting insights from the systeming interpretation are briefly presented upfront to enhance the understandability of ensuing interpretation (Figure 5.1).

Figure 5.1 Essential Aspects of Meaning Enactment in SCC

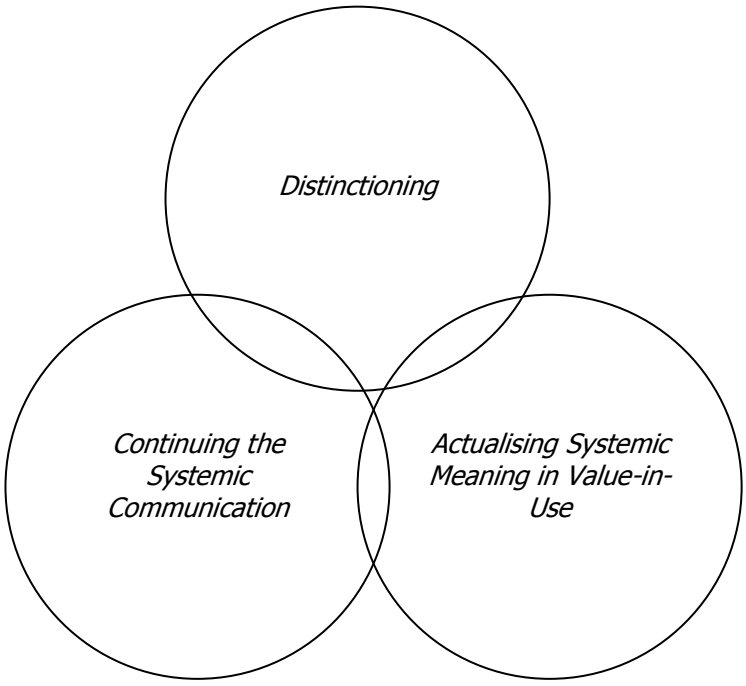


Figure 5.1 represents the essential aspects of the meaning-enacting process in SCC. In brief, in this chapter, I illustrate the aspects of SCC's purposeful behaviour in enacting sustainability meanings. These aspects are distinctioning, actualising, and continuing. *Distinctioning* refers to the pattern of systemic being-in-action, in the process of which hybrid car users employ identical system-specific distinctions to observe their experiential life-worlds. Distinctions activate

differences such as a contrast between sustainable and unsustainable patterns. *Continuing* refers to the intentionality aspect of a hybrid car consumer who distinguishes the system. Individuals intentionally reify the system in their active state of understanding the systemic practices and principles. Understanding-in-action is neither a cognitive nor a transcendental process, but a dynamic act of purposeful interacting. *Actualising* refers to a systemic pattern in which consumer value-in-use for hybrid cars reflects systems meanings. Systeming demonstrates that consumer value is a system-specific operation that actualises overriding distinctions within the system.

Distinctioning

Distinctioning is not a simple activation of distinctions. It symbolises a unifying pattern of differences that maintain a common meaningful difference. The interpretation indicates that activated distinctions in the consumer domain are not accidental; rather they are directed at maintaining *the difference.* Distinctioning is observed in the following patterns: *recurring distinctions, valuing, comparing, self-differentiating, and differential contradicting*.

Recurring Distinctions

Consider the following extract from conversation in a forum dedicated to hybrid cars:

> Confessions from a large truck driver
>
> … for the last 5 years I've been driving a 11-seater Ford E350. A very large van with a very large engine. There you got it..... I feel a weight off my shoulders. Now that I've come out of the closet, let me elaborate briefly: This is a company-sponsored carpooling van, which I drive. So when all the occupants are tallied, we still get very respectable MPGPP (Miles per Gallon per Person). So why did I need to make this confession? because I must admit that I was guilty of some of the aggressive behavior, that some forum members complain about large SUV [sport-utility vehicle] and truck drivers. When I got my HCH (Honda Civic Hybrid), I became EDUCATED and RESPECTFUL. It is amazing how much one's driving improves when one puts attention to the way one drives. The HCH has been a great educational tool on both driving for mileage and driving for respect. Forum members already know the reasons and tricks for driving for mileage. But what about driving respectfully? Why it is that large SUV and truck drivers - not

> everyone, but certainly on average - tend to drive more aggressive? My theory: because large trucks and SUVs are basically designed to isolate you as much as possible from the road and its surroundings. (posted by fg1 (usernames are altered), on 16/02/2006, at www.greenhybrid.com)

This passage is the example of how observation of events change depending on a system reified. In the passage, the story teller is unifying *truck and SUV drivers*, and objectifying their behaviour as being different to that of *hybrid car drivers*. The points of difference, distinctions, activated here are as follows:

a) the hybrid car drivers are educated rather than ignorant because of their sensitivity to social (peer) feedback (the distinction activated here is educated/ignorant);
b) the hybrid car drivers drive more respectfully rather than aggressively in comparison to SUV/truck drivers (respectful/aggressive);
c) the hybrid car drivers emphasise fuel efficiency rather than other motives (efficient driving/inefficient driving).

These distinctions resonate with other observers who also relate similar stories based on similar distinctions. The similarity of difference-making actions creates *the difference*, and it represents *the difference* of SCC from other systems reified through different distinctioning.

What happens if an initial distinction is out of SCC? One may always disagree with the proposed distinction, and consider the situation in the light of another, but a system-specific distinction. Thus, SCC emerges once again. SCC emerges when distinctions considered irrelevant are refuted, and instead, relevant systemic distinctions are suggested. This process is evident in the following conversation:

> With the help of my wife (read as "constant ribbing"), I have come to the conclusion that the Prius is a "chick [female] car". Almost all of the other Prius I see on the road here in the Princeton, NJ area are driven by women. Is that the trend nation wide? (posted by DS, on 28/05/2006, at www.priuschat.com)

> Reply: The way I look at it, good old economics will eventually dictate who buys and drives emerging high fuel-efficiency technologies and push the question of, "how do I look driving this car?" or the statement, "That's not a man's car!" further into the back seat. Far too many people live right on the edge of their financial capabilities and exist in

> a situation where one burp could send them into the abyss. Holding on to a low efficiency vehicle because of its looks, or because of the way they PERCEIVE they look in the driver's seat may be the very thing that brings down the house of cards. My question: Does image eclipse the potential loss of material gains accumulated through hard work over many years? At what point will a man (or woman) say, "You know, I really love my truck (or SUV) but I can't go on paying $75 or $100 every time I fill up. This is insane and it's getting to the point where I can't pay my other bills. I need to get a car with better fuel mileage - one of those hybrids that gets 50 miles per gallon, maybe. I don't like how they look, with that funky rear end, and I wouldn't have been caught dead driving one a year ago, but hey, I have to get more efficient if I'm going to survive." To me, the answer is plain and simple. The survivors are going to have to get more efficient - much more efficient - if they want to prosper in the future. That's going to be the issue, not whether a man or a woman looks better in this car or that. (posted by BeL, on 13/06/2006, at www.priuschat.com)

DS is concerned about whether or not the brand of hybrid cars, Prius, is seen to be a feminine car by a majority of consumers. Accordingly, the distinction operated regarding the brand is whether Prius is solely feminine, in contrast to other brands which are predominantly unisex. The sleek design of certain hybrid car brands often leads people to think that they are designed exclusively for females. The reply by BeL refutes this distinction. He/she argues that that the *feminine/unisex* distinction is not as important as distinguishing *fuel efficient versus inefficient* brands. In this case, the initial distinction is played down, while the system-unique distinction is suggested as original.

Valuing

Valuing, i.e. constructing a dialectical form that consists of binary, opposite values, consolidates communicative acts which reify the system as a whole (Luhmann, 1995). The system is not the result of valuing, but it is a process, the particular mode of valuing, copied by many agents both concurrently and sequentially. Binary values such as good/bad do not simply represent foundational criteria. They arise as systemic constructions. They are activated rather contingently to expand communication. A systemic *good* is not known unless a *bad* can be defined. For instance, the hybrid car fans talk about “radiation”. For them radiation represents radioactive waves emitted by electric systems of the hybrid car. They consider radiation as an unsustainable (bad) attribute of the car,

while non-radiation is considered to be good. In this case, one can observe a distinction – radiation/non-radiation – that becomes a means for interacting within the system. Interaction expands in search for appropriate definitions for both radiation and non-radiation. However, no fundamental grounding, a guiding reference, can be detected in defining radiation. The outcome depends on how radiation *vis-à-vis* non-radiation is defined in an argument, while a subsequent argumentation challenges initial assumptions of the previous argument.

Interaction is possible when observed events are posited in complex dialectical forms. For example, the form "radiation/non-radiation" divides the life-world into negative and positive sides. Is the process of valuing in itself, the system, posited within this form? If everything observed is divided into the positive and the negative, can this operating position itself above the confines of this valuing? The system is logocentric (Stern, 1995), meaning that the positive side of the distinction is always preserved for the observer:

> First: although there is a fair bit of media hype about 'radiation from power lines' and the 'danger' of radiation from cellphones and how it all may cause cancer, it is my understanding of the scientific principles involved that none of those fears or warnings are based on sound science. Radiation from cell phones, cars, even powerlines, is not going to give you cancer. You will be exposed to more radiation from spending an afternoon in the sun than you will from spending a year chatting on a cell phone. The most 'radioactive' activity you will ever experience in your life is getting on an airplane, because being above so much of Earth's protective atmosphere and being closer to the sun, even for just a few hours, exposes you to as much radiation as you would normally get in several months... and it's NOT harmful. Frequent air travellers [sic] are not endangering their lives, because levels of exposure that are sufficient to cause harm are SO much higher than levels experienced on airplanes, even cumulatively. Second, consumer safety standards in this country for acceptable levels of emissions from household products are set at incredibly low levels.. (posted by lb1, on 21/02/2006, at www.greenhybrid.com)

According to the passage, it is *good* to assume that the hybrid car's battery pack has "no radiation", as its effect is considered to be much less in comparison to that of a number of other serious radiation sources. The *good* actions reify SCC as a distinct unity to other systems. Individuals who act in "good" ways become part of the system. Consequently, it is *bad* when someone acts so as radiation is the

problem of hybrid cars. However, this valuing does not resolve the issue entirely. SCC's continuous self-affirmation of positiveness should be extended into the future. This is accomplished through alerting operations. The *alerting operation* is an observation which questions, and cautiously doubts the affirmed goodness of the system, while preserving an expectation of a positive resolution of the case. For example, one may occasionally ask whether it is "radiationally" safe to be seated near a hybrid car's battery pack for a long time. This brings the radiation distinction back into forefront of attention, and communications ensue. The other type of the alerting operation, the internal rendition of others' opinion on the issue, could also be suggested as a starting point. For example, one latest editorial published on the hybrid car's radiation can be presented. Both the questioning and answering operations pertain to SCC, and they both purposefully drive the system into the positive resolution of the issue. One might see hypocrisy in this situation, as it could be queried why someone asks a question when the answer is already known, or at least, he/she expects a positive confirmation. Nonetheless, agents in the system are not concerned by this paradox, as this is just one of many strategies to maintain systemic expansion.

The pattern of always positing the system as a positive event applies to all distinctions activated within the system. For example, the central distinction in using the hybrid car is *fuel efficiency/inefficiency*. Actions within SCC are predominantly defined as being conducive to fuel efficiency which is considered to be a positive, superior, and preferred event. In contrast, fuel *in*efficiency is attributed to non-systemic actions. The positive side becomes the perfect position to critique others. The self-affirmed positivity allows the system to suggest its own solutions to sustainability problems.

The system sees itself as morally responsible to promote the idea of total fuel efficiency. This morality, distinctioning good/bad practices, is considered to be good in itself. Therefore, solutions must always be sought according to the systemic perspectives. For instance, hybrid enthusiasts suggest that governments must raise prices for fuel to discourage both excessive fuel consumption and demand for gas-guzzling cars:

> I think that this type of gas rationing is ridiculous. All it would ultimately achieve is more invasive and inefficient government control and red tape over our lives. The only way that Americans are ever going to stop guzzling large amounts of fuel is if the price of fuel becomes so oppressively high that the American public has no choice but to curb unnecessary driving habits and start purchasing much more fuel efficient vehicles. We are seeing this as a general trend now and my guess is that it will continue. The average working American family simply will not be able to afford to drive around in inefficient SUV's and the like when the price of gas hovers at the $5.00 a gallon mark in the not too distant future. This will result in a drastic change in consumer buying trends and driving habits. We do not need the federal government rationing our gas consumption, this is simply going to add to the problem. (posted by GoH, on 12/06/2006, at www.hybridcars.com)

GoH is assessing the situation from the perspective of the system. He/she is neither interested in all the multi-faceted opinions of society members nor is he/she able to consider others' life challenges and aspirations linked to mobility problems. For GoH the solution of the sustainable mobility problem is both simple and clear – the government must raise fuel prices – which makes perfect sense within the context of interactions in SCC. SCC looks for the ways to expand. In order to expand, self-righteousness needs to be assumed. This approach to valuing is used to enforce system-specific distinctions on the increasing number of other agents. The higher the number of communications which employ the system-unique distinctions, the bigger (more total) is the system's domain of influence. Therefore, hybrid car enthusiasts favour strategies which morally enforce the fuel efficiency distinction on a larger part of society.

Comparing

The pattern that is distinguished in online discourses is that the hybrid car consumers construe and consolidate their identity through activating continuing comparisons to consumers of other car categories. Hybrid car characteristics and related consumption practices are taken to be different to those of non-hybrid ones. The differences observed create meaning and this meaning is at the core of SCC. The systemic essence is signified in the difference between hybrid vehicles and other comparable vehicle categories. For example, advantages and disadvantages of the hybrid car *vis-à-vis* the (bio)diesel engine car are discussed often:

> Which is better: 1) Buy a diesel car. In the short term, you would be saving yourself some money (diesel isn't an expensive technology), improving your fuel economy, hurting the environment (just a little bit), and contributing to rising health care costs. In the long term, you'd be funding the research to switch to biodiesel fuel, which is cleaner and possibly more fuel efficient. It might even bring about an improvement in piston engine design that increases horsepower and torque. The engine still needs motor oil though. 2) Buy a hybrid car. In the short term, you'd be spending a couple thousand extra (vs a gasoline or diesel powered car), improving your own fuel economy (comparable to a diesel engine), helping the environment a LOT, helping to reduce health care costs, and reducing not only dependence on foreign oil, but any fossil fuels. In the long term, you'd be helping to fund battery research, electric motor research, and fuel cell research. You're still using gasoline, you're still using motor oil, but half of the engine is using NEITHER motor oil NOR gasoline. Does that just about sum it up lock, stock, and 2 smoking barrels? Furthermore (if this IS a correct summation) then can we say the REAL question is: Which is better...Fuel cell research, or Biodiesel research? (posted by Tm1, on 28/02/2005, at www.hybridcars.com)

In this case, the observer constructs the meaning of the hybrid car. This meaning is realised in a form of "how the hybrid car is different to the diesel engine car", rather than in a form of transcendental (holistic) appreciation of the hybrid car in itself. Here, the meaning of the hybrid car also involves depiction and interpretation of the diesel [engine] car as the part of the whole. In this form of depiction, hybrid car consumption practices emerge as being *more* environmentally friendly, *more* conducive to health improvement, *more* helpful to national foreign policy, and *more* supportive of superior fuel-cell research than the diesel car patronage. Thus, SCC becomes the unity of difference between the self, the hybrid car meanings, and the other, the diesel vehicle meanings. If taken generally, the meaning of the hybrid car is constructed in the background of a set of comparable car categories. The categories such as SUVs, (bio)diesel cars, electric vehicles, or fuel-cell vehicles become a point of reference for comparison. The hybrid car is constructed as the most viable option that meets requirements of the present:

> I bought the Prius mainly because I could not buy a modern EV [electric vehicle]... and the Prius was the closest I could come. I chose the Prius over all other hybrids because of the (very limited!) EV mode. (posted by dd1, on 06/08/2006, at www.priuschat.com)

> There also a bonus about a hybrid that usually goes unmentioned but I like the fact I go to the gas station 3 times less than my previous car an SUV [sport-utility-vehicle]. With gas so high I hate to wait 20-40 minutes for the cheapest gas in town to save 10 cents a gallon. I've be saving over an hour of time of my life filling up gas. How much is your time worth? (posted by Wn1, on 16/10/2005, at www.hybridcars.com)

The alternative car categories are assessed from within the system. The system builds its judgment in conformity with its internal operations rather than portraying objectivity in its assessment. For example, while an SUV may be positively assessed as a powerful, spacious, and sporty car within other systems, SCC constructs it as the "radical enemy" of the hybrid car. Accordingly, the SUV is a gas-guzzler, the paragon of apathy to societal problems, and the symbol of waste and environmental destruction. Furthermore, conventional SUVs are seen fostering the habits of inefficient driving. Comparisons also emphasise the difference activated by *meaningful shift* in product usage behaviour. Hybrid car drivers argue that they change their driving *attitudes, styles,* and *habits* which are radically different to those of conventional drivers. This process of changing reifies a distinct communicative system, SCC.

As the vehicle driving attitudes and habits change, so does the observation of social events. The "average" (conventional) driving is thought to be conducive to fuel inefficiency. However, it is often stressed that simply possessing a hybrid car does not make one a "real" efficient hybrid car driver. This shows that the product in itself (or the possession of it) does not create a distinct consumption system and a corresponding value. It would be conventional to think that it is the hybrid car that is fuel efficient, and hence, the mechanical aggregation of discrete fuel efficiencies brings about the most venerated state of sustainable mobility. The systemic dynamics indicate that a purposeful human acting rather than the object is the basis of the system. Thus, systeming shows that SCC is the product of dynamic purposeful shifts in human behaviour. So the incorporation of hybrid cars into the ways of meaningful communicating, difference-creating, and valuing creates SCC rather than simply purchasing or owning a hybrid car. This demonstrates that the meaningfulness of SCC is rooted in communications which distinctly enact the relation of the hybrid car to the purposeful acts of society members in interaction.

Self-differentiating

The difference of the system is also actualised in individuals' *self-differentiating acts*. The hybrid car consumers self-differentiate in order to construct distinct identities. For instance, a hybrid car driver's identity, as it is expressed in the online forums, may comprise information on attained average fuel efficiency in terms of mpg (miles per gallon) or km/l (kilometres per litre) over the period of a hybrid car ownership, the number of hybrid-driving years, and a distance driven in the hybrid-car. The statement of these aspects of hybrid car identity creates a differentiation. Besides, this identity reflects the high complexity of relations within SCC. The drivers with an impressive mpg, long experience, and a big driving distance are conceived as the legitimate opinion leaders of the system. Therefore, the word of advice to others is often coupled with the indication of hybrid car identity. The identity aspects are believed to bestow high legitimacy and respect on the guidance of an advisor. From the systemic perspective, this may be the way through which SCC ensures that only original distinctions are communicated, accepted, and continued. A newcomer cannot hope that his/her unqualifying, unsystemic, and irrelevant distinctions are accepted easily. Thus, the system prevents a destabilisation and maintains stable reproduction of particular meanings. Also, self-differentiating happens in stages of *self-contentment*. The self-contentment occurs when one is satisfied with the level of one's own achievement, and acts toward this very self-chosen target.

The identity of a hybrid-car driver is not simply an individual identity. It emerges as social identity, because it is created in communicating and interacting with other hybrid car enthusiasts. The analysis of identity ethos reveals that its meaning is embedded in the network of communications which people subscribe to. This means that identity within the system does not solely originate from within individuals' cognitive and psychic structures. Fichte (1970) discussed how an otherwise undistinguished, but unlimited absolute self acquires meaning by means of positing (*setzen*) itself as a self that is limited by a non-self. The self-reference is thought to entail two operations. First, it comprises fragmenting the observed self by referring to the non-self, and second, fragmenting the absolute self by referring to the observed self. The social identity of hybrid car users that is

communicated in online discourses is fragmented in the same way: a) communications pertaining hybrid cars indicate recursively to themselves as a *hybrid-car practice,* which is defined in reference to a *non-hybrid practice*; b) the system detaches itself from the distinction (the hybrid/non-hybrid practice) assuming the role of an observer, the indivisible absolute unity, and observes the unity of the *hybrid vis-à-vis non-hybrid practices,* the divisible unity. This can be observed in the domain www.greenhybrid.com, that hosts the thread "you know you're a real hybrid owner when..." which discusses the unique behaviours of hybrid car consumers (these few statements were selected out of more than 600):

> You know you're a real hybrid owner when...
>
> 18. …you get told, "*shuuut uuupp*" when you mention your latest tank was 64.4 MPG (3.6 L/100km)!
>
> 42. …you park at the top of a hill at the store under your wife's protest and that extra 50 feet to walk turns out to be 500…and you don't mind.
>
> 68. …you check your tire pressure as often as you brush your teeth.
>
> 71. …you maintain both a printed and a stored Excel spreadsheet of you[r] mileage and proudly display it to any poor soul unfortunate enough to ask, "*How do you like your hybrid?*"
>
> 92. …you removed the side mirrors, rear wiper, and antennae to improve your automobile's wind resistance.
>
> 124. …you chuckle at SUV owners that get frustrated and race past you, only because they used more gas during that maneuver [sic] than you will for your entire commute to work. (www.greenhybrid.com/general forum)

These self-referential definitions have several common features. First, identity is expressed through a momentary interactive operation, i.e. communication. For example, the expression #42 "you know you're a real hybrid owner when you park at the top of a hill at the store under your wife's protest and that extra 50 feet to walk turns out to be 500…and you don't mind" indicates that "fuel efficient identity" is expressed via a concrete self-defining action in reference to a certain phenomenologically recognised object, a hill. Here, identity is not static but dynamic. However, it is fragmental, and realised through a discrete action. A unique context underlies each identity-constructing situation. Second, other-reference appears to be the inherent part of self-reference. In the aforementioned example, other-reference is hidden but implied firmly. It is implied that the "significant others" would ignore the hill, and stop at a convenient place close to

the store, as their distinction would be more a matter of convenience rather than fuel efficiency. Third, meaning cannot be determined by only analysing a single expression. The repetitive enactment of the action (e.g. stopping on the top of hills) in isolation has no meaning, while the meaning becomes embedded in the total context of the system. The identity of the person stopping at the top of hills becomes meaningful when his/her action is located in the embedding meaningful context. In other words, if the observers know that SCC is a locus of differentiation between fuel efficiency from fuel inefficiency, then they can put the meaning of a story in a proper perspective. The story of stopping on a hill asserts the recognition of the importance of fuel efficiency, and therefore, it can be located within SCC.

Differential Contradicting

Self-reference creates contradictions (Gödel, 1986/1929-1974; Hofstadter, 1979; Luhmann, 1995). Hybrid car fans are often perplexed by the manufacturers' strategies which promote both fuel-efficient cars and rival gas-guzzling brands at the same time. This may be the case, because the sharper the difference between these categories as perceived by consumers, the stronger the system's meaningfulness. However, the paradox exists not only in manufacturer actions, but also in consumers' communications. For example, consumers believe that their actions are sustainable because they are directed at reducing emission and fuel consumption. Although this assertion might be somewhat true in reference to individual drivers, it is highly doubtful in reference to collective fuel-efficiency of all cars-in-traffic:

> Gave this a little thought. You might actually LOWER the collective MPG (of all the cars on the road near you) by doing this, because you would force others to slow down (without capturing the wasted energy) and regain original speed if you drive a lot slower than permitted. (posted by Lb1, on 12/09/2005, at www.greenhybrid.com)

The passage implies that the roots of a solution for the fuel-efficiency problem (and thus that of sustainable mobility) may go much deeper than is understood. Drivers might become self-referentially closed into their own communication, while thinking in terms of discrete units, and their mechanistic aggregation. However, the situation around the hybrid-car-in-the-traffic is more dynamic than

perceived. The interaction of various cars in traffic can be seen as yet another system. So the problem becomes that of the interactive ability of SCC which must be conducive to recognition of other alternative systems. The system's ability to resonate with changes happening in other systems is an important factor in this situation. SCC may be driven by considerable fuel economies, whereas the effect of its fuel-economy-operating on other systems may become contradictory to self-chosen motives.

Furthermore, hybrid car enthusiasts employ particular driving strategies to boost hybrid car fuel efficiency. The conventional driving strategies are considered inefficient within the system's reference. The act of a change from inefficient to efficient driving practices in itself communicates that a certain difference has been enacted. At the same time, these communicative acts appear indistinguishable and even unapprehendable for those who are not initiated into the system. One of the forum participants (observers) struggles to understand this kind of event, while labelling it as hypocrisy:

> The hypocrasy i [sic] love the most is the people who advocate these vehicles as being just as good as a regualr [sic] car, yet they are the first ones to cry bloody murder when someone has a problem by claiming "They must have drivin [sic] it too fast, they must have done this or that". Gf [a forum participant] by his own omission has proven that he himself does not see the insight as one, in his battery failure thread he talks about how he is now changing his driving style to not affect his new pack. Well according to you we have seeminly [sic] different driving styles (Although you have never seen me drive) Yet the cause of failure is because of the operator. Yeah right, its either a regualr [sic] car or its not. Sorry for that little tangent but it is true. (posted by hs1, on 17-2006, at www.greenhybrid.com)

The distinction of the hybrid car battery's *failure/endurance* is a topic that is discussed often. Hybrid car fans are often worried about the duration of a service life and a replacement rate of battery packs. These battery packs are an energy source that drives the hybrid car's electric motor. However, the distinction (endurance/failure) is made meaningful by a means of acting. The hybrid car drivers usually change their driving practices to maximally extend the battery life. Yet at the same time, they may discuss how hybrid cars' batteries are durable and reliable. As a result, the observer (in the example of the poster given above)

becomes puzzled in regard to the consistency of the content of discussions and the form of actions. In his mind, the long service life of battery packs is caused by the hybrid car drivers' change in their driving styles. In contrast, the hybrid car drivers see manufacturing quality, the inherently positive feature of the product, to be a cause of performance. Certainly, it may look like hypocrisy when sayings (claiming that battery packs have a long service life) are betrayed by doings (acting purposefully to extend the battery life). In contrast, the systeming interpretation indicates that, for the system, this is the issue of neither hypocrisy nor sincerity. It is the basis of purposeful expansion. The *difference* is simply observed as a set of positive differences, and in this the system is recreated.

