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Sustainable Consumption and Consumer Sovereignty

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Abstract

There is a growing consensus in Ecological Economics that consumer preferences are neither fixed nor given, but rather endogenously determined by socio-economic and institutional factors. Hence, policy may promote "green" preferences directly. Yet any intervention in processes of preference formation seems to conflict with widely held liberal intuitions, imperfectly represented by the principle of Consumer Sovereignty (CS). We argue that a suitably refined, dynamic version of CS may not stand in the way of certain preference-shaping policies. By exploring different modes of consumer learning that imply varying degrees of behavioral lock-in, we show that there is a scope for policies that influence preference formation without violating CS. This extends the range of normatively acceptable sustainability policies.

Keywords: Consumer Behavior; Consumer Welfare; Evolutionary Economics; Sustainability; Consumer Sovereignty

JEL classification: D11, D63, Q58

1. Introduction

A predominant view in Ecological Economics is that current levels and paths of consumption are unsustainable and should be corrected accordingly. This position often builds upon the background assumption that consumer preferences are not exogenously "given" but rather endogenously influenced by socio-economic and institutional factors (Røpke, 2009). Hence, it may be necessary to promote sustainability by – among other things – influencing people's current preferences, ideally towards "less material consumption-oriented forms of satisfaction" (Norton et al., 1998) or "nonrival goods" (Wagner, 2006). Information campaigns, advertisement, "nudges" (Thaler and Sunstein, 2008) or some functionally equivalent device may be needed in order to overcome such locked-in consumption patterns. Influencing the demand side of the economy in this way may be a particularly powerful tool to promote sustainable behavior (Brennan, 2006). It may also enhance well-being, understood in hedonic terms (Norton et al., 1998; Welsch and Kühling, 2011).[1]

This approach conflicts, however, with widely held liberal intuitions according to which government should respect competent agents as "sovereign" by not interfering with their preference formation. These intuitions are imperfectly captured by the highly influential principle of "Consumer Sovereignty" (henceforth CS).[2] This principle also forms the basis of how mainstream economists assess allocative efficiency. At first sight, the conflict between sustainability and liberal intutions seems to be impossible to solve. If consumer preferences are to ultimately determine the allocation of resources, any attempt to manipulate these preferences appears to amount to usurping the power of consumers. While interference in processes of taste formation by private advertisement seems to be widely accepted, public policies that try to do the same are generally perceived as illegitimate.We argue that in order

[1] See also Costanza et al. (2007) for a more encompassing approach to measuring human welfare.
[2] To be sure, we do not claim that this liberal principle is generally accepted in the ecological economics literature.

to clarify this issue, it is necessary, first, to explore in more detail the precise nature of the endogeneity of consumers' preferences. Under which specific conditions can preferences really be considered endogenous and potentially locked in? Based on a psychologically informed account of preference learning, we argue that new preferences are acquired either "actively" via insightful learning involving mental deliberation, or "passively" via associative learning which does not require conscious mental deliberation on the part of consumers. Depending on the underlying mechanism of learning and the degree to which the consumer is actively engaged in the accumulation of specialized consumption-related knowledge, preferences may be more or less malleable.

These positive insights will then be used to examine whether and how the principle of CS can be revised in such a way as to (i) make it applicable to settings where preferences change endogenously over time, and (ii) identify legitimate ways to influence processes of preference formation and to distinguish them from illegitimate ones.[3] Such a refined concept of CS would open up a range of practical policies that effectively promote sustainable behavior by, at the same time, respecting fundamental liberal intuitions. Hence, it would help provide effective sustainability policies with a more broadly acceptable moral rationale.

The argument proceeds as follows. Section 2 discusses the emerging consensus in ecological economics about the endogenous nature of preferences. Section 3 presents an account of the dynamic interplay between insightful and associative learning that induces consumers to develop ever more specialized preferences. This affects the extent to which these preferences are (i) malleable and (ii) tend to change on their own accord. On this basis, section 4 first examines and dismisses the standard (orthodox) notion of consumer sovereignty and then introduces a refined, dynamic concept that is argued to apply to a world

[3] Scherhorn (2006) also calls for a re-definition of CS, without however going into details. In modern Ecological Economics, there is widespread skepticism towards concepts emanating from orthodox welfare economics, see e.g. Gowdy (2005), Gowdy and Erickson (2005, pp. 208-212).

of endogenous preference change. It also presents some practical policy implications. Section 5 concludes.

2. Endogenous preferences and the 'lock-in' effect in Ecological Economics

There is a general consensus in Ecological Economics that contemporary consumption patterns are not sustainable. Studies have shown that this applies in a wide range of consumption activities such as energy and food consumption (Myers and Kent, 2003). The problem is exacerbated by the fact that a large part of consumption is driven by potentially self-defeating and wasteful status concerns (Frank, 1999), that consumers are generally ignorant about the effect that their consumption choices have on the environment (Brown and Cameron, 2000), and that many of the relevant consumption acts give rise to "tragedy of the commons" scenarios. Consequently there have been calls for policies that promote sustainable consumption by fostering pro-environmental or "green" preferences among consumers. While the traditional textbook economics approach would be to recommend appropriate tax and subsidy schemes (i.e. incentive management) to promote sustainable consumption (e.g. Wagner, 2006), there is a growing tendency to reject the underlying assumption that consumer preferences are "fixed and given" (Stigler and Becker, 1977)[4], and to explore the policy implications that are grounded in a more realistic view of preferences. For example, Norton et al. (1998) have called on policymakers to "encourage" the adoption of a less material lifestyle and have further argued that society should establish democratic processes of public deliberation to discuss and re-evaluate consumer preferences.

