

The economics of escalation

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Abstract

Escalation is a key characteristic of many consumption behaviors that has not received theoretical attention. This paper aims to propose both a definition and a theoretical treatment of escalation in consumption. We define escalation as a subject's attempt to obtain "more" or engage in consumption behaviors that are "more intense" on a measurable, quantitative or qualitative, objective or subjective, scale (more difficult ski slopes, stronger drugs, harder sex, better restaurants etc.), even if the subject preferred less intense consumption behaviors in the past. Further, this evolution in behavior also occurs if the budget constraint does not change. We will find endogenous and exogenous theoretical microfoundations for escalation in models of hedonic adaptation, desire for novelty, acquisition of consumption skills, rising aspirations, positional effects, and envy. However, we will also discuss the possibility that the tendency to escalate is a specific innate behavior inherent to human nature. Finally, we will propose a preliminary theoretical formalization of such behavior and indicate the possible implications of taking escalation into adequate consideration.

JEL codes: B52, D11, D90, D91, I31

Keywords

Consumption, consumers' behavior, escalation, hedonic adaptation, consumption skills, envy

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Introduction

Escalation in consumption is a key characteristic of human behavior that has received no attention from economists. The only concept of escalation that economists have studied is the “escalation of commitment.” It refers to a course of action where subjects ignore evidence of adverse outcomes of behaviors into which they have invested resources in the past. Instead of cutting off these behaviors, subjects decide “to commit more effort and resources into making that course of action pay off” (Staw, 1981: 577). On the contrary, economists have overlooked a wholly different and far more important escalation case, namely, escalation in consumption.

This lack of interest might be because escalation has never been considered an autonomous theoretical construct with a role in economic theory. Escalating behaviors have not been recognized as such but have been discussed within other categories, such as addiction, without a thorough understanding of their specificities. Furthermore, escalation appears at odds with traditional economic theory and, particularly, with the assumption of monotonic preferences: another circumstance that might explain its neglect. In any case, independent of the causes, there is almost no reference to escalation in consumption in the economic literature, which implies that this concept lacks a univocal definition and a general theoretical treatment. Thus, the precise aim of this paper is to propose both a definition and a theoretical treatment of escalation.

Broadly speaking, escalation in consumption means subjects become progressively less satisfied by the consumption path they have started on, and escalate to different consumption choices which they had previously discarded to get “more intense sensations,” such as more difficult ski slopes, stronger drugs, harder sex, better restaurants, etc. In general, we can recognize escalation in consumption paths that do not simply ensure subsistence. Many behavioral economics contributors have described these consumption paths, albeit (except for D'Orlando, 2010, 2011) without referring to them as escalation.

Once escalation is defined and understood as being present in several consumption behaviors, a further step is studying its causes, that is, finding its microfoundations. Mainstream economic theory faces significant difficulties in dealing with escalation, even if the concept of decreasing marginal utility can constitute a first attempt for taking into account at least some aspects of the phenomenon. However, to build a better theoretical framework for systematizing escalation, one has to refer to psychology-based behavioral economics principles and models. In particular, within the possible endogenous (i.e. independent of others' behavior) causes of escalation, one can find hedonic adaptation, innovativeness, desire for

novelty, acquisition of consumption skills, and rising aspirations. Possible exogenous causes include positional effects and envy. Although these behavioral economics constructs can contribute to a thorough explanation of the phenomenon, it is also possible to consider escalation as an innate behavior strictly inherent to human nature, rather than as a phenomenon that operationalizes these constructs.

Several counteracting forces can either hamper escalation or even reverse its direction. Higher monetary costs may accompany more intense acts of consumption. There may be higher psychological costs associated with the same acts (due to social stigma, preference for the status quo, conformism, risk aversion, aversion to ostentation, frugality, etc). Subjects may expect to obtain low level of (ex-ante) gross well-being increase through more intense consumption acts (due to physical impediments, the difficulty to acquire the necessary skills for changing, limits to the capability of being envied, etc.). They may also have unrealistic expectations (due to underestimating the costs of more intense consumption acts or overestimating their benefits) that may reverse ex-post escalation into de-escalation. Some of these counteracting forces become more binding as consumption behaviors become more intense. All of them can be of some utility for explaining the possible simultaneous coexistence of less and more intense consumption acts. Ultimately, the actual realization of escalation depends on the relative strength of the forces boosting change vs. the forces hampering it.

In this paper, building on the above-listed principles, we propose a model that outlines a preliminary systematization of escalation in consumption. The most relevant conclusion concerning the model is that subjects can raise their well-being by continuously escalating to higher grade consumption behaviors.

The paper is organized as follows. Section 1 defines escalation and describes the main characteristics of the concept and the main circumstances under which it happens. Section 2 discusses the endogenous causes of escalation by focusing attention on the psychologically founded constructs and theoretical models of hedonic adaptation (habituation), desire for novelty, rising aspirations, and acquisition of consumption skills. Section 3 discusses the exogenous causes of escalation by centering on positional effects and envy while exploring the possibility that escalation is only a consequence of an innate tendency inherent to human nature. This section also describes the characteristics and the role of counteracting forces that can hamper escalation. Section 4 proposes a preliminary model for systematizing escalating behaviors. Lastly, Section 5 sums up the main results and implications of the analysis and concludes the paper.

What is escalation, and when does it occur?

While escalation has been studied only in relation to certain markets and goods (see, e.g. D'Orlando, 2010, 2011), its relevance is rather general, and one can recognize it in a wide variety of consumption behaviors. Escalation occurs when over time people show a growing interest in stronger, harder, faster, riskier goods, substances, or behaviors. The key concept here is "more intense sensations." Escalation is not simply a desire for novelty, that is, a desire for consuming a different good or engaging in different behavior. Instead, it requires a shift from goods, substances, and behaviors that give the consumer "less intense sensations" to those which provide "more intense sensations." People begin engaging in basic consumption behavior within a certain consumption type and are satisfied with this behavior. After a while, they become less satisfied with it, which, as time passes, leaves them with less well-being. Thus, they become more interested in other consumption behaviors, which are stronger, harder, riskier, and faster.