A similar situation is observed when the hybrid car drivers strive to reduce the overall travel weight:

> I don't let other people drive my HCH (Honda Civic Hybrid) (if I had a wife maybe, but girlfriends, NO), but I do get silently frustrated carrying passengers and feeling the struggle for the same FE the current tank is getting at that point. I know I'm saving fuel by taking just 1 car, and 1 very economical car at that, but darn those people for dragging along that much more weight. (posted by hs1, on 16/09/2005, at www.greenhybrid.com)

Hybrid car drivers strive to keep the total weight of a car as little as possible. Little weight is believed to have a significant effect on fuel efficiency (mileage). However, it is in the interest of the public that a larger number of people travel with a smaller number of vehicles. This idea represents the principle of carpooling. *Carpooling* refers to the practice of sharing a means of transportation to travel together to common destinations. Here, one can see again that the hybrid car drivers' intention to serve public interests (by reducing emission and fuel consumption) is in a direct opposition to the public cause of promoting carpooling. In fact, some governments promote carpooling as a measure to reduce the total amount of traffic, emissions, and fuel waste. However, hybrid car drivers dissent carpooling as this might reduce their individual fuel efficiency, while total efficiency at a societal level is not of interest. Consequently, they consider the fuel economy at the general societal level very narrowly, i.e. as the mechanistic sum of each individual's fuel savings.

The biggest self-contradiction is that the hybrid car fans entertain the positive view of hybrid-car-related acting, which is considered to be conducive to general societal sustainability, while presupposing the negative view of other practices. This creates a basis for discrimination, ethnocentrism, and intolerance. The systemic differentiative acts marginalise the feelings, preferences, aspirations, and communications of others. In some instances, these aspects are attacked from the position of self-ascribed positivity. The systemic actions encourage the belittlement, destruction, and elimination of "opponent" meanings. The irony is that such ways of acting are labelled as "sustainability" initiatives. The matter of how sustainable such sustainability activities are is seldom questioned. Moreover, the systemic acting of constructing "other" consolidates identity of the other. "Other" identity becomes stronger as the system keeps expanding. The system's expansion is related to its vulnerability, because its very acting fosters the consolidation of opposite meanings.

Continuing Systemic Communication

In the system, communication is continual, i.e. a communication is linked to preceding communications. This process is depicted in relation to information, utterance, and understanding (Luhmann, 1995). SCC arises when a) relevant conditions of the hybrid car usage are recognised and thus, information is constructed; b) the conditions are engaged with through the means of hybrid car driving practices, the process which constructs utterance; c) proper continuation of conditions-practices cycles reflects an individual's ability to continue system-relevant communications, which symbolises understanding. This conclusion is in line with Wittgenstein's (1963) view that understanding is an ability to carry on relevant communicative operations. The system is manifested in an ability to differentiate between proper systemic communication and non-systemic complexity.

Conditions as Information

Phenomenology stresses that individuals intentionally discern "objects" that could be engaged as information. In SCC, information is represented by a set of

conditions, which can be *external* or *car-related.* The hybrid car driver approaches only those conditions which are instrumental in realising the purposefulness of the system. Thus, conditions are not independent factors selected from a so-called concrete external environment, but are constructions which are self-referentially deduced from the state of complexity of the environment. For example, a "city drive" is not constructed unless driving practices and accompanying observation register a radical change in fuel efficiency within urban areas. What are other important conditions observed and constructed in the system? The patterns observed indicate *external conditions,* which comprise climatic and geographic factors. The climatic factors comprise weather conditions (air temperature, humidity, etc), weather events (rain, snow, storm, etc), and the seasons:

> Since getting my Toyota Prius…, I have monitored my gas consumption quite religiously. As weather cooled down in the Fall, I noticed that my gas consumption increased by about 10%. I remembered that I had noticed a corresponding improvement in gas consumption in the spring as weather warmed up (before I removed my snow tires). (posted by Pb1, on 06/11/2005, at www.hybridcars.com)

This discourse indicates that the hybrid car driver constructs the meaning of the climatic condition quite arbitrarily depending on a salient distinction emphasised within the system, rather than observing a weather event in more absolute and objective terms. For instance, weather seasons are assessed by the extent of influence they exert on driving habits and fuel savings. Consequently, a weather event is not a weather event as such. It is a *fuel-efficiency-changing* event. The car driver notices rain or wet conditions only in the case where the condition affects substantially a self-appointed fuel-efficiency target. It is a noticeable jump (shrink) in registered mileage (km/l) that makes, for example, a winter period different, and thus uniquely addressable, in comparison to a summer season. These phenomenologically distinguished factors call for a unique set of intentional actions to be constructed. For instance, air temperature is differentiated through addressing it through particular actions. Although such an uncontrollable factor as a level of outside temperature is expected to be taken for granted, it is not the case for the system. This factor can pro-actively be interacted through particular intentional actions:

> It sounds well deep, like walking on the rice paper and not leaving a mark like David Carradine in Kung Fu. Aside from accel [sic] work, this guy covers almost all of the front grill and half the engine room in winter, has extended the air intake pipe, and uses the equivalent of a block heater on the engine. It sounds like he is using a halogen room heater, a somewhat improvised solution. The speed limit on most Japanese roads is low, so law-abiding Japanese drivers will get good mileage in many cars outside the city. The Japanese S (no VTC) model EPA is 35.5km/l, though I think this is the first time anyone has claimed to achieve it…They have some of their offline meetings in Aichi where my missus is from, so I might try and go to one of them for some "tane akashi" (revealing of secrets). (posted by Sz1,, on 07/06/2005, at www.priuschat.com)

The geographic conditions include local topography, road traffic, routes, and driving distances/times. These conditions are also constructed in the manner of active engagement. In this way, the hybrid car drivers notice and meaningfully construct these situations in reference to their fuel saving experiences. The local topography assumes importance as a driver tries to anticipate and use a challenging topographical difference within his/her commute for fuel-efficiency advantage. Particularly, hills and long stretches of sloped distances become the object of communication. Particular changes in a driving style are activated depending on the height, slope, and length of hills.

In contrast to traditional car drivers, hybrid car drivers are not indifferent to idiosyncratic driving conditions such as heavy road traffic or traffic conjestion. The reason for this seems to be straightforward. On the one hand, it may help them assert their distinct self-identity in some places, where they can take high-occupancy (HOV) lines while driving alone. On the other hand, a slow stop-and-go kind of traffic is a perfect place to boost the level of mileage:

> I love how quiet and smooth my driving experience is in the kinds of traffic I most hated pre-hybrid -- stop and go, rush hour, construction traffic nightmares, accident delays, etc. And the focus on fuel economy gives me something more productive to shoot for than being the first to that next light. (posted by Gl1 on 16/06/2006, at www.greenhybrid.com)

The system actors experiment with different alternative routes for their travel. Although they would prefer routes that are perceived to optimise fuel-efficiency, they may also try alternative routes quite often. Depending on the complexity of road networks, drivers may choose to take parallel highways, avoid undesirable

traffic and roads, combine trips, plan and try out new routes, take a challenge of "curbing" difficult routes, and even simply experiment for the sake of experimentation.

> You know you're a real hybrid owner when… 68) You check your tire pressure as often as you brush your teeth. (ef1, 20/08/2004, www.greenhybrid.com)

In this passage, the hybrid car driver expresses a common eagerness to pay attention to a particular factor. Thus, the hybrid car driver becomes closely attuned to the conditions of his driving environment. Within this not only the external factors, but also *car-related internal conditions* are differentiated. The car-related conditions comprise ventilation, travelling mass, speed, aerodynamics, tyre condition, a mileage calculator, cruise control, road view, and last but not least, petrol quality. The variation of these factors emerges in the driver's experience rather chaotically. Yet the user is not a passive acceptor, rather he/she is an active interactor, even a constructor of his/her experiences. For example, it is generally accepted on the part of hybrid car drivers that the extensive use of air conditioner (A/C) reduces fuel efficiency.

Driving Practices as Utterance

How can one characterise intentional actions which are activated in constructing the conditions? This analysis identifies two broad patterns of driving practices: *principles* and *strategies*. It was mentioned earlier that self-legitimising recursivity emerges when consumers claim to attain a state of sustainability by choosing a fuel-efficient car, while interactively introducing particular driving strategies and principles, which bestow this car category a quality of "greenness". The strategies and principles are actively implemented and used to justify this selection. This kind of activity normalisation is actually done through differentiation, as certain relevant strategies are usually chosen from among many available in the perceived horizon of driving strategies. Once a principle or a strategy is chosen it acquires meaning *vis-à-vis* a newly expanded horizon of principles and strategies. For example, when a principle of "less braking" is activated, hybrid drivers may choose among many options of how to manage this braking experience.

Principles play the role of a broad umbrella to guide a set of interrelated actions. The boundaries for particular actions are set through the principles, but specific actions are left vaguely defined. Boundary-setting definitions are abounding in self-observation. For example, hybrid car drivers talk about the "seven miles-per-hour" principle with regard to braking, which is about avoiding slowing down below seven miles-per-hour when decelerating. This is believed to result in a lost opportunity to glide and regenerate extra energy for batteries. In addition, the analysis distinguishes the following patterns of the driving principles: less braking, smooth acceleration and slow driving, more manual control, less electric motor engagement, and combining short and long trips. Such in-the-system-principles are predominantly understood as having positive connotation *vis-à-vis* rival (opposite) principles or with the state of having no principles. Hybrid car drivers consider themselves as a gatekeeper and proud implementer of the systemic principles.

Several hybrid-car-driving *strategies* are implemented within the system: pulse-and-glide, engine-off coasting, and drafting. The *pulse-and-glide technique* is the most complicated strategy, in the process of which a driver maintains a certain speed and when necessary accelerates using electric power while the internal combustion engine is held on hold. This technique is also referred to as "feathering" or "deadband acceleration":

> The "Glide" technique places the Prius II in a similar mode to forced autostop. (Engine on but not turning over and transmission in neutral) Since you cannot place the Prius II in neutral and shut down the ICE, reboot, and coast in with the FE and mileage being electronically registered afterwards, you have to trick the Prius into this mode of operation. To achieve "Glide", hit a speed of 41 mph, let off the accelerator just a touch for a fraction of a second to induce regeneration (best if you can skip this altogether), get right back on the accelerator ever so slightly to achieve and then maintain black arrows all around with the ICE shut down, no regeneration to the pack, and no pack to motor generator set propulsion. The black arrows on the energy flow screen will tell you that you are in or very close to being in the coast free state. The only energy output during the "Glide" portion is from the pack to maintain the Prius II's electronics booted up and supplying the computers and displays. You will need to practice this as it is not intuitive. The "Pulse" phase is a lot trickier. During the "Pulse" phase the idea is to let the ICE send all of its energy only to the wheels during acceleration and nowhere else. This phase of operation in a Prius II is called the dead band state. In this state, power flowing

> from the Internal Combustion Engine to the Motor Generator Set, the MGSet to the wheels, or MGSet to the pack have been diminished to 0 or as close to this as practically possible. Achieving this requires significant experimental time or direct coaching. To achieve this, gently step on the accelerator enough to get the ICE to spin up and provide propulsion with the energy screen showing ICE power to the wheels. The digital readout will show between 30 and 55 mpg for the acceleration back up to 41 mph. In a nutshell, accelerate up to a maximum 41 mph, then "Glide" and slow to no less then 31 - 33 mph. Then begin the "Pulse" phase and re-accelerate back up to a maximum 41 mph. Repeat this over and over. Ordinarily, the target speeds make this un-sustainable for hours on end because of the speed limits, traffic, and traffic signals, or other conditions we experience. (Miller, 2005, August 10).

Drafting is a matter of getting very close to the rear of large vehicles such as trucks on highways to get an advantage from the aerodynamic corridor created by them:

> Drafting… involves sucking up real close to the back end of a truck or bus, riding in their wind shadow. It's amazing how much energy it takes to drive at high speed, with your vehicle's engine having to work hard to push all that air out of the way - if you let somebody else do it for you, your engine doesn't have to work as hard = you get better mileage. (posted by Pl1, on 01/09/2005 at www.hybridcars.com)

The driving strategies are unique to SCC. They are enabled by the current hybrid technology, though non-hybrid car drivers can make use of some relevant aspects of these techniques. However, the system is formed via difference-making communication. This kind of difference-in-action is made meaningful within the system itself. For a person operating outside the system, this type of abnormal driving behaviour is not understandable, and may seem to be odd in comparison to conventional driving practices. This means that the system is formed and understood from within rather than from without.

I refer to both the principles and the strategies as *practices*. The conditions and practices combine to create *conditions-practices* cycles. This means that when a condition is constructed it is followed by a particular practice, and at the same time, a particular practice constructs a relevant condition. The word *cycles* represents this dynamism and recursivity. Hence, the system's purposeful expansion requires dissemination. This is enabled by ongoing re-production of

conditions-practices cycles. Continuous learning, educating, and experimenting with the conditions-practices cycles occur within the system.

Learning in this case is not simply a change in conscious states. It involves operative emulation of systemic behaviour, and in this, it depicts a difference-making communication rather than a progressive mental growth. The system creates fractal copies of itself through rapid diffusion of communications, and this creates knowledge redundancy. There cannot be any talk of structural efficiency in this kind of network, as the system does not consist of a centre which holds all the knowledge and efficiently distributes it to its peripheries. Rather knowledge is transferred in totality as a whole set of ability training. Anyone can become an educator and a learner at any time. It means that knowledge does not have to be reinvented in each case of communication, but it must be copied and emulated. Any communicator is an educator at the same time. Hybrid car drivers communicate to be observed, and possibly to be emulated. Educating would not be successful if the learners did not experiment. Hybrid car drivers continuously *experiment* with techniques and principles they have learned in interaction with their peers.

Understanding

SCC forms in continuous occurrence of discrete, momentary communications which are equipped with the system-unique meaning. The main challenge is that ceaseless continuity needs to be maintained, so the system maintains its dissipativity. This analysis delves into the mechanisms of how this kind of continuity is maintained. The hybrid car consumer recognises the system-relevant external and internal conditions and actively engages with them via hybrid car driving practices. Accordingly, the combination of the conditions, the driving practices, and knowledge dissemination allows the system to re-create meaningful structures in each communicative moment. Not only does the hybrid car driver become a source for systemic rejuvenation, but also an autonomous point in the system that can be used for a complete re-production of the whole system if it is deemed necessary. For instance, the hybrid car driver interactively constructs the meaning of for example “a hill” by a means of manipulating his braking, accelerating and other driving principles (and strategies) when he/she approaches

one. These principles and strategies are instantly modified according to the perceived nature of the hill. The conditions and accompanying actions do not come in succession, rather they are co-constructed recursively. Once this recursivity is given motion, the system is recreated, i.e. continued. This process is called understanding, as it indicates that the rule of the game is understood when the driver continues acting in a proper systemic way according to the systemic meaning. Does understanding reside in the consciousness of the hybrid car drivers? I observe particular manifestations of understanding in the discourse of hybrid car drivers. But these are not pure cognitive operations. The systeming interpretation avoids the transcendental and reductionist explanations of the process. A transcendental account explains understanding as a Platonic quality hidden within a complex unobservable structure, while a reductionist account attributes this process to changes in neural networks of mind. Wittgenstein (1963) argues that understanding is neither a mental state nor an experience nor a proper quality of an actor, but ability that is manifested in a set of interrelated processes of meaning enactment. This idea parallels the concept of systems. In other words, one understands when he/she is able to distinguish system-proper conditions and strategies, while using these factors simultaneously and creatively in expanding communications. Hence, understanding is a proper continuation, and it is indispensable in maintaining the purposeful expansion of the system.

Actualising Systemic Meaning in Value-in-Use

Value is a complex phenomenon (Holbrook, 1994; Woodruff, 1997). There are a number of various approaches to define consumer value. In observing SCC, I accept a relatively dynamic definition given by Holbrook (1994, p.27) that "value is an interactive relativistic preference experience". This definition is in tune with the notion of value co-creation (Prahalad & Ramaswamy, 2004b; Vargo & Lusch, 2004) that stands in contrast to the mechanistic idea of value delivery and distribution. The notion of consumer value in this analysis is that of value-in-use, which recognises that "in using a product, the customer is continuing the marketing, consumption, and value-creation and delivery processes" (Vargo & Lusch, 2004, p.11) rather than the notion that the consumer is delivered a full value, which then gets consumed. What is the mechanism of value co-creation

seen from the systeming perspective? Does sustainability become enacted within the system in the form of consumer value-in-use? Accepting the notion that the system is formed through creation of meaningful communication, this analysis illustrates that co-creation of consumer value is contingent on systemic meaning-creation processes. Systeming indicates that value-in-use is constructed and transformed as the particular actualisation of systemic meaningfulness that is driven to purposeful expansion.

Value Proposition

The conventional mechanistic thought places a *value proposition* in the environment of SCC as a given factor. This value is taken to be complete, offered by marketers, and accepted (consumed) by consumers. For example, it is conventionally accepted that the hybrid car delivers fuel efficiency value. This value in a broader sense represents sustainable mobility. The mechanistic notion is that this value attributed to the product is the output of SMC and the input of SCC. The mechanistic perspective separates the process of delivering and the process of using a value. However, in stark contrast to this view, systeming shows that both value offered to consumers and value created in consumption process are the inherent internal operation of SCC. In other words, what is considered as the offer is not an absolute input taken from the environment, but it is the communication of SCC striving to interpret its external environment. The widespread belief is that the hybrid car manufacturers develop and expand the hybrid car market. However, this analysis suggests that manufacturer actions merely comprise part of the total marketing system. Companies are only able to make a value proposition (Vargo & Lusch, 2004) while this proposition is not accepted straightforwardly by consumers. It is re-translated into SCC's "language" and enacted in its operation. Consumers maintain their own perspective on the nature of the hybrid car value. This process is reflected in the example of accepting Toyota's concept of *synergy drive*. From the company's perspective, the concept of hybrid synergy drive (HSD) symbolises the hybrid car's electronic mechanism that automatically monitors the extent of power drawn from each of both an internal combustion engine (ICE) and an electric motor depending on evolving driving situations. It is a complex automatic system supported by an on-board computer. Hybrid car drivers create the meaning of this

feature on their own terms: HSD appears as too rigid a technology which actually inhibits creative experimentation with fuel efficiency.

The integration of HSD into the hybrid car depicts the intention on the part of the manufacturers to help drivers achieve optimal balance in fuel saving, while not compromising driving comfort. However, some hybrid car driver like to tamper with the features of HSD to co-create his/her own optimal situation. The synergy drive comes to the focal point of consumer communication when consumers' actions are directed at interacting with this state-of-art technology. Hybrid car users have simply discovered the additional point of differentiation in HSD. The difference stems from the fact that only the hybrid car offers this advantage of tampering with this type of technology. Also, this indicates a much deeper conflict - humanistic struggle against technology-driven rationalism – the depiction of superiority and relevance of human intelligence and flexibility over machine-like rigid rationality (Hofstadter, 1979). The value offering is based on *dehumanising* the driving experience. It is reflected in the intention by the manufacturers to relinquish human power to control life situations over to a "lifeless and soulless" technology. This causes frustration on the part of consumers:

> For the record, I don't have snowies [snow tyres] on it, just the Integra's [a hybrid car brand] that came with it, regardless, you still should be able to use wheel spin to your advantage, so I put on snowies, and I get on a steeper incline, probably same thing (although I admit, I could be wrong). I swear, between this and the anti-lock brakes (which IMO [sic; Integrated Motor Assist], is more dangerous than it's worth), I just wish I could shut down all this crap. I'd drive far better without it. I guess there's such a thing as too much technology.... I just wanted to yell, "STOP TRYING TO DRIVE FOR ME!!!". (posted by Ms1 , on 09/12/2005, at www.priuschat.com)

Some hybrid car drivers wish to *be-in-control*. This creates a paradox of the hybrid car offering. While companies take pride in delivering a reliable technology which is thought to reduce fuel consumption in an automatic, predictable, and stable manner, the system operates on the wholeness of this value proposition by narrowing it down to the fact of the promise that users can take personal charge in saving fuel. By this both complexity and simplicity is attained for driving experiences at the same time. On the one hand, driving becomes complex, because of incorporation of system-unique practices into otherwise

standard automobile usage. On the other hand, complexity related to the external environment – state-of-art technology, the future of the planet, the new alternative sources of energy, prominent environmental issues, sustainability, safe driving conditions, to name but a few – is reduced to a simple gauge, a computer calculator, that shows how many kilometres (miles) are driven per litre (gallon) of petrol burned.

The autopoietic process in meaning-creation renders this simplification of the value proposition as a basis for creation of internal complexity. It becomes a source from which endless metamorphosis of communications is tapped. The value proposition represents hope (Belk, 1996) that being-in-control of fuel-saving-behaviour delivers much wanted public welfare and environmental balance. The hybrid car's appeal is not based on rational evaluation based on cost, price, and saving criteria, although this is what the manufacturers would like to emphasise in their enactment of consumer motivation. The value proposition is anything but the indicator of promised *potentiality* for consumers which must be taken the advantage of:

> …see what kind of mileage is possible with hybrids. The average (mean) is not indicative of what gas saving techniques can produce in a hybrid, it simply blows away a conventional car. (posted by Ml1, on 03/10/ 2005, at www.hybridcars.com)

The hope for the endless potentiality to co-create value experiences is what serves as a principal point for a recursive turn of communications, while becoming a "common platform" upon which co-creative experiences are built (Prahalad & Ramaswamy, 2004a). Hybrid car users are aware that the value proposition from the manufacturing companies is not a magic bullet for all the concerns, rather it is a "pie in the sky". It must be realised and actively pursued by relevant actions. This tells that the fact of a hybrid car ownership is not a guarantee of sustainability in itself. The way this value proposition is purposefully acted upon and enacted within the system is accepted as hope to transcend beyond the individual blindness to environmental issues.

A question thus arises on how the manufacturers should act if their intended meaning from delivering value does not have a linear impact on consumer

meanings. Forum participants provide an answer - the product must be tuned into the systemic meaning:

> Hybrid cars are built-in with the technology to really take advantage of gas saving techniques. It is completely true that conventional cars can take advantage of them as well. However, conventional cars most often do not have the feedback to truly get the best mileage. Caution, generalization: Those who are getting 45 mpg in their HCH are not necessarily driving their cars carefully. Those that are driving their HCH for mileage are getting at least 50 mpg and more like 55 mpg. If you are getting 31 mpg in your V6, you might be in the 55 mpg range with a HCH. I can use the same techniques in my V6 car and get 30 mpg. I do the same techniques in my 2004 Prius and get 60 mpg. The Prius is just tuned to really take advantage of gas saving techniques and gives immediate feedback to hone your techniques. (posted by Ml1, on 03/10/2005, at hybridcars.com)

The system does not maintain a unique preference for a particular product brand. Any product that becomes a point for continuing communications within the system may become a basis. Marketers should realise that a fine balance needs to be struck in order to be at the forefront of consumer communications. The product must not delimit those communications which serve the cause of the system's total identity, at the same time it should limit those communications which are considered as the other. Tuning into the systemic sentiments of value may take various forms. Managers can observe a manner in which the value proposition is translated and used in co-creation of systemic communications and accordingly adapt the proposition itself, a task which may require a more relational and dialogical approach to marketing (Ballantyne & Varey, 2006; Varey, 2003).

Value Co-creation

Value can have many facets in terms of meaning. I observe value variability in the example of fuel efficiency of the hybrid car, as this aspect of the product is much discussed and stressed by consumers. For consumers, fuel efficiency is a cultural and existential phenomenon rather than an absolute measure that is simply expressed in miles-per-gallon (mpg) or kilometres per litre (km/l). Even the meaning of this measure is fluid, i.e. it changes depending on the nature and self-observation of consumer experiences. A particular number reported as an achievement indicates the unique flow of underlying experiences, that brings forward this number as a label to mark particular interaction. For example, a

reported “42 mpg” on two different occasions indicates two totally different experiences:

> I am very disappointed in my gas mileage. I follow all the "tips" shared by Honda and this web site, however I continue to get about 42-23 [mpg] highway and 36- 38 [mpg] city. I am wondering if I have a problem with my battery. (posted by lk1, on 16/12/2004, at www.hybridcars.com)

> I have been getting around 40mpg (regularly registering 41-42mpg on the trip meter that i reset each tank full, the trip metter [sic] left from the beginning has 39.3 registered, it had 82 miles when bought. I do find myself watching the real time reading and backing off the pedal where possible to try to keep the reading above 40 wherever possible and find I rarely go over 60-65 MPH on the highway (in town Atlanta so at rush hour I'm often going a LOT slower than that (26 round trip miles to/from work)… Overall I like the car. (posted by Pt1, on 01/12/2004, at www.hybridcars.com)

The unique fuel-efficiency experience is not the extent of fuel spending expressed numerically as a particular quantity (km/l or mpg), rather it represents the unity of all consumer experiences which led to this level of fuel spending. This view illustrates the difference between the mechanistic description and the systeming depiction of the happening. The former observes the distinction of measurable absolute variation in fuel-spending, while the latter indicates the totality of experiences. The v*ariability* in reporting unique fuel-efficiency achievements indicates that fuel efficiency comprehension depends upon a great number of factors that range from conditions, actions, and expectations to the ways of defining, calculating, and measuring it. The actual reported level of mileage, the unique fuel-efficiency experience, varies from as little as 19 mpg to more than 100 mpg. Fuel efficiency is not stable. Rather its meaning is co-created in interaction among consumers and most probably in relation with producers too. Hybrid car drivers co-create each and every aspect of driving.