This has led to a new focus on how consumer preferences may be affected by a number of economic, socio-cultural and institutional factors which may cause them to change

[4] Strictly speaking, Stigler and Becker argue that we cannot determine whether observed choice differences arise due to heterogeneity in preferences or in acquired human capital. We are grateful to an anonymous reviewer for urging us to clarify this point.

even substantially over time (Røpke, 1999; Lintott 1998). Different stages and forms of economic development may yield important systematic differences in the nature of preferences (Bowles, 1998). Accordingly, there may be certain factors that have grown in importance with the emergence of the affluent society and that may contribute to the "lock-in" of consumption patterns (Sanne, 2002). The unsustainable nature of current consumption is particularly attributed to deeply-embedded cultural changes that are beyond the individual's control, such as the secular rise of individualism (Røpke, 1999).

A key issue for policymakers here is whether "green" preferences can emerge on their own accord. In some situations, consumers may be unresponsive to new information and experiences due to sticky habits (Maréchal 2010). In other situations behavior may be very responsive to new information and experiences that consumers are exposed to. If certain (institutional) conditions can foster preference malleability, then this would be significant information for policymakers who could work towards indirectly promoting sustainable consumption patterns by creating the institutional conditions for green preferences to emerge, rather than blatantly attempting to indoctrinate consumer preferences. There is indeed growing evidence that at least in certain areas, consumption patterns appear to be shifting in a "green" direction on their own accord, without any change in external incentive structures (e.g. Pederson, 2000). To illustrate, a 1999 survey of US households suggest that 70% of households are willing to pay at least $5 per month more for electricity from renewable sources, with 38% willing to pay at least $10 per month more, and 21% even willing to pay at least $15 per month more (Fahar, 1999). Indeed much work has been done since the 1980s on how pro-environmental changes in the individual's consumer preferences and activities can be stimulated through non-price factors, including how the consumers' social environment may influence their attitudes (Ölander and Kahneman, 1995; van den Bergh, 2008).

It is notable that many studies highlight a link between how much knowledge consumers possess about a particular consumption activity, and their receptiveness to public information campaigns that promote pro-environmental behavior in relation to that consumption activity. For example, the likelihood of some action being motivated by intrinsic motivations depends on such factors as "how interesting the act is to the consumer" and "how much individuals may influence the nature of the act" (Frey, 1993: 645). Elsewhere, in a study of consumers who chose to purchase green electricity, Arkesteijn and Oerlemans (2005) found that early adopters were particularly knowledgeable of sustainable energy features and had a positive attitude towards the environment. Hence the accumulation of specialized knowledge by consumers represents an important factor that can account for whether or not green preferences may emerge on their own accord.

Apart from knowledge, the other fundamental issue in understanding consumer behavior concerns consumer motivation and the relationship between its genetically hard-wired foundations, on the one hand, and cultural learned influences, on the other hand (Norton et al., 1998; Robson 2001). In order to understand the role of biological evolution, scholars in Ecological Economics have sought to identify a set of objective human needs. This may help to find out to what extent current consumption goes beyond these needs and may, then, be seen as potentially "wasteful" (Jackson et al., 2004). Needs schemas that shed light on the functional nature of consumption, such as those developed by Galtung (1980) and Max-Neef (1991) have attempted to explain how the long run growth of consumption expenditure has not only involved the emergence of new goods and services to satisfy existing needs, but also an expansion of the number of underlying needs that consumers seek to satisfy.

While the role of needs should of course be taken seriously, these approaches suffer from two shortcomings. First, they are difficult to apply as they tend to include relatively

hard-to-observe needs, such as, e.g., the need for self-determination (Jackson and Marks, 1999). This poses a challenge to researchers as it is difficult to discern what types of goods and services are used in the satisfaction of such a need. In contrast, earlier drive theories of motivation attempted to explain human behavior as being related to a limited number of objectively identifiable primary reinforcers whose effects can be observed in the laboratory. For example, Hull (1943) argued that all behavior is ultimately based on four primary drives: hunger, thirst, sex, and the avoidance of pain. This relatively short list, though oversimplified, is much easier to manage in terms of uncovering what types of goods and services are used to satisfy these needs.

A second drawback of these psychological schemas is that they presume the set of needs that drive the long run growth of consumption to be preexisting, constant, and independent of the socio-economic context of consumption. In that sense, the notion of fixed preferences reenters through the back door. This is because the broad pattern of change in consumption behavior that takes place as consumers become more affluent is pre-determined by the hypothesized hierarchy of needs. In other words, the consumer's preferences may be non-homothetic in the sense that as income rises, the type of needs she seeks to satisfy will change, though the manner in which these needs will change is essentially fixed. In that sense, these approaches not only assume that all consumers possess the same set of needs, but also that the income effects on consumption expenditure are identical across the population of consumers. Put differently, the preferences of any two consumers with the same initial income level will alter in an identical fashion in light of some increase in income, irrespective of the individuals' own experiences. Importantly, the interaction of the consumer with her socio-economic environment is assumed not to have any effect on her set of needs. We argue that this is a serious shortcoming of these approaches. In order to attain a better account of the evolving nature of consumption patterns, it is important to also consider how the underlying

needs interact with, and are mediated by, cultural settings that form the context of consumption.

3. An Evolutionary approach to consumer learning and needs

This section discusses how a new, comprehensive account of consumer learning processes developed in Evolutionary Economics may be useful to understanding some of these open questions about the malleability of consumption patterns. This account describes the dynamic interaction between, on the one hand, the way consumers acquire needs and, on the other hand, the way they accumulate knowledge, through what is known as the consumer specialization process (Witt, 2001). We argue that this specialization process can help shed light on the circumstances in which preferences are either likely to be "locked-in" due to socio-economic factors, or are subject to change due to the more "active" role played by knowledgeable consumers. This account begins with the notion that consumer preferences are the product of the interplay of biological and cultural evolution – a view shared by scholars in Ecological Economics (as noted in the previous section).

