Darwin in Fashion.
Innovation and Selection in Fashion

Dany Jacobs

Introduction

In *The Empire of Fashion* Gilles Lipovetsky (1994) showed how in the realm of fashion a culture of continuous innovation was created, which later spread to other industries. So, successful continuous innovation is at the core of any economic model of fashion. In this paper it is argued that it is useful to use the Darwinian framework of variation, selection and retention/speciation to understand and assess success in the field of fashion innovation. It allows us to think more systematically about possible success ('fitness') criteria in different selection environments. Moreover, evolution is always co-evolution: the interactive development of units and species with their relevant environments. This contribution is part of a larger project on the cultural aspects of all kinds of innovation (including technical innovation) which lead to my book *Adding Values. The Cultural Side of Innovation* (Jacobs, 2007). Working on the case of fashion innovation has allowed me to better understand the multitude and complexity of relevant interactions in economic selection environments. Mapping relevant selection environments ('selection systems') helps us to think more systematically about the more decisive elements within these environments and concentrate on these in order to increase success of innovations.

In the following section, I introduce the basic Darwinian framework and its relevance for innovation in general and fashion innovation in particular. Then I address the question what possible fitness criteria of (fashion) innovations may be. Basically I come to a distinction between two kinds of fitness criteria: technical elements (objectively measurable functionalities) and cultural ones (more subjective valuations). It is, however, important to understand that also the technical realm is part of the cultural environment: the chances for success of new technologies which are far from the existing cultural frame of people, are much lower. This brings us to the issue of incremental and radical innovation, also in the realm of fashion. Radical innovations are radical because they are relatively far from existing cultural frameworks. For this reason, sometimes experts play a decisive role in 'framing' more radical innovations, conferring them value by relating them to existing frameworks and possibly also to other innovations and social developments. As a consequence, 'selection systems', to which I come in another section, are not just markets, but quite complex, co-evolutionary systems in which subcultures, peer groups, experts and other opinion leaders play important roles. Mapping these systems helps us to see where the more decisive elements are in these selection systems and to address these in order to increases the chances for success of the different kinds of innovation. Then, selection systems are further differentiated on the basis of subcultures, 'neo-tribes' and networks. In the following section I look more specifically at the rewarding the people who contribute to value creation. In the last section I conclude.

A Darwinian framework of innovation

In the framework of Darwinian evolutionary theory each innovation is a kind of genetic recombination or mutation ('variation') which is accepted ('selected') or not by its environment (the 'selection system') and possibly survives for a longer term ('retention'). In biology, most variation stems from

mere recombination of the genes of the parents (a kind of incremental or marginal innovation). Only from time to time mutations (random mistakes in copying) happen. Beside this, as a consequence of mainly external shocks (the impact of meteorites, volcanic eruptions…) more rapid evolution may take place from time to time ('punctuated equilibrium').

If we apply this scheme to innovation we see that more radical innovations (originating from new concepts or new technological insights) are most comparable with genetic mutations. Such radical innovations may lead to new categories (comparable with 'speciation' or 'phylogenetic development', the coming into being of new species, in natural selection). As can be seen from the concepts between brackets in the first sentence of this Section, evolutionary approaches as a rule look for three mechanisms: variation, selection, and retention[1] (Aldrich,1999: 21). However, in many cases the term 'sorting' is more correct than 'selection', following the distinction neo-darwinian authors like Gould, Vrba and Eldredge make. Sorting relates to relatively random survival as a consequence of sheer chance, whereas selection implies causality: survival as a consequence of greater fitness in a given environment (Hodgson, 1993: 46; Eldredge, 1997: 393).

If we transfer these mechanisms to the level of innovations in the realm of the economy in general and fashion in particular, they get meanings like these:

– Variation: the generation of variety. From an evolutionary perspective any departure from routine or tradition, intentional or not, is a variation. Also in the realm of fashion, innovations are not always intended. Some people dress in a certain way and this may influence others.

– Selection (or sorting): the survival of an innovation as fitting in a certain environment, a selection system. In the field of fashion, innovations must first be accepted by an organisation (of course this may be a one person firm) and then by a market. Moreover, selection is possibly influenced by what certain experts or opinion leaders in the informal environment think about it. I will come back to this hereafter.

– Retention (and possibly speciation): an innovation may be just one item which survives for a certain time, but it may also be the starting point for a new 'species', a new category which survives for a longer term and within which new innovations occur: for example pyjamas, bikinis, mini-skirts, catsuits. New categories are important, because they provide the cultural frame with the help of which more radical innovations can be understood. This will be dealt with in later.

Before going on with the discussion on the selection of innovations, it has to be emphasised that selection in socio-economic systems differs from that in biology, especially in the way that learning is possible (Nooteboom, 2000: 75, 83-87). Cultural information can 'jump' from one lineage to another in a way that genetic information cannot (Eldredge, 1997: 395). In this sense, in socio-economic evolution Larmarckism, involving both purposeful behaviour and the cultural inheritance of acquired characters, is important – in contrast to simple biological variation and selection which are random and without possibilities for hereditary transfer of learned skills. But group processes and the coming into being of cultures historically have emerged from these more 'simple', blind evolutionary processes. So, they are just a new development of natural selection itself[2]. As a consequence, in socio-economic systems more rapid developments are possible through the combination of imitation, improvement, learning and the purposeful transfer of these to newer generations (Hodgson, 1993: 47).

All of this does not deny the fact that also in human cultural systems a lot of trial and error – random variation and sorting – takes place. Moreover, seemingly inefficient or useless innovations may be examples of successful selection, as they possibly fit in a

certain (selection) environment. The survival of the QWERTY keyboard, not an example of optimality, has its reasons. When it was adopted, this keyboard design had its use, as it helped to prevent the cluttering of typewriter keys. And now it is an example of 'lock-in'. As so many people use this standard across the world, it is difficult to be changed (David, 1986). This example illustrates that fitness, adaptation and learning are always related to a specific environment. When we study the selection of innovations, it is, therefore, necessary to relate these to their relevant selection systems, each with its specific rules, culture, selectors and 'fitness criteria'.

What constitutes 'fitness' in a fashion environment?

In the Darwinian framework only the fittest survive, i.e. the units which fit best into a certain environment. But in all ecological systems, including the human ones, we also see a co-evolutionary development in the direction of ever more differentiation (Jacobs, 2000: 16-17). All kinds of species find niches in which they fit best. Moreover, many species not only adapt to their environment but also change it, they really *construct* niches (Laland & Odling-Smee, 2000: 123). As a consequence, increasingly there is room for ever more species which only to some degree compete for the same resources. So, evolution is always co-evolution, in which the selection environment itself may be changed. This is certainly true for human societies where many kinds of purposeful, 'strategic' behaviour can be observed. Innovators partly build on opportunities provided by social and cultural change on the one hand, but also try to stimulate certain developments in their selection environment which 'fit' their purpose on the other hand.