It appears preliminarily necessary to define this discussion's objects, that is, consumption behaviors and consumption types/categories, to discuss this point thoroughly. In doing so, we have neither the aim of proposing a general definition of consumption nor a definition of consumption that is an alternative to the traditional ones. Simply, we need an operational definition that can be useful for better describing escalating behaviors to simplify and clarify the topic as much as possible. Keeping such a goal in mind, we will adopt one of the standard definitions of consumption, that is, the satisfaction of our wants by using goods, services, and even time, that does not necessarily link consumption acts with expenditure.¹ On these bases, we will define "consumption category" or "consumption type" the use of goods and services for a specific activity (skiing, drinking, having sex, etc.). In turn, such an activity can be undertaken in different ways (skiing easy slopes, skiing more difficult slopes, drinking Amarone wine, drinking low-quality wines, making vanilla sex, making extreme sex, etc.). Each different way of undertaking a specific consumption type represents a "consumption behavior." Finally, each consumption behavior is comprised of single "consumption acts" (each time people ski a red slope, they are engaging in a consumption act within the consumption behavior of skiing red slopes; each time people drink a glass of Amarone wine, they are engaging in a consumption act within the consumption behavior of drinking Amarone wine; etc.).

If we assume that, within each consumption category, it is possible to order consumption behaviors based on their intensity, more difficult, better, harder, riskier, stronger consumption behaviors can be considered more intense or higher grade. Escalation occurs when subjects engage in a less

intense, or lower grade, consumption behavior within a consumption category, but then cut off this behavior and undertake a higher-grade, more intense consumption behavior within the same consumption category. It follows that escalation happens for consumption (acts and) behaviors which are of the same or similar kind, that is, belong to the same consumption category, alternative to each other (blue or red ski slopes, Amarone or low-quality wine, harder or softer sexual acts, etc.), and that can be vertically differentiated, that is, consumption behaviors for which a "scale of intensity" can be built. This "scale of intensity" is not necessarily an index of quality; simply put, it classifies consumption behaviors based on some generally agreed cardinal or ordinal measure of intensity, whether continuous (such as the average rating for a restaurant) or discrete (such as the color indicating the difficulty of ski slopes,² or stars or dots to classify restaurants and hotels). This index can be obtained by considering objective, measurable, quantitative characteristics of the good or the behavior (such as horsepower or speed for sports cars). It could also be based on some less objective, but generally agreed, subjective, qualitative characteristics (such as the difficulty of a ski slope), even if, in many cases, the judgment that subjects make on the characteristics of goods or behaviors can even be fully subjective (such as the quality of a certain wine). In all these cases, since a generally agreed scale of intensity exists, can be built, or is at least theoretically conceivable, it is possible to classify the behavior based on such a scale. Inevitably, objective, quantitative classifications will more likely be generally agreed upon by people instead of subjective, qualitative scales. Nonetheless, our world is dominated by quantitative scales based on subjects' judgments of fully subjective qualitative characteristics, such as Michelin stars for restaurants, different colors for ski slopes, dots for wine quality, etc.

The key element, which, as we shall see, makes traditional theoretical analysis incapable of adequately systematizing escalation, is that the subject, facing a choice between less and more "intense" consumption behaviors that are both within her/his budget constraint, initially chooses the less intense option. However, after a while, she/he reverses her/his choice and begins consuming the most intense good or engaging in the most intense behavior. The subject might choose whether to ski green, blue, red, or black slopes and decides to ski green slopes; later, he changes her/his mind, concluding that she/he prefers skiing blue slopes. Later, she/he changes her/his mind again and chooses to ski red slopes, and so on. All these choices have the same cost.³ Meanwhile, the subject could decide whether to consume soft or hard pornography and chooses soft. Later, she/he decides to watch harder pornography. Or in the beginning, she/he might choose to follow a

vegetarian regime, but later escalates to a vegan regime, and even later to a fruitarian regime. Alternative options can also imply different monetary costs. For example, when one begins with average restaurants and later escalates to better ones. The key element is that all the choices fall within the same budget constraint: reversing the choice implies modifying the consumption basket chosen from within the same budget constraint. Put another way, escalating to superior consumption behaviors is not a consequence of an income increase, as stated in traditional theory. In some cases (e.g. escalating to a fruitarian diet), escalation might also cause a reduction in costs. Indeed, the cases where the more intense choice was, in the beginning, outside (i.e. above) the subject's budget constraint can also be considered an example of escalation and explained on the basis of the same approaches, but are far less interesting and can be explained more easily by traditional neoclassical theory. However, we can say that, in this latter case, subjects try to escalate to a higher income to escalate to higher-grade consumption behaviors.

Another characteristic of escalation is that, as consumption behaviors become more extreme (riskier, more difficult, harder, etc.), the number of people who escalate reduces. This might be because some higher-grade behaviors require higher incomes. It is certainly because counteracting forces (such as social stigma or skills requirements) tend to rise as subjects escalate to more intense behaviors. We will discuss this point further in Section 3.4 below.

Several consumption behaviors implicate escalation. Examples include:

- Drug consumers begin consuming soft substances but later escalate to harder ones.
- Diners eat out at restaurants and progressively prefer better restaurants.
- Wine or other alcoholic beverage consumers progressively escalate to better products.
- Skiers initially prefer green slopes, but, when they become more expert, choose more difficult black slopes.
- Consumers of pornography begin with soft before escalating to harder pornography.
- Swinging couples begin with simple exhibitionism and later escalate to harder intercourse with others.
- Vegetarians decide to escalate to raw-veganism, and later to veganism, and even later decide to become fruitarian.
- Nature-lovers progressively escalate to more extreme environmentally friendly behaviors, that is, behaviors generating a smaller ecological footprint.⁴

All these escalation examples may or may not imply different monetary costs. In any case, if a different budget is required, it may also happen that the cost of the newly chosen behavior is smaller than the cost of the previously undertaken behavior (even if, in most cases, escalation implies a higher cost).

Finally, it is important to emphasize that the circumstance that a subject has already escalated to more intense consumption *behaviors* does not imply that she/he no more undertakes less intense consumption *acts*: escalation only implies that a specific consumption behavior (e.g. skiing black slopes) has become prevalent so that the subject most often undertakes consumption acts consistent with this behavior; but she/he can nonetheless occasionally undertake single consumption acts, consistent with less intense consumption behaviors (e.g. after having skied all day black slopes, one can feel tired and can appreciate relaxing a while skiing one single green slope), even if only on an occasional basis. We will discuss in Section 3.4 the possible causes of such mixed behavior.