With its focus on the role of knowledge and novelty as drivers of processes of endogenous growth, Evolutionary Economics has generally sought to examine which role learning consumers can play in introducing novelty into the economic system. Here the consumer can be seen from two different perspectives. On the one hand, many have argued that due to her cognitive constraints, she is guided by habits and rules, and that social institutions, peers and experts help her form appropriate rules (Earl and Potts, 2004; Nelson and Consoli, 2010). On the other hand, several studies have tried to account for the role of highly specialized, creative consumers in co-developing commercial innovations (Bianchi, 2002; Buenstorf, 2003). To reconcile these two views, it must be recognized that human learning is the evolved capability of a species to adapt to change by modifying its behavior in

response to environmental stimuli (McFarland, 1987). Hence the question of why consumer preferences are "locked-in" can be recast as the question of why consumer behavior is not adapting, or is adapting at a relatively slow rate. We argue that a part of the answer is related to the fact that the capability to learn evolved in humans over a very long time span in a relatively piecemeal fashion, such that there was no smooth substitution of more advanced learning mechanisms for more primitive ones (Flinn, 1997, p. 33; Sartorius, 2003, p. 30). Rather, development was sticky, with more advanced mechanisms emerging to complement older mechanisms. Thus it is fundamentally important to consider the existence of multiple modes of learning, and how these modes interact, to understand why preferences may change relatively fast in some areas of consumption, but not change at all in other areas.

To this end, we adopt Hergenhahn and Olson's (1997) distinction between associative and insightful learning. *Associative* learning describes a basic learning mechanism which humans share with other species. This mode of learning describes human behavior in situations where consumers appear to be "uninvolved" and "uncommitted" whilst consuming, and are unlikely to undertake thoughtful, comparative evaluations of choices (Foxall 1990, p. 14). Rather, consumers follow simple habits or routines. The aim of such behavior is originally the satisfaction of basic needs, which is done via the attainment of reinforcement. These are the underlying sensations of pleasure and pain that ultimately motivate consumption, such as the avoidance of pain derived from hunger, thirst, or the absence of cognitive arousal (Millenson, 1967, p. 386).

An important fact which may help explain why some of the needs that drive consumption are neither constant nor fixed is that the set of stimuli which deliver reinforcement is altered by experience via associative learning (Witt, 2001). In particular, formerly neutral stimuli can become secondary reinforcers when paired repeatedly with primary reinforcers; they then exert a reinforcing effect in their own right (Anderson, 2000, p.

39). For example, aesthetic tableware may become associated with the attainment of food, which may lead consumers to develop a "liking" for tableware (Witt, 2001, p. 35). Thus, in addition to basic needs, the consumer may acquire other needs that are unique to her particular learning history, and different consumers with different learning histories will turn out to have different sets of such acquired needs. These acquired needs are reversible in that they may become extinct if the neutral stimuli become disassociated with primary reinforcers (Myers and Davis, 2007). Hence by allowing a component of the consumers' needs to evolve in accordance with the types of reinforcers that they are exposed to, a more dynamic approach to studying consumer preferences emerges.

In contrast to associative learning, *insightful* learning describes a situation in which the consumer is in a highly alert state and predisposed to engage in mental deliberation (Posner and Peterson, 1990). Outcomes of this process depend on the creative capacity of agents to analyze situations in order to find appropriate solutions (Hergenhahn and Olson, 1997, p. 263). Relative to associative learning, behavior here tends to adapt at a much faster pace and also displays greater variability. Thus consumer choice is understood as a problem-solving exercise, involving a sequence of activities, the outcome of which is principally determined by the agents' cognitive functioning and the way they process information (Earl, 1986). An essential determinant of learning in these circumstances is the information that consumers possess. Key here is the consumer's social environment in terms of the peers and experts with whom she interacts, and her access to knowledge embodied in (informal and formal) social institutions (Bandura, 1986; Earl and Potts, 2004).

A potential outcome of the dynamic interaction between insightful and associative learning is a specialization process through which consumers accumulate an increasingly refined set of knowledge and likings about a particular consumption activity (Witt, 2001). On the one hand, the consumer's set of likes and dislikes can guide what she tends to insightfully

learn about in that the hedonic value of reinforcement acts as a marker that helps guide which information is worth paying attention to (Goodson, 2003, p. 115). On the other hand, insightful learning can influence associative learning because it can facilitate the formation of new associations between sources of reinforcement and neutral stimuli (Witt, 2001, p. 36). Together, the two effects may be mutually reinforcing and lead to the refinement of both what consumers know and what they like or dislike. Via this specialization process, consumers do not only attain greater knowledge about a particular consumption activity, but get a more specific set of acquired (dis)likes in relation to a consumption activity. It is a well-established fact in consumer research that more experienced consumers have more differentiated preferences. For example, expert bird watchers have greater interest in "lower profile" wildlife species than unspecialized bird watchers (Martin, 1997) and specialized tourists tend to derive more satisfaction from visiting historic sites than unspecialized tourists (Kerstetter et al., 2001).

This account of specialization from the evolutionary perspective is quite different from the theory of rational addiction where consumers may accumulate "personal capital" which can influence the marginal productivity of their future consumption activities (Becker and Murphy, 1988). In the above account, specialization leads to *qualitative* changes in the nature of the consumption activity, while in Becker and Murphy's account the accumulation of capital only leads to changes in the marginal productivity of doing exactly the same consumption activity as before. To use the example of birdwatchers, the accumulation of personal capital would lead them to gain more utility from watching the same bird over and over again, rather than developing new specific tastes for particular types of birds. Moreover, in relation to how personal capital is accumulated, Becker and Murphy portray this process as being analogous to a firm's investment decision, which is undertaken with perfect foresight of its expected consequences. Each investment is assumed to be both the result of a freely

chosen action and reversible in that it decays unless maintained (Elster, 1997, p. 750). In contrast, Witt's theory of specialization emphasizes the role of associative learning in shaping what comes to the attention of consumers in the first place. Thus, what the consumer tends to specialize in is not so much a consequence of forward-looking investment decisions in which consumers take into account the future payoffs, but rather a result of the previously acquired needs as well as the consumer's knowledge that have both emerged from her learning history.