Consumers copy others’ actions and expect comparable results. Value expectations are actively communicated, and actions are accordingly directed to the result. Both success and failure in meeting an expectation result in more communication. In some US states hybrid drivers apply for HOV lane stickers. The application process takes some time to be processed. The system participants

maintain certain expectations with regard to the acceptable period of waiting time. When the waiting time exceeds the expectation, they start worrying. This is the effect of the system within which they operate. For example, this communication can be considered:

> Quote: My check cleared on 2/17 but still no sticker. I called the DMV and they can see an "action" was taken on my car on 2/22 (hopefully the mailing of my sticker) but they can't tell what it was. Any advice on confirming that a sticker was issued? (posted by CNT, on 04/03/2006, at www.priuschat.com)
>
> Reply: I feel your pain, only worse! Here are my key dates: (1/23/06 - Bought car; 1/24/06 - Mailed app; 2/10/06 - Check cashed; 3/2/06 - still no stickers!). what is really going on? I called the DMV field office, but they were no help. She said to call back in a week. If I don't have them by now, I certainly won't have them in another week, whats [sic] the point? Something is wrong. I guess I will have to dread another week without my stickers, and call in then and see what they can do at this point. (posted by ms1, on 04/03/2006, at www.priuschat.com)

Autopoietic Transformation

The analysis indicated so far that the value proposition is uniquely enacted within the system. The emergent value is the result of co-creative practices which are maintained through communication of expectations. What is the character of value transformation in reproducing meanings in the system? Communications must be continuously produced and reproduced. This uncertainty contributes to the alternative mode of value to that advocated by the marketers. In the system, the marketer's *efficiency* turns into the system's *play*, and the former's *quality* may be taken as the latter's *beauty* (Holbrook, 1994). Holbrook argues that efficiency-as-value incorporates motives for attaining "technical rationality" by "maximising the input-output ratio" (p.45). The manufacturers think that this industrial sensitivity is directly transferred to consumer life situations. However, this does not mean that consumers become the machines of fuel efficiency. The manner in which the fuel efficiency is constructed is totally different. Holbrook proposes the concept of play. Play is defined as an interactive experience that is an end in itself (Holbrook, 1999). Play equips experience with fun and interactivity, and it becomes a basis for communication dissemination. Play does not put the burden

of necessary achievement on a person, and thus gives access to innumerable possibilities to extend meaning. It enriches the meaningful existence of the system:

> My favorite gear is neutral. Every chance I get, I run with the engine off and the ignition switch on. My kids call it driving "Soap Box Derby" style. They are all Soap Box Derby racers. We own three All-American soap box derby cars, and I am a race official. We have been doing this for five years. So you can see, coasting downhill has become a family hobby. (Miller, 2005c)

This shift in the value transforms the “extrinsic” nature of the proposition , a means to ends), to the “intrinsic” quality, an end in itself (Holbrook, 1994, p. 45), its character changes from instrumental to ludic (playfulness), from practical to autotelic (action is a reward in itself rather than being associated with some outcomes), from utilitarian to personal appreciation (Holbrook, 1999). I call this process an *autopoietic transformation* of value. The themes retrieved from the data that support this idea are “obsession” and “artful driving”. Playfulness creates obsession:

> What extremes? For example this summer has been very hot. Mid 90's, 99% humid. Sticky. While almost everyone just runs their AC I have not. Many times I've brought along a 6-pack size cooler with icewater and a dabbing cloth.... (posted by hg1, on 14/09/2005, at www.hybridcars.com)

The complexity of dealing with the hybrid car shifts consumers closer to the recognition that tampering with the hybrid technology is not only the depiction of a technical expertise, but also that of an artful accomplishment:

> Finding the best balance between using the battery for auxiliary power (when getting up to speed) and using the gas engine only when cruising may turn out to be an art. (posted by Rd1, on 01/12/2004, at www.hybridcars.com)

The notions of play, obsessive and artful behaviour hint at the process of *communication enrichment*. These factors make consumers get tuned onto the systemic flow of communications. This is comparable to the theory of job enrichment (Hackman, Oldham, Janson, & Purdy, 1987). According to this theory, a person’s satisfaction with an activity depends on three states:

experienced meaningfulness, experienced responsibility, and the knowledge of results. Experienced meaningfulness underlies a playful character of actions which thereby are perceived as important in reference to a particular system of values. Experienced responsibility depicts an individual's perception that he/she is the sole responsible person for the outcomes, whereas the knowledge of results requires that a person must have adequate criteria to measure the results of his actions. All these states are present in SCC. The character of SCC confers meaningfulness to hybrid car drivers' actions, while drivers perceive themselves to be in control of the situation, and have access to a fairly stable criterion (a mileage metric) to measure the outcome of their actions. These conditions enrich their actions within the system.

The analysis indicates that consumers are aware that hybrid cars are not simply about *saving costs*. A large part of discussions were about why hybrids should not be considered as a means of "return on investment". The argument was that small savings in operating costs such as fuel economy are not able to off-set a huge premium paid for acquisition of the hybrid car *vis-à-vis* alternative comparable models. Marketers urge users to note a clear advantage in fuel economy, thus emphasising a *hedonic* character of value (Podolny & Hill-Popper, 2004), that is, reducing value to a set of measurable criteria. However, experiences communicated within the system indicate that it rather fits a *transcendent* conception of value (Podolny & Hill-Popper 2004), which stands for a holistic blend of mutual appreciation that reduces a social distance between the object and the subject.

Actualising Systemic Meaning

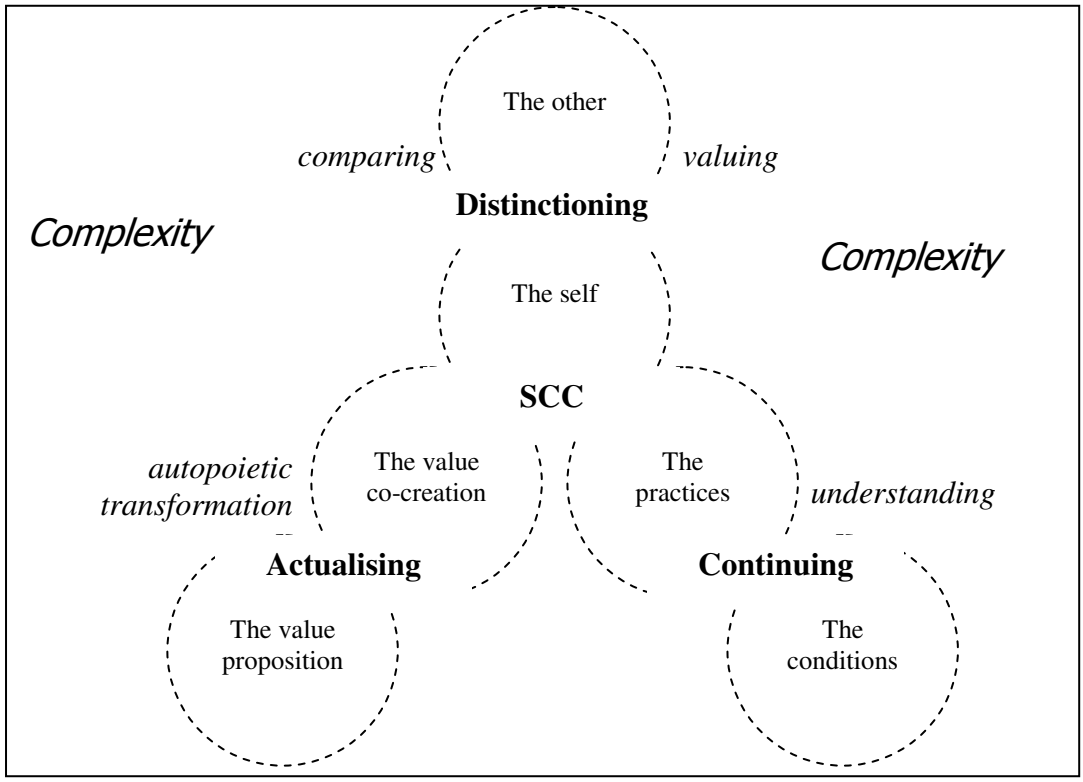
The discussion sheds some light onto the process of value creation within the self-referential system of consumption practices. The self-reference is depicted in the fact that the system only entertains its own perspective on a value offering, while being blind to the value proposition in the form of an environmental input. The value (co)creation is not a linear mechanistic process; rather it seems to be non-trivially complex. This complexity demands reduction, so value as an interactive consumer experience is ordered in reference to the system's meaningfulness. The system operates along the distinction of fuel efficiency/ inefficiency, i.e. the

communications are directed toward distinguishing between the fuel efficiency consumption practices and the other types of communication. Consequently, the consumer value is not the mechanistic rendition (co-creation) of a value proposition that is the output of the system of manufacturers, but is a system-specific internal operation that actualises the overriding meaning of the system.

Summary

The insights from the discussion of the hybrid car consumers' behaviour are summarised in the systeming crystallisation given in Figure 5.2.

Figure 5.2. Purposeful Expansion of SCC



The figure describes the main aspects of SCC's meaningfulness. The terms in the crystallisation can be provisionally divided into three broad groups of patterns. They are a) meaning flows, namely distinctioning, continuing, and actualising; b) core constructs such as the self, the practices, and the value co-creation coupled with enacted environment elements, namely the other, the conditions, and the value proposition respectively; and c) active processes which link the core constructs to the enacted environmental elements, e.g. valuing, comparing,

understanding, and autopoietic transformation. The external environment is represented by complexity.

The *meaning flows* warrant formation, continuance, and meaningfulness of SCC. Distinctioning differentiates SCC from the external environment in the process of which the unity of difference between *the self* and *the other* is realised. The self and the corresponding other are not the system and the environment respectively, rather they are two sides of the same coin. The system is the process of a unique interpenetration and characterisation of the self and the other, while the environment is everything else, or other than this unique way of distinctioning. The active processes of *valuing* and *comparing* enable SCC to construct the conception of self-sustainability, whereas unsustainability is attributed to all "othered" constructs. SCC is recreated when a person intentionally reifies appropriate *conditions* and tackles them with proper SCC *practices*. The ability to continue the system is called *understanding*, which is an active process rather than a mental activity. *Actualising* refers to the process through which consumer value is shaped and determined through communicative interactions within the system. Consumer-value-in-use is *co-created*, whereas the *value proposition* by the manufacturers is internally interpreted. SCC maintains its unity through the stable reproduction of identical product-use situations. The distinctiveness of the system stems from the *autopoietic transformation* of value which enables the enrichment of hybrid car consumption practices and their expansion along the underlined meaningfulness. The enacted environment parallels the core constructs of the system. The enacted environment is the inherent operation of SCC, and therefore, it is at the heart of the purposeful expansion process that develops from within. The environment becomes the inseparable component of the system while becoming the boundary of meaningfulness. The "real" environment is the state of complexity that is impenetrable, although its interpretation is depicted in the enacted environment. Thus, the boundary between SCC and complexity becomes that of meaning, while SCC comes forth into the focus of observation as the system of meaningful operations.

Chapter 6: Hybrid Car Marketing System

Synthesis

The preceding chapters have focused on two analytically selected domains of the marketing system that are formed in reference to the automobile category of a hybrid car. These domains were the subsystem of hybrid car marketer communications (SMC) and the subsystem of hybrid car consumption practices and communications (SCC). This chapter synthesises the insights reported in the previous two chapters.

Purposeful Expansion

The hybrid car marketing system is an active process that expands in the locus of meaning. It emerges as a unity reified in the relation between the corporations' and the consumers' self-observation. Both the hybrid car manufacturers and the consumers purposefully construct their environment to differentiate, locate, and actualise the self in sustainability discourse. Purposeful expansion is observed in the patterns of meaning-creation, i.e. activating and promoting system-specific distinctions. In the case of SMC, vigorous meaning-creation leads to contradictions that are expanded through particular communicative strategies. These strategies create depth and dimension along meaning hierarchy, functions, temporality, and transvective chains. The strategies of expansion bestow legitimacy and meaningfulness to systemic communication. The communications appear as natural, rational, and necessary in consequence. The contingency and arbitrariness of decisions, and thus total uncertainty, are removed from the focus of observation. Contradictions are made indiscernible. The system turns into a trivial, stable machine that can be consistently expanded into the new areas of operating. Identically, SCC expands through consumer valuing, comparing, understanding, and autopoietic transformation. Valuing and comparing are conducive to constructing the self and the other the constructs which guide the systemic action. The self is related to the other in specifically systemic ways, and this pattern creates the closedness and self-reference of the system. The autopoietic transformation of value enriches communicative acts, so they become

the end in themselves, thereby blocking the observation of contradictions. System agents deal with what is immediate and immanent, while developing myopia about the myopic nature of their operating within the marketing system. The hybrid car drivers simultaneously construct the core of the system (the self, hybrid car driving practices, and value-in-use) and the opposing environmental notions (the other, conventional driving practices, and value proposition). All patterns are existentially created and employed within the system. Hence, both the environment and the system become a self-referencing operation of the system.

The concept of purposeful expansion is not compatible with mechanistic thinking. The mechanical view that the marketing system *survives* within the turbulent environment is not adequate from this perspective. The environment is the meaningful enactment of the system, and its character largely depends on the system's purposefulness. The environment does not determine the character of the marketing system, as it was supposed by many systems researchers: rather the marketing system enacts and determines the character of the environment. The marketing system is not a passive entity that is shaped by external factors, but it is a purposeful, active entity that expands from within in meaning spaces.

Complexity Reduction

The hybrid car becomes the basis for complexity reduction. The subsystems observed construct a simplified, reduced, and even trivialised depiction of complexity within their operations. They approach complexity in an interpretive way through means of unfolding communicative acts, which manifest preferred forms of operating. In the case of SMC, *complexity reduction* is depicted in creating the meaningful concept of time flow that changes from the past to the present to the future. Acting in the present depends on the current interpretations of the past and the future. The combination of the past and the future represents the complex space of social events. Complexity unreduced into a meaningful pattern blocks ability to interact in the future. Specifically, SMC reduces complexity with regard to alternative car technologies. A selection must be made which is given precedence over other options. Once the *hybrid technology* comes to forefront through actioning, SMC progressively centralises around this construct and uses it as a base for further communicative expansion. In this, the

hybrid car becomes one of many complexity-reduction themes. In SCC, the hybrid car bestows the sense of purpose to consumer actions. Consumers consolidate their identity, construct experiences, locate themselves in life-worlds, and enrich these experiences through using the product, and also, observing this usage. For consumers, complex life issues find their solution within the system. Social interacting provides rationalised answers to complex questions, while these temporalised solutions become a basis for acting into the future.

Difference

Difference is the basis of the hybrid car marketing system rather than substantive elements such as individuals or organizations or goods. Both the corporations and the hybrid car consumers take the concept of sustainability as transcendental value, while they take the hybrid car technology as a current solution to sustainability problems. Both parties operate according to the distinction, sustainable versus unsustainable. The analysis indicated that the sustainable/unsustainable distinction had contrasting meanings within SMC and SCC. SMC enacts the distinction through the specific binaries such as managing/ignoring emissions, recycling/non-recycling, saving/wasting, safe/unsafe operating, designing/not designing green technologies, and initiating/not initiating social programmes. In these operations the system differentiates itself from other communicative systems including SCC. SCC renders the distinction into such binaries as fuel efficiency/inefficiency, change/no-change in driving practices, hybrid cars/non-hybrid cars, co-creating/receiving value, and understanding/ignorance. To compare, the manufacturers become “sustainable” when they save energy or materials, while the hybrid car drivers become “sustainable” when they believe that they could save some fuel. This is a connecting point for the systems. For both systems, sustainability is believed to be attained via manipulation of material resources.

Content Contradicts Form

The next common aspect of the subsystems is that the corporations and the consumers operating at the basic level of the system contradict their own motives at the meta-level of interacting. Here, I distinguish two levels of operating: the communication content and the communication form. The *content* is the unity of

acting and observing *within* the system, which is the basic level of operation. For instance, a driver can apply various hybrid car braking techniques and observe this acting as a fuel saving act. The form is a meta-communication that reflects the relation of the actor toward others (Bateson, 1991). The form comes forth in observing both the basic level of observing, and the context of observing. For instance, regarding the example given above, the form reveals how socially efficient the consumer's fuel saving and observing activities are. In general, the form indicates the sustainability of the marketing system's sustainable/ unsustainable distinctioning. For example, the manufacturers perform "unsustainabling", i.e. unsustainability (e.g. emissions, waste, etc.) is given meaning by managing it through specific functions. The system becomes sustainable, when it is unsustainable, meaning that only unsustainability-generating systems can successfully manage their own unsustainability to claim a "sustainability success". The interesting aspect of such communication is that deep ignorance about the environment becomes the basis of sustainable action. For example, the system purposefully fails to see the types of emission different to those defined within systemic processes. Hence, the emission-free society becomes only possible when this fundamental ignorance is maintained and the observed types of emission are infinitely reduced. The other side of the coin is that the marketing system is driven to keep producing both fuel efficient and inefficient cars. The difference in the fuel efficiency of car models must be maintained in order to maintain the meaningfulness in both SMC and SCC. In this, the form of SMC becomes contradictory to the content of operating. In turn, the divergence in the form and content of communicating can also be seen in SCC. Hybrid car drivers practice specific driving styles in order to get relatively better effects (e.g. high fuel efficiency, longer battery life, etc.) than those attained through conventional driving. Nevertheless, the content of communications rarely portrays this recursivity. Any effect is attributed to an object, the hybrid car, rather than to purposeful human behaviour. At times, some meta-observers detect a contradiction between acting and sayings, and they call this tendency as hypocrisy. In another example, SCC agents act toward and observe their individual success in reducing fuel consumption, while society-as-a-whole is not a matter of concern. Hybrid driving practices may affect other systems in such a way so that both a conflicting social situation emerges and the general fuel

consumption increases. In consequence, the sustainability of SMC turns into unsustainability for all.

Intentionality of Citizens

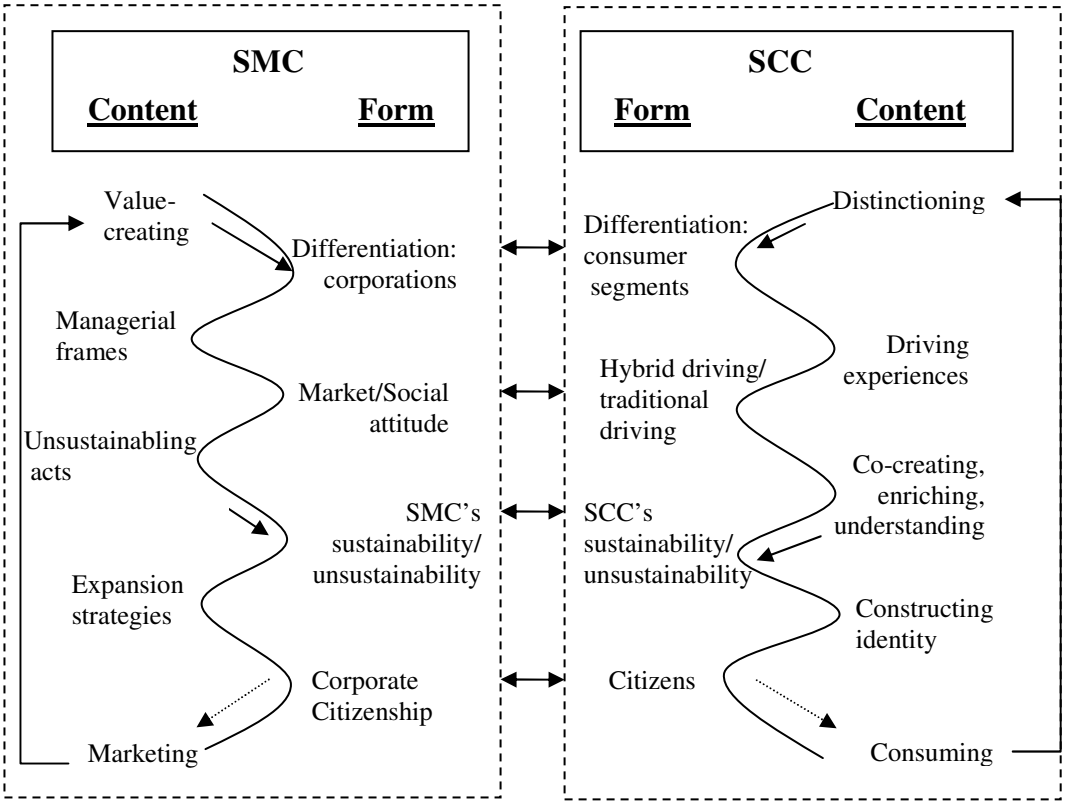
How do citizens participate in the system? Here, I cautiously use terms such as producer, marketer, or consumer, because they are system-specific roles, and they bear certain interpretive connotations (Firat, 2001). It is a citizen who decides to act in a particular way, and thus reify a system. This occurs in the process of switching personal intentionality from one system to another. Intentionality is the process of unity between experience and the object of experience (Thompson et al., 1989). In systeming, intentionality indicates the purposeful unity of communication and the object of communication. For instance, I observed that meaningful attributes of the hybrid car are purposefully constructed by consumers, while this construction is actualised via active operating. Citizens communicate in the system and about the system. When their communication and observation are directed toward SMC, the citizens are designated as marketer or manufacturer. In this role, they observe the opposite system. If intentionality is directed into SCC, then a person becomes a consumer, and he/she can observe the manufacturers in comparison to the self. Further, depending on communication, a person could unite several systems in his/her reality. Therefore, citizens must not be taken as static identity symbols who become the exclusive elements of the system. The same individual may switch his/her intentionality from one system to another quite often and simultaneously. He/she can participate in many systems at the same time depending on his/her intentions, motives, and purposes. This means that the mechanical understanding of the marketing system as a collection of individuals with static roles is too simplistic. Personalities are rather fluid and their character depends on the systems which dominate the intentionality of societal members.

Interaction Contexts

This work de-emphasises a stand-alone, cohesive, and rational picture of the marketing system. The marketing system emerges in rather fragmentalised, contextualised, and temporalised flows of meaningful relations. *Relation*, reflected in interaction, is an important concept here, as a social phenomenon attains

meaning in a relation rather than in itself (Bateson, 1991). For instance, the meaning of *a consumer* is only understood when it is related to a concept at the same level, *a producer* (Firat, 2001). But what processes would underlie the managerial description of the hybrid car marketing system as a locus of competing for consumers? Figure 6.1 is drawn based on the *process-form schema* developed by Bateson (1979). The figure shows that a) the marketing system comes forth in the contexts of interaction; b) concepts which enable its observation emerge in the relation to each other; c) the naturalness of the phenomena is contestable; d) the meaning of actions is constructed in comparison; and d) this way of observation is not dominant, i.e. there could be many ways of observing the same events through different concepts. In Figure 6.1, each subsystem's domain is divided into two components: the content and the form.

Figure 6.1 Marketing System as Interaction Contexts



In SMC, the basic level of acting-observing is depicted in *value-creating*. The value-creating acts are directly related to development, production, and marketing of the hybrid car. They happen in the domains of researching, designing,

developing, decision-making, collaborating, building strategic alliances, branding, and so on. These communications are performed within loose interconnected networks, value chains, and alliances, so at this level corporative boundaries are blurred, and are not considered. For instance, networking such as researching in a strategic alliance partnership, producing a hybrid drivetrain for strategic partners, or communicating to link hybrid cars to ecological concerns become a part of value. Therefore, this value is not the simplistic depiction of competitive drive and survival.

At the same level, acting-observing is about *distinctioning* in SCC. Various distinctions are operated in the life experiences of people, and some of them become relevant to the domain of hybrid car consumption. Distinctioning in this case depicts the process of acting according to the distinctions such as fuel efficiency, motor power, reliability, vehicle design, aesthetic attributes etc. A switch between the content and the form occurs, when the rational observer attributes SMC's value-creating acts to *corporations* and SCC actions to *consumer segments*. This switch is essentially a "chicken or egg" situation, where one cannot be sure of whether the actors conduct the actions, or the actions construct the actors. The intentionality concept accepts it to be interactive, yet many choose to take the existence of actors for granted. The interaction between the differentiated corporations and the differentiated consumer segments reifies the hybrid car marketing system context, which is ontologised through three categories of differences and relations: a) inter-corporative differences and relations; b) inter-consumer differences and relations; and c) corporations-consumer differences and relations. These relations can be seen in many forms. For example, if the utility maximisation concept is accepted from the economics viewpoint, then the marketing system can be constructed as the context of *competition* for scarce utility among consumers groups and corporations. If the theory of evolution is accepted as a basis, then these relations become meaningful in the context of *survival*. Many marketing phenomena can be explained in reference to the contexts of relations. For example, advertising in the mass media can be explained as a systemic and relational phenomenon. A corporation assumes a competitive attitude toward other related corporations and a dominative attitude toward audiences. The other parties show they understand the context by acting

accordingly. For instance, some consumers may assume a submissive attitude and respond favourably to the message, which may drive the company to advertise further. Thus, domination-submission dynamics, and the processes of continuance/rejection of this context determine the nature of advertising and its emergence. However, direct copying of the analogous context into the "moment-of-truth" encounters may have disastrous effects (Gronroos, 1990; Gummesson, 1991; Varey, 2002b). The name of names and the observation of observations cannot be a treated as a part of itself, which is called a logical typing error (Bateson, 1991; Hofstadter, 1979). Rational observers make "logical switches" to explain marketing phenomena by invoking consumers (or corporations) according to their discrete actions limited within SCC (or SMC), and propose implications for the whole marketing system, while not considering its relational character and emergence.