The endogenous causes of escalation

It is quite difficult to explain escalation if one refers to standard economic theory, both within models based on the old assumption of decreasing marginal utility and within the rational addiction approach. More in general, it is the whole traditional approach based on the idea that it is possible to substitute quantities of a good with quantities of another good leaving utility unchanged that faces great difficulties in dealing with escalation.

It is certainly true that the old traditional concept of decreasing marginal utility might explain why a subject's behavior loses importance for her/him with consumption, and hence why she/he, at a certain time, cuts off that "old" behavior and engages in a different behavior. However, even in terms consistent with the neoclassical approach, where the concept of decreasing marginal utility is born, escalation requires both a reduction of previously undertaken consumption behaviors and an increase in more intense consumption behaviors (within the same consumption type). Decreasing marginal utility might explain the first phenomenon, that is, justify a change, but cannot explain the second, the shift to higher-grade consumption behaviors (within the same consumption type), that is, escalation. Thus, even if it is possible to discuss some aspects of escalation using marginal utility, such a concept cannot explain the whole process alone. Furthermore, hedonic adaptation, but also other psychological principles, must be recalled to furnish a robust theoretical basis for explaining why the marginal utility is decreasing, so that ultimately one has, in any case, to refer to these psychological principles, and not to marginal utility.

For what concerns the rational addiction approach (Becker et al., 1994; Becker and Murphy, 1988), the difficulties arise from the circumstance that rational addiction models can explain why subjects increase their consumption of a good over time, but cannot explain why they suddenly cut off a certain consumption behavior and begin another consumption behavior, above regarding the index of intensity. In general, addiction implies a more intense consumption of the old addictive substance, while escalation implies cutting off the old consumption behavior and starting another consumption behavior. In some cases, the two concepts might be similar, but they are usually quite different.

Finally, and more in general, escalation cannot be properly discussed in terms of the traditional approach based on the idea of the existence of a marginal rate of substitution among goods. Indeed, such an idea implies a two-ways two-goods road and is built within a framework in which: (1) consumption refers to goods and is ultimately intended as purchase of goods; (2) a certain quantity of a good can be substituted with a certain quantity of another good leaving utility unchanged (and vice versa), and the marginal rate of substitution among goods is decreasing with consumed quantity; (3) generally a stable equilibrium where both goods are purchased exists (if we assume a two-goods world); (4) in equilibrium the quantity consumed of both goods depends upon preferences, income and prices, with no explicit role for the intensity of the consumption behavior; (5) time and dynamics are put aside, and the theory focuses on comparative statics and the equilibrium position; (6) if dynamics is somehow introduced into the model, such a process in discrete time would be a two-ways dynamics that ultimately converges toward a two-goods equilibrium in which (excluding corner solutions) the subjects consume two goods replaceable with each other. In the absence of exogenous shocks, subjects will not change their consumption basket anymore, and no dynamics will happen. On the contrary, escalation implies a one-way one-behavior road and is built within a framework in which: (1) escalation refers to consumption behaviors, not to consumption of goods, and consumption acts are defined as the use of goods and services, not as purchase of goods and services; (2) a marginal rate of substitution among consumption behaviors is hardly conceivable, since a behavior cannot be substituted for a plurality of doses of another behavior (talking of three beer drinking behaviors that compensate for drinking high quality wine appears nonsensical, or requires a certain number of strong ad hoc assumptions); (3) the equilibrium can only be conceived as the prevalence of a unique consumption behavior (even if few less intense consumption acts might still be present), whereas in the standard approach subjects buy both goods, and it is certainly not stable, since endogenous forces that tend to drive subjects to different, more intense behaviors exist; (4) the currently undertaken consumption behavior depends mainly

upon the intensity of that consumption behavior, upon the behaviors undertaken by the reference group, and upon the time the subject has spent undertaking that consumption behavior and/or she/he has spent in skill acquisition; (5) the model is dynamic, and time plays a central role in the dynamics (not only because the dynamics happens in time, but mainly because the passage of time generates the dynamics); (6) the dynamics is one-way, from less to more intense behaviors: subjects that have left the old consumption behavior x^1 for the new consumption behavior x^2 might certainly change again, but only for a more intense consumption behavior x^3 , they will not return to x^1 (apart from errors or exogenous shocks, as we will discuss in Section 3.4). So, we have one-way (from lower to higher-grade consumption behaviors) and one-behavior road.

Hence, escalation is a process that shows specific characteristics very different from those shown by the traditional objects of study of traditional theory. As a result, the traditional theory does not seem to be the best interpretative tool for adequately deal with it.

Leaving aside the traditional approach, a number of psychological principles studied by behavioral economics may (at least partially) furnish us with more robust foundations for escalation. These foundations can be either endogenous or exogenous.

Among the endogenous foundations, we find behavioral constructs, such as hedonic adaptation, innovativeness and desire for novelty/variety, accumulation of consumption skills, and rising aspirations. However, hedonic adaptation, innovativeness, and desire for novelty present relevant drawbacks in that they can explain the basis of escalating behaviors, but not escalation itself. In particular, they can explain why boredom arises and why people change; but only in some specific cases they can explain why they change to more intense consumption behaviors.⁵ In other words, they represent the framework within which escalation models run; but, overall, they cannot fully explain the proper act of escalation. The opposite is true for the (controversial) aspiration treadmill, that is, rising aspirations, as well as accumulation of consumption skills, in cases in which more intense behaviors are also more difficult.

However, it may be useful to start from the framework. In particular, we will begin discussing why a subject becomes bored by a consumption behavior (habituation) and why later she/he decides to change.

Hedonic adaptation

The first behavioral economics construct that can help to explain escalation, and in particular, to explain why people become bored by repeating consumption acts within a given consumption behavior is hedonic adaptation.

Subsequent to the seminal contribution by Brickman and Campbell (1971), recent theoretical contributions on hedonic adaptation in economics include Clark and Oswald (1994), Clark (1999), Di Tella et al. (2003), Clark et al. (2004), Stutzer (2004), Layard (2005), Oswald and Powdthavee (2006), D'Orlando and Ferrante (2008, 2009), and D'Orlando et al. (2011).