'Fitness', therefore, is not a 'one size fits all' criterion – contrary to what many economists assume. Of course also in biology, beside specific fitness criteria for different species, a more general success criterion can be defined: the relative increase in the descendants of a lineage. So it is no surprise that certain economists identify fitness of economic units *in general* with their propensity to accumulate. which, in turn has been associated with economic efficiency (Hodgson, 1993: 49-50). This reminds us of Oliver Williamson's statement that 'economy is the best strategy': economic units have to adapt rapidly to lower prices and to eliminate rigorously all waste (Williamson, 1991: 76, 87). This reasoning presupposes, however, that the economic environment is uniform and has only one selection criterion. Just as in biology the existence of a general success criterion does not preclude the reality of specific fitness criteria in each particular ecosystem. In most markets price (and therefore also cost) may be an important element of fitness, it certainly is not the only one. Not every customer is just looking for the lowest price. Moreover, following Williamson's advice there would be an undifferentiated race to the bottom.

Michael Porter anticipated this traditional economist's view long time ago, by stating that beside cost leadership, a "second generic strategy is one of differentiating the product or service offering of the firm, creating something that is perceived *industrywide* as being unique. Approaches to differentiating can take many forms: design or brand image (…), technology (…), features (…), customer service (…) dealer network (…), or other dimensions. (…) It should be stressed that the differentiation strategy does not allow the firm to ignore costs, but rather they are not the primary strategic target" (Porter, 1980: 37). So, cost is certainly an important criterion for valuing process innovations, but not necessarily for product innovations.

Porter's differentiation strategy leaves more room for strategies aimed at different niches within an environment. In each market or niche customers value products differently. In this respect economics literature talks about customer or consumer preferences, which for a long time have been seen as given and fixed or at least exogenous to the

economy. Consumer preferences are, however, not exogenous to the economy or society, but continuously endogenously reconfigured on the basis of all kinds of social developments and innovative economic activities (Bowles, 1998). Such preferences are, however, demand categories. What connects preferences and characteristics of innovations are therefore values: values at the basis of certain preferences which are apparently recognisable in characteristics of specific innovations. So 'value', a clear cultural concept, is probably the best economic equivalent of fitness from an evolutionary point of view. Behind every economic value there is a cultural value or a set of values, which connects the customer's valuation with tangible and intangible features of products.

Valuation to a large extent is subjective, different with different actors or actor groups, 'selectors'. "[T]his means that the value of an innovation can only be determined within the context of a set of preferences of selectors" (Wijnberg, 2004: 1472). Since the marginalist revolution at the end of the 19th century most economists see value as individual subjective preferences. Sociologists and institutionalist economists tend to disagree with this. Preferences may be subjective, but they are never completely individual. Already in the beginning of the 20th century institutionalists like Veblen and Commons argued that value is socially constructed (Mirowski, 1990; Throsby, 2001: 21-23).

Let us consider this proposition more closely. Is all value socially constructed? Of course, also biologic predispositions and technical performance aspects play a role in our valuations. We need air, water, sleep, warmth, nutrition, affection…, but most of these needs are 'secondarily reinforced' through all kinds of cultural 'socialisation' processes. Think for example of different food tastes (Witt, 1991: 564-569; Bowles, 1998: 79-84). So, we acquire preferences through genetic inheritance and through social learning.

Beside biological predispositions also technical criteria play a role in selection. This is quite obvious for more technical products, such as steel, where functional criteria like strength and durability in relation to price will prevail. In general, a technical innovation, like for example EDI or a system for processing POS (Point Of Sales) data, has to 'work', to fulfil its promise. But again, beside technical criteria, non-technical preferences in the form of conventions, tastes and fashions will play a role. Why is a certain material selected for a certain application? Why choosing steel for a building and not aluminium, marble or wood? Aren't many software systems more often selected on the basis of their supplier's tactics, rather than on the basis of their reliability? As Wijnberg states: "*The aspects that are technically necessary are those aspects of a product which selectors can specify in advance and which could, in principle be checked by other actors, or even robots. If such other actors exist, they have a purely technical role and not an economic one; they have no personal sets of preferences. The role of the other actors still leaves selectors with the task of determining or attributing value in an economic sense. The other actors could check the speed of microprocessors, but the selectors would have to specify beforehand (a) that speed makes a microprocessor valuable and (b) which type of measurement of speed are acceptable to them*" (Wijnberg, 2004: 1477).

In a similar way, from diffusion literature it emerges that the two most important features which determine the speed of adoption of an innovation are its 'relative advantage' and its 'compatibility' (Rogers, 2003: 229-257). 'Relative advantage', "*the degree to which an innovation is perceived as being better than the idea it supersedes*" (Rogers, 2003: 229), most resembles the technical aspects of innovation. However, as can be seen from Rogers' definition, to a large extent this advantage is a *perception*. Even for technical innovations perceptions may be more important than precise measurements. Moreover, 'relative advantage'

also relates to status aspects. Especially the adoption of highly visible innovations (cars, clothing, hairstyles, but also advanced technical gismos) may be status-conferring (Rogers, 2003: 231).

'Compatibility', the second feature important in diffusion, is mostly seen as compatibility with existing cultural ideas and values and recognised needs, but of course it may have a technical component as well: compatibility with existing technical standards (Rogers, 2003: 240-350).

Each selection system functions within a certain culture, with certain norms and *values*: general and more specific ones. As a consequence, different selection systems function according to different fitness criteria. Some of these norms and values may look very particular or even inefficient from most people's value perspectives, but still be the decisive in their own environment: "*If for example, selection criteria favor administrative rationality and formalized control structures within an industry, then adaptive organizations will switch to the new practices*" (Aldrich, 1999: 26). Similarly, a small change in the criteria in a selection system may lead to a totally different outcome. In most industries there is a kind of socially constructed 'industry recipe', a mental model or 'paradigm' of what is valuable, of what 'critical success factors' are (Porac et al., 1989; Debackere et al., 1994). At the same time a lot of variety will remain within these accepted recipes. At this level preferences of individuals, of peers, peer groups and subcultures also play a role. Different actors (suppliers and customers) make different choices between competing 'value propositions', leaving room for a multitude of strategies. Think for instance of the different subcultures in the realm of fashion: some people always wear the same, whilst other continuously monitor the latest styles. Different professions and other cultural scenes have different clothing habits and requirements and of course religions play a role too. Increasingly we also see the increasing influence of fashion in realms like those of sports and outdoor… So, there is continuous co-evolution, interaction between the cultural valuations in different subcultures. This leaves a lot of room for co-evolutionary strategic profiling and niche finding or niche construction. I will come back to this later.