At the individual level, an important outcome of specialization is that it leads to specialized consumers having a relatively greater propensity to vary the details of the consumption activity compared to unspecialized consumers. Essentially, gaining more detailed knowledge and a more refined set of acquired needs tends to change the way consumers assess the performance of goods and services. Due to specialization, goods used in the past that were once deemed adequate may be regarded as no longer suitable. Hence consumers turn to new types of goods and services that enable them a greater degree of flexibility and control in changing aspects of the consumption activity or are better adapted to the more refined state of the consumer's knowledge and likings, such as high-performance sports cars (Scitovsky, 1976, p. 273) or high-performance cameras (Windrum, 2005). In other cases, consumer specialization can lead to greater path-dependence in consumption patterns and the prolonged use of goods and services if consumers have developed specific skills and tastes related to a particular good (Moreau et al., 2001). One such example is the analogue (shutter-operated) camera, which is still used by many experienced camera enthusiasts, despite the fact that it has been superseded by the digital camera (ibid.). Unspecialized consumers, on the other hand, whose ability to modify consumption activities is relatively limited, were more willing to accept the new digital camera that simplified the consumption act of taking pictures (by doing away with the need for film and film development).

Beyond the individual level, the specialisation process has important observable consequences for market institutions (Chai et al.2007). Because markets are essentially tools that are used by consumers to interact with suppliers, the extent to which they possess knowledge about the consumption activity will affect a number of market institutions, such as:

(a) **How suppliers compete for and communicate with consumers.** Producers appealing to specialized consumers offer more specific information about the performance capabilities of goods and services, information which is relatively less effective on generalized consumers. Subsequently, the advertising channels used to reach specialized consumers are more specific. Rather than purchasing relatively expensive and short advertising space in the mass media, firms would tend to use channels that may be unique to specialist communities and whose relatively lower popularity would enable longer or larger advertisements that carry more information appealing to specialists (Foxall 1990, p. 135). Examples include specialized magazines and radio shows. In contrast, firms appealing to generalized consumers tend to use advertisements that highlight the causal connections of goods by relating the good or service to wants in an easily understood manner. This may come down to a demonstration of the effectiveness of goods or by simply associating it with positively reinforcing stimuli (e.g smiling beautiful people) (ibid., p. 133). Such short, appealing commercials can be communicated to a relatively large audience via the mass media.

(b) **How suppliers coordinate production with consumers.** The coordination of production and consumption activities reflects the distribution of knowledge across consumers and producers. This can influence the specific manner by which consumers and suppliers interact (Langlois and Cosgel 1998, Langlois 2001). In the case of specialized consumers, who have a greater willingness to produce their own goods and demand more differentiated goods, coordination mechanisms tend to be more modular, which allows consumers a greater degree of customization. Langlois and Cosgel (1998) give the example of the Land's End catalogue which, by offering a varied assortment of mix-and-match clothing elements within a coordinated design paradigm, allows consumers to better fine-tune a wardrobe to their personal tastes (ibid., p. 116). Non-

specialized consumers, on the other hand, may coordinate with suppliers through standardized goods and products, such as the American standard for measuring shoe size via numbers 1-15. Standards can relate to the technical, durable and performance characteristics of a good (Farrell and Saloner 1985). Whilst inflexible, such standards provide a universal and convenient institution which helps consumers to find out which goods and services properly satisfy their wants.

(c) **The type of product innovation that emerge in markets.** As discussed above, specialized consumers come to possess relatively more knowledge; they have a greater tendency to modify the consumption act to better suit their refined likings. Hence markets serving these consumers display a greater likelihood that products emerge which reflect the detailed knowledge and refined likings that specialized consumer possess, which tend to render them more difficult to use by other consumers (e.g. the high-performance sports cars or cameras discussed above). In markets catering for non-specialised consumers, there is a tendency to innovate goods and services that makes them increasingly convenient and easier to use. An example is pre-cooked frozen meals available in supermarkets. Whilst these have previously already saved consumers' time and effort in not having to cook, a new generation of such meals emerged in the 1990s which are designed to be more "healthy" in that they contain reduced amounts of calories and fat. Hence not only is the consumer's need for food satisfied, but their concern for being healthy is also addressed.

(d) **The role consumers play in the innovation process.** Specialization may also influence the role that consumers can potentially play in the innovation process. Recently, a variety of studies have examined the role that expert consumers play in co-developing novel products and services (von Hippel 2005, van den Ende and Dolfsma 2005). In contrast, non-specialized consumers are less likely to take a lead role in the introduction of innovation. In this sense, markets in which there are a higher number of specialized consumers have a higher probability of witnessing the introduction of novelties which have been co-developed with consumers.

Because of their greater propensity to vary the details of the consumption activity, we contend that specialized consumers tend to display a relatively higher frequency of self-

motivated change. This conjecture does not rule out the possibility that the consumption patterns of unspecialized consumers may not also frequently change. Rather, what is unique about the consumption patterns of specialized consumers is that they are more likely to change *on their own accord*. Unspecialized consumers, in contrast, tend to change consumption habits as a consequence of changes by their peers or experts that are part of their social environment (Chai et al., 2007). But it is the specialized consumers who are more likely to creatively apply the knowledge they possess and pay attention to new information about a particular consumption act.

Thus there is a greater likelihood that green preferences will emerge on their own accord among specialized consumers. This has ramifications for the ongoing debate about whether green preferences may emerge spontaneously. As argued by Buenstorf and Cordes (2008), pro-environmental behavior can emerge if there is sufficient information about the effects of excessive consumption on the environment and the consumer has a sufficient level of specialization in a particular consumption activity to be receptive to such information. At the same time, these authors are pessimistic about the likelihood that green preferences will emerge among unspecialized consumers. This is due to a "hedonic bias" which makes unspecialized consumers prefer alternatives that offer more rewarding sensory experiences (Buenstorf and Cordes, 2008, p. 649).