Hedonic adaptation is founded on the empirical finding that people adapt to life events: “[I]f life events such as marriage, loss of a job, and serious injury may deflect a person above or below [her/his] setpoint, but in time hedonic adaptation will return an individual to the initial setpoint” (Easterlin, 2003: 1). In the same way, undertaking a different consumption behavior increases well-being in the first stage; but, later, the consumer suffers habituation, and her/his well-being returns to the baseline level. Thus, if a subject aims to remain above the baseline, she/he has to change the behavior that she/he undertakes.

The existence of a baseline level of well-being toward which actual well-being tends to return is a crucial characteristic of the hedonic adaptation approach. Subsequent to the controversial paper by Brickman et al. (1978), strong empirical evidence on hedonic adaptation has been reported in psychological journals (see, e.g. Diener et al., 1999; Frederick and Loewenstein, 1999; Oswald and Powdthavee, 2006), even if it is still disputed whether or not adaptation is complete or incomplete, that is, whether life shocks have a permanent effect on the long-period level of agents' well-being: some authors maintain that, as subjects can approach but never attain their baseline level of well-being, an irreversible loss would persist for negative life events and an irreversible gain for positive life events.⁶

Innovativeness, desire for novelty, and accumulation of consumption skills

Other behavioral economics constructs that can help explain escalation are innovativeness and desire for novelty or variety (see, e.g. Bianchi, 2002; Chai, 2012; Hirschman, 1980). The consumer becomes bored with the behavior that she/he has undertaken for a certain period and searches for different ones. In the hedonic adaptation approach, the emphasis is on reasons that cause a subject to cut off the “old” consumption behavior due to rising boredom. The emphasis here is on the reasons that cause a subject to change to the “new” behavior.

In particular, innovativeness is a behavioral construct that has received significant attention in the literature (Robertson, 1971; Rogers and Shoemaker, 1971; Midgley, 1976; Midgley and Dowling, 1978). This concept represents the subject's willingness and ability to adopt novel goods, services, or ideas before or independent of other members of her/his social

system. Since a consuming population must be innovative, innovativeness is necessary to make an otherwise static marketplace dynamic. Indeed, if nobody were willing to accept and purchase novel goods or services, "consumer behavior would consist of a series of routinized buying responses to a static set of products" (Hirschman, 1980: 283). It follows that, without innovativeness, escalation would only be possible through the imitation of others' behaviors and inevitably tend toward zero in the long run, when all others' behaviors are imitated.

Regarding the possible causes of innovativeness, while some studies assume that this attitude is given for each individual in different degrees, thus considering it a genetic constant, others correlated it to social variables, such as education, occupational status, and urbanization (Rogers and Shoemaker, 1971).

However, innovativeness is only a prerequisite for escalation, a necessary but not sufficient condition, since it can explain the desire for change, without which escalation cannot exist. It cannot explain why a skier decides to escalate to more difficult slopes and not, for example, why she/he decides to leave skiing for skateboarding.

Novelty and variety seeking are similar behavioral constructs that represent the propensity to seek out new and potentially discrepant information or to vary the choice between already known stimuli (Acker and McReynolds, 1967; Cattell, 1975; Farley and Farley, 1967; McClelland, 1955; Maddi, 1961; Rogers, 1962). Some reasons that might explain why individuals are willing to seek information have been discussed in the literature on this theme (Hirschman, 1980) and are particularly important to explaining escalation. In this respect, these behaviors' first aim is to store data that can become useful for future consumption behaviors, even though, right now, they are not, since future consumption problems are unknown today, but likely to occur tomorrow. A second purpose is to collect data to improve consumption performances, that is, to accumulate consumption skills (e.g. the ability to ski).

Indeed, for certain goods or behaviors, through the continuous engagement in specific consumption acts, people (i) acquire information on consumption alternatives that they did not possess when they made their first choice, and/or (ii) acquire the skills necessary to engage in different, more intense consumption behaviors, and/or (iii) acquire the skills necessary to extract more well-being from these behaviors. Hence, skills are accumulated through the past undertaking of less intense consumption behaviors.⁷ When people become able to undertake the new consumption behavior and know that they can extract more well-being from it, rather than from the old, they change.⁸

Therefore, from such a perspective, the desire for variety/novelty arises, since new information gives us different (greater) expectations on well-being deriving from alternative choices and/or because of an increase in the well-being derived from alternative choices, and not from a reduction in the well-being derived from current choices, as in the hedonic adaptation scenario. Put another way, we can justify why a subject chose x^1 instead of x^2 based on a lack of information about the capacity of x^2 to enhance well-being and/or on the impossibility of extracting enough well-being from consuming x^2 (or even to undertake that behavior), due to insufficient training. More information and/or more training will reverse the contribution of consumption behaviors to well-being and reverse the choice.

In the particular case where more intense consumption behaviors also require more skills (i.e. if they are more difficult to undertake, as in black and red slopes), skill accumulation can explain escalation; otherwise, it can only explain change.

The aspiration treadmill

The so-called “aspiration treadmill,” first proposed by Kahneman (1999), can be added to the list of the possible endogenous causes of escalation. This construct is quite controversial since later, Kahneman himself (Kahneman, 2008) found empirical proof of the treadmill was inconclusive. However, we use the treadmill for the (different) scope of explaining escalation. Since this choice also requires a different definition of the construct, its original version’s limits appear less relevant.

The aspiration treadmill was first proposed to explain why people in the richest countries do not claim to be much more satisfied than people in poorer countries. According to Kahneman (2008: 1): “Californians are accustomed to a pleasant life and come to expect more pleasure than the unfortunate residents of other states. Because they have a high standard for what a life should be, Californians are not more satisfied than others, although they are actually happier.” In other words, better life conditions modify what one considers to be essential for a good life, increasing one’s aspirations: if the subject finally succeeds in winning a ski race, she/he will then want to win her/his country’s skiing championship, a target that, until the day before, the subject did not even consider to be a possibility; when she/he finally wins her/his country championship, she/he next wants to win the world championship.