So we see that the economic environment consists of a multitude of niches, each with its own fitness criteria. Behind the general concept of economic value, there is a variety of cultural *values* in continuous development. Technical elements play a role, but in the core of economic fitness we observe the importance of the non-technical aspect of culture, norms and values in their different manifestations: different 'ideologies', cultures of professions and other peer groups, paradigms, fashions, stylistic movements, all leading to more general basic criteria like price, functionality and status on the one hand, and particular and sophisticated ones in the realm of quality, defined in a multitude of subcultures on the other.

Incremental and radical innovation and the role of experts

A distinction regularly made in the realm of innovation is that between incremental and radical innovation. Some observers only see radical innovation as 'real' innovation. But then the question is where to draw the line. Moreover, just like in biological variation, the overwhelming majority of innovations is incremental or even marginal. Without them our economic system would come to a standstill quite rapidly. According to Gilles Lipovetsky (1994: 131) the continuous flow of style, design and content innovations and small improvements can be seen as an extension of the fashion logic to all kinds of industries, "the overall process that forces companies to innovate, to keep on introducing new articles that are sometimes truly new in conception, but that sometimes (most often) simply incorporate minor refinements in detail (…). [A] firm that does not regularly create new models loses its market penetration and weakens its image

of quality in a society where consumers spontaneously hold that the new is by nature superior to the old. (…) [O]ur economic system has been propelled into a spiral in which innovation is sovereign whether on a large scale or a small one, and in which obsolescence is accelerating" (Lipovetsky, 1994: 135). "We have reached the era of *consummate fashion*, the extension of the fashion process to broader and broader spheres of collective life. (…) Everyone is more or less immersed in fashion, more or less everywhere and the triple operation that specifically defines fashion is increasingly implemented: the operation of *ephemerality, seduction and marginal differentiation*" (Lipovetsky, 1994: 131).

Personally I like Lipovetsky's approach for its clarity. His 'marginal differentiation' concept is, of course, quite near to that of incremental innovation, but without the latter's connotation with improvement. A new product is not necessarily better; it does not necessarily lead to a higher degree of welfare, beside possibly the added value found in the newness itself or in a larger degree of choice. 'Ephemerality' emphasises the temporal character of many of these innovations, leading to increased economic obsolescence. As a consequence, many people argue that this even leads to a lower level of welfare, related to increased waste problems. But without anyone conferring added value to an innovation, it would of course fail. 'Seduction' finally draws the attention to the fact that there is an increased need for marketing investments to make innovations succeed. In many cases these marketing endeavours cost more than the expenditures necessary to develop an innovation itself.

Radical or 'paradigmatic' innovation, by contrast, is more difficult and risky, because of its relative incompatibility with existing norms and values. Many radical innovations fail for lack of compatibility with existing demand, values, or a lack of fit with existing technical and non-technical systems of testing, implementation, production, commerce or distribution. Such lack of fit is sometimes called the 'Leonardo effect', referring to Leonardo da Vinci who conceived many ideas that could not be realised or even tested with existing technologies (Nooteboom, 2000: 11, 182, 194). But when radical innovations succeed, their social impact is much larger: think of historical examples like electrification or the introduction of the car system.

Wijnberg makes an interesting contribution to the understanding of the radicalness of innovation, where he proposes to link it to its impact on processes of selection of innovation: "The importance [i.e. the degree of radicalness] of an innovation is the extent to which the innovation is connected with changes in the relative valuations of products satisfying the same set of preferences, of the set of preferences, of the composition of the set of selectors or of the characteristics of the selection system itself" (Wijnberg, 2004: 1474). So Wijnberg distinguishes between four possibilities:

– Incremental innovations lead existing selectors to reconsider the relative value of products satisfying the same set of preferences. When I see a new type of car, do I want to replace the one I have?

– A more radical innovation causes the selectors to reassess their preferences. Think about the introduction of mobile phones. At a certain moment many young people started to spend more money on these than on clothes.

– Even more radical is the case where the set of selectors is changed. Also this happened with mobile phones. Their main customer base moved relatively rapidly from business people to younger people.

– Most radical or important in Wijnberg's view are innovations, which lead to a change in the selection system itself. Previously telecommunications were seen as a public utility, but as a consequence of new technological opportunities and social developments, this industry has become a highly competitive deregulated industry.

As said above, in most cases innovations are marginal developments from earlier arte-

facts. In the realm of fashion George Darwin, one of Charles Darwin's sons, in 1872 published an interesting article in which he described a series of fashion innovations as incremental developments from earlier forms. Some items, such as epaulets or bands and gowns, are quite peculiar and can only be understood as elements surviving from earlier functionalities with no further relevance (Darwin, 1872). In these cases selection apparently can only be understood as a consequence of cultural preferences which have remained equal or at least recognisable, even when the environment for them has changed! Maybe for this reason Darwin did not analyse the selection environment itself. In contrast to his father, he took selection for granted.

In a previous section we have seen that also in the biological realm radical innovations rarely happen, unless radical events occur in the (selection) environment. When mutations take place, as a rule new species come into existence. In economic life new species can be identified as new categories or new 'families' of products, 'new concepts'. This has to be taken literally: a new concept is a new (cultural) category. As a rule, however, new concepts have a link with (they 'descend' from) existing categories. Otherwise we would not be able to understand them. E-commerce is the combination of electronic and commerce and also descends from the mail order concept. The monokini descended from the bikini and the catsuit from the ladies' suit which in its turn was a development of the men's suit. Without these lineage these radical innovations cannot be understood or even perceived!

In many cases experts play an important role in explaining the meaning and relevance of more radical innovations to larger audiences. Sometimes these experts even 'coin' the new categories. In such cases we can observe with our own eyes the actual construction of new meanings. We also see how such experts literally add value to the innovations: they present a (possibly changing) value framework and then assess the place of the innovation in that framework.

Mapping selection systems and identifying key selectors

Because economic valuation to a very large extent is a cultural process, 'market selection' is at least co-determined by valuation in all kinds of groups or subcultures, possibly supported by expert valuations. In this sense a market is never simply a market. As a rule economic selection takes place in a complex combination of different selection systems. Mirroring Williamson's (1975) traditional distinction between markets and hierarchies, we can distinguish between two basic idealtypical forms of economic selection – which are often combined in one or another hybrid form: hierarchical and market selection.