4. Rethinking Consumer Sovereignty

Given these positive insights into the way consumers learn about and specialize in new needs, we will now devise a refined concept of Consumer Sovereignty that is tailored to an "evolutionary-behavioral world" where needs and preferences change endogenously. In order to do this, we first take a closer look at the orthodox interpretation of CS with its inherent shortcomings, and the way it may be modified in light of preference change. We then explore

the potential of an alternative notion of CS, understood as "opportunity to learn" which turns out to be applicable in a world where preferences change and are incoherent. As we will see, our variant of CS opens up a range for policy instruments that both promote sustainability and are acceptable from a liberal point of view. Of particular interest are "nudges". In Thaler and Sunstein (2008), these instruments are suggested as a policy tool to support "libertarian paternalism". A nudge can be defined as any aspect of the "choice architecture" that alters people's behavior in a predictable way without blocking options or significantly changing economic incentives to choose otherwise. Nudges achieve this by exploiting well-known cognitive biases, such as the status quo bias, and framing effects. To illustrate, consider manipulating the order of healthy and unhealthy dishes at a cafeteria as an example: Depending on where the cafeteria manager places fruit relative to chocolate bars, say, the relative consumption of these products may change significantly, even if, on the face of it, both remain easily accessible.

CS: The orthodox view

William H. Hutt originally coined the term "Consumer Sovereignty" as a normative claim which implies "that the goodness or success of productive effort can be judged only in the light of consumers' preferences" (Hutt 1936: ch. 16). He later added the positive statement that CS meant "the controlling power exercised by free individuals, in choosing between ends, over the custodians of the community's resources" (Hutt 1940: 66).[5] For economists, the main attraction of this principle (in its normative sense) lies in the fact that it seems to exclude any kind of paternalistic interference with an individual's choices.

[5] See Persky (1993) for the genesis of the term, and Norton et al. (1998) for a survey of alternative definitions of CS. It is important to take account of the difference between the positive and the normative interpretation of CS: While the former is often violated (e.g. in monopolistic markets), this does not affect the validity of the latter.

Already in Hutt's original formulation, it is apparent that the principle essentially comprises not one, but two (albeit closely related) normative requirements: Economic outcomes should be evaluated according to (i) the degree of preference satisfaction they provide and (ii) the degree to which the "controlling" individuals (i.e., the consumers) are "free" to pursue their own preferences. Hence, CS is based on two requirements. While the first one focuses on outcomes, the second one is of a procedural nature.

Combining them is no trivial matter. Consider first a world with given and fixed preferences. Since Hutt's original contribution, different versions of CS have been suggested in the literature, with each one based on its own way – not always convincing or successful – to combine these two requirements. Notice that overstressing one requirement may lead to implications that violate the other: It is conceivable that an omniscient and benevolent dictator might provide individuals with all they long for (reaching an outcome of perfect "preference-satisfaction"), while eliminating their freedom of choice altogether.[6] Hence, with invariant preferences, a version of CS that would neglect one of these two requirements could hardly be argued to reflect the philosophical view that motivates the idea of "sovereign" consumers in the first place.[7]

The focus of orthodox interpretations has nevertheless been on the *preference satisfaction* component: For instance, Rothenberg (1968, p. 327) defines CS as prescribing simply that "all economic processes are ultimately focused toward satisfying the wants of the final consumer". In a much-cited contribution to the field, Harsanyi (1982) proposed his well-known principle of *Preference Autonomy*, stating that "in deciding what is good or what is bad for a given individual, the ultimate criterion can only be his own wants and his own

[6] See Rothenberg (1962).
[7] Also the link between CS and the Pareto criterion presupposes a combination of the two components of CS, as Rothenberg (1962: 271) shows.

preferences" (ibid., p. 55).[8] Importantly, as welfare economics uses well-behaved utility functions to depict an individual's "wants and preferences", these have to obey the standard consistency ("rationality") conditions, such as completeness, reflexivity and transitivity.

Apart from excluding ill-informed and anti-social tastes (in order to avoid counterintuitive implications),[9] Harsanyi's principle does not prescribe anyone to pursue any particular set of "wants" (we will use the term "needs" in the following) or preferences, but rather attributes positive normative weight to any subjective idea about the "good life" an individual consumer may, for whatever reason, hold.[10]

The second, libertarian, component of CS – the *freedom to choose* – has been emphasized in the contractarian literature. This component draws its normative appeal from the concept of "individualism" (or "normative individualism", Buchanan 1991) which can be defined as an "ideology which assigns a higher moral value to the individual than to the community or society, and which consequently advocates leaving individuals free to act as they think most conducive to their self-interest" (McPherson 1997, p. 790). Schumpeter (1980, p. 3) defined what he called "political individualism" – distinguishing it from methodological individualism – as starting from the "general assumption that freedom, more than anything, contributes to the development of the individual and the well-being of society as a whole."

In Buchanan's seminal interpretation, the respect for individual freedom to choose is taken to be justified independently of the question whether the individual is (always or typically) the "best judge" in matters pertaining to her own well-being. Hence, when this "epistemic privilege" is shattered by, e.g., behavioral economics insights, this would leave

[8] Also, empirical tests that allegedly support CS by showing that consumers value their own purchases more than they value gifts (e.g. Waldfogel 2005) focus on the preference satisfaction component.
[9] See, however, Cowen (1993) for the hazards implied by demanding that preferences be "perfectly informed".
[10] In the words of Scanlon (1991),, the moral idea behind this principle is that "what we owe to individuals is not concern for the quality of their lives *simpliciter* but rather concern for the quality of their lives *as judged by their lights*" (ibid., p. 33, italics in the original).

the justification of CS intact.[11] The price to pay for this immunization strategy is, of course, a strong normative premise that is perfectly detached from the subjective attitudes of the affected individuals themselves, i.e., a kind of "liberal paternalism".[12] A refinement of the "freedom to choose" component of CS has been suggested by Sugden (e.g. 2004, 2009). According to his "opportunity" criterion, value lies in people being free to act on whatever preferences they may happen to have in the future. That criterion suffers, however, from the fact that Sugden's normative role model, the "responsible" person who unconditionally endorses all her future preferences without the desire to self-commit, lacks empirical plausibility (Schubert 2012b). All in all, the "freedom to choose" component leaves some room for preference-targeting policies, provided they meet with universal consent (Buchanan) or do not block freedom to choose (Sugden), as in the toolbox proposed by the proponents of "libertarian paternalism" (see below).