Even if, as we said above, the empirical data seem incapable of justifying the use of the aspiration treadmill for discussing the happiness paradox, that is, for the original scope pursued by Kahneman, the treadmill can be used for a different scope, namely, to justify escalation. It could be argued that, in

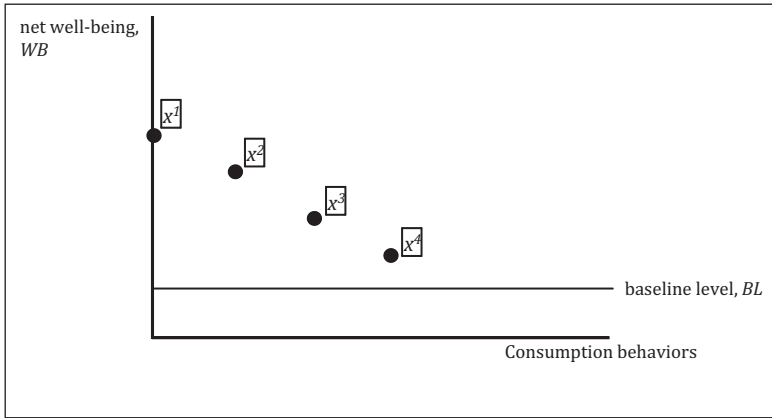


Figure 1. Alternative consumption behaviors.

the beginning, a subject might consider some consumption behavior to be too difficult, or too intense, for her/him to undertake. She/he has just learned to ski and is not even thinking about winning (or even participating in) the world ski championship. But when the subject achieves some small successes, she/he begins to expand her/his aspirations, to the point where consumption behaviors, which she/he previously considered to be outside her/his choice set, have now entered this set. Furthermore, the aspiration treadmill reduces the well-being derived from low-level consumption behaviors when one increases her/his aspirations.

Putting together the different approaches

Altogether, hedonic adaptation, innovativeness, novelty and variety seeking, and accumulating consumption skills⁹ can explain escalation as follows. At time 0, the subject makes a choice that she/he considers preferable based on the combination of information and skills that she/he possesses. If the options are those represented in Figure 1 (x^1 , x^2 , x^3 , and x^4), the best choice is to undertake the behavior x^1 which gives the consumer the highest level of net well-being (we shall formalize this choice in Section 4 below). Thus, the subject chooses x^1 .

Immediately, a habituation process begins that reduces well-being derived from the initial choice. Meanwhile, the accumulation of new information and consumption skills, through actual consumption, increases the expected well-being derived from the alternative choices (and/or makes the subject capable of undertaking these alternative consumption behaviors). Thus, the subject changes. The process is described in the first graph of

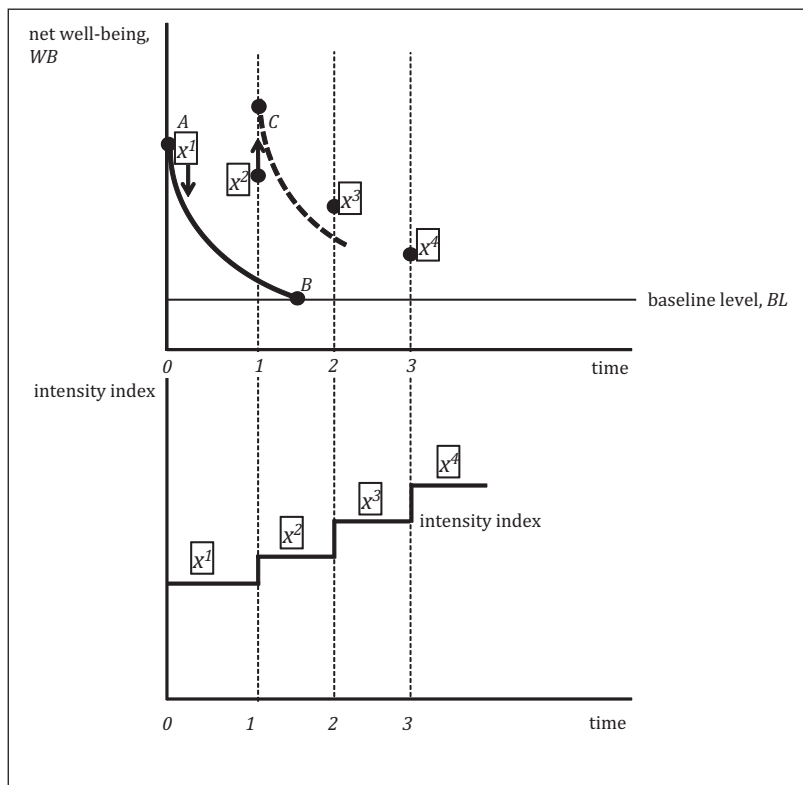


Figure 2. The habituation process.

Figure 2. At the beginning (Point A), the consumer is satisfied by the behavior x^1 that she/he is undertaking, which is capable of pushing her/him above the baseline level of well-being and also above the level of well-being expected from the alternatives. Later, however, she/he becomes bored by x^1 and suffers from habituation, such that well-being slowly returns to the baseline (Point B). In the meantime, she/he acquires information on the alternatives and accumulates consumption skills, which increase well-being derived from these alternatives, for example, x^2 .¹⁰ For the consumer, it is hence more advantageous to change undertaking a different behavior, in this case the behavior x^2 , capable of pushing again her/his well-being above the baseline and above the well-being that she/he can obtain when consuming x^1 (Point C):¹¹ skiing blue slopes instead of green, driving faster cars, watching harder pornography, all behaviors she/he could also undertake at time 0, but that she/he had discarded. However, as habituation starts over again,

well-being that can be extracted from x^2 reduces, whereas information and skill accumulation increases the well-being that one expects she/he can extract from the alternatives, so the subject will have to change again, and so on, without there ever being an end. The only way in which a consumer can steadily remain above the baseline level of well-being is to change the behavior she/he undertakes continuously.