– Hierarchical selection is selection by selectors who have received the authority for this. Policy makers and managers at higher levels in organisations are the typical examples of this. Other examples are juries and editorial boards. In hierarchical selection the selectors usually have some room for personal preferences, but mostly act within a set of rules and criteria, formal and informal. The editorial board of a scientific journal probably works in the framework of the rules of its publishing house combined with the rules of the scientific community in general and a certain discipline and maybe even one paradigm in particular. In organisations producing for markets, we can expect that the assessment of possible success in the market is an important selection criterion. But this is never precisely the case. All organisations are also governed by political rules and games, with which people with innovative proposals have to deal.

– Market selection is selection by customers in a market place. Here it is important to understand that customers never select in a vacuum. Of course, customers also have personal preferences (which usually are not explicitly defined), but mostly they are influenced by their broader culture and their direct environment: family, colleagues and

other members of peer groups (or 'neo-tribes'), or by experts they value (reviewers, critics). From communication theory we know that opinion leaders have an influence, but also that people select the opinion leaders they like. Opinion leaders, in turn, take into account the opinions of their 'followers'. So, there is mutual selection. Moreover, all these people are part of a culture and possibly one or more subcultures or peer groups (ethnic, professional, age or other groups) with specific values and role models.

– There are many forms of hybrid combinations of these two basic forms. Sometimes there is even 'expert selection' in which someone with a special authority selects what the customer buys: firms or school may decide on uniforms, teachers on school books, physicians on medications (Wijnberg, 2004: 1471-1472). In such cases marketing departments of supplying firms (publishers, pharmaceutical companies) as a rule will direct their endeavours in the direction of these deciders.

In figure 1 this complex system of hybrid selection of new products is visualised from the perspective of the enterprises. On the left side we see the firms, in which there is always a battle between different ideas and projects. When hierarchical selection is the preliminary stage before market selection, we may expect that the ultimate market perspective directs this hierarchical selection. But this is not necessarily the case. The success factors related to internal selection (e.g. secret or more open agendas, favouritism between departments, managers' hobby horses, short and longer-term political games within organisations) may be completely different from those on the market. People initiating innovative proposals better take this into account.

On the right side of Figure 1 we have consumers, possibly clustered in peer groups, subcultures or 'neo-tribes', all of them with their different valuation criteria. These are influenced by experts, peers and opinion leaders. Some of these latter may also influence external hierarchical selection to which I come in a moment. Between supply and demand we sometimes also have preselectors: for example buyers from larger or smaller retail chains, or music stations or theaters.

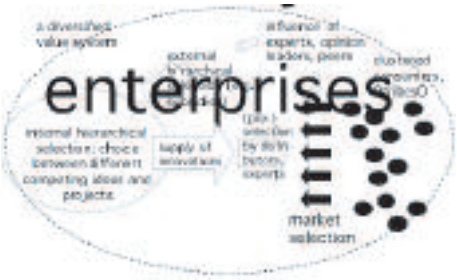

Figure 1: Complex hybrid selection from the perspective of enterprises

In some cases there is also external hierarchical selection, for instance when producers need subsidies. Selection criteria here may be, again, quite different from those on the market or those within organisations - for obvious reasons. Many public regulations have been specifically devised to remedy 'market failure', so we may indeed expect a different logic. In order to be subsidised, theatre or music productions for example may have to be 'experimental' (i.e. not commercial). In the realm of enterprise innovation, research and development has to be 'pre-competitive' in order to be subsidised. In concrete terms this may mean that high art has to be difficult to digest in the first case and R&D may not lead to practical solutions in the latter. In other situations external tax or subsidy schemes have only an additional role. Sometimes, thrifty policymakers resort to subsidy and tax schemes, through which they stimulate private actors to invest in, donate to or sponsor valued cultural objects and initiatives (investing in monuments, film projects or scientific institutes, sponsoring museums and exhibitions, or donating to socio-cultural, scientific, ideological or environmental organisations). Here, the selection is not hierarchical – the authority only supports in

principle the product *category* – but neither does it take place purely in the market. Apparently, an important selection criterion for policymakers in such cases is that private actors also take part in the cultural and economic valuation.

As a consequence of all these considerations, innovative 'entrepreneurs' better know in which selection systems they are acting at a certain moment, each with its specific rules. Within their organisation they have to look to their bosses and colleagues.

At a later stage they may have to shift to other selection systems with totally different rules. All of this requires quite some strategic and tactical flexibility.

As an illustration of the many ramifications of hybrid co-selection, in figure 2 a model is presented in which the selection of fashion (including fashion magazines) is presented on the basis of two related value systems: that of fashion firms and that of fashion magazines. When we look at the fashion buying of end consumers, we see that these consumers are influenced by certain of their peers and also by critics and magazines, which they select themselves!

The fact that there is also market selection of experts by the consumers (and to some extent by fashion firms who are an important source of income for fashion reviews) illustrates that consumers, fashion firms and magazines to an important degree mutually select each other. They are part of at least related subcultures and subsystems. In the language of complexity theory, this is a clear example of co-evolution within a *complex adaptive system* (Holland, 1995).

In figure 2 also the cultural realm is being visualised, from peer subcultures to the cultural realm of one industry (fashion, with its paradigms, worldviews or recipes), to the broader cultural at different possible levels: local and global, temporary (the 'Zeitgeist') or longer lasting.

From this comprehensive, but still partial understanding of selection, we could move to other cultural fields which are connected to that of fashion. To Figure 2, for example also the fields of sport, movies or music could be added, as these provide role models who may endorse (often on a contract basis) certain fashion products. Think for example of the increasing importance of product placement in movies and television series. Ever new business models are developed on the basis of these interactions, sometimes related to new forms of e-business. Some commercial television stations for example do not only want to earn money on the basis of product placement, but are trying to exploit related e-business sites, together with manufacturers. When a certain actress wears an attractive dress, a related website could then be activated on which this dress could be bought.

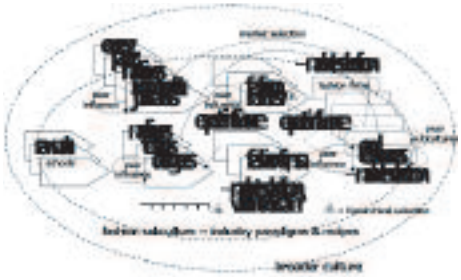

Figure 2: Value systems and selection in fashion

In some cases the relationship with customer groups may be more interactive and relational. Some firms have for example found a subcultural niche (e.g. punkrockers, kite surfers, Moroccan immigrants) with which they develop a special relationship, possibly with the help of special websites. Markets and industries are indeed increasingly being fragmented *and* (re-)connected at the same time. The role of the internet for these kinds of connections cannot be underestimated. On some websites customer groups discuss the offerings of the various competitors in an industry. Smart firms can take part in these discussions as well as using them to ask the advice of these customers: 'crowdsourcing' as this is now called.