Let us now introduce the assumption that individual preferences change endogenously. Obviously, preference-targeting policies based on the orthodox view of CS (described above that is centered on preference satisfaction) run into problems of circularity at the level of practical policy-making (e.g. Penz 1986, Cowen 1993). While conceptually, the orthodox variant of CS is just as agnostic about the origin and formation of people's preferences as the other variants, at the level of practical application it creates problems for preference-targeting environmental policies. For if a policy that is deliberately influencing preferences is bound to "respect" the preferences people have, it faces the problem that it has itself made the status quo indeterminate: Should people's ex post- or ex ante-preferences be

[11] Rothenberg (1962: 282-83) argues that in light of the many problems inherent to the preference satisfaction view of CS, the freedom to choose component should be favored, supported by an appeal to the value of autonomy: "What really can belong to the self and be accurately known is the experience of making and taking responsibility for choices, whether right or wrong, and seeking to know by this continuing dialogue across the permeable boundary of the self what if anything is worth preserving."

[12] This is to be distinguished from the "libertarian paternalism" advocated by Thaler and Sunstein (2008), which we address below.

the benchmark guiding policy? As Brennan (2006: p. 153) puts it, preferences cannot simultaneously serve as policy criterion and policy instrument.

By decoupling policy evaluation from preference satisfaction, the freedom to choose variant of CS is not subject to this issue. Giving the freedom to choose absolute authority, though (as, e.g., in Buchanan's and Sugden's approach), is a risky strategy. We argue that it becomes ever less convincing, the more the fundamentally contingent nature of most individual preferences is unveiled. There is evidence that under certain conditions, individuals appear to not even *have* one, so that "preference" becomes a purely artificial construct to rationalize observed choices ex post (e.g. Ariely et al. 2003; Ariely et al. 2006).[13] This undermines the belief in the unconditional authority of a person's choices.[14] Instead, we suggest that a change of perspective toward a *dynamic* interpretation of CS overcomes the dilemma.

An alternative conception: CS as "opportunity to learn"[15]

In a dynamic view, CS would be based on the assumption that preference change, instead of being a potential source of "irrationalities", is a perfectly natural concomitant of economic processes. Rather than deliberating about whether a person's preferences in period *t* or her preferences in period *t+1* ought to be privileged, the focus is on how individual well-being can be assessed in light of there being different learning mechanisms and paths of preference development. CS is accordingly to be understood dynamically, as requiring that

[13] This charge has previously been leveled only against the concept of "utility function".
[14] As Schumpeter argued on economists' "uncritical belief ... in the virtues of consumers' choice": "Is it not time to investigate what the bases of this respect are and how far the traditional and, in part, advertisement-shaped tastes of people are subject to the qualification *that they might prefer other things than those which they want at present as soon as they have acquired familiarity with these other things*?" Schumpeter (1949: 380, FN 28, italics added).
[15] To avoid misunderstandings, we wish to clarify here that in the following we stipulate, as a hypothetical imperative, that policy respects this particular variant of CS.

the individuals are free to *learn* new preferences as they see fit, provided they do not harm non-consenting others in the process.[16]

In terms of the distinction between basic and acquired needs (introduced earlier in section 3) we suggest this dynamic variant of CS to be two-tiered: A social state would then be legitimate in light of our dynamic variant of CS if it is the case that (i) the individuals' basic needs are satisfied, and (ii) the individuals have the chance, at the level of acquired needs, to try out new preferences as they see fit, given their budget constraints.

Learning is a constituent of human flourishing. We claim that as a precondition of self-development, it is firmly rooted in the tradition of classical liberalism. To illustrate, John Stuart Mill (1989), inspired by the liberal approach of the German philosopher Wilhelm von Humboldt,[17] argued that "it is the privilege and proper condition of a human being, arrived at the maturity of his faculties, to use and interpret experience in his own way. It is for him to find out what part of recorded experience is properly applicable to his own circumstances and character ... It is not by wearing down into uniformity all that is individual in themselves, but by cultivating it and calling it forth, within the limits imposed by the rights and interests of others, that human beings become a noble and beautiful object of contemplation" (ibid., 58, 63).[18] Hence, we submit that a dynamic conception of CS – understood as the "opportunity to learn" – would adequately express fundamental liberal intuitions about the good life. At the same time, as we will demonstrate below, it is compatible with a range of preference-targeting sustainability policies, both conceptually and practically. Note that our criterion differs from the orthodox ("preference satisfaction") variant of CS in that the actual

[16] Needless to say, this proviso also applies to the orthodox and the libertarian variant of CS just discussed.
[17] According to v. Humboldt, "the end of man, or that which is prescribed by eternal or immutable dictates of reason, and not suggested by vague and transient desires, is the highest and most harmonious *development of his powers* to a complete and consistent whole" (as quoted by Mill, ibid., p. 58, italics added). See also Schubert (2012a).
[18] Note that similar normative ideas have been expressed by v. Hayek (1949) and Scitovsky (1976). Our dynamic variant of CS may also be understood as a generalization of the meta-preference approach (see, e.g., George 2004) in that the effective learning of new preferences increases an agent's chances to align her preferences with her second-order preferences (i.e., her preferences over preferences), thereby reducing internal conflict.

satisfaction of needs is only required to the extent that it is necessary to ensure the individual's ability to continue to learn new preferences. For that to be valid, *basic* needs have obviously to be satisfied (see above). The satisfaction of *acquired* needs, though, is only important to the extent that it is necessary to occasionally corroborate the association between an acquired need and the corresponding basic need.