In general, economic theory can explain the shift from consuming x^1 to consuming x^2 , in the case of a consumer who had previously preferred x^1 to x^2 , only based on a change in the relative cost or relative contribution to the well-being of the two choices. If the cost remains unchanged, the consumer will shift from x^1 to x^2 only if the relative contribution to the well-being of x^1 falls compared to that of x^2 (or, but it is the same thing if the relative contribution to the well-being of x^2 rises compared to that of x^1). This is exactly what happens in the above-described scenario: consumption generates habituation, which reduces the relative contribution to well-being of x^1 ; skill accumulation makes the consumer capable of (consuming x^2 and) extracting more well-being from consuming x^2 . As a result, consumers' choice to shift to consuming x^2 , whose relative contribution to well-being has increased, becomes the best choice.

Therefore, escalation is a complex phenomenon which can be explained by combining theoretical explanations of why people lose interest in less intense consumption behaviors (decreasing marginal utility, innovativeness, desire for novelty, hedonic adaptation, and habituation) with theoretical explanations of why people, over time, increase the well-being they can extract from more intense consumption behaviors (skill accumulation through past consumption).

But, why do people escalate, rather than simply change? Furthermore, why do people initially choose x^1 and later escalate to the more intense consumption behavior x^2 also in situations where: (i) they know, from the beginning, the well-being furnished by x^2 ; (ii) they possess enough skills to extract this well-being; and (iii) more intense consumption behaviors are *not* more difficult?¹² One explanation may be proposed by adding the aspiration treadmill to our analysis (more general explanations will require discussing the exogenous causes of escalation).

Once rising aspirations are given full consideration, we must acknowledge the possibility that, suddenly, due to the success derived from undertaking the "old" consumption behavior, within subjects' set of possible choices there appear to be other higher-level alternatives that they had previously discarded as being too extreme. These alternatives are characterized by higher levels of intensity and higher well-being since, by definition, rising aspirations implies wanting "more." As such, escalation can be the result.

It is certainly possible to include rising aspirations within the already discussed concept of skill accumulation and information acquisition; but, we believe that such a choice would not allow the specificity of the process to be grasped: the subject knew, from the first moment, the existence of this option (e.g. harder sexual acts) and the attached level of well-being, as well as that she/he was fully capable of undertaking such a behavior. Hence, it is not a problem of a lack of skills or information. It is a problem of judgment: she/he discarded the consumption act considered too extreme. Later, after having engaged in similar but less extreme (e.g. sexual) acts, she/he feels ready to include the new consumption behavior within her/his choice set.

However, independent of the possibility of including the aspiration treadmill within the skill/information accumulation approach, we know that this theoretical construct is quite controversial. Thus, we have to evaluate whether other, possibly more robust, causes for escalation exist. Indeed, these more robust causes exist and can be found in some exogenous forces. These exogenous determinants' key roles are reducing the well-being that one can extract from less intense consumption behaviors and increasing the well-being one can extract from more intense consumption behaviors, leading to true escalation and not simply change.

The exogenous causes of escalation: Envy, positional effects, and the innate tendency to escalate

In many cases, consumption behaviors are influenced by consumption choices made by others. This is also true for escalating consumption behaviors. In particular, positional effects and envy (i.e. the escalation process of others) can be considered to be among the exogenous causes of escalation.

Positional effects and envy

When discussing the possibility that social position or, more generally, social interaction plays a role in escalation, the theoretical interest inevitably focuses on concepts such as envy, positional effects, preferences for status, conspicuous consumption, etc.¹³ In these cases, subjects' well-being depends upon their position in a somewhat defined hierarchy and hence also on others' behaviors, income, or wealth. Although most studies emphasize the well-being losses and negative externalities derived from these positional effects (see, e.g. Frank, 2005), we here discuss the possibility that these concepts can also increase well-being by generating escalation. We discuss, in particular, envy.

According to Parrott and Smith (1993: 906), envy “occurs when a person lacks another’s superior quality, achievement, or possession and either desires it or wishes that the other lacked it” (Parrott and Smith 1993: 906).¹⁴ The subject could hence try to level the difference between her/him and the other in two ways: by making efforts to reach the other position (constructive or benign or white envy) or to make the other lose her/his possession (disruptive or malicious or black envy) (Belk, 1985; Corneo and Jeanne, 1999; Grolleau et al., 2006). Only the first kind of response to envy can boost escalation, that is, change toward higher-level consumption behaviors.

Envy could also foster escalation in the case of conspicuous consumption, positional consumption, or ostentatious behavior, that is, when people increase consumption or chose particular behaviors because they *desire to be envied* (or admired or esteemed). For instance, Veblen ([1899] 1970: 32) considers the “desire to excel in pecuniary standing and so gain the esteem and envy of one’s fellow-men” one of the main “incentives to acquisition and accumulation.” No relevant difference distinguishes this latter case, the desire to be envied, which we can name as *active envy*, from the standard case of suffering from *passive envy*, that is, envying others’ consumption behaviors. In both cases, envy might reduce well-being derived from the currently undertaken consumption behaviors and increase well-being derived from the alternatives.

Positional effects are particularly strong for some subjects and some consumption behaviors, and far less relevant for other subjects and other consumption behaviors: swinger couples can represent the reference group for someone, in particular the males of other couples, and can generate strong aversion in someone else; older kids/girls who smoke or take drugs can be the reference group for younger girls/kids, independently of social stigma, whereas for others social stigma is crucial; good skiers can be envied by bad skiers but can generate no envy in non-skiers; and so on. We will discuss the point in-depth in Section 3.4 below.

Generally speaking, envy and positional effects can affect escalation in the following ways:

- (i) They reduce (and/or accelerate the reduction of) the well-being generated by the currently undertaken consumption behavior if different from that undertaken by the reference subject (or group), or if this behavior is recognized as no more capable of generating envy on others.
- (ii) They increase (and/or accelerate the increase of) the well-being generated by the alternative consumption behavior if this alternative is that undertaken by the reference subject (or group) or if this alternative is recognized as capable of generating envy in others.

- (iii) They slow down habituation if the actual consumption behavior is of a higher-than-average level, as long as others do not succeed in escalating to it.
- (iv) They allow the spread of information from the reference subject (or groups) to the envious subject (or to the subject who wants to be envied) on consumption behaviors that she/he had previously discarded as incapable of generating enough well-being, independently of the circumstance that these behaviors can generate active or passive envy, and that now she/he has re-evaluated.