Other set up own websites to advertise attractive bargains or to organise sales. Some of them also set up their own internet forums. Maybe some customers are pre-

pared to reflect on a firm's innovative ideas and contribute to these? Consider the new opportunities in the realm of co-development of innovation, together with the experimenting with 'lead customers' by manufacturing firms which provide these customers with specialised design tools (Von Hippel, 2005). Initiatives such as these illustrate that increasingly firms are trying to move away from the traditional innovation push model and have at least an awareness of the need for a better understanding of customer needs and of the complexities of the networks in which they operate.

Probably no such initiatives will be decisive in making an innovation succeed, as many frustrated marketers experience every day. What is attractive to one customer group may be appalling to another one. Moreover, curious and intelligent marketers may have an increasing amount of information about their consumers, but this is counterbalanced by many consumers' increasing sophistication and knowledge of marketing methods (Brown, 2003: 36–37, 51–53). However, this does not exclude the possibility that firms may find innovative solutions for which certain customer groups are really craving, or establish a value connection to which certain groups genuinely want to adhere – as examples such as Diesel, The Lonely Planet, Apple, Ben & Jerry's, or Harley-Davidson demonstrate. In order to understand this, it is useful to look again at niches, and also at 'neo-tribes' and networks.

Understanding our clustered world: niches, networks and neo-tribes

Previously we saw that the value of an innovation can only be determined within the context of a set of preferences of selectors. In this respect, the concept of 'niches' has already been mentioned a few times. Moreover, in all ecological systems, including human ones, we observe a co-evolutionary development in the direction of ever more fragmentation and differentiation (Jacobs, 2000: 16–17). Many species find or construct niches into which they fit best. As a consequence of this, 'fitness' is not a 'one size fits all' criterion. Also, mass markets are becoming more differentiated. Hence the emergence of a concept such as 'mass customisation': increasingly manufacturers and service providers try to reconcile economies of scale 'at the back' of their organisations with customisation 'at the front'.

Recent developments in network theory are quite helpful for understanding the development of our clustered network world. In network theory, it is recognised that the worlds of most people are quite small – from two completely different perspectives. On the one hand, most people only know a limited number (say about 150) of people, and these other people to a large extent share the same 'cluster' of acquaintances within the larger network. On the other hand, a few people called 'connectors' know many people in a variety of 'clusters' and form connections between them. As a consequence, the world becomes quite small. In fact we can connect most of the people in the world in only six steps! This view of clustered networks is shown in Figure 3 (Gladwell, 2000: 34–56; Janssen & Jager, 2001: 750–751; 2003: 77).

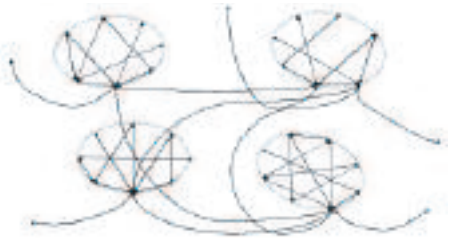

Figure 3: Clustered networks

It is at the level of their clusters – sometimes called 'tribes' or 'neo-tribes' – that people are most influenced by others (the peer influence discussed in the previous Section). However, the more people we know personally, the less influence each of them will have on us – apart from a few whose valuation we especially value such as close friends and opinion leaders within peer groups. As a consequence, in small villages or small

organisations there is a higher degree of 'monoculture' than in larger ones.

People increasingly belong to a greater number of groups, partly because these expand the basis for possible identities. A person may be a woman, an adolescent, a Muslim, a psychology student, a lesbian, a punk rock fan and a scuba diver at the same time, but not all possible identities will have the same meaning to her. Zygmunt Bauman has illustrated to what extent 'liquid modernity' under the ethos of hedonism leads to an anxious quest of proving an acceptable 'authentic' and original identity which never become more than a 'necessary optical illusion'. "The search for identity is the ongoing struggle to arrest or slow down the flow, to solidify the fluid, to give form to the formless". Fashion and shopping around provide material tools for this as well as nearly ideal metaphors: "Given the intrinsic volatility and unfixity of all or most identities, it is the ability to 'shop around' in the supermarket of identities, the degree of genuine or putative consumer freedom to select one's identity and to hold to it as long as desired, that becomes the royal road to the fulfilment of identity fantasies" (Bauman, 2000: 82-83). So, understanding possible customers to a large extent implies understanding which identity definitions or aspects of them are most important to each of them. Often observing them, how they dress (and the codes this expresses) and how they behave, will provide important clues for this understanding. Many 'neo-tribes' have their own dress codes, no matter whether they are accountants or punks (Bennett, 1999; Stahl, 2003; Weinzierl & Muggleton, 2003).

In their quest for identity, people sometimes find inspiration in virtual communities. With this latter word, now especially communities on the internet may come to mind. But the first virtual communities probably were those inspired by a similar style. In this respect Michel Maffesoli (1996) coined the concept of 'neo-tribes'. With this he reacted to previous conceptualisations in terms of subcultures, which sometimes had too much a more realistic connotation. In the 1970s, especially the CCCS (the Centre for Contemporary Culture Studies in Birmingham) approach looked for working class youth cultures as really existing tight, coherent social groups. Later on, it appeared that quite a few of these subcultures were relatively coherent constructions of the CCCS researchers and/or the media, rather than really existing groupings with such a degree of coherence. There was much more diversity in behaviour than was recognised. Some kinds of behaviour had been filtered out, while others had been highlighted (Bennett, 1999: 603-605).

In my opinion, the term 'subculture' does not necessarily have this overstretched or idealised meaning. It can be used to classify similar value preferences of people who do not necessarily form a group. But of course, sometimes they do. They may adorn themselves with identification tags like socialist, punk, or (a certain form of) Christian or Muslim. With his concept of *tribus* or neo-tribes Maffesoli aims to address higher levels of fluidity. "This bond is without the rigidity of forms of organization with which we are familiar; it refers more to a certain ambiance, a state of mind, and is preferably to be expressed through lifestyles that favour appearance and 'form'"(Maffesoli, 1996: 98). So we come back to Bauman's metaphor of the supermarket of identities in which individuals shop for the combination which fits their needs best. '*Tribus*' are thus not 'tribes' in the traditional anthropological sense, for they do not have the fixity and longevity of tribes' (Shields, 1996: x). Moreover, the media play an important role in the constitution of these groupings, both in their origin as in prolonging their lifecycle (Stahl, 2003: 31-32). This brings us back to more interactive kinds of marketing. As we have seen in the previous Section, especially fashion marketing sometimes plays an important role in the co-development of neo-tribes and subcultures.