Having "opportunities to learn" also does not presuppose the - quite possibly utopian – perfect personal autonomy demanded by the libertarian ("freedom to choose") component of CS. We argue that not only is there no such thing as a "perfectly autonomous" choice on the basis of given preferences; "perfect autonomy" is even less attainable in the preceding process of preference formation: that process is always shaped by a multitude of cultural and political factors that are impossible to disentangle. That's why we submit that the use of "nudges", as proposed by the advocates of "libertarian paternalism" (e.g. Thaler and Sunstein 2008) does not violate CS, properly understood.[19]. Peoples' "autonomy" may be restricted by the use of nudges (e.g. Gruene-Yanoff 2012, Hausman and Welch 2010), but this observation does not qualify as a decisive argument against nudging.

In particular, we suggest that our notion of dynamic CS only requires that the total amount of *subjectively perceived chances to try out new preferences* not be interfered with by policy interventions. This would be the case, for instance, if policy would restrict people's access to markets or remove existing goods from the shelves;[20] in contrast, well-being in our sense would be unambiguously improved by informing consumers in an unbiased way about the characteristics of products and services. But even beyond that, we submit that CS (as defined here) would typically not be violated by policies that use nudges to exploit

[19] Nudges have to meet the requirement that the agents' personal freedom not be restricted. This requirement originally aims at giving agents (assuming there are any) who are not susceptible to cognitive biases the chance to act on their rational preferences. In light of our criterion, this "freedom requirement" should rather be understood as giving real-world, cognitively constrained individuals the chance to try out and acquire new preferences on their own, possibly contrary to the choice architect's recommendations.

[20] This may look like an arbitrary step to normatively favor the status quo. From a pragmatic point of view, however, we have to start from somewhere.

consumers' biases, through, e.g., the provision of biased information, the manipulation of default rules or the framing of decision contexts. This holds, as long as subjectively perceived opportunities to learn are not forestalled.[21] In addition, we suggest that policymakers should be transparent at least about the ends associated with the use of nudges.

From the perspective of the evolutionary approach to consumer learning outlined above, nudges may be even more effective than typically assumed in the literature. For due to the path-dependent nature of preference learning, an agent that is initially pushed toward preferring a certain "green" good or service (or characteristic of a good or service) may be led to acquire a habit for that good or service, redirect her attention to new information concerning that good or service, and possibly even end up specializing in its consumption. In cognitive learning theory (e.g. Anderson 2000), it is a well-established fact that consumers tend to pay more attention to stimuli that coincide with reinforcement. This cognitive mechanism helps screen which incoming messages are attended to (Witt 2001). Even without outright specialization, though, we submit that the use of nudges may stimulate a process of preference change that is based on the dynamic interplay between associative and insightful learning and may be characterized as "normatively reinforcing": In period t+1, the agent may have begun to have acquired a liking for what she has been nudged towards..

This has an important implication for our concept of dynamic CS: When an agent has never learned a certain preference, the removal of corresponding opportunities will not harm him, neither in terms of preference satisfaction nor in terms of freedom of choice nor in terms of "opportunities to learn", for he does not *perceive* what he has never learned (Witt 2011, p. 12).[22] Thus, when its dynamic ramifications are taken into account, licensing even "light"

[21] While the promotion of pro-environmental preferences may be seen as ultimately enhancing people's well-being, properly understood (e.g. Costanza et al. 2007), we abstract from this "paternalistic" aspect in the following, focusing instead on the policy goal of promoting sustainable behavior.
[22] Such an argument would not be valid if we were to assume that the "opportunity to learn" concept of welfare has "objective" value, i.e. value independent of the individuals' own subjective perceptions.

interventions in preference formation provides potentially powerful tools to sustainability policy.

More generally, the notion the removal of corresponding opportunities that the consumer is not aware of is analogous to the problem of preference endogeneity that plagues the application of the orthodox CS principle (see above). To illustrate, a policy promoting liberal education may, over time, contribute to the creation of preferences that, in turn, support this very policy. Notice that there is an interesting analogue to this phenomenon in the thought experiment, introduced by John Rawls (1971, pp. 20-21, 48-49) of "reflective equilibrium", where people's unreflected judgments are distilled into abstract principles that may then, in turn, inspire people to revise their original judgments, which again are distilled into a new set of principles, etc. In the end, Rawls argues that a set of widely agreed abstract normative principles will emerge, representing an "overlapping consensus" on which policy can be based.[23]

Finally, two possible objections to our revision of the principle of CS ought to be addressed: First, isn't it subject to the same circularity issues that make the orthodox principle a non-starter as soon as preferences change endogenously? Second, isn't it counterintuitive to suggest that individuals should be able to learn and try out any new kind of preference they deem fit, since these can also include anti-social preferences?

As to the first point, circularity is not an issue if well-being is defined as being constituted by a person's chance of learning new opportunities, since the endogeneity of the subjective perceptions underlying those chances does not imply inconsistent evaluations. Put differently, the policy-maker is not forced to arbitrarily choose whether to base his evaluation on ex ante or ex post preferences (as in the orthodox CS case), because it is the *process of preference change itself* that gains normative value. If people continue to develop their own

[23] We are grateful to an anonymous reviewer for urging us to discuss the analogy between Rawls' model and our notion of normative self-reinforcement.

preferences, whatever they may be, that is a good thing in itself. Welfare does not hinge on whether or not an outcome obtains where certain preferences are satisfied.

As to the second point, it is true that in theory, our revised principle of CS would allow people to acquire anti-social (sadist, racist,...) preferences. Note, however, that in order to learn them, it is usually necessary to "try them out" in practice. As soon as this involves inflicting harm to other non-consenting individuals, such behavior would legitimately be banned by the authorities.

5. Policy Implications: Dynamic CS in practice

As we have shown above, dynamic CS allows sustainability policy to influence processes of preference formation, provided the agents' subjectively perceived learning opportunities are not restricted. While "removing" existing goods from the shelves would be considered illegitimate, banning the development and sale of novel goods or services that are expected to be "dirty" would be legitimate, as would be nudging consumers away from those kinds of goods. This intervention may then gradually shape the agents' path-dependent processes of preference learning.