Escalation as an innate human behavior

It remains for us to discuss the possibility that escalation is a specific innate behavior inherent to human nature instead of resulting from a combination of several psychological constructs.

Indeed, this might be the case if escalation were a process that could also happen in the absence of the manifestation of the psychological principles discussed in these two sections. But the very absence of empirical examples of escalation that conform to the above requirements leads to the conclusion that escalation cannot be considered an innate behavior inherent to human nature; on the contrary, it is a consequence of several psychological principles, especially envy. In particular, it would be difficult to deny that escalation intended as an innate behavior would depend on two main motivations: self-esteem and active envy. A subject might wish to escalate to higher-intensity consumption behaviors, since she/he wants to demonstrate her/his superiority over other people, that is, she/he wants to be envied. Conversely, the subject might wish to escalate to higher-intensity consumption behaviors since she/he wants to demonstrate to her/himself that she/he is capable of undertaking a higher-intensity consumption behavior for self-esteem, as one might say, to generate envy over her/himself. Inevitably, the first motivation, that is, generating active envy, seems more commonplace than the second, that is, generating self-esteem. In any case, self-esteem and active envy would ultimately represent the microeconomic foundations for the concept of escalation intended as an innate behavior inherent to human nature, so that the latter loses relevance.

Summing up: all the possible causes of escalation

Summing up, we can divide the causes of escalation into three main categories: those that reduce the net well-being¹⁵ derived from currently undertaken consumption behavior; those that increase the net well-being derived

from higher-intensity alternative consumption behaviors; and those that can generate escalation alone (and, furthermore, if added to other causes).

Among the theoretical constructs capable of reducing the net well-being arising from the currently undertaken consumption behavior, we can find: (i) boredom caused by hedonic adaptation; (ii) passive envy from knowing the reference subject or group undertakes a different consumption behavior. *Ceteris paribus*, these circumstances can modify consumption behaviors, a prerequisite for escalation, but cannot generate escalation alone.

Among the theoretical constructs capable of increasing the well-being arising from alternative, more intense consumption behaviors, we can find: (i) accumulation of consumption skills that allows the subject to extract more well-being from previously discarded consumption choices; (ii) accumulation of consumption skills that allow the subject to undertake a consumption behavior that she/he could not undertake previously due to insufficient training; (iii) novelty and variety seeking that allows the subject to acquire more information on different consumption choices, thus (in the case of good news) increasing the expected well-being coming from alternative consumption behaviors—in this case, the well-being associated with the alternatives does not change over time, it was the subject that, in the beginning, suffered for incomplete information. *Ceteris paribus*, also these circumstances can generate a modification in consumption behaviors, a prerequisite for escalation, but not escalation alone.

Finally, among the theoretical constructs that can generate escalation alone, and furthermore if added to other constructs, we find: (i) boredom caused by hedonic adaptation in the cases in which all less intense consumption behaviors are already included in the actually undertaken consumption behavior, so that only higher-intensity behaviors remain; (ii) accumulation of consumption skills in the case in which more intense consumption behaviors are also more difficult to be undertaken, that allows the subject to consume a good or undertake a consumption behavior which she/he could previously not consume or undertake, due to insufficient training; (iii) rising aspirations, that allow the subject to include, within her/his choice set, consumption behaviors that, before undertaking the current consumption behavior, she/he considered too extreme and outside this set; (iv) passive envy caused by the acknowledgment that the reference subject or group consumes a specific good or undertakes a specific behavior, which, in the beginning, the subject had considered inadequate, but that now she/he has re-evaluated and considers higher in intensity due to the circumstance that the reference subject or group consumes or undertakes it—in this case, the well-being associated with the alternatives has changed over time and, in the beginning, the subject did not suffer from incomplete information; (v)

the desire to generate active envy (or a natural tendency to escalate to generate active envy); (vi) the desire to generate self-esteem (or a natural tendency to escalate to generate self-esteem).

The counteracting forces

Indeed, the process of escalation cannot be taken for granted, since there are counteracting forces that can hamper or even reverse it. These counteracting forces act in three different ways: (i) they may hamper or slow down the process of escalation; (ii) they may fully reverse the process of escalation, generating a de-escalating behavior; (iii) they may allow people to escalate, but later, once subjects have engaged in the more intense consumption behavior for a while, they might induce people to go back to the previous, less intense consumption behavior. Since de-escalation processes require a framework different from the one used here, implying a set of behavioral forces alternative compared to those inducing escalation (even if inevitably similar to those hampering escalation), here we will briefly discuss only the forces that hamper escalation and the forces that can reverse escalation after it has occurred and will not discuss de-escalation.

Several elements can hamper or slow down the escalation process. These elements are mainly (but not exclusively) of two types: those forces that impact the monetary and/or psychological costs of escalation and those that impact the expected gross well-being deriving from escalation.¹⁶

The traditional theory, that is, orthodox microeconomics, has thoroughly discussed the role of monetary costs and budget constraints in consumption choices, even without referring to escalation. Nothing relevant changes in this case: engaging in higher-grade, more intense consumption behaviors might require a higher income, since these acts can have a higher monetary cost, or might require higher expenses for the process of skill accumulation. Hence, escalating consumption behaviors might fall outside the person's budget constraint or more likely the cost increase necessary for escalating might be high enough to cause either a reduction of net well-being deriving from more intense consumption behaviors, so that other (different) choices become preferable, or even a negative net well-being increase, cutting escalation off. In these cases, people would like to escalate since they would like to engage in higher-grade, more intense consumption behaviors, but the budget constraint is binding and they, simply cannot, or prefer not to, escalate. A monetary bound for certain types of consumption behaviors does not imply that escalation, in general, is impossible. Only those too expensive behaviors get discarded; nothing prevents subjects from escalating to other (different), more intense consumption behaviors, if they exist.

Psychological costs play a similar role, reducing the net well-being deriving from escalation by raising its non-monetary costs. Among these costs, we find social stigma (many more intense consumption behaviors—for example, harder sex or stronger drugs, but also buying luxury cars or going vegan—can generate social stigma or at least stigma in some social group), preference for the status quo, conformism and risk aversion (that increase the ex-ante expected psychological costs of change, even if they do not necessarily affect the ex-post realized costs), frugality and aversion to ostentation (that might generate discomfort if higher-grade consumption behaviors are undertaken and become visible to others).