The next level of interaction (Figure 6.1) is recognised in the process through which cyclical experiences are calibrated in the view of a corresponding feedback. In SCC, the process of driving is cyclical, i.e. a driving episode is followed by a next driving episode. A "driver + hybrid car" combination is very unpredictable in terms of particular outputs, so learning is ongoing. The hybrid car drivers continue to create unique *driving experiences* to attain their ends. Each driving attempt is undertaken based on the holistic assessment of all previous driving experiences. The meta-level of these cycles is about observing the difference between *hybrid driving versus traditional driving*. The hybrid driving pattern, its character, content, and strategies are different to those of the traditional driving. This differentiation is operated at the relational level of the marketing system, where drivers socially interact with each other. Otherwise, nobody would become aware of differences in driving. At the parallel level, corporate actors are prone to repetitive decision-making and ways of thinking. They develop "managerial frames" which are the crystallised patterns of behaviour that often transform into dogmatic routines (Hamel & Prahalad, 1994). This process is recursive; the managerial frames guide decision-making, while decisions cumulatively become a part of the managerial frames. At the meta-level, different patterns of this recursiveness are labelled as the difference between market and civic attitudes.

At this point, the relevance of recursive actions in SCC and SMC to the idea of sustainability needs to be discussed. At the basic level, operating is simply cyclical, and at the same time, a teleological purpose of continuation is maintained. Two purposes should be kept distinguished: the purpose of operating (e.g. fuel efficiency in SCC) and the purpose of the system (e.g. expansion). However, a discrete action by a particular actor cannot be invoked alone, when sustainability is the focus of observation. For example, one may observe a driver doing feathering. This event in itself cannot be discussed as being sustainable or unsustainable, as the meaning of actions is revealed in the context of systemic relations. One needs to know the form of differentiation, and the character of relation among the forms. Thus, the key to understanding the sustainable marketing system is the recognition of relational contexts and forms. Only in social and communicative domains do the systemic actors come to realise differences.

In the next level, actions are specifically targeted to enact sustainability in the system. In SCC, one observes active co-creation, enrichment of actions, and enactment of conditions-practices cycles. In SMC, these actions are in the form of unsustainabling, i.e. managing emissions, energy and material waste, unsafe situations, social and ecological imbalances. However, interactive observation of relevant actions allows the actors (and the researcher) to come up with systemic constructs. For example, how would one assess the integration of wind power electricity generation systems into the manufacturing plant's electricity supply networks? The case of using recyclable containers? The comparison in the context of relations to other parties allows the manufacturer to declare about the self being *greener* than others. In this way, the systems construct the self being sustainable, or they can even develop a self-critique of being less sustainable. The form of relations between these relations (sustainable/unsustainable corporative acts versus sustainable/unsustainable consumer practices) reifies the hybrid car marketing system.

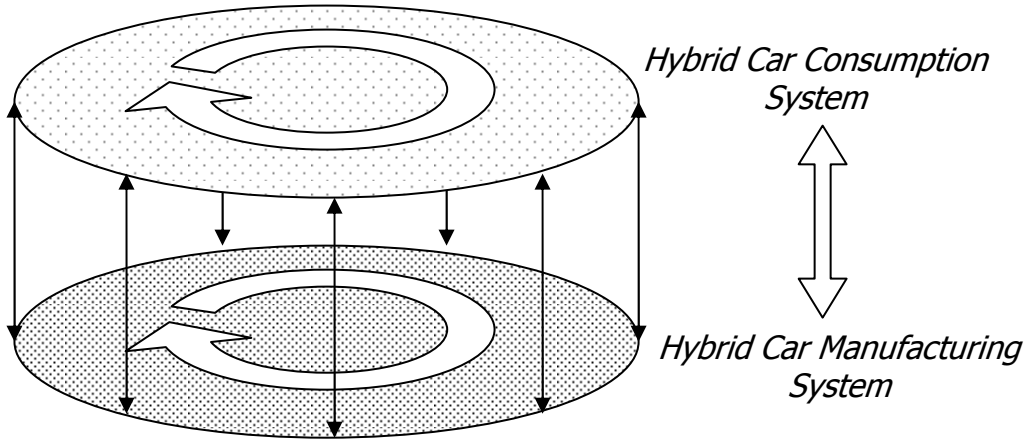
The switch into the general societal level is undertaken when the observation focuses on legitimising the activities in the context of relations. SMC operates the expansion strategies to underlie the "fact" that the system is coping well with

corporate social responsibilities, whereas SCC constructs the sustainable self and the unsustainable other, and subsequently enforces the self-created morality and solutions on other sections of society. This citizenship discourse is not a political forum as such, but is an operative relation situated within the particular context of the marketing system because it tends to happen around the hybrid cars and their use. In this case, citizen and citizenship are not above or beyond the system, but the system's enactment of societal relations. Citizen identity is constructed in the context of marketing relations, which is based on relating marketing and consuming practices. The marketing system context creates the role of a marketer pitched against that of a consumer, which indicates that individuals are only seen in their roles rather than for their human qualities (Firat, 2001). Consuming is not different from distinctioning, whereas marketing is about value-creating acts. This completes the full cycle of the marketing system that becomes a context for systemic relations.

Communicative Harmony

The hybrid car marketing system is not a direct aggregation of SMC and SCC, although these subsystems cannot exist one without the other. SMC and SCC are closed in their recursive communication, i.e. they represent independent meaning domains. It is not necessary that they are operatively related to each other as far as direct impact-effect relationships are concerned. Each subsystem is principally directed by its own internal logic of communicative flows. The systems are operatively closed to each other, but cognitively open to perturbations in their respective communicative structures (Luhmann, 1995). This means that these systems enforce only internal changes in their respective operative domains by becoming sensitive to changes in the opposite domain. In this sense, they form a unity in developing shared meaning and cannot be detached from each other. The hybrid car marketing system can be taken as meta-interaction between two systems: SMC and SCC (Figure 6.2). Thus, the marketing system is relational and social rather than natural.

Figure6.2 Hybrid Car Marketing System as a Meta-entity



The systems remain as a part of complexity for each other. The interaction becomes a form of complexity reduction. For SCC, the communications of SMC are a complex noise which should be meaningfully enacted within the systemic structure through interpretation and reduction, and *vice versa*. These two corresponding systems develop a harmonious co-existence to form the general marketing system. The formation of the common system is not a matter of simple aggregation, however. These two systems develop sensitivity to perturbations in the structure of the counterpart and direct their communications accordingly. This process is called *communicative harmony*. Communicative harmony symbolises the extent of coordinated behaviour of two systems, when their operations form a concerted unity. This appears to be the point of emergence of the marketing system. Accordingly, the marketing system is not the mechanical aggregation of the smaller systems, rather it is the communicative harmony of the systems that coordinate their self-referential operations through developing sensitivity to and resonating corresponding changes in the respective networks of communications. No operation can pass through the systemic border to interact with "alien" operations in this locus of meanings. The system observes itself as a unity, and it is not able to observe and incorporate "other" communications without "translating" them in terms of internal operative meaning. This kind of respective translation is referred to as *enactment,* observed in the preceding analysis.

Information is not mechanically transferred from a subsystem to another; rather the unity of one subsystemic communication is reflected within the other subsystem. For example, to what extent can the manufacturers become consumer-centric? This is the issue that is both generated and reified within SMC. In other words, it is a unique operation of this system which may pose no meaning for SCC. Thus, the consumer-centredness is the reduction of consumption communication within SMC. One must always be aware that reductions are just reductions; they may not always lead to expected effects. An identical phenomenon can also be observed in SCC. The value proposition received from manufacturers is not the same within the system. SCC develops its own perspective on value offered and value in use. However, the operations of both systems create certain invariants, which are relatively stable for long time. The harmony arises when systemic expectations perfectly match these invariants. For example, the manufacturers become convinced that consumers create enough demand for hybrid cars for a substantially long period of time. Similarly, consumers develop expectation of a continuous inflow of hybrid cars, services, and innovative developments. When systemic expectations and invariants diverge, the systems may go through internal re-organisation in reference to new invariants.

Sustainable Marketing System

In conclusion, I summarise major aspects of the sustainability of the hybrid car marketing system. In this respect, systeming points of view are contrasted to mechanistic conceptions. This is represented in the Table 6.1. The mechanical viewpoint is based on the understanding that the hybrid car marketing system is underlined by *flows in physical substances*, e.g. the flows of hybrid car exchanges, related services and consumption practices, and disposal activities, which may affect the material and substance-induced emotional states of consumers and manufacturers. According to this view, the whole marketing system that comprises the production and the use of the hybrid car is the product of *adapting* to the turbulent environment. Environmental factors (e.g. manufacturer activities, consumer needs and preferences, ecological factors, political and legal trends, etc.) shape the system directly. Causal responsiveness to the environmental factors

ensures the *survival* of the system into the future. Therefore, the hybrid car marketing system as a locus of resource-saving is considered to be *more robust* and *adapted* to the current environmental circumstances underlined by imminent resource shortages and pollution. Attained savings in fuel and a smaller discharge of greenhouse gases within this system is thought to increase the chances of its survival and growth in the face of impending ecological problems.

Table 6.1 Aspects of the Sustainability of the Marketing System

ASPECTS	MECHANICAL VIEW	SYSTEMING VIEW
The marketing system's essence	Physical substance flows	Meanings flows
The system's being-in-the-environment	Survival through adapting	Purposeful expansion
The marketing system's structure	Real entities	Relational/social constructs
The marketing system's process	Input-output	Expanding
Individuals in the marketing system	Fixed roles	Social actor
Emphasised sustainability target	Material efficiency	Social effectiveness
Driver of sustainability	Product attributes	Purposeful human behaviour
Becoming sustainable	Progressive	Momentary
The marketing system versus society	Positive-negative effects	Existential (mode of living)
To attain sustainability	Downsize material usage	Transcend the system
Future generations inherit	Sound material resource environment	Sound social forms of communicating

Accordingly, the marketing system's structure is considered to be the collection of real entities, which exist independent of subjective judgment. Its process represents an input-output mechanism. From this perspective, the hybrid car marketing system is a machine made of individuals and institutions that accepts natural resources from the environment and discharges waste. Individuals are considered to be fixed in their relevant roles. Role-related character features and psychological processes are taken for granted. The sustainability is taken to be about attaining material efficiency, e.g. preventing wasteful and unbalanced use of material resources. Therefore, the product's attributes become important in this context, as they can be designed to be conducive to achieving material efficiency. Sustainability is attained gradually through a slow progression toward selected

targets. The marketing system's total effect on society gradually changes from negative to positive. Hence, typical recommendations are often directed at promoting a reduced material consumption in the marketing system. It is suggested that as the consequence of this move, future generations would inherit a sound natural environment which is the most important aspect of their lives.

In contrast, systeming stresses that the marketing system is the locus of meaning flows. Although the physicality of the processes is neither refuted nor supported, it is argued that in socially interactive spaces the meaning of goods and services is more predominant than their physical substance. The marketing system meaningfully constructs both the self and the environment. Therefore, instead of surviving in the environment, it expands purposefully by means of active self-constructive meaningful flows. The marketing system's structure comes forth as a set of relational contexts, in which the meaning of social constructs is built. Within the system, nothing exists in itself, i.e. in its physicality, but is constructed through social interacting. The system's process is about expanding, the essence of which is depicted in the proliferation, dissemination, and transvection of communicative forms. An individual's personality in the marketing system is not considered as fixed, coherent, rational, but as the network of social living patterns that are made meaningful within the dominant systems of practices. In other words, individuals are "system beings" whose activities are confined in interaction systems. The sustainability of the marketing system is linked to merited relationships among system agents, which represent socially effective operating in the system. Even the matter of *resource efficiency* needs to be made meaningful in inter-individual interaction. The point is that the sustainability of the self should not become the unsustainable relating between the self and the other. The sustainability of the marketing system is driven by purposeful human actions rather than product attributes. It is more about constructing meaningful consumption experiences which reference social interactions than using products to attain individual "sustainability" targets. The social aspect of sustainable behaviour is momentary, it is not added up mechanically toward a common result. Rather each interaction in a discrete situation must become about enhancing the welfare and happiness of all. In this, the marketing system represents a mode of living, being, and acting in society, so there is no separation between these

entities. Society and the marketing systems are one, and they mirror each other. The sustainability for both is achieved when individuals transcend the frames of the dominating system, and understand the complexity of events occurring around them. Such wise operating creates sound communicative forms which are inherited by future generations. Thus, the sustainability is not simply about endowing future generations with material means, but is more about endowing them with wise social forms of living.

Chapter 7: Discussion and Implications

Discussion

Discussion of Interpretations

Purposeful Expansion. Systeming interpretation of the hybrid car marketing system alleviates common misconceptions about marketing system processes. Conventional thinking may be that:

> *A marketing system is a passive purposeless entity shaped by environmental forces. The system's agents are motivated to ensure its survival. The system's processes adapt to environmental changes.*

Alderson (1965) has stressed a marketing system's purpose of survival and adaptation within the environment, and marketing systems researchers have followed his convention (Dixon & Wilkinson, 1982; Dowling, 1983; Reidenbach & Oliva, 1983). Strong emphasis on the mechanical meaning of survival and adaptation has led to common misunderstandings and inhibited the development of systems research. For example, Shapiro (1964) undertook an in-depth analysis of the Ontario Hog Board to arrive at the conclusion that the concept of survival and adaptation were not robust enough to explain the situation under focus. The study revealed that the board executives refused to recognise imminent environmental threats, and thus behaved according to their own apprehension of changes occurring at that time. Shapiro argued that the environment is not separable from the system and advocated the notion of "the relevant environment" (p.120). He argued that "the environment is a dynamic rather than static component of a system" (p.120). In response, Alderson (1964) developed the typology of the environment that included the proximate environment, the aspiration environment, and the ultimate environment. The strong advocate of the marketing systems concept, Roger Layton (2007) argues that the environment can be divided into the task environment and the institutional environment. The task environment includes suppliers, intermediaries, customers, competitors, and other stakeholders, whereas the institutional environment comprises political, social,

economic, and technological factors. Layton thinks that the environment is associated with uncertainty and the ways this uncertainty is dealt by the system. His conclusion is that the system is an environment. The remarkable aspect of these studies is that they agree that a) the environment is complex; b) the environment is an inherent part of the system; and hence, c) survival and adaptation is not an adequate concept. This work shows that the marketing system has a meaningful purpose in constructing both the self and the environment, and it expands in the communicative domain rather than adapting to changes.

Sustainable marketing system. The sustainability of marketing systems can have two communicative forms: the content-based and the form-based. The identification of the sustainable marketing system according to the content/form of communication is both simple and complex. It is simple in terms of recognising operated distinctions, the approach which is also used in structuralist and poststructuralist interpretations (Holt, 1997; Levy, 1981; Stern, 1995; Thompson & Hirschman, 1995). It is complex, owing to recursive re-entry of operating into the space of distinctioning. This work indicates that the problem of the sustainability of marketing systems is not only the matter of material resource manipulation that is reflected in the content of communications, but also it is the issue of constructing sound social relating that is grounded in the form of communicating. Hence, the consequences of sustainability-directed operations in themselves must be considered. It is often the case that a particular sustainability-enactment within the system cannot be sustained indefinitely due to its conduciveness to proliferation of unbalanced social forms.

Sustainable marketing literature most often looks for linear causes of unsustainable conditions (Crane, 2000; Fuller, 1999; Luhmann, 1989; Reidenbach & Oliva, 1983; Schaefer, 2005). Accordingly, solutions suggested for solving sustainability problems inevitably lead to identification and restraint of parties who are thought to be exclusively responsible for ecological misbalance. Such a view misses, to a large extent, the systemic character of the marketing relations in society. Conventionally, researchers think that:

> *Consumers are waste-generators; their consumption must be curbed. (Dolan, 2002; Reidenbach & Oliva, 1983; see Schaefer and Crane, 2005)*
> *Manufacturers are greenwashers, hypocrites, and their intentions are at odds with their claims. (Peattie, 1999; Schaefer, 2005; Smith, 1998)*

Researchers observe that sustainability is becoming a shallow, surface-level rhetoric for marketing system actors (Dolan, 2002; Kangun & Polonsky, 1995; Luhmann, 1989; Peattie, 1999; Schaefer, 2005; Schaefer & Crane, 2005; Smith, 1998; Welford, 1997). Schaefer (2005) reviewed green marketing literature that argued that a sustainability concern represents rhetorical rather than substantive moves by businesses. This means that sustainability-ecological changes are reflected at a semantic level, while the pragmatic aspect of sustainable business operating remains unchallenged. Communication as being and acting within systems can have two forms of implication: semantic and pragmatic (Carpenter, Glazer, & Nakamoto, 1994; Gruenfeld & Wyer, 1992). The semantic form of communication conveys the literal meaning of a message, while the pragmatic form suggests the reasons for the message being communicated. Although the framework *semantics versus pragmatics* is an insightful approach to the analysis of communication, it connotes the conduit metaphor of communicating. Systeming suggests that semantics cannot be meaningless, i.e. every communicative act creates a meaning. In other words, any change in terms of a languaging act communicates the difference. In this context, the semantic aspect of a happening is interactive. Interactivity involves two or more parties, therefore, meaning arises as the precondition of continuance. Meaninglessness cannot be communicated or interacted with. Interaction creates meaning, which is differentiated from complexity. To convey this insight, systeming proposes differentiating the content and the form of communication. They are not taken as a linear delivery of information, rather they are assumed to be patterns of interactive operating. The conflict between the content and the form of communication evokes ethical concerns. The observer of a conflicting divergence dubs the actors of the marketing system as being unethical, hypocritical, and deceptive. However, these are not the meanings enacted in self-observation. The hybrid marketing system actors are sincere in their meaning creation: however, they are ignorant of self-contradiction which arises from their purposeful behaviour.

Crane (2000) discussesed the fair-play perspective that had emerged in green marketing research focused on the ethics of greenwashing. For example, he analysed the research that reported that distinctions (e.g. biodegradable, recyclable, light) used by companies in their packaging were unproven, inconclusive, and sometimes even deceptive (Kangun & Polonsky, 1995; Polonsky et al., 1998). However, Crane (2000) commented that this kind of "deception-uncovering" research lacks a deep analysis that links the marketing system to the social and natural environment. This tendency hinders an in-depth insight into the tension between the content and the form. In an analogous research work, but in a different context, Livesey and Kearins (2002) analysed environmental reports by the Body Shop and Royal Dutch/Shell corporations to find that the environmental sustainability identity was built at the content level of communication through deploying metaphors such as transparency and openness, while substantive changes (the form) were ignored. In turn, Crane (1997) observed how sustainability practices were amoralised in corporative operations. The *amoralisation* of the environment referred to "the inclusion of environmental criteria into marketing practices [that] tends to be framed in largely amoral terms of technical procedures, costs, and customer demand rather than ethical criteria" (Crane, 2000, p.151). It may be the case that Crane has observed the paradox of morality in the marketing system. Although the observation of practices is guided by moral and ethical distinctions, the actual form of the system constructed in terms of purposeful expansion is guided by entirely internal (system-specific) distinctions. Thus, amoralisation could be thought of as one of the dynamic systemic processes that bring about the conflict between the content and form of communication. Research on corporative sustainable communication simply tells a partial story about the marketing system. No research exists with regard to how both the content and form of communication in the marketers domain affect and/or arise in respect to rhetorical and actual discourses in consumption systems (Crane & Desmond, 2002; Desmond & Crane, 2004). Some consumption research is underpinned by links between macro- and micro-forms of consumption behaviour (Dolan, 2002; Kilbourne et al., 1997; Schaefer & Crane, 2005; van Dam & Apeldoorn, 1996). For instance, Kilbourne et al. (1997) suspected the role of dominant social paradigms (DSP) in influencing marketing practices in society.

They thought that DSP determined the relation between sustainable consumption views and quality of life experiences. According to them, DSP referred to the set of beliefs and interpretive frames of societal functioning. The DSP framework is the example of how a macro-level phenomenon is linked to micro-level operating. In the context of this work, DSP comes into play in the form of society that mirrors itself through assuming the form of marketing systems. Society depicted in the marketing system enacts sustainability in its communications. However, the key to understanding this dynamic is in distinguishing between the content and the form of communication. Porter (2005) said that "the surface-level discourse may be a thin veneer that disguises much more powerful struggles around [environmental sustainability] identity establishment, negotiation, and defense" (para.2). Porter's "thin veneer" may well be the hybrid car marketing system's "thick" purposeful expansion, as the content of communication disguises the contradictions of the form, which are made invisible via expansion strategies.

The issue of the sustainable marketing system is complex and meaning-laden rather than being simplistic (Dolan, 2002; Nason, 2006; Schaefer, 2005; van Dam & Apeldoorn, 1996). Conventional thinking is that:

> *Sustainability is achieved when absolute reduction in both material consumption and production levels is imposed.*

This "objectivist" approach (e.g. see Nason, 2006; Schaefer & Crane, 2005) stresses a contradiction between absolute reduction in consumption (and thus production) and higher level of social welfare ensured by more material consumption. The conceptual tension becomes more intense when the situation of developing countries is considered. Should not materially less privileged people have a right to a higher level of consumption? In contrast, systeming poses the question in a different manner. It asks, whose observation the "objectivist" approach is? Is it not the problem and its solution defined within the frames of the objectivist (mechanistic) systems conceptualisation? In this sense, the problem is posed in presupposition of a certain and only angle to answering it. The objectivist solution ends up suggesting particular rations of consumption (and respectively production) to citizens living in different socio-economic conditions, or to

societies as a whole (Hart, 1997; Schaefer & Crane, 2005). However, this solution is framed and developed within objectivistically-defined marketing systems, and researchers are operating as agents of the grand-observer, the marketing system. This pinpoints the self-closure of communication, which is only one of many possible attempts to understand complexity of the environment. Hence, concepts such as sustainable consumption, quality-of-life, and green marketing have a connotation, which is system-specific. They only have meaning within the materialistic system.

The problem of cultural consumption has also been proposed (Dolan, 2002; Kilbourne et al., 1997; Schaefer & Crane, 2005). Consumption can be taken as an end in itself. For instance, consumption can be taken as a means of identity construction, hedonistic experience, and communication (Schaefer & Crane, 2005). The production part of the marketing system reacts to this nature of consumption by creating and offering goods and services which fuel cultural and social use of products (Belk, 1996; Holt, 2002; Kozinets, 2002a; Sherry, 1998; Thompson et al., 2006; Thompson & Troester, 2002). The paradox of the concept of sustainability emerges when one calls for the reduction of consumption (and production that references this), whereas consumption (production) experiences represent the social and cultural bases of life satisfaction and welfare construction (Dolan, 2002). The proponents of *the cultural view* defend the legitimacy of the marketing system which enacts sustainability neither in the content nor in the form of communication. An example could be shopping as pleasure seeking (Elliott, 1994). In this context, agents are involved in cultural consumption, the process which is considered to be instrumental for their individual welfare. Sustainability of such acting is considered neither in the content nor in the form. To reconcile the cultural view and the sustainability concept, Schaefer and Crane (2005) suggested using sustainability distinctions as cultural bases when engaging in marketing experiences. The hope was that sustainability was attained when it became operated within the cultural and social experiential domains. The argument propounded in this work is not much different from this approach to understanding the sustainability problem. Culture is redefined as a systemic process that is about transferring the ways of constructing observation and communicational forms from one generation to another (Luhmann, 1995;

Maturana & Varela, 1992). In other words, culture is seen as "the trans-generational stability of behavioral patterns ontogenetically acquired in the communicative dynamics of a social environment" (Maturana & Varela, 1992, p. 201). Sustainability becomes an issue of inter-generational communication that is constructed at the present condition of the marketing system. The argument is that citizens must realise the self-closure of the marketing system they operate in and complexity of the environment. Conventional thinking is that:

> *Market behaviour should be taken a given and natural, for instance, pleasure seeking or profit maximising are supreme default motives which must not be challenged (see Bateson, 1991)*

Hence, sustainability-ignorant systems (e.g. consumption as hyper-real cultural force) are neither necessary nor natural. Researchers should be cautious in defending such systems. For example, shopping as pleasure seeking is a specific observation operated within a hedonistically guided marketing system and this experience can be regarded simply one of many selections of cultural existence which is enacted by a small group of citizens residing in specific western cultural environments. There could be many alternative marketing systems which do not operate along this distinction, where the concepts of shopping and pleasure may have different systemic meanings. For example, in some countries shopping might mean a means of struggle to live, while in some bazaars it means social interaction, information, and community news exchange. Cultural systems must be open to other systems, and not closed into themselves. Even worse, they should not be defensive of their way as natural and objective. Hunt (1993) warned about objectivism that is "seeking knowledge that is absolutely true, universally valid, absolutely correct, definitive, known with certainty, or known from a unique privileged position" (p.86). Objectivism leads to "vulgar" systemic ethnocentrism believing "that our ways, because they are ours, must be closer to the truth, goodness, and beauty than are the ways of others" (Hunt, 1993, p.86). In this sense, sustainability can be opposite to objectivism, that is equal to being uncertain about the self and the environment, and open to many options as far as the systemic enactment is concerned (von Foerster, 2003; Weick, 2001). Consequently, being limited to enacting sustainability in the content of

communication can become a vulgar ethnocentric operation, as it has a danger of being considered morally good and thus, the only right way of dealing with the sustainability issue. The systeming example is that the communications of hybrid car drivers posit the self on the positive side of distinctions, and then command system-specific solutions to societal issues. In this case, sustainability is the content, while ethnocentrism is the form of communication. Therefore, the observation of both categories needs to be exercised.