In light of our discussion in section 3, above, different kinds of intervention may be appropriate for different kinds of consumers. We focus on the difference between relatively specialized (informed) and relatively unspecialized (uninformed) consumers. The extent to which consumer preferences are malleable depends on the extent and trajectory of their level of specialization in a particular consumption activity – i.e. on the extent to which they have accumulated detailed knowledge and (dis)likings about the goods or services in question.[24] We assume that consumers exhibit preferences in a range from highly specialized to

[24] Consumers that have been specialized in one period may, of course, become unspecialized again in the next, and vice versa.

unspecialized, and that market institutions reflect this state of specialization (see section 3, points (a) to (d)).[25]

It is easy to see that nudges will be likely to affect specialized consumers differently than unspecialized consumers. The former, whose preference formation is mainly governed by insightful learning processes, are typically more receptive to public information campaigns, while nudges will probably be less effective in stimulating a process of "normative self-reinforcement" among this subset of consumers. The latter, whose preference formation is mainly governed by processes of associative learning, will probably be influenced more easily by nudges, while remaining indifferent to information campaigns, whether neutral or non-neutral.

Hence, policy should ideally create the institutional conditions for a learning environment where formerly unspecialized consumers are gradually lead to specialize in "green" consumption. As Chai (2011) argues for the case of recreational activities, the likelihood of consumer specialization depends positively on (i) the availability of information on that particular activity, (ii) the extent to which that information is associated with reinforcing stimuli, and (iii) the extent to which the consumer is able to creatively modify details if the activity in question.[26] Thus, ensuring that these conditions are met in an unspecialized consumer's learning environment can lead to an increase in consumers who become specialized in that particular consumption area, thereby becoming more receptive to public information campaigns.

Besides the creation of appropriate institutional conditions for consumers to specialize, the use of "green nudges" may be required to promote sustainable behavior. In a

[25] Some markets are dominated by specialized consumers (e.g. the market for expensive french wines), others by unspecialized ones, such as the market for lightbulbs, where consumer involvement tends to be very low (Mills and Schleich 2010). While policymakers don't need to know the degree of specialization of each particular consumer, they need to take account of the differential impact of their policy tools on the two kinds of consumers.

[26] The link between consumer specialization and the tendency of consumer's to modify aspects of the consumption activity has been discussed in the section 3 above.

sense, interventions of this kind may even *improve* people's overall opportunities to learn: One may argue that in the case of most ordinary consumer products the individuals' learning environment (i.e. the set of factors, institutional and physical, that shape the way an individual acquires new preferences or refines her given preferences)[27] is biased in favor of "dirty" goods due to their relative hedonic superiority (Bünstorf and Cordes 2008). In order re-establish a functioning learning environment – to level the playing field, as it were – and to promote the variety of goods and services in the marketplace, appropriate nudges (or again, rather "counter-nudges") would be called for.

To illustrate the practical implications for the use of environmental nudges, the use of more effective labelling with respect to the fuel economy of new cars (e.g. by emphasizing the total costs over a certain time period rather than mileage numbers),[28] or the use of "ambient orbs" to make visible a household's energy consumption, may be legitimate also from a strictly liberal point of view.[29] The same would apply to the exploitation of people's status quo bias by installing the option to use carbon-offsetting as the default when purchasing air travel tickets. As long as the option to opt out is available at minimum costs (just a mouse-click), individual freedom to learn is not curtailed. Another nudge could make use of the phenomenon of hyperbolic discounting (people's tendency to overvalue immediate relative to future benefits): House owners or buyers could be nudged toward investing in energy-efficient technologies (such as isolation) – which typically require substantial upfront costs. A paying scheme could be proposed in which the buyer initially only pays the price of

[27] We suggest this notion as the dynamic counterpart to the "choice environment" introduced by Anand and Gray (2009).
[28] Analogously, standard light bulbs could be labeled more effectively by informing consumers about the percentage of additional energy they use relative to energy-saving lamps.
[29] These are among the few examples of environmental nudges given in Thaler and Sunstein (2008, ch. 12). Another example, the use of a public "Greenhouse Gas Inventory" does in fact not qualify as a nudge in the sense that Thaler and Sunstein define that term, for it affects firms' incentives in a non-trivial way (Hausman and Welch 2010).

the cheaper – and less energy-efficient – option; the extra costs would be paid later and automatically deducted from the savings generated by the investment.[30]

6. Concluding Remarks

In contrast to orthodox environmental economics, Ecological Economics concedes that real-world individuals typically act on preferences that are both incoherent and subject to endogenous change. However, precisely how and to what extent consumer preferences are determined by social institutions is not clear. In this respect we have argued that a comprehensive theoretical account of the consumer specialization process can help shed light on the circumstances in which preferences are either likely to be "locked-in" due to socio-economic factors, or are subject to change due to the more "active" role played by knowledgeable consumers. In the latter case, the probability is higher that "eco-friendly" preferences will emerge on their own accord.

We have further argued that this requires a reassessment of normative dilemmas that are so far widely seen as being insurmountable. Reconceptualizing the principle of Consumer Sovereignty (CS) in light of these "behavioral-evolutionary" assumptions leads to a dynamic interpretation of CS – as peoples' "opportunity to learn" – that is in fact compatible with a range of preference-targeting policies. In particular, the use of nudges may – under certain conditions – be argued to be acceptable from a liberal point of view.

In other words, since it is the process of preference formation preceding choice that is truly fundamental (especially in the long-run view of ecological economics), we argue that policies should be evaluated according to whether they promote "beneficial" processes of preference formation in the future. In order to do so, we argue, they must deliberately try to influence those processes. In our view, it is indeed legitimate to do so, as long as the

[30] This example is from Bracker (2010).

"sovereignty" of individuals is not negatively affected, with "sovereignty" redefined as people's subjectively perceived chances to acquire or learn new opportunities over time.

Some conceptual and practical policy implications have been presented that made use of positive insights from evolutionary economics into the dynamics of preference change. Arguing the case for the compatibility of CS and sustainability-enhancing policies may contribute to making the latter acceptable to a wider audience, including perhaps the majority of professional economists.

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