Understanding our clustered world is also important for another reason. Because 'con-

nectors' make the connections between clusters, they possibly play an important role in spreading information (or diseases!) and diffusing innovations.[3]

When many 'connectors' reinforce the same message, an 'information cascade' or 'bandwagon effect' (such as a hype or fad) may arise, where – as in an epidemic – in a short time many people are 'seized' by that same idea: which movie to go to, which fashion item or internet share to buy. Because this kind of cascade has similar features to epidemics, one sometimes speaks about 'social contagion'.[4] There are, however, important differences between social contagion and the spread of diseases. Epidemics are stimulated when many people are connected to each other. Social contagion, however, works differently. As just mentioned, the more people we know, the less we are influenced by each of them. As a consequence, social 'contagion' works best in a social environment – such as the one which is most common – in which networks are highly clustered, but without too many people making the connections between the clusters.[5]

A somewhat surprising consequence of network theory is that "the structure of the network can have as great an influence on the success or failure of an innovation as the inherent appeal of the innovation itself" (Watts, 2003: 244). Of course, the quality of the innovation plays a role too, but at the same time we know that many – even attractive – innovations fail. Or if they do not fail totally, they are unable to break out of restricted niches (Gladwell, 2000: 35–46; Watts, 2003: 217–244). Other messages, however, spread relatively rapidly. In communication literature, this is related to the 'stickiness' of a message. For this reason publicity specialists continuously search for 'sticky' phrases; just as politicians and their advisers look for catchy one-liners. Stickiness is, however, not easily obtained. A tune for a commercial may be sticky, but its message or brand connection easily forgotten. Subtle advertising, sometimes implying games or guesswork, is as a rule more effective than aggressive publicity (Gladwell, 2000: 24–25). Similarly, movies launched with great fanfare regularly fail. Quite a few celebrity books cannot recoup the big advances paid for them. After the launch of a new product, word-of-mouth in the clustered network is more important than anything else in determining its success. In literature this is known as the 'nobody knows' property of innovation, especially in the cultural realm (Caves, 2000: 138–142, 166–167). An important exception to this is, of course, reputation, whereby an established author or actor receives relatively more attention, and for this reason can secure a higher fee.[6] It is for the same reason that sequels are so popular with producers.[7]

In the realm of movies or books, hypes are very interesting for their authors and companies. Also in other industries, as a consequence of sometimes unexpected 'positive feedback loops', hypes and rages occur, with opportunities for rapid growth. In the realm of fashion, such rapid growth opportunities may be interesting, but also quite risky. One year a firm is world leader and expanding rapidly, and the following year it is out of fashion and having problems making ends meet. So, it is quite understandable that firms react differently to these growth opportunities. Some prepare themselves to be able to make a profit from hypes, for example by establishing flexible networks with manufacturers around the world. Some even try to stimulate short-term hypes themselves. Others, however, opt for maintaining a consistent brand, even at the cost of missing temporary growth opportunities.

An interesting case illustrating this is the opposite reactions of the Tommy Hilfiger and Timberland fashion brands to opportunities provided by unexpected success in the American rap and hip-hop environment. Tommy Hilfiger, which previously had a more preppy image, jumped at the chance, immersed itself in this scene and adopted a more hybrid mix of preppy and urban street

styles. When rap singers such as L.L. Cool J and Snoop Dog appeared on television wearing Tommy shirts, the rage was unstoppable. Tommy Hilfiger experienced a growth spurt which allowed it, around 1995, to finally catch up with its model and rival Ralph Lauren.

At about the same time Timberland was equally surprised to learn that its hiking boots and rugged outdoor gear were being bought by inner-city kids at a rate of three or four items at a time. Of course, it did not object, but in contrast with Hilfiger, opted to keep to its traditional brand image and customer group. Timberland did not experience the same kind of rapid growth as Hilfiger, but later on it did not crash in the way Hilfiger did. At the end of the 1990s a number of hip-hop groups launched their own fashion label, and Hilfiger fell into a deep hole. Sales dropped and, even worse, the brand suffered from a kind of identity crisis. As a consequence, Europe, where Tommy Hilfiger never lost its preppy image, is now its main market (Agins, 1999: 110–125; *BusinessWeek*, 27-10-2003; *Financial Times* 17-09-2004).

The clustered structure of networks also helps us to understand the tension between global developments and remaining local tastes. People are influenced by global fashions, but this influence is filtered by their local culture and environment (Brand & Teunissen, 2005). As a consequence, global fashions sometimes only reach the clusters (various kinds of in-groups or peer groups) in a diluted way. In a similar vein, a few music styles and performers have become global, while many have remained local.

In this and the preceding sections I have discussed the way selection works in the field of fashion innovation. In the next Section I delve somewhat deeper into this more active, strategic side of selection. The – hopefully sticky – message of this will be that co-evolution is not only useful for description, but also for prescription.

Paying attention

From interacting with customer groups or 'connectors', it is only a small step to recognising that these 'these' possibly play an important role in adding value, and that they should be paid as a consequence. The smartest customers helping firms to innovate at least require as a necessary precondition for this that these firms do not appropriate the intellectual property rights of these innovations but instead leave them to the *creative commons* (Von Hippel, 2005).

Sometimes from a marketing perspective the relationship is nurtured with especially the connectors, the opinion leaders. As we also live in an 'attention economy' in which, as a consequence of oversupply, human attention is one of the most scarce resources. So literally firms and innovators are prepared to 'pay attention' (Davenport & Beck, 2001: 2-10). The classic form of this is, of course, publicity. But 'maps' like the figures 1 and 2 presented above may help to concentrate such endeavours by understanding the increasingly complex and fragmented way in which selection is happening. Experts, critics, reviewers and all kinds of peers take a role in valuing innovations and in this way in adding value to these (or taking value away from them).