Differentiation and distinctions. This work indicates that the marketing system has to differentiate in order to communicate. The marketing system divides the self-identity into fragments (smaller subsystems), in order to guide self-observation. In turn, the systems of manufacturer and consumer communications conduct distinctioning to expand. Communication does not deliver information, it cuts distinctions in the domain of meanings (Luhmann, 1995). Autopoietic systems differentiate in order to maintain self-reproduction (Maturana, 1981), hence, the marketing system creates the stable patterns of distinction-making in order to approach complexity in a identical manner at every autopoietic turn. Conventional thinking is that:

> *The marketing system comprises substantive objects, e.g. goods, institutions, infrastructure etc. Systeming shows that meaningful difference is the basis of any marketing system.*

Community research in marketing has argued that differentiating is at the core of communicating in brand and consumption communities (Cooren et al., 2005; Cova & Cova, 2002; Lawrence & Lorsch, 1986; Muniz Jr. & O'Guinn, 2001; Weick, 1979). In their summarising work of the last twenty years of consumer culture research, Arnould and Thompson (2005) identify the stream of research that deals with marketplace cultures such as communities, tribes, microcultures, and subcultures. Arnould and Thompson see the work by Maffesoli (1996) on neotribalism as a fundamental basis for this stream of research. Neotribalism is based on the idea that the socio-industrial forces of modernity erode traditional cultural networks, and people left in the resulting void create alternative "ephemeral" communities. These communities are constructed through

differentiation (Maffesoli, 1996; Muniz Jr. & O'Guinn, 2001; Suttles, 1972). The argument in this work is that differentiation is not simply a community phenomenon rather it has a more general scope. It is the basis of communication, meaning-construction, and existence in the marketing systems. In other words, differentiation is total in socially constructed systems. If modernity is driven by distinctions and differentiation (Luhmann, 2002) that bring about constant fragmentalisation of society and marketing systems (Brown, 1993; Firat & Venkatesh, 1995; Thompson & Troester, 2002), would one still be able to talk about inter-systems dialogue that is based on a "common ground" of understanding to attain a sustainable existence?

Researchers argue that:

> *Commercialism destroys traditional cultures and communities, which are seen more sustainable, authentic, and ecologically benign. (Belk, 2001; Dixon & Wilkinson, 1982; Durning, 1992; Fisk, 1971; Maffesoli, 1996; Sheth et al., 1988; Swaney, 1981)*

This work indicates that the marketing system is in itself the form of cultural existence. So the process is not that of cultural destruction, but it is reminiscent of cultural transformation. Muniz and O'Guinn (2001) argued that consumer culture never destroyed real communities, but it created new cultural ethos through integration (we-ness) and differentiation (othering). Old distinctions were replaced with new ones.

Luhmann (1995) talked about an ephemeral "social memory" of social systems, which was a depository of all relevant distinctions. Systemic communications appeal to this social depository in order to construct the meaning of events. In a similar way, SMC operates with emission/non-emission, recycling/non-recycling, and energy saving/wasting distinctions, while SCC is essentially driven by the fuel efficient/inefficient distinction. This is consistent with the view that organisations practice sensemaking (of the environment) through distinctions (Daft & Weick, 1984; Weick, 2001). The systems may recursively do distinctioning about themselves-operating-distinctions (Taylor, 2006). Maturana

and Varela (1992) argued that distinctions were operated in the linguistic domain and always occurred retrospectively. Furthermore, they argued that any action was told (narrated) by an observer, so language became a means of distinction drawing. Spencer-Brown (1969) offered a general corollary in regard to this: *draw a distinction and a universe comes into being*. This means that observation of an action starts with a distinction, and this distinction guides the nature of the constructed world. Kangun and Polonsky (1995) described a set of environmental marketing claims that were used to distinguish companies and their products from other products. The distinctions used were: degradable (versus non-degradable), biodegradable, photogradable, compostable, recyclable, recycled content, source reduction, refillable, ozone-safe, and ozone-friendly. This does not exhaust the case. Distinctions are so pervasive that the systemic actors tend to take them for granted. Such distinctions as true/false, good/bad, ethical/unethical, sustainable/un-sustainable underlie our common knowledge of the world, and especially the constructed reality of sustainable systems (Dolan, 2002).

The marketing system is built on the reciprocal observation of distinctioning on the part of market actors. This is exemplified in classic product differentiation strategies employed by marketers (Carpenter et al., 1994; Kotler, 1994; Porter, 1990; Porter & Van Der Linde, 1995), and also in consumer interpretive strategies (Arnould & Thompson, 2005; Hirschman & Thompson, 1997; McCracken, 1987; Mick & Politi, 1989). Both camps (marketers and consumers) self-referentially enact sets of distinctions as a strategy to reduce the complexity they face. Some researchers note that discursive usage of highly vague, semantic, and meaningless distinctions creates a fundamental uncertainty in markets (Carpenter et al., 1994; Kangun & Polonsky, 1995). Environmental claims are made, distinctions are drawn, and goods are differentiated, regardless of the fact that distinction-makers know that objective information on the real matter of a situation is not obtainable (Kangun & Polonsky, 1995; Polonsky et al., 1998). This kind of distinctioning is treated as misleading (Kangun & Polonsky, 1995), uninformative (Hoch & Ha, 1986), or meaningless (Carpenter et al., 1994). In contrast, consumers have their own reference systems, identity projects, and interpretive habits (Hirschman & Thompson, 1997). So, describing certain distinctions as “meaningless” appears to be meaningless from the perspective of consumer experience, and perhaps vice

versa (Thompson et al., 1989). Systeming suggests that there is no meaningless communication in social systems. Communication, including both relevant and irrelevant product attributes, has its unique meaning within a respective marketing subsystem. The issue of distinction-making must be resolved from the point of inter-system communication and communicative harmony.

Is ignorance sustainable? Conventional thinking is that the map of the environment people construct represents the true environment. This leads to thinking that:

> *The real natural environment can be known and taken into account when operating in the marketing system.*

Dolan (2002) described how the natural environment was objectified by both consumers and producers in cultural interaction. He warned that the environment had become one of many product features that were put on sale. The systeming insights indicate that the marketing system's self-attribution of sustainability is based on ignorance about the real environment. The true essence of surrounding complexity is not known to the system. Porter (2005) argued that "all versions of sustainability are based on identities reflected from human as opposed to natural systems" (para 24). The natural environment was removed from the sustainability discourse. The marketing system is essentially contrived (Katz & Kahn, 1966), as its structure and processes comprise human communication. This human communication only enacts human communication, while the enactment of the natural environment is impossible (Luhmann, 1989). In this sense, the sustainability concept applied to the marketing system remains anthropocentric as opposed to ecocentric (Crane, 2000; Dolan, 2002; Kilbourne et al., 1997; Rogers, 1994). In this way, the marketing system is disconnected from the eco-system of bio-physical changes, and information these systems provide is translated into human communication for the marketing system. The marketing system remains ignorant of the true nature of bio-physical perturbations. For example, SMC emphasises the attainment of the Zero-emission Society as well as the Complete Recycling Society. These targets are only achievable when the system successfully maintains myopia on "non-emission" emission and "non-recycling"

recycling. The certain types of emission and recycling activities such as emission from newly introduced technology, non-commercial nature preserving technologies, and unobserved modes of resource wasting are not observed, meaning they simply do not exist for the system. The analysis of SMC indicated that managerial decision-making is based on particular decision-premises, which become self-referential dogmas in operating. Although these decision-premises are retro-success patterns, they are independent from the environment. They make managers insensitive to complexity. The same view is applicable to the context of consumption practices. Usually, chaotic behaviour and experimenting with products creates various and contrasting levels of material savings, which are sometimes observed or unobserved. Saving actions do not emerge as systemic meaning unless they are purposefully observed. Essentially, ignorance builds up when system actors become obsessed with the content, i.e. fuel saving distinctions. The form is not observed. Social interaction consequences become less important. Moreover, SCC posits the self as superior, and thus assumes a moral responsibility in enforcing one-way, self-referential solutions to social problems. In this, ignorance about other systems and their dynamics must be maintained. Due to the complexity of the environment and the inaccessibility to eco-systemic perturbations, ignorance seems to be a natural systemic reaction. The marketing system is not able to construct a point-to-point relation with its environment, so reduction is unavoidable. The essence of the problem lies in the fact that ignorance is considered positive *per se*, which gives rise to arrogance. Hamel and Prahalad (1994) called this managerial frames and the lack of *humble* self-assessment. In the case of SCC, arrogance results from ethnocentrism.

Is sustainability a matter of mutual producer-consumer education? The stable operating of the marketing system requires maintaining the simplified picture of communicating actors in referenced systems. For example, manufacturers may maintain the view of consumers as rational-choosers. This view enables SMC to tailor products with enhanced pro-environmental qualities wanted by supposedly rational consumers (Schaefer & Crane, 2005). This logic suggests that:

> *Sustainability is achieved when the sufficient number of consumers starts using a green product. According to this perspective, the problem of sustainability is solved through education.*

What is meant by education here is the mechanical transfer of information, i.e. the diffusion of particular distinctions. The same could be said about marketers learning about consumer preferences through market research, where consumption distinctions are supposedly delivered to SMC. A mutual information exchange in the sense of a conduit metaphor is underlined by the simplified picture enacted in the marketing system. What is the implication of a simplified picture for sustainability? It would mean that sustainability would only be established, when people would really want it, e.g. buy it. As long as citizens do not enact proper distinctions, sustainable development remains as impossibility (Fuller, 1999; Ginsberg & Bloom, 2004; Porter & Van Der Linde, 1995; Smith, 1998). Schaefer and Crane (2005) discussed several possible barriers that hindered adoption of proper distinctions such as less environmental concern, apathy and limited environmental understanding, scepticism, considering environment as less important, and feeling powerless. In contrast, Varey (2002a) argued that in the context of the modern conception of communication, education occurred as the participative construction of shared communication. From this perspective, no agent has absolute power over the communicative content (Poerksen, 2004; von Foerster, 2003). Systeming reifies the agency and power of the marketing systems. I maintain that meaning is not derived from a singular communicating act: rather meaning represents the network of linked communications. Hence, the marketing system-as-a-whole constructs meaning in emulative education. This means that not only the content of communication is co-constructed, but also the form of the system. Systeming observes the transfer of the form. Citizens can choose various distinctions, while they emulate very similar social forms of communication. It is seen in consumers learning how to observe in the system. Self-contradictory form construction and emulation that is observed in both SMC and SCC suggests that the particular (autopoietic) form of communication is commonly disseminated and adopted throughout the marketing system. In this case, sustainability becomes the matter of cultural and social education among generations within the dominant systems (Kilbourne et al., 1997). This means that

sustainability is not simply learned through cognitive adaptation and semantic transfer of content. The essence of education is deeply rooted in processes through which people learn purposeful interacting. The important insight learned in systeming is that sustainability communication is not only delivery of the communicative content, but also the emulation of distinct *distinctioning,* i.e. the communicative form. Why should this insight be important? Let us consider the situation of manufacturers who purposefully expand self-sustainability which is depicted in their hypocritical acting, excessive semanticising, and amoralised operating. The labels I am using here – purposeful expansion, hypocritical acting, excessive semanticising, and amoralised operating – all indicate the roots of the same socially co-constructed pattern, the communicative form that underpins the social consequences of sustainability communication. As this form becomes widely emulated in society, one can see consumers (citizens) also increasingly repeating this form in their interaction. Hence, manufacturers should not be surprised to encounter such aberrations as consumer purposefulness and hypocrisy, i.e. expressing strong and genuine interest in sustainable products while failing to act according to their expressed intentions. Manufacturers complain that green products are not widely accepted assuming that consumers do not want to compromise price, quality, and comforts for the vague sake of welfare for all. Systeming redirects the attention to the self. Are manufacturers themselves ready to compromise their profit maximising commercialism and opportunism? If not, how much could and should we expect from others? Neither manufacturers nor consumers are to be blamed for unsustainable communicative forms. It resembles the "who first: chicken or egg?" situation. Communicative forms emerge as a whole, as a social system.

Co-orientation between SMC and SCC. What is the nature of relations between marketers and consumers? The conventional thinking is that:

> *Consumers and marketers directly exchange messages as it is depicted in the conduit metaphor of communication.*

This work explored the systemic ordering of the marketer and consumer domains to suggest that the relation between the marketer and consumer systems is that of

an inter-systemic coordination. SMC and SCC rarely exchange information in a mechanical sense, rather they enact the view of the other within their respective processes. A similar idea is propounded by Thompson et al. (2006), who discuss the strategies of emotional branding and the construction of doppelganger brand images. Emotional branding is based on developing brand-related stories that resonate with consumer emotions, inspirations, lifestyles, and aspirations. The concept of a doppelganger brand image depicts the tendency of the autonomous development of brand stories among consumer groups. The dictionary meaning of the doppelganger term refers to a ghostly twin of a person. In the case of marketing communication, it means the counter-reflection of the emotional branding story. Thompson et al. (2006) contest the traditional view on brand image co-creation, which is based on the idea of participative development of the marketer-managed set of positive stories and images about a brand. On the contrary, consumers independently create their own stories about brands, which are not quite favourable, and often portray very disparaging images. This corresponds with the view propagated in this work that SMC and SCC are the independently closed systems of communication that reflect each other according to their self-referentiality. The reflection of a brand image attains its bias in both systems, and the bias is the result of autopoietic operations. The same event may be reflected in contrasting ways according to the systemic meaning. For instance, the hybrid car represents a contextualised solution to the sustainability dilemma for manufacturers, while this technology becomes a means of playful identity-construction, differentiation, and value co-creation for consumers. Similarly, a drift develops between the offered value and the co-constructed value-in-use. Individual experiences are reflected in many different ways, and the systemic ordering of communication and meaning creation affects these reflections. Citizens develop accounts, self-reflections on their current situations in order to explain complex postmodern reality and derive meaning from the context according to communicational goals (Varey, 2005a). However, value-construction in this sense is not a completely autonomous individual accomplishment, rather it is situated in the larger context of the systems of meaning (Thompson, 1997; Thompson & Troester, 2002; Varey, 2005a). If an analytical focus is directed at the higher level of systemic operation, or alternatively, the agency attributed to entities is moved from individuals to systems (Cooren et al., 2005), it could be

seen that it is the system that is directing and framing communicating and relating acts. Following this approach, the tendencies of drift and commonality among different value constructions can be observed.

Complex problems and fragmentalisation. The problem of sustainability and the sustainable mobility is not a trivial one. It is a complex social problem. Lindblom (1959) argued that complex social problems cannot be solved by adhering to traditional assumptions that a) analysis values and problem-solving objectives must be clarified in advance; b) the ends are separated from means, and the best means to solve the ends are selected; c) "good" policy represents the best means to a desired end; d) all important factors can be accounted for; and e) universal theory is indispensable. In contrast, Lindblom advocated *disjointed incrementalism* that suggested that values and objectives were interlinked and not easily clarifiable, ends and means were not separable, the best policy was incremental acting, important factors were ignored or impossible to account for, and incremental comparisons replaced universal theories. Lindblom argued that complex problems were dealt with through fragmental actions. The holism, a unity of all values and preferences, was not achieved: instead, people adjusted the ends to available means, and *vice versa*. Comparably, societal sustainable development is a complex and holistic problem (Schaefer & Crane, 2005). Society solves this highly complex problem by observing the self from the particular points of observation. This means that citizens are unable to understand sustainability in its holism, but only through its fractional enactments in different systems. In this sense, copying Maturana and Varela (1992), who said that "anything said is said by an observer", this work argues that *anything constructed about the sustainability of the marketing system is constructed by a specific system,* be it SMC, SCC, or other marketing systems. The sustainability of the systems cannot be evaluated and assessed objectively. This problem must be resolved from within each communicative system. This pattern is comparable to the abstractness of the concept of marketing (Brown et al., 1996; Sheth et al., 1988). Complex, abstract, transcendent concepts serve as a basis for fragmentalised actions. Brown et al. (1996) edited a number of marketing literatures that argued that marketing became a general umbrella concept for a wide variety of conflicting approaches in business. For instance, some central

concepts such as “4Ps” and “consumer satisfaction” were shown to be far from being viable (Brown & Maclaran, 1996; Brownlie & Saren, 1992; McDonagh & Prothero, 1996), despite these concepts representing the fundamental premises of managerial marketing research. The point was that the marketing concept simply became a useful holistic construction that could mechanistically be applied to a variety of complex situations in order to reduce them into a meaningful pattern. The general theory of marketing is impossible (Sheth et al., 1988), and this creates a great deal of opportunities to use it as an explanatory tool. I argue that conceptual nebulousness creates a system on its own. Corporate operations proliferate and attain meaning by reifying this unique system that is built on the differentiation between the market orientation and other perspectives (Kohli & Jaworski, 1990; Narver & Slater, 1990).

Discussion of Methodological Similarities and Differences

Comparison to the laddering (means-end chains) analysis. Meaning is derived from textual data in many different ways (Thompson, 1997). One of them is the *laddering* or *means-end chains* method (Botschen & Thelen, 1999; Gutman, 1982; Overby, Gardial, & Woodruff, 2004; Woodruff, 1997). The laddering analysis is based on the cognitive model of means-end chains, which assumes that an action (e.g. choosing a product) is associated with personal perceived consequences that are instrumental in realising a particular consumer value. From this perspective, consumers form associative links between product attributes (means), consumption consequences in consumption situations, and desired end states (Overby et al., 2004). The interpretation of textual data is based on the metaphor of climbing a conceptual ladder up and down, i.e. attributes-consequences-values and *vice versa*, to reveal meanings of preference actions. For example, various combinations of interpretation are possible for the hybrid car under this schema. Depending on the combinations of end-states (e.g. ecological concern, patriotism, ethnocentrism, moral domination, play), consequences (e.g. good mileage, less emission, less fuel waste, esteem, unique status, fun) and attributes (e.g. fuel efficiency, sleek design, hybrid technology), a researcher may come up with different interpretations in a variety of consumption contexts. This method could equally be used in the context of manufacturer relations. Accordingly, this method would link the issue of the sustainable marketing system into the problem of

education about value-attribute linkages. Sustainability is attained when actors recognise sustainable values, become aware of personal consequences which lead to these values, and accrue these consequences from product attributes. This model is comparable to the form of communication, because values represent systemic character, as they arise via interaction among individuals. If individual choice acts represent "patterns", then consumer values are the "pattern of patterns" (Bateson, 1979). In other words, if actions are communication, values are mega-communication (Hofstadter, 1979). The means-end model recognises the effect of meaningful systems on choice behaviour. However, the model is based on the logical typing error that connects micro to macro on the basis of a "dormitive" principle (Hofstadter, 1979). Drawing argumentation comparable to the discussion of the causal "vehicles" by Wittgenstein (1963), Bateson (1979) defines a "dormitive" principle as accounting that explains the complexity of relations by a means of invoking unobservable "qualities" in individuals. Similarly, the means-end chains model attempts to build explanation through reference to the mechanisms of individual consciousness, the essence of which is not readily observable. The logical switch from individual to social is implicit in this model. In contrast, this work considers *sustainable/unsustainable* to be the pattern (form) of communication that is different from the other forms of marketing systems rather than equating them to individual characteristics. The suggestion is that the problem of identifying how sustainable the marketing system is needs to be solved by examining how distinctions are created, employed, and observed in different contexts.

Comparison to ethnographic interpretations. Ethnography in reference to marketing could be in two forms: ethnographies of marketing and market-related ethnography (Arnould & Wallendorf, 1994). Arnould and Wallendorf define e*thnographies of marketing* as a study of "people in organizations carrying out the activities of marketing management: planning, product development, and strategy execution, sales activity, and service delivery" (p.484). *Market-related ethnography* focuses on the consumption side of the marketing system in order to explore behaviours of consumers, who constitute certain product/service segments, micro-cultures, or communities (Arnould & Wallendorf, 1994). In this

way, both the supply and consumption sides of the marketing system can be analysed by a means of ethnographic methods.

The similarities and differences between systeming and the ethnographic traditions are several. First, both perspectives seek to reveal operations of general meaning-creation systems. In this regard, systeming focuses on more abstract levels of communication, while the ethnographic traditions are limited to cultural beliefs and behaviours. This difference is due to a difference in purpose: the ethnographies of marketing and the market-related ethnography are driven to serve and facilitate the micro-managerial goals of marketing strategy formulation, while systeming is driven to draw both the macro- and micro-level implications of marketing system operations. For example, following systeming, the sustainable marketing system emerges in the contextual variation and calibration of meanings created through systemic communications. The communicative harmony, meaning synergies, and coorientation between SMC and SCC which operate as purposeful systems are observed in the context of a societal sustainable progress. In contrast, ethnographic research attributes agency to individuals in meaning-creation, while observing discrepancies in differentiation, contradiction, and expansion. The individual is a unit of analysis for ethnographic research, while culture is inferred from commonalities discovered among individual behaviours. SMC and SCC would be treated as separate cultural domains, while their interactive and co-creative nature may not be studied. Second, both perspectives are essentially based on interpretation of textual data. However, the ethnographic investigation differentiates between participant/non-participant observation and verbal reports. The emphasis here is that direct observation may enable objective descriptions, while subjective descriptions from informant verbal reports can then be compared to them. Implicit here is the fact that all information is transformed into a textual form first, and then used for interpretation. For example, observations are made as field notes, while photographic/video materials are turned into narratives. Systeming recognises this caveat by approaching any description as the ordered reduction of complexity, while complexity, even if observed, cannot be conveyed in its holism through communication. For example, in ethnographic research the divergent individual meanings of sustainability and the value of hybrid cars may be observed in themes such as overgeneralisations, cultural glosses, and

idiosyncrasy claims, which are thought to give rise to irrational meanings (Arnould & Wallendorf, 1994). Then these variations are compared to the supposedly "real" and "objective" meaning, which is given preference on the part of researchers. The ethnographic research may thus reveal the inability, weakness, and irrationality of informants in enacting the single, preferred, and objective meaning of sustainability. In contrast, systeming indicates that all meanings of sustainability and the value (including formal and objective values) are enacted within particular systems of communication. The distinction of irrational/real meanings is the operation of ethnographic observers, but not that of systeming. Sustainability does not have a single objective meaning, but diverse content and form enactments in different systems. Third, both perspectives probe for the meanings of cultural (systemic) actions that arise from different contexts. However, divergent meanings are the operations of certain individuals in the ethnographic studies, while systeming emphasises the meaning arising in the context of interactive communicative acts, where individuals cease to exist as autonomous unities, but represent constellations of communications. Ethnography observes people within real, situated, material contexts, while systeming observes contexts and forms which are temporally, virtually created through communicative acts. Sustainability within the material contexts would require the image of real people using/wasting tangible resources in various manners. In contrast, in communicative contexts, the sustainability is made meaningful through difference, distinction, contradiction, and expansion. So, the insights generated by two perspectives on the same phenomenon may differ considerably. Fourth, both perspectives focus on social/cultural events as opposed to cognitive patterns of communication. In this regard, Arnould and Wallendorf (1994) state that "ethnography aims to explicate patterns of action that are cultural and/or social rather than cognitive" (p.485). The difference may arise from presuppositions. When ethnographers bring attention to the delineation between cultural and cognitive, they mean the distinction between individual qualities of acting (can be observed) and thinking (cannot be observed, but can be accessed through verbal reports). In contrast, systeming differentiates between the system of communication and the system of psychic processes, i.e. social versus psychic systems (Husserl, 1970; Luhmann, 1995; Thompson et al., 1989). Textual data or verbal accounts are considered communication, and thus, social rather than

individual. Researchers can infer individual psychic system processes by looking at changes in communication (Thompson et al., 1989; Thompson et al., 1990). The logical typing error occurs when one links individual psychic operations to social communications. In contrast, systeming focuses on social processes, while consciousness is considered to be a part of complexity. Ethnography would reveal differences between what people "say" and what they "do" in regard to ecological and social issues. Systeming suggests that both saying and doing is communicating, but they might be different because a) these utterances reflect different categories of information; for example, organisations may claim to be sustainable in terms of managing/ignoring harmful emissions, while still increasing the amount of total generated emissions which seems to be guided by the distinction of expansion/contraction of business; b) these communicative acts may be observed by different systems; for instance, a consumer may often discuss, calculate, and report fuel efficiency, the fact of which is viewed as rationalistic behaviour by SMC, while the same acts may be viewed as the enrichment (playfulness) of actions in SCC; c) saying and doing exhibit respectively the content and the form of communication; a hybrid driver says that he is reducing his emissions and fuel spending, while his actions create imbalance in the flow of traffic, which may increase total fuel consumption for the cars in these traffic situations; d) these communicative acts become the elements of paradoxes; for example, consumers may express green identity, while this ethnocentric differentiation promotes, legitimises, and strengthens non-green identities; and e) meanings are enacted in expectation of divergent understanding and continuation; one may utter doubts about fuel efficiency and other attributes of hybrid cars, while this action is simply for the purpose of continuation of communication and positive reinforcement.

Comparison to hermeneutical interpretations. The hermeneutic framework for interpreting consumer stories and identity narratives has been suggested by Thompson (1997). The hermeneutic framework is based on the narratological/ hermeneutic model of meaning. This model assumes that consumers construct personal histories as a narration. It is assumed that consumption life-events acquire meaning within the broader narrative of self-identity. In turn, the personal histories as a text become actualised in the context of broader cultural meanings

and beliefs. Consumers develop the "personalized cultural frames of reference" in order to be able to coordinate story-telling within the broader context of cultural experiences (Thompson, 1997, p. 440). Thompson recognises the recursive nature of meaning construction – dialogical relationships – through which the interpreted stories become the part of a personal history, while the personal history as a text determines the meaning of life events. This recursiveness is referred to as an "experiential gestalt", which comes forth in various forms within the general cultural background of "historically established meanings" (Thompson, 1997, p. 440). The hermeneutic interpretation develops the multilayered view of consumer stories. Several aspects of consumer stories are scrutinised. These aspects are plot lines, symbolic meaning of actions, personal history, existential themes, and socio-historic contexts. The relevant aspect of the hermeneutic perspective to systeming is its emphasis on positioning consumer's (self)observations within a bigger system of socio-cultural meanings. Accordingly, the stories and narratives of hybrid drivers would be taken as personalised manifestations of the encompassing socio-historical system (Thompson, 1997), rather than systemic communication *per se*. Thompson also suggests that the system is thought to be constructed of meanings, which are incorporated into a "collective cultural memory" of society (p.449). This parallels the notion of the distinctions depository of social systems. Also, the hermeneutical approach supports the systeming concept that meaning construction is an interactive, social phenomenon, which cannot simply be attributed to human consciousness, while suggesting ways to connect individual identity narratives to the process of cultural meaning formation. Following this perspective, the sustainability narratives of hybrid car drivers would be seen as phenomenological reductions constructed peculiarly through the mental operations of consumers, which may interactively constitute and draw on the background of cultural beliefs and meanings. Consequently, the meaning of sustainability would arise within consumer life experiences in respect to the enactment of the socio-historical development of relevant discourses.

The hermeneutical framework is trapped in an ongoing struggle to explain how individuals "contain" a social concern for welfare and sustainability. If the meta-level of the system is taken as a direct aggregation of individual cognitive

operations, the analysis of localised mental phenomena may simply fail to represent social transformations. Systeming resolves this problem by reversing the point of emphasis: narrative and stories are communicated by observers (systems), rather than individuals. Thus, a macro-micro transition is kept at a minimum, while only macro differences are observed. Consequently, sustainability is not studied as the socio-historical evolution of meaning; rather it is viewed as the current operation of a system that differentiates this meaning in reference to other systemic meanings. Systeming proposes interpretations in order to shed light on the problem of positioning a sustainability enactment among other enactments, which is different to linking the individual cognitive vision of sustainability to the social system of sustainability meanings. This discussion points to two alternative meanings of sustainable consumption and production: a) the hermeneutical framework takes the micro-view through equating a sustainable action to a cognitive phenomenological operation; and b) systeming takes a macro-view by equating a sustainable action to systemic observation and operation. Hence, there is a substantial difference in the interpretations.

For instance, how would these perspectives explain widespread consumer apathy toward green and ecological product choices? Foremost, both perspectives would dismiss rational bases of choice mechanisms. The hermeneutical interpretation would link the consumer's choice to his/her conscious life-world construction patterns, which are underlined by ongoing structuring of the narrative of personal history (Thompson, 1997). This perspective explains that the hybrid car or a "green" product/service is selected depending on its symbolic significance in the personal history narrative of the individual. It would not be selected, if the person were to think that the product/service were not instrumental in actualising the "regret-free future" that is built in consciousness via structuring history narratives (Thompson, 1997, p.445). For the consumer, the regret-free future would mean that he/she is a balanced and coherent person in terms of market actions. Hence, hermeneutics explains the essence of market action through personalised life-meanings which may be unique to a particular consumer. Also, Thompson notices "chains of symbolic associations" which link the consumer's narratives to each other (p.444). In contrast, systeming observes symbolic associations (I call them social forms or the form of communication) among narratives which transcend a

consumer's consciousness. Systeming interpretations probe interactive (social) mechanisms of consumer choice, rather than singular cognitive mechanisms. Hence, apathy toward the green product/service is observed as a social form that is the emergent aspect of interaction between marketers, consumers, and other parties. The consumer fails to make a "green" choice, because he/she is simply unable to project the understanding (continuing) of a required communicative form. The "green choice" may not exist in a reduced form to be emulated in action that is interactively meaningful in the marketing system. In society, the communicative forms such as purposefulness, ethnocentrism, individualism, or economic benefit-maximisation are predominant. Therefore, abandoning these non-green forms in the context of marketing systems may seem to be too complex, and thus, meaningless for the consumer in his/her interaction with others. Complexity paralyses the action. In the same vein, unwise is a manufacturer's attitude when it enacts sustainability in terms of profits and commercialism, while pushing the ecological (welfare for all) benefits of products/services in the market which require the consumer's heresy towards these very forms of commercialism? Consumers are marketers too, who are driven by the identical practices and sensitivities which shape the common marketing system.

Discussion of Conceptual Issues

Meaningscape. Where does the systeming view of a sustainable marketing system fit within the theory of marketing systems? Traditional research observes marketing systems in terms of flows. For instance, Fisk (1967) showed that a marketing system comprises the set of substantive functions such as the flows of ownership, possession, finance, risk, and information. Traditionally, marketing systems as complex organisations are defined in terms of a structure and operations, which are thought to have an independent ontological existence (Dixon, 1991; Dixon & Wilkinson, 1982). In contrast, non-orthodox literature takes organisation, and especially, systems, as flows of communications, discourses, narratives, and interactive networks (Bouchikhi, 1998; Cooren et al., 2005; Czarniawska-Joerges, 1998; Luhmann, 2004; Seidl & Becker, 2006; Smircich & Calás, 1995). The text-based view of systems is propounded by the Montréal School of Management Communication, according to which,

communication is a form of organising (Cooren et al., 2005). In line with this, Porter (2005) indicates that a corporate sustainability identity is constructed via discursive formulation of corporate responsibility issues. He thinks that the process is based on sustainability discourses involving all stakeholders. Similarly, researchers investigating the consumer side of the marketing system report a "linguistic turn" in apprehending consumer culture and experiences (Arnold & Fischer, 1994; Arnould & Thompson, 2005; Thompson et al., 1989). Most importantly, these researchers do not suggest that text and/or narrative is the world *per se*, but they point out that language has a strong performative power, through which individual life-worlds are organised. In this work, communications observed are expressed in languaging operations and they do not represent a message exchange in a mechanical conduit sense (Varey, 2004; Varey & Ballantyne, 2005). Instead, I observe how communicative acts create multilayer contexts of social forms.

Systeming re-focuses attention on the form of *meaning transformations* that is different to the locus of physical transformations. This is the main conceptual contribution of this work. Layton (2006, 2007) observed diverse physical variations of marketing systems, which can be in various shapes and structures depending on the national, geographical, cultural, and socio-historical contexts. His main interest was to explore the general characteristics of the different forms of marketing systems, which did not fluctuate from one system to another. The conclusion was that the commonality was not easily found. However, Layton imagines that the physical forms might be contained in the broader domain of meanings, and especially, the interplay of meaning transformations that are imperative in the formation of systems. Although the systeming view developed in this work makes no claim of generality, it may shed significant light to that "more general" mechanism of the marketing system's meaningful operations. Certainly, only a rich fusion of the physical and meaning(s) domains can create the so complex phenomenon called *marketing systems* (Penalosa & Venkatesh, 2006). In the marketing discipline, there are several seminal works which have explored the symbolic aspect of consumption and marketing, e.g. Levy (1959; 1981), Stern (1995; 1996), and Thompson (1997; 1989; 1990). However, the research on symbolic aspects of markets was fragmentary in terms of

understanding underlying marketing systems dynamics. In macromarketing, there is no known research on the meanings dimension of marketing systems. In this sense, this work is unique, although it is largely based on the contributions of key marketing systems researchers.

Marketing system and society. The traditional conceptualisations see a marketing system and society to be separate unities (Hunt, 1981). Systeming suggests that there is no divergence in a literal sense (Sheth & Sisodia, 2005), but a convergence. The hybrid car marketing system is one of many manifestations of a societal form. Society does not emerge separately from the marketing system. It is mirrored in the operations of the marketing system. The hybrid car marketing system becomes a life-issue (world) for system actors when they operate within it. Some researchers argue that society is not mono-contextual, but poly-contextual (Gunther, 2004, February). Contextuality represents a societal context, in which a *tertium non datur* (no golden mean) distinction is applied. The mono-contextual society is considered "being" (in reference to non-being), where, for example, a negative marketing action causes problems for other social actors. However, the poly-contextuality implies many meaning contextures, which are referentially closed in themselves. In this case, a negative/positive marketing action can only be seen as a process of becoming. Similarly, the hybrid car marketing system is built upon the sustainable/unsustainable distinction, and the process of distinctioning may indicate the ethnocentric (negative) side of cultural becoming. Hence, systeming reveals inadequacies in causal reasoning, where an individual is accepted to be responsible for some "causes" that bring about unsustainability. In contrast, the view of the system, which consists of communications, but not of personal consciousness, implies that negative (positive) communications are the interactive result of action by many parties co-creating a common reality. Unsustainable action should not be taken as the inherent characteristic of a particular type of people. The unsustainable communications may be communicated by any agent participating in the marketing system, and the responsibility for the consequence of certain actions does not exclusively lie within the capability of these people. Traditionally, to direct a public policy, a cause is identified, and then a responsible party is found and convicted as guilty, while this action ignores *non-causes*, i.e. other parties considered as not

responsible, and thereby innocent (Luhmann, 1989). However, it is unjust to fix a certain identity (for example, an unsustainable individual/organisation) to an individual. The individual is not *bad per se*, only his/her activities may lead to undesirable consequences. This view recognises the potential to change, and thus provides individuals with an opportunity to rectify their communications. Otherwise, inherently *bad* individuals may become stripped of this ability simply by definition. For example, some researchers consider consumers as being the sole responsible party for unsustainable situations (Heiskanen & Pantzar, 1997). I suggest that interactively constructed consumption and production communications need to be researched in a holistic manner in order to identify solutions to the pressing problems. Furthermore, focusing on only one party (identity) would decontextualise activities from interactive interdependencies built within marketing systems, and in this way this would transform a macro-problem into a micro-manipulation (Dolan, 2002). This work is a step toward arguing that the marketing system is not separable from society. Communication is social, therefore it leads to consideration of interpersonal ethics, i.e. the sustainability of its social form (Varey, 2002a).

Implications

Conceptual Implications

Marketing systems, Service-dominant Logic, and Consumer Culture Theory. The developed systeming vision of the sustainable marketing system offers some advantages in integrating a number of important macro-marketing theories, namely those of marketing systems, the service-dominant logic, and consumer culture (Arnould & Thompson, 2005; Layton, 2006; Vargo & Lusch, 2004). In other words, the contribution of this work is to integrate the concept of marketing systems with the conceptualisation of the service-dominant (S-D) logic of marketing (Vargo & Lusch, 2004) and Consumer Culture Theory (CCT) (Arnould & Thompson, 2005). There are several points at which these perspectives converge. First, the meaningscape dimension of marketing systems corresponds to the S-D logic's third premise: "goods are distribution mechanisms for service provision" (Vargo & Lusch, 2004, p.8). In a similar vein, CCT has long propounded the view that consumers do not buy objects, rather their meaningful

application in various life contexts (Arnould, 2006; Levy, 1959; Thompson et al., 1990). Second, the description of the transvectional diffusion of communications in the system echoes the arguments for the premise "knowledge is the fundamental source of competitive advantage" (Vargo & Lusch, 2004, p.9). According to this premise, a value chain (transvection) not only includes the flows of material goods, but also those of information. Information is taken to be equal to culturally situated understandings in particular relational contexts (Arnould, 2006; Hudson & Ozanne, 1988; Thompson & Troester, 2002). The veridical nature of information is also repudiated by the analyses of a sustainable marketing system, which argues for knowledge that is co-created in the interaction of market system actors in various relational contexts. Finally, all three perspectives argue for the importance of co-creation. S-D logic is based on the premise "the customer is always a coproducer" (Vargo & Lusch, 2004, p.10), which propounds that true value is created in use, and that it is not delivered by marketers in a full scale, rather it is generated in the process of continuous relationships with consumers (Ballantyne & Varey, 2006). Similarly, CCT provides a rich view of how consumption activities become a means of deriving value from interpenetrating marketing/consuming practices (Arnould, 2006; Arnould & Thompson, 2005). Systeming is based on the premise that meaning, and specifically, value are impossible outside the contexts of systemic relations.

Community research. The systeming theory may provide several theoretical implications for community and subculture research. In systeming, the essence of *communing* is reflected in sustainable-value-guided practices, which are grounded in the acts of creating, communicating, and observing contingent meanings that divide the reality into distinctive forms. Community can be differently conceptualised within the systeming crystallisation of a sustainable marketing system. Community would refer to the system of meanings communicated across the transvective chains of marketscapes. This operational definition of community emphasises the operative flow of actions plus observations, which are self-referential in constituting the sense of community, which is opposite to the traditional view that community is made up of individual members. The community research has so far focused on how culturally shared and communicated meanings are utilised within certain consumption communities and

micro-cultures (Cova, 1997; Cova & Cova, 2002; McAlexander et al., 2002; Muniz Jr. & O'Guinn, 2001; Thompson, 1997; Thompson & Troester, 2002; Wenger, 2000; Wenger & Snyder, 2000). In particular, Thompson and Troester (2002) conceptualised a community as a value system that consists of narratives which share, represent, and use social meanings. However, the traditional studies are limited to the description of meaning that is pertinent to individual experiences, the view which fails to represent meaning-construction in larger social networks (Bagozzi & Dholakia, 2002; Penalosa & Venkatesh, 2006). The systeming conceptualisation emphasises the functional and operative side of meaning-creation. I argue that meanings, and thus, communities, are not the result of individual psychic experiences, but they are created (distinguished) by diffusing communications that rise above any individual, and thus become contingent and germane to interactive operating in society. The systeming theory solves the problem of fixing community identities to participating individuals. No person is to be pinpointed as a genuine member of a particular community and marked with a tag of a particular micro-culture. This person can participate in many communities at the same time, and this can be done by the participation and observation of community-specific-communications. Actually, the same action or event could belong in several communities at the same time, as the communities operate with the self-created meanings of communication, and not with natural facts which supposedly make up the social environment.

Implications for Macromarketing

Hunt's definition. This work suggests that macromarketing as the field of observation of marketing systems needs to be attuned to the complex character of systems. Simplistic assumptions about marketing systems could result in catastrophic conclusions, e.g. consumers are destructors and waste-generators, or manufacturers are hypocrites. These views pertaining to unsustainable social relating are the direct consequence of the main definition of macromarketing that states that macromarketing is about the mutual (mechanistic) effects of marketing systems and society (Hunt, 1981). The complete redefinition of the domain of macromarketing is needed. However, this redefinition is impossible unless observers understand that operating and social relating are not separate and independent from marketing systems and society, rather their operating-through-

relating constitutes both marketing systems and society. In this light, I suggest a modification of Hunt's (1981) definition. Macromarketing must be defined as *the interpretation of a) marketing systems; b) marketing systems' enactment of society; and c) society's enactment of marketing systems*. Systeming assumptions underlie this definition.

Public policy implications. In many countries public policy prerogatives are centered on ensuring sustainable social and economic development. Because of the enormous size of automobile markets, the solution of the sustainable mobility dilemma is thought to lie within new alternative technologies that offer substantial fuel efficiency. This is reflected in the US president's speech: "…and as we make our homes more energy efficient, we're doing the same for our automobiles. Hybrid vehicles are one of the most promising technologies immediately available to consumers" (Bush, 2005, April 27). The US government pledged $2.5 billion within 2005-2015 in tax credits which would encourage consumers to buy energy-efficient hybrid vehicles. Some American states granted an exclusive access to the high occupancy lines (HOV) of motorways for hybrid cars. Netherlands has offered tax breaks for the purchase of hybrid cars (Environment Daily, 2006). The Japanese government is considering certain privileges for the users of hybrid cars. At the same time, some developing countries see their future linked to the hybrid car. For example, the Iranian government is stipulating a requirement that the national automaker Iran Khodro Company produce 280,000 light duty hybrid cars a year (Autoblog.com, 2006, August 18). Thus a great amount of public funds and effort is spent to promote this category of a "green" product, the attributes of which are perceived to be sustainable over those of other product categories. In most cases, the level of consumption is manipulated through monetary and action "carrots and sticks". How effective are these policies in meeting the purpose of sustainable development? I argue that the overemphasis on the physical attributes of the products is a self-defeating strategy. Public policy is to be guided by communicative changes in public behaviour. For instance, access to HOV lines is directed to encourage carpooling, whereas hybrid car drivers can resent the idea of having extra riders due to the effect on fuel efficiency. Also, not only the content of communication by policy-makers is emulated, but also their forms are observed by publics. For example, policy is often directed at contextualising the cause-

effect assumptions through punishing or restricting responsible parties. Similarly, this kind of a fundamental attribution error is repeated in social living contexts. The sustainability theme is used to discriminate, marginalise, and punish imagined "enemies" and wage "rhetoric wars". The contingency, emergence, unity of distinctions, and the fundamental uncertainness about the environment are rarely accepted as a primary basis of policy action. Society members reflect the very acts of policy-making in their actions rather than those uttered in the policy content. For instance, the environment is discussed much, while the related action communicates the opposite. This form is reflected in the governments' actions such as opting out of the Kyoto Protocol or failing to offer substantial factual tax breaks for hybrid cars despite these government's key figures extensively uttering the sustainability content. Such systemic purposeful action is the very social form that is followed by citizens. For them, the reoccurrence of such forms becomes entrenched in cultural becoming as citizens. Regardless of the fact that they are consciously in favour of environmental sensitivities, they would emulate the forms of policy-making in action. The social forms appear to be independent of changes in consciousness. Governments and corporations may keep complaining that citizens and consumers are not guided by environmental convictions when they reject slightly expensive but sustainable products, but fail to understand that the forms which dominate society are self-referential. The public policy-making can thus become self-referential. The communicative form of altruistic decision-making is still considered to be an exceptional, atypical, and uncommon situation (Hill, 2002).

The next point pertaining to the environmental and climate policy is that the effect of regulations on the systems (SMC and SCC) is not linear. In fact, these regulations are triggers rather than policy interventions, as they trigger the chains of changes within these systems. The systems are neither motivated nor aware of the true motives behind the public regulation, rather they develop the closed self-referential network of meanings, which are driven by an independent purposeful expansion. Straightforward intervention implies that regulation either destroys the system or boosts its expansion. Both approaches are not desirable, as this would mean harming the purpose of sustainability. The public policy-makers should learn to co-orient (dance) with systemic processes, so that the mutual effects are

calibrated to achieve a common purpose. For instance, policy-makers attempt regulating production and consumption through price mechanisms (eco-tax, tax credits, sales tax exemption, differentiated parking meter fees, fuel and mileage taxes). Here, the reference emphasises monetary distinctions, whereas the hybrid car marketing system may not be sensitive to these distinctions. The analysis shows that the creation of value within the system is rarely affected by monetary valuing. Hence, we need sustainable policy-making (that enacts sustainability in both its content and form of action), instead of a sustainability enforcing policy. The difference between these two communicative acts is substantial. The latter is directed toward others, i.e. rectifying the behaviour of other responsible parties. The former is directed to the self, i.e. rectifying the behaviour of the self. Both create communicative forms which diffuse throughout society, and become a part of cultural living. In the case of the society that is prevalently based on other-corrections, the conflicting, antagonistic, and vulgarly ethnocentric social communicating may prevail. The society that works on the basis of both the self-correction and the other-corrections (e.g. suggesting the other-correction through the self-correction) might be much closer to sustainability. This would create society where persuasion is done through *empathic and seductive aesthetics* rather than straightforward coercion. Persuasion through confrontation appears to be of no use when it comes to changing habits which are deeply entrenched as the result of the continuous repetition of dogmatic social forms (Bateson, 1991; Maturana & Varela, 1992; Verplanken & Wood, 2006). Consequently, the role of governments should change. The key to sustainability does not lie in curbing (or promoting) consumption and production as the proliferation of consumption and marketing in both material and cultural forms may be unavoidable (Schaefer & Crane, 2005). I suggest that sustainability originates within the meaningful form of marketing action. So the objective needs to be not *less/more of* material consumption (and production), but *wiser* consumption (and production).

Specific action propositions for managers. The popularisation of the hybrid car technology, or in general, any environmentally friendly good/service, requires the knowledge of systems dynamics such as purposeful expansion, the form-content contradiction, and distinctioning. From the systeming perspective, positioning the hybrid car as a complementary option that stands at the same level as the standard

range of vehicles and additionally caters for the needs of “green” consumers is a grave mistake. Because, a) there arises a need to explain why these premium-charging brands are special entailing separate promotion budgets, advertising expenditures, and marketing effort; b) the straightforward differentiation strategy based on sustainability themes creates a unqiue marketing system underlined by environmentalist/ethnocentric meanings; this divides people and forces them to accept or reject these meanings; c) at the meta level, the hybrid car marketing system is not sustainable, because it is based on more general social and identity conflicts between hybrid car fans and non-hybrid vehicle driving consumers; d) the hybrid car meanings predominantly based on fuel saving promote, actualise, and consolidate the gas-guzzler car technologies. The only way out from the grips of the hybrid car marketing system is to reposition the hybrid car technology as a natural upgrade of traditional technologies. The hybrid car must not be prorily defined or differentiated for both employees and consumers. It must become the basis for many meanings for many parties, yet be unnoticed at the level of communication. Talking about hypercars (not a hybrid car), the innovative environmentally friendly vehicle concept in 1990s, Lovins, Lovins, and Hawken (1999) said that “Hypercars will succeed for the same reason that people buy compact discs instead of phonograph records: CD is a superior product that redefines market expectations” (p.151). Since then, CDs evolved into DVDs, and recently, to Blueray without much communicative hype about their social and environmental impact. The users of new technologies are not necessarily only green consumers. In the same way, the hybrid car must be repositioned as a logical and expected upgrade of the exsiting drive-train technology. Managers must drop the distinction “sustainable” in communicating and solve several operations, logistics, and particularly cost-related problems to bring hybrids to the mainstream of global mobility.

References

Alderson, W. (1964). A normative theory of marketing systems. In R. Cox, W. Alderson & S. J. Shapiro (Eds.), *Theory in Marketing* (pp. 92-108). Homewood, Illinois: Richard D. Irwin, Inc.

Alderson, W. (1965). *Dynamic marketing behavior; A functionalist theory of marketing*. Homewood, Ill.: R.D. Irwin.

Alderson, W., & Martin, M. W. (1965). Toward a formal theory of transactions and transvections. *Journal of Marketing Research, 2*(2), 117-127.

Allen, D. E., & Guy, R. F. (1974). *Conversation analysis: The sociology of talk*. The Hague: Mouton.

Anderson, P. F. (1983). Marketing, scientific progress, and scientific method. *Journal of Marketing, 47*(4), 18-31.

Angyal, A. (1969). A logic of systems. In F. E. Emery (Ed.), *Systems Thinking* (pp. 17-29). Middlesex: Penguin Books Ltd.

Applbaum, K. (2004). *The marketing era: from professional practice to global provisioning*. New York: Routledge.

Ardelt, M. (2004). Wisdom as expert knowledge system: A critical review of a contemporary operationalization of an ancient concept. *Human Development, 47*(5), 257-285.

Arndt, J. (1981). The political economy of marketing systems: Reviving the institutional approach. *Journal of Macromarketing, 1*(2), 36-47.

Arnold, S. J., & Fischer, E. (1994). Hermeneutics and consumer research. *Journal of Consumer Research, 21*(1), 55-71.

Arnould, E. J. (2006). Service-dominant logic and consumer culture theory: Natural allies in an emerging paradigm. *Marketing Theory, 6*(3), 293-297.

Arnould, E. J., & Thompson, C. J. (2005). Consumer culture theory (CCT): Twenty years of research. *Journal of Consumer Research, 31*(4), 868-882.

Arnould, E. J., & Wallendorf, M. (1994). Market-oriented ethnography: Interpretation building and marketing strategy formulation. *Journal of Marketing Research (JMR), 31*(4), 484-504.

Arthur, C. (2006). *What is the 1% rule?* London: The Guardian. Retrieved November 30, 2006, from www.technology.guardian.co.uk

Autoblog.com (2006). *Iranian automaker expands, steps up hybrid effort*. Tehran: Mehr News Agency. Retrieved October 18, 2006, from http://trucks.autoblog.com/2006/08/18/

Baecker, D. (2002). Lenin's twist, or the R-factor of communication. *Soziale Systeme, 8*(1), 88-100.

Baecker, D. (2006). The form of the firm. *Organization, 13*(1), 109-142.

Baecker, D. (Ed.). (1999). *Problems of form*. Stanford, CA.: Stanford University Press.

Bagozzi, R. P. (1974). Marketing as an organized behavioral system of exchange. *Journal of Marketing, 38*(4), 77-81.

Bagozzi, R. P. (1975a). Marketing as exchange. *Journal of Marketing, 39*(4), 32.

Bagozzi, R. P. (1975b). Social exchange in marketing. *Journal of the Academy of Marketing Science, 3*(4), 314-328.

Bagozzi, R. P. (2000). On the concept of intentional social action in consumer behavior. *Journal of Consumer Research, 27*(3), 388-396.

Bagozzi, R. P., & Dholakia, U. M. (2002). Intentional social action in virtual communities. *Journal of Interactive Marketing, 16*(2), 2-21.

Bagozzi, R. P., & Dholakia, U. M. (2006). Antecedents and purchase consequences of customer Participation in small group brand communities. *International Journal of Research in Marketing, 23*(1), 45-61.

Ballantyne, D., & Varey, R. J. (2006). Creating value-in-use through marketing interaction: The exchange logic of relating, communicating, and knowing. *Marketing Theory, 6*(3), 335-348.