Increasingly such influencers are being rewarded or even bribed for playing this role. Think for example of the practice of 'payola' in the music and other cultural industries. Payola is a kind of bribe, paid to influence the choice of experts and gatekeepers to bring a product under the attention of the public. The term payola comes from the music industry where DJs or broadcasting stations are being paid for giving certain music airplay. Some DJs or programme directors may be bribed personally, but the practice can also be part of the business model of the radio or television station. They are then paid for airplay instead of having to pay themselves for the rights to this music. In a similar way bookstores may be paid by publishers to push certain new books by displaying large quantities of them

in the shop or shop-window. The market for product-placement has even lead to the development of its own brokerage industry (Caves, 2000: 286-294). Quite a few movie or music stars get expensive couture dresses for free, as designers hope they will wear them to the Academy Awards or similar occasions which attract a lot of attention.

There are nowadays, however, so many 'experts' on the market that the value contribution of each of them is decreasing. The internet with its many millions of blogs and chatrooms makes this situation ever more nontransparent. The exception here are the 'superstars', the few programmes, magazines or experts which get most of the attention. It is said that even a bad review in *The New York Times Book Review* already generates the sale of 6,000 additional copies of a book. Even better is Oprah Winfrey's endorsement which easily leads to a few hundred thousands extra books sold. So it is understandable that she established her own book club to capture some of the value she creates (Green, 2005). An important asset of experts is, however, their supposed objective valuation. So by accepting payola-like payments they put their reputation at risk.

Also peers may create value, by bringing certain items under the attention of their friends and colleagues and praising these. Only incidentally these peers are rewarded for this by the innovators. They may for example receive a certain present if they provide a firm with the address of a possibly interested customer (for example for a magazine subscription or a mail order catalogue). The more marketing endeavours are personalised, however, the more these peers probably will be rewarded by firms for their share in creating value. Also modern 'viral marketing' approaches more or less successfully try to imply in a commercial way these 'connectors' (Rogers, 2003: 313-314). So, some of the 'peers' at a certain moment are promoted into recognised and compensated experts. They may be paid to promote products (especially the ones they like themselves), to 'hunt' cool trends, to write reviews, or to become paid advisers or brokers.

Since 2005, Procter & Gamble, through its Vocalpoint programme, has enlisted literally hundreds of thousands of 'connectors' within peer groups to recommend its products by word-of-mouth. For this, P&G especially looks for women with larger social networks. Contrary to the policy advice of the recently formed Word of Mouth Marketing Association (www.womma.org), P&G does not require these connectors to disclose their P&G affiliation. This does not appear to be very smart, as people will start to distrust the peer recommendation of P&G products, or at the very least feel betrayed when they find out about this practice (*BusinessWeek*, 29-05-06).

In general, such rewarding of peers by the innovators is still the exception. Some may receive a gift if they provide a firm with the address of a possibly interested customer. However, the more marketing endeavours are personalised, the more these peers will probably be compensated for their share in the creation of value. For the moment, most peers only get some informal compensation from their peers themselves: I help you, because you helped me. If you helped me a lot with certain suggestion, I maybe pay you a meal or give you another present. Here we remain in the realm of anthropoligical exchange approaches, which draw the attention to forms of informal 'bookkeeping' of mutual favours between actors.

All of this illustrates the fact that there is no economic value creation without at least a reconfiguration of cultural values with the help of various actors outside enterprises. These actors are increasingly integrated into innovation and marketing endeavours, and as a consequence to some extent compensated. In the final analysis, doing this in an open way, playing fairly, seems to be the smartest approach.

Concluding

I summarise my conclusion in ten points. In this contribution I have argued that:

1. A crucial element of any economic model of fashion is successful continuous innovation. It is useful to make use the Darwinian framework of variation, selection and retention/speciation to assess relative success of fashion innovation.

2. Fitness of innovation in economic environments can best be defined as the match – or even fit – between the values 'added' to products and the values, adhered to by (different kinds of) selectors in a certain selection system.

3. Selection of innovations takes place in hierarchical and market selection systems, and in hybrid combinations of these – all of them with different criteria of success or fitness (value).

4. Selection is based on quantitative and qualitative evaluation, related to a culturally determined set of preferences. Some of these preferences are translated into explicitly ratified selection criteria; most however remain more tacit.

5. Technical aspects of the fitness of innovations mostly relate to their 'relative advantage', non-technical aspects to their (non-) compatibility with existing cultural norms and values. Moreover, also relative advantage is based on perceptions and non-technical norms and values.

6. Creating economic value through innovation always entails the reconfiguration of cultural norms and values leading to a reconfiguration of customer preferences.

7. The more radical the innovations, the more radical the necessary reconfiguration of cultural values and the more important the role of new concepts and categories – and experts explaining these to larger audiences.

8. Fashion entails mostly marginal innovation which is easier to understand. Fashion-like 'marginal differentation' has spread to most other industries, where it has increased the rate of innovation.

9. Experts, opinion leaders and peers play an important role in the cultural creation of economic value. Increasingly they are taken seriously by marketers and rewarded for this.

10. To some extent e-business tools allow for new business models (for example combining product placement in television shows with actual sales), to some extent they reinforce the fragmentation of markets; they also have stimulated an explosion of self-appointed blogging 'experts' and in this way even further fragmentation of meaning and attention. To some extent this is balanced by the emergence of 'superstars', the few blogs, magazines or experts which get most of the attention.

Dany Jacobs
Professor of Strategic Management, University of Groningen, the Netherlands

1. Aldrich (1999: 21) mentions diffusion as a fourth mechanism, but diffusion is never static: it nearly always implies at least marginal innovation and adaptation, i.e. new variety oriented at specific customer groups (Gold, 1983: 107; Jacobs, 1990: 11-12).
2. Other animals also show forms of cultural transfer of skills within the group, which illustrates the fact that human learning is only a further biological development at a higher level of emergent 'learning', which is already present in other species (De Waal, 1996: 210-212). For this reason I disagree with Nooteboom who tends to view the use of an evolutionary framework as mainly metaphorical (2000: 77, 89). For the same reason I see no necessary contradiction with the use of learning or complexity approaches which Nooteboom proposes (Nooteboom, 2000: 87-90).
3. In this way they play the role of 'opinion leaders' as we know them from traditional two-step-flow communication theory (Rogers, 2003: 204-312).
4. Such 'bandwagon effects' are forms of 'increasing returns to adoption' which operate purely on the information side of demand, contrary to other forms which operate more on the supply side (scale economies, learning by using) or via the combination of both (network externalities, technological interrelatedness) (Arthur, 1998: 590-591; Van den Ende et al., 2003: 274-276).
5. From complexity theory we learn that the dynamics of a network, consisting of a number (N) of entities, is determined by the number (K) and strength (P) of the connections between these entities (Stacey et al., 2000: 113-116).
6. This constitutes the so-called A-list of different kinds of professionals (actors, writers, visual artists, musicians, consultants) which implicitly exists in many of the creative industries (Caves, 2000: 7-8, 28, 33-34).
7. For similar reasons many producers try to extend a suc-

cessful brand to other products. Such 'line extensions', however, endanger the clear 'brain position' of such a brand (Ries & Trout, 1986: 101-125).