Baltes, P. B., & Staudinger, U. M. (2000). Wisdom: A metaheuristic (pragmatic) to orchestrate mind and virtue toward excellence. *American Psychologist, 55*(1), 122-136.

Baltes, P. B., & Staudinger, U. M. (Eds.). (1996). *Interactive minds: Life-span perspectives on the social foundation of cognition*. Cambridge ; New York: Cambridge University Press.

Bartels, R. (1970). *Marketing theory and metatheory*. Homewood, Ill.: R. D. Irwin.

Bartels, R. (1976). *The history of marketing thought* (2nd ed.). Columbus, Ohio: Grid Inc.

Bateson, G. (1979). *Mind and nature: A necessary unity*. New York: Dutton.

Bateson, G. (1991). *A sacred unity: Further steps to an ecology of mind*. New York: Cornelia & Michael Bessie Book.

Belk, R. W. (1996). On aura, illusion, escape, and hope in apocalyptic consumption: The apotheosis of Las Vegas. In S. Brown, J. Bell & D. Carson (Eds.), *Marketing Apocalypse: Eschatology, Escapology and the Illusion of the End* (pp. 87-107). London: Routledge.

Belk, R. W. (2001). *Materialism and you*: Journal of Research for Consumers. Retrieved November 30, 2006, from http://www.jrconsumers.com

Berman, B. (2006). The top ten hybrid myths. *Business Week Online*, 12. Retrieved October 18, 2006, from www.businessweek.com

Bickers, C. (1999). Split personality. *Far Eastern Economic Review, 162*(31), 44-45.

Botschen, G., & Thelen, E. M. (1999). Using means-end structures for benefit segmentation. *European Journal of Marketing, 33*(1/2), 4-58.

Bouchikhi, H. (1998). Living with and building on complexity: A constructivist perspective on organizations. *Organization, 5*(2), 217-232.

Boulding, K. E. (1956). General systems theory - the skeleton of science. *Management Science, 2*(3), 197-208.

Bourdieu, P. (1984). *Distinction: A social critique of the judgement of taste*. London: Routledge & Kegan Paul.

Brown, S. (1993). Postmodern marketing? *European Journal of Marketing, 27*(4), 19.

Brown, S. (1995). *Postmodern marketing*. London: Routledge.

Brown, S. (2005). When executives speak, we should listen and act differently. *Journal of Marketing, 69*(4), 1-4.

Brown, S., Bell, J., & Carson, D. (Eds.). (1996). *Marketing apocalypse: eschatology, escapology and the illusion of the end*. London ; New York: Routledge.

Brown, S., & Maclaran, P. (1996). The future is past: Marketing, apocalypse and the retreat from utopia. In S. Brown, J. Bell & D. Carson (Eds.), *Marketing Apocalypse: Eschatology, Escapology and the Illusion of the End* (pp. 260-277). London: Routledge.

Brown, S., Sherry Jr., J. F., & Kozinets, R. V. (2003). Teaching old brands new tricks: Retro branding and the revival of brand meaning. *Journal of Marketing, 67*(3), 19-33.

Brownlie, D., & Saren, M. (1992). The four Ps of the marketing concept: Prescriptive, polemical, permanent, and problematical. *European Journal of Marketing, 26*(4), 34-48.

Bush, G. (2005, April 27). *[Address].Speech presented at National Small Business Conference. Washinton, DC. [Transcript]*. Retrieved January 27, 2007, from http://www.whitehouse.gov/news/releases/2005/04/20050427-3.html

Byrne, M. R., & Polonsky, M. J. (2001). Impediments to consumer adoption of sustainable transportation: Alternative fuel vehicles. *International Journal of Operations & Production Management, 21*(12), 1521.

Capra, F. (1997). *The web of life: A new synthesis of mind and matter*. London: Flamingo.

Carpenter, G. S., Glazer, R., & Nakamoto, K. (1994). Meaningful brands from meaningless differentiation: The dependence on irrelevant attributes. *Journal of Marketing Research, 31*(3), 339-350.

"Cars". (2007). *Cars*: HybridCars. Retrieved March 30, 2007, from http://www.hybridcars.com/cars.html

Casti, J. L. (1991). *Searching for certainty: What science can know about the future*. London: Scribners.

CKISVA (2005). *Global 100 most sustainable corporations in the world*: Corporate Knights and Innovest Strategic Value Advisors. Retrieved March 30, 2006, from http://www.global100.org/2005/top3.asp

Commercial Carrier, J. (2006). Green doesn't mean tax-free. *Commercial Carrier Journal, 163*(8), 50.

Connolly, J., & Prothero, A. (2003). Sustainable consumption: Consumption, consumers and the commodity discourse. *Consumption, Markets & Culture, 6*(4), 275-292.

Cooren, F., Taylor, J. R., & Van Every, E. J. (2005). *Communication as organizing: Empirical and theoretical approaches into the dynamic of text and conversation*. Mahwah, NJ: Lawrence Erlbaum.

Cova, B., & Cova, V. (2002). Tribal marketing: The tribalisation of society and its impact on the conduct of marketing. *European Journal of Marketing, 36*(5/6), 595-620.

Crane, A. (1997). The dynamics of marketing ethical products: A cultural perspective. *Journal of Marketing Management, 13*(6), 561-577.

Crane, A. (2000). Marketing and the natural environment: What role for morality? *Journal of Macromarketing, 20*(2), 144-155.

Crane, A., & Desmond, J. (2002). Societal marketing and morality. *European Journal of Marketing, 36*(5/6), 548-569.

Czarniawska-Joerges, B. (1998). *A narrative approach to organization studies*. Thousand Oaks, CA: Sage Publications.

Czarniawska-Joerges, B., & Gagliardi, P. (2003). *Narratives we organise by*. Amsterdam ; Philadelphia, Pa.: John Benjamins.

Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *The Academy of Management Review, 9*(2), 284-295.

Dawson, M. (2003). *The consumer trap: Big business marketing in American life*. Urbana: University of Illinois Press.

de Graaf, J., Wann, D., & Naylor, T. H. (2005). *Affluenza: the all-consuming epidemic*, San Francisco, CA.

de Haan, P., Mueller, M. G., & Peters, A. (2006). Does the hybrid Toyota Prius lead to rebound effects? Analysis of Size and Number of Cars Previously Owned by Swiss Prius Buyers. *Ecological Economics, 58*(3), 592-605.

Denzin, N. K., & Lincoln, Y. S. (2005). *The SAGE handbook of qualitative research* (3rd ed.). Thousand Oaks: Sage Publications.

Desmond, J., & Crane, A. (2004). Morality and the consequences of marketing action. *Journal of Business Research, 57*(11), 1222-1230.

Dholakia, N., & Dholakia, R. R. (1982). Marketing in the emerging world order. *Journal of Macromarketing, 2*(1), 47-56.

Dixon, D. F. (1991). Marketing structure and the theory of economic interdependence: Early analytical developments. *Journal of Macromarketing, 11*(2), 5-18.

Dixon, D. F., & Wilkinson, I. F. (1982). *The marketing system*. Melbourne: Longman Cheshire.

Dolan, P. (2002). The sustainability of "sustainable consumption". *Journal of Macromarketing, 22*(2), 170-181.

Dowling, G. R. (1983). The application of general systems theory to an analysis of marketing systems. *Journal of Macromarketing, 3*(2), 22-32.

Dreyfus, H. L., & Rabinow, P. (1982). *Michel Foucault, beyond structuralism and hermeneutics*. Chicago: University of Chicago Press.

"Driving trends". (2007). *Driving trends*: HybridCars. Retrieved March 30, 2007, from http://www.hybridcars.com/cat_featured/driving-trends.html

Durning, A. T. (1992). *How much is enough?: The consumer society and the future of the earth* (1st ed.). New York: Norton.

Economist. (2005). Battery assault. *The Economist, 376*(8445), 65.

Economist. (2006). Plugging into the future. *The Economist Technology Quarterly, 379*(8481), 22-24.

Elliott, R. (1994). Addictive consumption: Function and fragmentation in postmodernity. *Journal of Consumer Policy, 17*(1), 159-179.

Emery, F. E., & Trist, E. L. (1960). Socio-technical systems. In C. W. Churchman & M. Verhulst (Eds.), *Management Science, Models and Techniques* (Vol. 2, pp. 83-97). London: Pergamon.

Emery, F. E., & Trist, E. L. (1965). The causal texture of organizational environments. *Human Relations, 18*(1), 21-32.

Emery, F. E., & Trist, E. L. (1972). *Towards a social ecology: Contextual appreciation of the future in the present*. London, New York,: Plenum Press.

Environment Daily (2006). *Netherlands offers tax breaks for hybrid cars*: Environment Daily. Retrieved August 11, 2006, from www.wbcsd.org

EPA. (2006). *Light-duty automotive technology and fuel economy trends: 1975 through 2006*. Washington, DC: U.S. Environmental Protection Agency.

Eve, R. A., Horsfall, S., & Lee, M. E. (1997). *Chaos, complexity, and sociology*. Thousand Oaks: SAGE Publications.

Feigenbaum, M. J. (2004). Foreword. In H.-O. Peitgen, H. Jurgens & D. Saupe (Eds.), *Chaos and Fractals: New Frontiers of Science* (pp. 1-7). New York: Springer.

Fichte, J. G. (1970). *Science of knowledge (wissenschaftslehre)*. New York: Appleton-Century-Crofts.

Firat, F. A. (2001). *Consumer research for (the benefit of) consumers*: Journal of Research for Consumers. Retrieved November 30, 2006, from www.jrconsumers.com

Firat, F. A., & Venkatesh, A. (1995). Liberatory postmodernism and the re-enchantment of consumption. *Journal of Consumer Research, 22*(3), 239.

Fiscbetti, M. (2005). Lean and mean. *Scientific American, 292*(6), 102-103.

Fisk, G. (1967). *Marketing systems: An introductory analysis*. New York: Harper & Row.

Fisk, G. (1971). New criteria for evaluating the social performance of marketing. In G. Fisk (Ed.), *New essays in marketing theory* (pp. 439-448). Boston, Massachusetts: Allyn and Bacon, Inc.

Fisk, G. (1981). An invitation to participate in affairs of the Journal of Macromarketing. *Journal of Macromarketing, 1*(1), 3-6.

Ford Motor Company. (2005). *Our route to sustainability: Connecting with society - Ford sustainability report 2004/1005*. Dearborn, MI: Author. Retrieved December 14, 2005, from http://www.ford.com/en/company/about/sustainability/default.htm

Forrester, J. W. (1958). Industrial dynamics: A major breakthrough for decision makers, *Harvard Business Review* (Vol. 36, pp. 37): Harvard Business School Publication Corp.

Fournier, S. (1998). Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research, 24*(4), 343-373.

Fournier, S., Dobscha, S., & Mick, D. G. (1998). Preventing the premature death of relationship marketing. *Harvard Business Review, 76*(1), 42-45.

Frank, R. H. (2000). *Luxury fever: Money and happiness in an era of excess*. Bryn Mawr, Pennsylvania: The American College.

Fuller, D. A. (1999). *Sustainable marketing: Managerial-ecological issues*. Thousand Oaks, CA: Sage Publications.

General Motors Corporation. (2005). *Finding the balance: 2004/2005 corporate responsibility report*. Detroit: The Public Policy Center. Retrieved February 2, 2005, from http://www.gm.com/company/gmability/sustainability/reports/05/600_environment/index.html

General Motors website (2006). *General motors*. Retrieved February 2, 2006, from http://www.gm.com/company/gmability/

Gersovitz, M. (1989). Transportation, state marketing, and the taxation of the agricultural hinterland. *Journal of Political Economy, 97*(5), 1113-1137.

Gibbs, G. (2002). *Qualitative data analysis: Explorations with NVivo*. Buckingham ; Phildelphia, Pa.: Open University.

Giddens, A. (1991). *Modernity and self-identity: Self and society in the late modern age*. Cambridge: Polity.

Ginsberg, J. M., & Bloom, P. N. (2004). Choosing the right green marketing strategy. *MIT Sloan Management Review, 46*(1), 79-85.

"Global warming". (2007). *Global warming and your vehicle choice*: HybridCars.com. Retrieved March 30, 2007, from http://www.hybridcars.com/global-warming.html

Gödel, K. (1986/1929-1974). *Collected works*. Oxford: Oxford University Press.

Goodman, N. (1984). *Of mind and other matters*. Cambridge, Mass.: Harvard University Press.

Goodwin, N. R., Ackerman, F., & Kiron, D. (Eds.). (1997). *The consumer society*. Washington, D.C.: Island Press.

Gronroos, C. (1990). *Service management and marketing: Managing the moments of truth in service competition*. Lexington, Mass.: Lexington Books.

Gronroos, C. (1996). Relationship marketing logic. *Asia-Australia Marketing Journal, 4*(1), 7-18.

Gruenfeld, D. H., & Wyer, R. S. (1992). Semantics and pragmatics of social influence: How affirmation and denials affect beliefs in referent propositions. *Journal of Personality and Social Psychology, 62*(1), 38-49.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*. Thousand Oaks: Sage Publications.

Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (Third Edition ed., pp. 191-216). Thousand Oaks: Sage Publications.

Gummesson, E. (1991). Marketing-orientation revisited: The crucial role of the part-time marketer. *European Journal of Marketing, 25*(2), 60-76.

Gummesson, E. (1999). *Total relationship marketing: From the 4Ps - product, price, promotion, place - of traditional marketing management to the 30Rs - the thirty relationships - of the new marketing paradigm*. Boston, Mass: Butterworth-Heinemann.

Gunn, B. (1975). The anatomy of the macro marketing system. *Journal of Academy of Marketing Science, 3*(2), 161-171.

Gunther, G. (2004, February). *Life as poly-contexturality*. Retrieved January 25, 2007, from http://www.vordenker.de/ggphilosophy/gg_life_as_polycontexturality.pdf

Gutman, J. (1982). A means-end chain model based on consumer categorization processes. *Journal of Marketing, 46*(2).

Habermas, J. (1996). *Contributions to a discourse theory of law and democracy*. Cambridge, Eng.: Polity Press.

Hackman, R. J., Oldham, G. R., Janson, R., & Purdy, K. L. (1987). A new strategy of job enrichment. In L. E. Boone & D. D. Bowen (Eds.), *The Great Writings in Management and Organizational Behavior* (pp. 315-340). New York: McGraw-Hill, Inc.

Halliday, J. (2006). Hybrid strategy forces foes' hands. *Advertising Age, 77*(46), M-5.

Hamel, G., & Prahalad, C. K. (1994). *Competing for the future*. Boston, Mass.: Harvard Business School Press.

Hammond, D. (2003). *Science of synthesis: Exploring the social implications of General Systems Theory*. Boulder, Co: University Press of Colorado.

Hart, S. L. (1997). Beyond greening: Strategies for a sustainable world. *Harvard Business Review, 75*(1), 66-77.

Hart, S. L., & Milstein, M. B. (1999). Global sustainability and the creative destruction of industries. *Sloan Management Review, 41*(1), 23-34.

Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Executive, 17*(2), 56-69.

Heiskanen, E., & Pantzar, M. (1997). Toward sustainable consumption: Two new perspectives. *Journal of Consumer Policy, 20*(4), 409-442.

Hill, R. P. (2002). Compassionate love, agape, and altruism: A new framework for understanding and supporting impoverished consumers. *Journal of Macromarketing, 22*(1), 19-31.

Hirschman, E. C. (1986). Humanistic inquiry in marketing research: Philosophy, method, and criteria. *Journal of Marketing Research, 23*(3), 237-249.

Hirschman, E. C. (2003). Men, dogs, guns, and cars: The semiotics of rugged individualism. *Journal of Advertising, 32*(1), 9-22.

Hirschman, E. C., & Thompson, C. J. (1997). Why media matter: Toward a richer understanding of consumers' relationships with advertising and mass media. *Journal of Advertising, 26*(1), 43-60.

"History". (2007). *History of Toyota*: Toyota Motor Corporation. Retrieved March 30, 2007, from http://www.toyota.co.jp/en/history/index.html

Hoch, S. J., & Ha, Y.W. (1986). Consumer learning: Advertising and the ambiguity of product experience. *Journal of Consumer Research, 13*(2), 221-233.

Hofstadter, D. R. (1979). *Gödel, Escher, Bach: An eternal golden braid*. New York: Basic Books.

Hofstadter, D. R. (1982). Analogies and metaphors to explain Godel's theorem. *The Two-year College Mathematics Journal, 13*(2), 98-114.

Holbrook, M. B. (1994). The nature of customer value. In R. Rust & R. Oliver (Eds.), *Service Quality: New Directions in Theory and Practice* (pp. 21-71). Newbury Park, CA: Sage Publications.

Holbrook, M. B. (1998). The dangers of educational and cultural populism: Three vignettes on the problems of aesthetic insensitivity, the pitfalls of pandering, and the virtues of artistic integrity. *Journal of Consumer Affairs, 32*(2), 394-423.

Holbrook, M. B. (Ed.). (1999). *Consumer value: A framework for analysis and research*. London ; New York: Routledge.

Holbrook, M. B., & Hullbert, J. M. (2002). Elegy on the death of marketing: Never send to know why we have come to bury marketing but ask what you can do for your country churchyard. *European Journal of Marketing, 36*(5/6), 706-732.

Holmstrom, S. (2005). Reframing public relations: The evolution of a reflective paradigm for organizational legitimization. *Public Relations Review, 31*(1), 497-504.

Holt, D. B. (1997). Poststructuralist lifestyle analysis: Conceptualizing the social patterning of consumption in postmodernity. *Journal of Consumer Research, 23*(4), 326-350.

Holt, D. B. (1998). Does cultural capital structure American consumption? *Journal of Consumer Research, 25*(1), 1-25.

Holt, D. B. (2002). Why do brands cause trouble? A dialectical theory of consumer culture and branding. *Journal of Consumer Research, 29*(1), 70-90.

Honda Motor Company LTD. (2005). *Honda environmental annual report*. Tokyo: Environment and Safety Planning Office. Retrieved October 13, 2005, from http://world.honda.com/environment/reports/index.html

Honda Motor Company website (2005). *Honda motor company*. Retrieved October 13, 2005, from http://world.honda.com/environment/

Honda Motor Company profile (2005). *Honda motor company*. Retrieved October 13, 2005, from http://world.honda.com/profile/

Hoos, I. R. (1983). *Systems analysis in public policy: A critique* (Rev. ed.). Berkeley: University of California Press.

Hudson, L. A., & Ozanne, J. L. (1988). Alternative ways of seeking knowledge in consumer research. *Journal of Consumer Research, 14*(4), 508-521

.

Hunt, S. D. (1976). The nature and scope of marketing. *Journal of Marketing, 40*(3), 17-28.

Hunt, S. D. (1981). Macromarketing as multidimensional concept. *Journal of Macromarketing, 1*(1), 7-8.

Hunt, S. D. (1993). Objectivity in marketing theory and research. *Journal of Marketing, 57*(2), 76-91.

Hunt, S. D. (2003). *Controversy in marketing theory: For reason, realism, truth, and objectivity*. Armonk, N.Y.: M.E. Sharpe.

Husserl, E. (1970). *Logical investigations*. London: Routledge.

Jacoby, H. G. (1998). *Access to markets and the benefits of rural roads* (No. 2028). Washington, DC: World Bank.

Japp, K. P. (1999). The form of protest in the new social movements. In D. Baecker (Ed.), *Problems of Form* (pp. 155-170). Stanford, CA: Stanford University Press.

Kadirov, D., & Varey, R. J. (2005). *Marketplace wisdom and consumer experience: Redefining sustainability*: Journal of Research for Consumers. Retrieved December 5, 2005, from www.jrconsumers.com

Kadirov, D., & Varey, R. J. (2007). Autopoietic turns of value co-creation in marketing systems: Meaning(s) of fuel-efficiency for hybrid Car users. *Advances in Consumer Research Asia Pacific, 7*(1), forthcoming.

Kangun, N., & Polonsky, M. J. (1995). Regulation of environmental marketing claims: A comparative perspective. *International Journal of Advertising, 14*(1), 1-24.

Kast, F. E., & Rosenzweig, J. E. (1974). General system theory: Applications for organization and management. *Academy of Management Journal, 15*(4), 447-465.

Katz, D., & Kahn, R. L. (1966). *The social psychology of organizations*. New York,: Wiley.

Keat, R., Whiteley, N., & Abercrombie, N. (Eds.). (1994). *The authority of the consumer*. London ; New York: Routledge.

Keith, R. J. (1960). The marketing revolution. *Journal of Marketing, 24*(3), 35-38.

Kelley, E. J., & Lazer, W. (1962). *Managerial marketing, perspectives and viewpoints; A source book* (Rev. ed.). Homewood, Ill.,: R. D. Irwin.

Kilbourne, W. E., & Beckmann, S. C. (1998). Review and critical assessment of research on marketing and the environment. *Journal of Marketing Management, 14*(6), 513-533.

Kilbourne, W. E., McDonagh, P., & Prothero, A. (1997). Sustainable consumption and the quality of life: A macromarketing challenge to the dominant social paradigm. *Journal of Macromarketing, 17*(1), 4-21.

Kirsch, D. A. (1997). The electric car and the burden of history: Studies in sutomotive Systems; Rivalry in America, 1890-1996. *Business and Economic History, 26*(2), 304-310.

Kitchen, P. J. (Ed.). (2003). *The future of marketing: Critical 21st century perspectives*. Houndmills, Basingstoke, Hampshire ; New York: Palgrave Macmillan.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: The construct, research propositions, and managerial implications. *Journal of Marketing, 54*(2), 1-18.

Kotler, P. (1972). A generic concept of marketing. *Journal of Marketing, 36*(2), 48-55.

Kotler, P. (1994). *Marketing management: Analysis, planning, implementation, and control* (8th ed.). Englewood Cliffs, N.J.: Prentice Hall.

Kotler, P. (2004). Wrestling with ethics. *Marketing Management, 13*(6), 30-36.

Kotler, P., & Levy, S. J. (1973). Buying is marketing too! *Journal of Marketing, 37*(1), 54-59.

Kozinets, R. V. (1997). "I want to believe": A netnography of the X-Philes' subculture of consumption. *Advances in Consumer Research, 24*(1), 470-475.

Kozinets, R. V. (1998a, Nov 9, 1998). How online communities are growing in power. *Financial Times,* p. 5-6.

Kozinets, R. V. (1998b). On netnography: Initial reflections on consumer research investigations of cyberculture. *Advances in Consumer Research, 25*(1), 366-371.

Kozinets, R. V. (1999). E-tribalized marketing?: The strategic implications of virtual communities of consumption. *European Management Journal, 17*(3), 252-264.

Kozinets, R. V. (2002a). Can consumers escape the market? Emancipatory illuminations from Burning Man. *Journal of Consumer Research, 29*(1), 20-38.

Kozinets, R. V. (2002b). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research, 39*(1), 61-72.

Kuhn, A. (1963). *The Study of society: A unified approach*. Homewood, Ill.: Irwin.

Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Kunzmann, U., & Baltes, P. B. (2003). Wisdom-related knowledge: Affective, motivational, and interpersonal correlates. *Personality and Social Psychology Bulletin, 29*, 1104-1119.

Laczniak, G. R., & Murphy, P. E. (2006). Normative perspectives for ethical and socially responsible marketing. *Journal of Macromarketing, 26*(2), 154-177.

Langer, R., & Beckmann, S. C. (2005). Sensitive research topics: Netnography revisited. *Qualitative Market Research: An International Journal, 8*(2), 189-203.

Lawrence, P. R., & Lorsch, J. W. (1986). *Organization and environment: Managing differentiation and integration* (Rev. ed.). Boston: Harvard Business School Press.

Layton, R. A. (1981a). Trade flows in macromarketing systems. *Journal of Macromarketing, 1*(1), 35-48.

Layton, R. A. (1981b). Trade Flows in Macromarketing Systems. *Journal of Macromarketing, 1*(2), 48-55.

Layton, R. A. (1989). Measures of structural change in macromarketing systems. *Journal of Macromarketing, 9*(1), 5-15.

Layton, R. A. (1991). Structure and dynamics in trade flows models. *Journal of Macromarketing, 11*(2), 56-71.

Layton, R. A. (2006). *What are marketing systems?* Paper presented at the Macromarketing2006: Macromarketing the Future of Marketing?, Queenstown, New Zealand, June 5-8.

Layton, R. A. (2007). Marketing systems - A core macromarketing concept. *Journal of Macromarketing, 27*(3), 227-242.

Lee, M. J. (Ed.). (2000). *The consumer society reader*. Oxford, UK ; Malden, Mass.: Blackwell.

Levy, S. J. (1959). Symbols for sale. *Harvard Business Review, 37*(4), 117-124.

Levy, S. J. (1981). Interpreting consumer mythology: A structural approach to consumer behavior. *Journal of Marketing, 45*(3), 49-61.

Lewis, R. J., & Erickson, L. G. (1969). Marketing functions and marketing systems: A synthesis. *Journal of Marketing, 33*(3), 11-14.

Lilienfeld, R. (1988). *The rise of systems theory: An ideological analysis*. Malabar, Fla.: R.E. Krieger.

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, Calif.: Sage Publications.

Lincoln, Y. S., & Guba, E. G. (2003). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (pp. 253-291). Thousand Oaks: Sage Publications.

Lindblom, C. E. (1958). Policy analysis. *The American Economic Review, 48*(3), 298-312.

Lindblom, C. E. (1959). The science of "muddling through". *Public Administration Review, 19*(2), 79-88.

Lindblom, C. E. (1994). Modes of inquiry. *Journal of Public Administration Research and Theory: J-Part, 4*(3), 327-341.

Lindblom, C. E. (2001). *The market system: What it is, how it works, and what to make of it*. New Haven: Yale University Press.

Livesey, S. M. (2001). Eco-identity as discursive struggle: Royal Dutch/Shell, Brent Spar and Nigeria. *Journal of Business Communication, 38*(1), 58-91.

Livesey, S. M., & Kearins, K. (2002). Transparent and caring corporations? A study of sustainability reports by the Body Shop and Royal Dutch/Shell. *Organization & Environment, 15*(3), 233-258.

Lovins, A.B., Lovins, L.H., & Hawken P. (1999). A road map for natural capitalism. *Harvard Business Review, 77*(3), 145-158.

Luhmann, N. (1989). *Ecological communication*. Cambridge, UK: Polity Press.

Luhmann, N. (1992). What is communication? *Communication Theory, 2*, 251-259.

Luhmann, N. (1994). Speaking and silence. *New German Critique, 61*(special issue), 25-37.

Luhmann, N. (1995). *Social systems*. Stanford, CA: Stanford University Press.

Luhmann, N. (2002). *Theories of distinction: Redescribing the descriptions of modernity*. Stanford, CA: Stanford University Press.

Luhmann, N. (2004). *Law as a social system*. Oxford: Oxford University Press.

Luhmann, N. (2006). System as difference. *Organization, 13*(1), 37-57.

Maffesoli, M. (1996). *The Time of the tribes: The decline of individualism in mass society*. London ; Thousand Oaks, CA: Sage.

Malle, B. F., Moses, L. J., & Baldwin, D. A. (Eds.). (2001). *Intentions and intentionality: Foundations of social cognition*. Cambridge, Mass.: MIT Press.

Marketing Week. (2006). Hybrid cars not as green as claimed, Says Survey. *Marketing Week, 29*(14), 5-5.

Maturana, H. R. (1981). Autopoiesis. In M. Zeleny (Ed.), *Autopoiesis: A Theory of Living Organization* (pp. 21-33). New York: North Holland.

Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and cognition: The realization of the living*. Boston: D. Reidel Pub.Co.

Maturana, H. R., & Varela, F. J. (1992). *The tree of knowledge: the biological roots of human understanding*. New York: Shambhala.

"Maximizing Mileage". (2006). *Maximizing mileage in a Toyota Prius*: HybridCars. Retrieved April 15, 2006, from http://www.hybridcars.com/gas-saving-tips

McAlexander, J. H., Schouten, J. W., & Koenig, H. F. (2002). Building brand community. *Journal of Marketing, 66*(1), 38-54.

McClamrock, R. A. (1995). *Existential cognition: Computational minds in the world*. Chicago: University of Chicago Press.

McCracken, G. (1987). Advertising: Meaning or information? *Advances in Consumer Research, 14*(1), 121-124.

McDonagh, P., & Prothero, A. (1996). Making a drama out of a crisis: The final curtain for the marketing concept. In S. Brown, J. Bell & D. Carson (Eds.), *Marketing Apocalypse: Eschatology, Escapology and the Illusion of the End* (pp. 44-65). London: Rouledge.

McInnes, W. (1964). A conceptual approach to marketing. In R. Cox, W. Alderson & S. J. Shapiro (Eds.), *Theory in Marketing* (pp. 51-67). Homewood, Illinois: Richard D. IRWIN, Inc.

McManus, W. (2006). *June 08, 2006: Tradable gasoline rights - "I'll give you 2 BP regulars for that Exxon premium."* Retrieved March 30, 2007, from www.hybridcars.com

Meade II, W. K., & Nason, R. W. (1991). Toward a unified theory of macromarketing: A systems theoretic approach. *Journal of Macromarketing, 11*(2), 72-82.

Mick, D. G., & Politi, L. G. (1989). Consumers' interpretations of advertising imagery: A visit to hell of connotation. In E. C. Hirschman (Ed.), *Interpretive Consumer Research* (pp. 85-96). Provo, UT:: Association for Consumer Research.

Mihata, K. (1997). The persistence of "emergence". In R. A. Eve, S. Horsfall & M. E. Lee (Eds.), *Chaos, Complexity, and Sociology* (pp. 30-38). Thousand Oaks: SAGE Publications.

Miller, D. J. (2005a). *Aug. 30, 2005: Hybrid marital woes: Part deux*: Hybrid Daze Weblog. Retrieved April 25, 2006, from www.hybridcars.com

Miller, D. J. (2005b). *The cost of 643 gallons of liquid crack*: Hybrid Daze weblog. Retrieved March 30, 2006, from www.hybridcars.com

Miller, D. J. (2005c). *The hybrid if-then equation*: Hybrid Daze Weblog. Retrieved March 30, 2006, from www.hybridcars.com

Miller, D. J. (2005, August 10). *Pulse and glide technique*: Hybrid Daze Weblog. Retrieved April 20, 2006, from www.hybridcars.com

Monieson, D. D. (1981). What constitutes usable knowledge in macromarketing? *Journal of Macromarketing, 1*(1), 14-22.

Muniz Jr., A. M., & O'Guinn, T. C. (2001). Brand community. *Journal of Consumer Research, 27*(4), 412-433.

Nagel, E. (1969). A formalization of functionalism. In F. E. Emery (Ed.), *Systems Thinking* (pp. 297-329). Middlesex: Penguin Books Ltd.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing, 54*(4), 20-36.

Nason, R. W. (2006). *The macromarketing mosaic.* Paper presented at the Macromarketing 2006: Macromarketing the Future of Marketing?, Queenstown, New Zealand, June 5-8.

Overby, J. W., Gardial, S. F., & Woodruff, R. B. (2004). French versus American consumers' attachment of value to a product in a common consumption context: A cross-national comparison. *Journal of the Academy of Marketing Science, 32*(4), 437-460.

Palmer, A. (2000). Co-operation and competition: a Darwinian synthesis of relationship marketing. *European Journal of Marketing, 34*(5/6), 687-704.

Parsons, T. (1977). *Social systems and the evolution of action theory*. New York: Free Press.

Peattie, K. (1999). Trappings versus substance in the greening of marketing planning. *Journal of Strategic Marketing, 7*(1), 131-148.

Peattie, K. (2001). Towards Sustainability: The third age of green marketing. *Marketing Review, 2*(2), 129-147.

Peitgen, H.-O., Jürgens, H., & Saupe, D. (2004). *Chaos and fractals: New frontiers of science* (2nd ed.). New York: Springer-Verlag.

Penalosa, L., & Venkatesh, A. (2006). Further evolving the new dominant logic of marketing: From services to the social construction of markets. *Marketing Theory, 6*(3), 299-316.

Peppers, D., & Rogers, M. (1997). *Enterprise one to one: Tools for competing in the interactive age* (1st ed.). New York: Currency Doubleday.

Perakyla, A. (2005). Analyzing talk and text. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (pp. 869-885). Thousand Oaks: Sage Publications.

Pirog III, S. F. (1991). Changes in US distribution system output, 1947-1977: The effects of changes in structure and final demand. *Journal of Macromarketing, 11*(2), 29-41.

Podolny, J. M., & Hill-Popper, M. (2004). Hedonic and transcendent conceptions of value. *Industrial & Corporate Change, 13*(1), 91-116.

Poerksen, B. (2004). *The certainty of uncertainty: Dialogues introducing constructivism*. Exeter: Imprint Academic.

Polkinghorne, D. (1988). *Narrative knowing and the human sciences*. Albany: State University of New York Press.

Polonsky, M. J., Bailey, J., Baker, H., Basche, C., Jepson, C., & Neath, L. (1998). Communicating environmental information: Are marketing claims on packaging misleading? *Journal of Business Ethics, 17*(3), 281-294.

Polonsky, M. J., & Mintu-Wimsatt, A. T. (Eds.). (1995). *Environmental marketing: Strategies, practice, theory, and research*. New York: Haworth Press.

Popper, K. (1962). *Conjectures and refutations*. New York: Harper.

Porter, M. E. (1990). *The competitive advantage of nations*. New York: Free Press.

Porter, M. E., & Van Der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review, 73*(5), 120-134.

Porter, T. B. (2005). Identity subtexts in the discursive construction of sustainability. *Electronic Journal of Radical Organization Theory, 9*(1), Retrieved August 15, 2006, from http://www.mngt.waikato.ac.nz/ejrot

Prahalad, C. K. (2005). *The fortune at the bottom of the pyramid*. Upper Saddle River, NJ: Wharton School Publishing.

Prahalad, C. K., & Ramaswamy, V. (2004a). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing, 18*(3), 5-14.

Prahalad, C. K., & Ramaswamy, V. (2004b). *The future of competition: Co-creating unique value with customers*. Boston, Mass.: Harvard Business School.

Prevignano, C., & Thibault, P. J. (2003). *Discussing conversation analysis: the work of Emanuel A. Schegloff*. Amsterdam ; Philadelphia, PA: John Benjamins.

Price, B. (1997). The myth of postmodern science. In R. A. Eve, S. Horsfall & M. E. Lee (Eds.), *Chaos, Complexity and Sociology* (pp. 3-14). Thousand Oaks: SAGE Publications.

Prigogine, I. (2003). *Is future given?* River Edge, NJ: World Scientific.

Reed II, A. (2002). Social identity as a useful perspective for self-concept-based consumer research. *Psychology & Marketing, 19*(3), 235-266.

Reed II, A., & Bolton, L. E. (2005). The complexity of identity. *MIT Sloan Management Review, 46*(3), 18-22.

Reidenbach, E. R., & Oliva, T. A. (1981). General living systems theory and marketing: A framework for analysis. *Journal of Marketing, 45*(4), 30-37.

Reidenbach, E. R., & Oliva, T. A. (1983). Toward a theory of the macro systemic effects of the marketing function. *Journal of Macromarketing, 3*(2), 33-40.

Robinson, T. M. (2006). Hybrid hysteria. *Black Enterprise, 36*(9), 129-130.

Rogers, R. A. (1994). *Nature and the crisis of modernity: A critique of contemporary discourse on managing the Earth*. New York: Black Rose Books.

Rubach, E. (2006). Saving the world. *New Media Age*, 19-20.

Saad, L. (2006). Half of Americans driving less to save gas: Hybrids have mass appeal. *Gallup Poll Briefing*, 1-3.

Salk, J. (1973). *The survival of the wisest* (1st ed.). New York: Harper & Row.

Saren, M. (2000). Book review: Sustainable marketing: Managerial-ecological issues. *European Journal of Marketing, 34*(5/6), 747-749.

Schaefer, A. (2005). Some considerations regarding the ecological sustainability of marketing systems. *Electronic Journal of Radical Organization Theory, 9 (1),* Retrieved November 11, 2006, from http://www.mngt.waikato.ac.nz/ejrot

Schaefer, A., & Crane, A. (2005). Addressing sustainability and consumption. *Journal of Macromarketing, 25*(1), 76-92.

Schau, H. J., & Muniz Jr., A. M. (2002). Brand communities and personal identities: Negotiations in cyberspace. *Advances in Consumer Research, 29*(1), 344-349.

Scheurich, J. J., & McKenzie, K. B. (2005). Foucault's methodologies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (pp. 841-868). Thousand Oaks: Sage.

Schor, J., & Holt, D. B. (Eds.). (2000). *The consumer society reader*. New York, NY: New Press.

Schouten, J. W., & McAlexander, J. H. (1995). Subcultures of consumption: An ethnography of the new bikers. *Journal of Consumer Research, 22*(1), 43.

Schultz, D. E. (2005). The loyalty paradox. *Marketing Management, 14*(5), 10-11.

Schwandt, T. A. (2003). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (pp. 292-331). Thousand Oaks: Sage Publications.

Scitovsky, T. (1976). *The joyless economy: An inquiry into human satisfaction and consumer dissatisfaction*. New York: Oxford University Press.

Seidl, D., & Becker, K. H. (2006). Organizations as distinction generating and processing systems: Nikias Luhmann's contribution to organization studies. *Organization, 13*(1), 9-35.

Sevanen, E. (2001). Art as an autopoietic sub-system of modern society. *Theory, Culture & Society, 18*(1), 75-103.

Shapiro, S. J. (1964). The survival concept and the nonprofit behavior system. In R. Cox, W. Alderson & S. J. Shapiro (Eds.), *Theory in Marketing* (pp. 109-124). Homewood, IL: Richard D. Irwin.

Shaw, E. H., & Jones, D. G. B. (2005). A History of schools of marketing thought. *Marketing Theory, 5*(3), 239-281.

Shawyer, D. L., & Nickels, W. G. (1981). A rationalization for macromarketing: Concepts and definitions. *Journal of Macromarketing, 1*(1), 8-10.

Sherry, J. F. (2000). Distraction, destruction, deliverance: The presence of mindscape in marketing's new millennium. *Marketing Intelligence & Planning, 18*(6/7), 328-337.

Sherry, J. F. (Ed.). (1998). *Servicescapes: The concept of place in contemporary markets*. Lincolnwood, Ill.: NTC Business Books.

Sheth, J. N., Gardner, D. M., & Garrett, D. E. (1988). *Marketing theory: Evolution and evaluation*. New York: Wiley.

Sheth, J. N., & Sisodia, R. S. (2005). A dangerous divergence: Marketing and society. *Journal of Public Policy & Marketing, 24*(1), 160-162.

Sheth, J. N., & Sisodia, R. S. (2006). *Does marketing need reform?: Fresh perspectives on the future*. Armonk, N.Y.: M.E. Sharpe.

Shultz II, C., J., & Holbrook, B. M. (1999). Marketing and the tragedy of the commons: A synthesis, commentary, and analysis for action. *Journal of Public Policy & Marketing, 18*(2), 218-230.

Small, M. W. (2004). Wisdom and now managerial wisdom: Do they have a place in management development programs? *Journal of Management Development, 23*(8), 751-764.

Smircich, L. M., & Calás, M. B. (1995). *Critical perspectives on organization and management theory*. Aldershot Brookfield: Dartmouth.

Smith, T. M. (1998). *The myth of green marketing: Tending our goats at the edge of apocalypse*. Toronto: Toronto University Press.

Smith, T. S. (1997). Nonlinear dynamics and the micro-macro bridge. In R. A. Eve, S. Horsfall & M. E. Lee (Eds.), *Chaos, Complexity, and Sociology* (pp. 52-63). Thousand Oaks: SAGE Publications.

Sober, E., & Wilson, D. S. (1998). *Unto others: The evolution and psychology of unselfish behavior*. Cambridge, Mass.: Harvard University Press.

Solheim, M. K. (2006). How green is my hybrid? *Kiplinger's Personal Finance, 60*(5), 102-104.

Spencer-Brown, G. (1969). *Laws of form*. London: George Allen and Unwin Ltd.

Spiggle, S. (1994). Analysis and interpretation of qualitative data in consumer research. *Journal of Consumer Research, 21*(3), 491.

Staubmann, H. M. (1997). Self-organization of the economy: A system-theoretical reconsideration of Georg Simmel's philosophy of money. In R. A. Eve, S. Horsfall & M. E. Lee (Eds.), *Chaos, Complexity, and Sociology: Myths, Models, and Theories* (pp. 79-90). Thousand Oaks, CA: SAGE Publications.

Staudinger, U. M., & Baltes, P. B. (1996). Interactive minds: A facilitative setting for wisdom-related performance? *Journal of Personality and Social Psychology, 71*(4), 746-748.

Staudinger, U. M., & Pasupathi, M. (2003). Correlates of wisdom-related performance in adolescence and adulthood: Age-graded differences in "paths" toward desirable development. *Journal of Research on Adolescence, 13*(3), 239-268.

Stern, B. B. (1995). Consumer myths: Frye's taxonomy and the structural analysis of consumption text. *Journal of Consumer Research, 22*(2), 165-186.

Stern, B. B. (1996). Textual analysis in advertising research: Construction and deconstruction of meanings. *Journal of Advertising, 25*(3), 61-73.

Stern, B. B., Thompson, C. J., & Arnould, E. J. (1998). Narrative analysis of a marketing relationship: The consumer's perspective. *Psychology & Marketing, 15*(3), 195-214.

Sternberg, R. J. (Ed.). (1990). *Wisdom: Its nature, origins, and development*. Cambridge: Cambridge University Press.

Sternberg, R. J., & Jordan, J. (Eds.). (2005). *A handbook of wisdom: Psychological perspectives*. Cambridge: Press Syndicate of the University of Cambridge.

Stewart, T. (2006). Wal-Mart joins the hybrid vehicle parade. *Business & the Environment with ISO 14000 Updates, 17*(1), 10-11.

Strauss, A. L., & Corbin, J. M. (1998). *Basics of qualitative research: Techniques and procedures for developing Grounded Theory* (2nd ed.). Thousand Oaks: Sage Publications.

Surowiecki, J. (2004). *The wisdom of crowds: Why the many are smarter than the few and how collective wisdom shapes business, economics, society, and nations*. London: Little Brown.

Suttles, G. D. (Ed.). (1972). *The social construction of communities*. Chicago: University of Chicago Press.

Swaney, J. A. (1981). Externality and community. *Journal of Economic Issues, 15*(3), 615-628.

Sybrandy, A., Pirog III, S. F., & Tuninga, R. S. J. (1991). The output of distributive systems: A conceptual framework. *Journal of Macromarketing, 11*(2), 19-26.

Sybrandy, A., & Tuninga, R. S. J. (1991). A comparative study of distributive system structure: Australia, the Netherlands, and West Germany. *Journal of Macromarketing, 11*(2), 42-55.

Tarde, G. D. (1969). *On communication and social influence: Selected Papers*. Chicago: University of Chicago Press.

Taylor, F. W. (1967). *The principles of scientific management*. New York: Norton.

Taylor, J. R. (2006). Coorientation: A conceptual framework. In F. Cooren, J. R. Taylor & E. J. Van Every (Eds.), *Communication as Organizing* (pp. 141-156). London: Lawrence Erlbaum Associates.

Thompson, C. J. (1997). Interpreting consumers: A hermeneutical framework for deriving marketing insights from the texts of consumer's consumption stories. *Journal of Marketing Research, 34*(4), 438.

Thompson, C. J., & Hirschman, E. C. (1995). Understanding the socialized body: A poststructuralist analysis of consumers' self-conceptions, body images, and self-care practices. *Journal of Consumer Research, 22*(2), 139-144.

Thompson, C. J., Locander, W. B., & Pollio, H. B. (1989). Putting consumer experience back into consumer research: The philosophy and method of existential-phenomenology. *Journal of Consumer Research, 16*(2), 133-146.

Thompson, C. J., Locander, W. B., & Pollio, H. R. (1990). The lived meaning of free choice: An existential-phenomenological description of everyday consumer experiences of contemporary married women., *Journal of Consumer Research,* Vol. 17(3), 346-362

Thompson, C. J., & Pollio, H. R. (1994). The spoken and the unspoken: A hermeneutic approach to understanding the cultural viewpoints that underlie consumers' expressed meanings, *Journal of Consumer Research,* Vol. 21(3), 432-453

Thompson, C. J., Rindfleisch, A., & Arsel, Z. (2006). Emotional branding and the strategic value of the doppelganger brand image. *Journal of Marketing, 70*(1), 50-64.

Thompson, C. J., & Troester, M. (2002). Consumer value systems in the age of postmodern fragmentation: The case of the natural health microculture. *Journal of Consumer Research, 28*(4), 550-571.

Toyota Motor Corporation. (2005). *Environmental and social report 2005*. Toyota city: Environmental Affairs Division. Retrieved September 20, 2005, from www.toyota.co.jp

Toyota New Zealand (2005). Sustainability. *Toyota NZ.* Retrieved September 20, 2005, from http://www.toyota.co.nz/MOTMPages/sustainability.

Train, K., & Sonnier, G. (2003). *Mixed logit with bounded distributions of partworths*. Department of Economics: Working paper, University of California, Berkeley, CA.

Traynor, I. (2007, February 11). *Putin hits at US for triggering arms race*. Munich: The Observer. Retrieved February 12, 2007, from http://observer.guardian.co.uk/world/story/0,,2010462,00.html

Tuninga, R. S. J. (1991). The hierarchical structure of intermediate markets: A new approach to the analysis of trade flow tables. *Journal of Macromarketing, 11*(2), 55-62.

van Dam, Y. K., & Apeldoorn, P. A. C. (1996). Sustainable marketing. *Journal of Macromarketing, 16*(2), 45-56.

Varela, F. J. (1975). A Calculus for self-reference. *International Journal of General Systems, 2*(1), 1-25.

Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. Cambridge, Mass.: MIT Press.

Varey, R. J. (2002a). *Marketing communication: Principles and practice*. London: Routledge.

Varey, R. J. (2002b). *Relationship marketing: Dialogue and networks in the E-commerce Era*. Chichester: Wiley.

Varey, R. J. (2003). A dialogical foundation for marketing. *Marketing Review, 3*(3), 273-288.

Varey, R. J. (2004). The orthodoxy and hegemony of 'marketing communications': From interactive communication to communicative interaction. *International Journal of Applied Marketing, 1*(2), 1-27.

Varey, R. J. (2005a). Accounts in interactions: Implications of accounting practices for managing. In F. Cooren, J. R. Taylor & E. J. Van Every (Eds.), *Communication as Organising* (pp. 181-196). London: Lawrence Erlbaum Publishers.

Varey, R. J. (2005b). Consumption, happiness, and marketing: A review of antimarketing Books. *Journal of Marketing, 70*(1), www.marketingpower.com/content31000

Varey, R. J., & Ballantyne, D. (2005). Relationship marketing and the challenge of dialogical interaction. *Journal of Relationship Marketing, 4*(3/4), 11-28.

Varey, R. J., & Kadirov, D. (2006, June 5-8). *Reconciling marketing and society: An alternative conceptualisation of emergent structure and process in the marketing system.* Paper presented at the Macromarketing 2006: Macromarketing the Future of Marketing?, Queenstown, NZ, June 5-8.

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing, 68*(1), 1-17.

Veblen, T. (1899/2007). *The theory of the leisure class*. New York: Oxford University Press Inc.

Verplanken, B., & Wood, W. (2006). Interventions to break and create consumer habits. *Journal of Public Policy & Marketing, 25*(1), 90-103.

Vickers, G. (1983). *Human systems are different*. London ; New York: Harper & Row.

von Bertalanffy, L. (1950). An outline of general systems theory. *British Journal for the Philosophy of Science, 1*(2), 134-165.

von Bertalanffy, L. (1969). *General systems theory: Foundations, development, applications*. New York,: G. Braziller.

von Bertalanffy, L. (1972). The history and status of general systems theory. *Academy of Management Journal, 15*(4), 407-426.

von Foerster, H. (2003). *Understanding understanding: Essays on cybernetics and cognition*. New York: Springer-Verlag New York, Inc.

von Foerster, H., & Poerksen, B. (2001). *Understanding systems*. New York: Kluwer Academic/Plenum Press.

von Glasersfeld, E. (1995). *Radical constructivism: A way of knowing and learning*. London ; Washington, D.C.: Falmer Press.

Wall Street Journal. (2005). Environmentalists extol hybrids for New York City's taxi fleet. *Wall Street Journal - Eastern Edition, 246*(2), D4.

Wallendorf, M., & Belk, R. W. (1989). Assessing trustworthiness in naturalistic consumer research. In E. C. Hirschman (Ed.), *Interpretive Consumer Research* (pp. 69-84). Provo, UT: Association for Consumer Research.

Webster Jr., F. E. (1992). The changing role of marketing in the corporation. *Journal of Marketing, 56*(4), 1-17.

Webster Jr., F. E. (1997). The future role of marketing in the organization. In D. R. Lehmann & K. E. Jocz (Eds.), *Reflections on the Futures of Marketing: Practice and Education* (pp. 39-66). Cambridge: MA: Marketing Science Institute.

Webster Jr., F. E. (2005). Back to the future: Integrating marketing as tactics, strategy, and organizational culture. *Journal of Marketing, 69*(4), 4-6.

Weick, K. E. (1979). *The social psychology of organizing*. Reading, Mass.: Addison-Wesley.

Weick, K. E. (2001). *Making sense of the organization*. Oxford: Blackwell Publishers.

Welford, R. (1997). *Hijacking environmentalism: Corporate responses to sustainable development*. London: Earthscan.

Wernick, A. (1991). *Promotional culture: Advertising, ideology, and symbolic expression*. London: Sage Publications.

White, P. D. (1981). The systems dimension in the definition of macromarketing. *Journal of Macromarketing, 1*(1), 11-13.

Whitehead, A. N., & Russell, B. (1927). *Principia mathematica* (2nd ed.). Cambridge: University Press.

Wilkie, W. L., & Moore, E. S. (1999). Marketing's contributions to society. *Journal of Marketing, 63*(4), 198-218.

Wilkie, W. L., & Moore, E. S. (2003). Scholarly research in marketing: Exploring the "4 Eras" of thought development. *Journal of Public Policy & Marketing, 22*(2), 116-146.

Wittgenstein, L. (1963). *Philosophical investigations*. Oxford: Blackwell.

Wolcott, B. M. (2005). Drive of the future? *Mechanical Engineering, 127*(10), 32-32.

Woodruff, R. B. (1997). Customer value: The next source for competitive advantage. *Journal of Academy of Marketing Science, 25*(2), 139-154.

World Business Council for Sustainable Development. (2004). *Mobility 2030: Meeting the challenges to sustainability*. Geneva: WBCSD.

World Commission on Environment and Development. (1987). *Our common future*. Oxford, UK: Oxford University Press.

World Health Organization. (2004). *World report on road traffic injury Prevention*. Jeneva: WHO

Yankelovich, D., & Meer, D. (2006). Rediscovering market segmentation. *Harvard Business Review, 84*(2), 122-131.