References

Agins, Teri (1999), The End of Fashion, New York: Quill.

Aldrich, Howard (1999), *Organizations Evolving*, London: Sage.

Arthur, Brian (1988), 'Competing technologies: an overview', in Giovanni Dosi, Christopher Freeman, Richard Nelson, Gerald Silverberg, Luc Soete (eds.), *Technical Change and Economic Theory*, 1988, London: Pinter: 590–607.

Bauman, Zygmunt (2000), *Liquid modernity*, Cambridge: Polity Press.

Bennet, Andy (1999), 'Subcultures or Neo-Tribes? Rethinking the Relationship Between Youth, Style and Musical Taste', *Sociology*, 33 (3): 599-517.

Bowles, Samuel (1998), 'Endogenous Preferences: The Cultural Consequences of Markets and other Economic Institutions', *Journal of Economic Literature*, 36: 75-111.

Brown, Stephen (2003), *Free Gift Inside!!*, Chichester: Capstone.

Caves, Richard (2000), *Creative Industries. Contracts between Art and Commerce*, Cambridge Mass.: Harvard University Press.

Darwin, George (1872), *L'évolution dans le vêtement*, 2002, Paris: IFM-Regard.

Davenport, Thomas, John Beck (2001), *The Attention Economy*, Boston: Harvard Business School Press.

David, Paul (1986), 'Understanding the Economics of QWERTY: The Necessity of History' in William Parker (ed.), *Economic History and the Modern Economist*, Oxford: Blackwell: 30-49.

Debackere, Koen, Bart Clarysse, Nachoem Wijnberg, Michael Rappa (1994), 'Science and Industry: A Theory of Networks and Paradigm', *Technology Analysis and Strategic Management*, 6/1: 21-37.

de Waal, Frans (1996), *Good Natured. The Origins of Right and Wrong in Humans and Other Animals*, Cambridge Mass.: Harvard University Press.

Eldredge, Niles (1997), 'Evolution in the marketplace', *Structural Change and Economic Dynamics*, 8: 385-398.

Gladwell, Malcolm (2000), *The Tipping Point*, London: Abacus.

Gold, Bela (1983). 'On the adoption of technological innovations in industry: superficial models and complex decision processes' in Stuart MacDonald, D. Lamberton, Thomas Mandeville (eds.), *The Trouble with Technology. Explorations in the Process of Technological Change*, 1993, London: Pinter: 104-121.

Green, Hardy (2005), 'Why Oprah Opens Readers' Wallets', *BusinessWeek*, 10-10-05: 39.

Hodgson, Geoffrey (1993), *Economics and Evolution. Bringing Life Back into Economics*, Ann Arbor: University of Michigan Press.

Holland, John (1995), *Hidden Order. How Adaptation Builds Complexity*, New York: Basic Books.

Jacobs, Dany (1990), *The policy relevance of diffusion*, The Hague: Ministry of Economic Affairs.

Jacobs, Dany (2007), *Adding Values. The Cultural Side of Innovation*, Rotterdam: Veenman Publishers.

Jacobs, Jane (2000), *The Nature of Economies*, New York: Vintage.

Janssen, Marco, Wander Jager (2001), 'Fashions, habits and changing preferences: Simulation of psychological factors affecting market dynamics', *Journal of Economic Psychology*, 22: 745–772.

Laland, Kevin, John Odling-Smee (2000), 'The evolution of the meme' in Aunger, Robert (ed.) (2000), *Darwinizing Culture: The State of Memetics as a Science*, Oxford: Oxford University Press: 121–141.

Lipovetsky, Gilles (1994), *The Empire of Fashion*, Princeton: Princeton University Press.

Maffesoli, Michel (1996), *The Times of the Tribes. The Decline of Inidividualism in Mass Society*, London, Sage.

Mirowsky, Philip (1990), 'Learning the meaning of a dollar: conversation principles and the social theory of value in economic theory', *Social Research*, 57/3: 689-717.

Muggleton, David, Rupert Weinzierl (eds.) (2003), *The Post-Subcultures Reader*, Oxford: Berg.

Nooteboom, Bart (2000), *Learning and Innovation in Organizations and Economies*, Oxford: Oxford University Press.

Porac, Joseph, Howard Thomas, Charles Baden-Fuller (1989), 'Competitive Groups as Cognitive Communities. The Case of Scottish Knitware Manufacturers', *Journal of Management Studies*, 26/4: 397-416.

Porter, Michael (1980), *Competitive Strategy*, New York: Free Press.

Ries, Al, Jack Trout (1986), *Positioning. The Battle For Your Mind* (revised edition), New York: Warner.

Rogers, Everett (2003), *Diffusion of Innovation*, 5th edition, New York: Free Press.

Shields, Rob (1996), 'Foreword: Masses or Tribes' in Maffesoli 1996, p. ix-xii.

Stacey, Ralph, Douglas Griffin, Patricia Shaw (2000), *Complexity and Management. Fad or radical challenge to systems thinking?*, London: Routledge.

Stahl, Geoff, (2003) 'Tastefully Renovating Subcultural Theory: Making Space for a New Model' in Muggleton & Weinzierl, 2003, p. 27-40.

Throsby, David (2001), *Economics and Culture*, Cambridge: Cambridge University Press.

Van den Ende, Jan, Nachoem Wijnberg, Rianne Vogels, Michiel Kerstens (2003), 'Organizing Innovative Projects to Interact with Market Dynamics: A Coevolutionary Approach', *European Management Journal*, 21/3: 273–284.

Von Hippel, Eric (2005), *Democratizing Innovation*, Cambridge Mass.: MIT Press.

Watts, Duncan (2003), *Six Degrees. The Science of a Connected Age*, London: Heinemann.

Weinzierl, Rupert, David Muggleton (2003), 'What is 'Post-subcultural Studies' Anyway?' in Muggleton & Weinzierl, 2003, p. 3-23.

Wijnberg, Nachoem (2004), 'Innovation and Organization: Value and Competition in Selection Systems', *Organization Studies*, 25 (8), p. 1469-1490.

Williamson, Oliver (1975), *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: Free Press.

Williamson, Oliver (1991), 'Strategizing, Economizing, and Economic Organization', *Strategic Management Journal*, 12: 75-94.

Witt, Ulricht (1991), 'Economics, socio-biology, and behavioural psychology on preferences', *Journal of Economic Psychology,* 557-573.