The net well-being increase caused by escalation can also be low due to a low level of (ex-ante) gross well-being increase expected from undertaking more intense consumption behaviors. Among the elements that can reduce the expected increase in gross well-being, we find:

- Physical impediments (subjects may be willing to engage in more intense consumption behaviors, but they are physically incapable of extracting enough well-being from these activities, whatever their skill accumulation is).
- The inability to accumulate new skills (subjects may be incapable of learning and hence to increase well-being they can extract from more intense consumption behaviors).
- Particular reasons that do not cause others to feel envious.
- The unwillingness to generate envy and/or the scarce impact of being envied on escalating subjects' well-being.

Thus, the actual realization of escalation, and/or its speed, depends upon which forces (and principles) prevail: those that boost escalation or those that hamper it. In any case, since the habituation process will go on anyway (in some cases together with skill accumulation), the status quo will remain the preferred choice only if antagonistic forces rise at the same or greater speed as the habituation/skill accumulation process. Otherwise, escalation will nonetheless happen.

Finally, the forces that can reverse escalation ex-post, that is, after it has occurred. In these circumstances, the main forces capable of reversing escalation are error, that is, wrong expectations, and exogenous shocks. In the first case, subjects made previous choices underestimating the costs of more intense consumption behaviors or overestimating their benefits. After realizing they made an error, they now return to the previous consumption behavior. In the second case, there might be a change in the reference group's behavior, such as a change in income, prices, physical conditions, culture, etc. that modifies today's payoffs of formerly undertaken choices.

All the above considerations can also help explain why some people do not escalate, why few people engage in the highest grade, that is, the most intense consumption behaviors, and why it is possible the simultaneous coexistence of lower and higher-grade consumption acts.

The circumstances in which some people do not escalate, and others escalate, that is, the existence of different propensities to escalate among different subjects, can be explained by the different impact of the counter-acting forces: apart from the possibility that higher-grade consumption behaviors require a higher income, a circumstance that inevitably prevents someone from escalating, people, in general, have different levels of risk aversion, different ability to learn and to acquire skills, different levels of conformism, different physical abilities, more or less pessimistic expectations, suffer in different ways social stigma and have different feelings toward active and passive envy. So, for some subjects, the expected costs of escalation exceed expected well-being increases. For other subjects, the opposite is true. Some subjects escalate, others do not. And the (expected) net well-being increase seems to decrease as consumption behaviors become more extreme, so few subjects engage in the highest-grade consumption behaviors. The reduced propensity to escalate depends upon the circumstance that some antagonistic forces become stronger as consumption behaviors become more extreme: monetary costs in many cases rise (e.g. higher quality wines cost more than lower quality wines), as well as risk (e.g. skiing a black slope is riskier than skiing a green slope), physical requirements (e.g. freestyle skiing requires physical capabilities that green or red slopes do not require), social stigma (e.g. exhibitionism generates less social stigma than cuckolding), etc.

Similar considerations can be proposed for the simultaneous coexistence in the same subject and time of less and more intense consumption acts. Indeed, a subject that has escalated to a higher-grade consumption behavior can easily engage, at the same time, in (few) less intense consumption acts belonging to a less intense consumption behavior, and in (many) more intense consumption acts belonging to the actually undertaken more intense consumption behavior (such as skiing both black and blue slopes the same day or consuming marijuana 1 day and stronger drugs another day). Such coexistence is possible only for a limited set of consumption behaviors, since in many cases escalation is strongly unidirectional and, apart from the possibility of an ex-ante error in expectations, cannot be reversed: vegans do not eat meat 1 day a week, consumers of hardcore pornography never return to softcore pornography, nature-lovers do not feel free to pollute a day a week, etc. However, in some cases, the coexistence of less and more intense consumption acts do exist. Apart from the (relevant) circumstance

that engaging in less intense consumption acts, after having escalated to more intense behaviors, can represent a strategy for slowing down the hedonic adaptation process, the coexistence can be the result of the short-term, temporary operation of (some) counteracting forces hampering escalation. For example, subjects might ski some blue slopes at the end of a long skiing day because they are tired (temporary physical impediments), subjects meeting with their parents might not want them to know what they do with their friends (social stigma), subjects might be temporarily out of money (budget constraint), subjects might occasionally hang out with friends that belong to different social groups and hence have different value systems (inability to generate envy), etc. In these cases, unlike what happens when the counteracting forces are persistent, deviations from escalation are short-term phenomena that do not hamper the effectiveness of the escalation process. The more intense consumption behavior is prevalent, so most consumption acts belong to this behavior, but few single consumption acts belonging to less intense consumption behaviors are occasionally possible.

A preliminary formalization

Within the framework depicted above, escalation can be formalized as follows.

Suppose that, at $t=0$, the subject enjoys a level of well-being, which corresponds to her/his baseline level BL .¹⁷ She/he now has to decide whether or not to undertake a consumption behavior within a specific consumption category/ type. The subject's time horizon is T , that is, she/he thinks that she/he will be able to undertake the behavior, that is, undertake the consumption acts of that behavior, for a maximum of T days (or years, or whatever time unit is involved). T might also correspond to the subject's entire life expectancy; but, in general, it will be a smaller amount of time, mostly depending on the kind of consumption behavior she/he is undertaking. We will assume that consumption behavior characteristics uniquely determine T . If x^l is the consumption behavior, we will also assume that either the subject pays the cost for all consumption acts x_t^l belonging to x^l at time $t=1$ and continuously undertakes that consumption behavior for the entire time from $t=1$ to Tx^l (where Tx^l is the time horizon for behavior x^l), or the subject repeats the payment of the cost for each consumption act x_t^l belonging to x^l in each period from $t=1$ to Tx^l and continuously undertakes the consumption behavior for the entire time span from $t=1$ to Tx^l . The cost includes monetary, psychological and opportunity costs. Furthermore, we suppose that the subject *considers* undertaking behavior x^l , to be incapable

of generating (negative or positive) future effects for her/his levels of well-being from the end of the time horizon onward.

A subject will undertake the consumption behavior x^l , if by doing so she/he will increase her/his net well-being for the entire time and if this increase is greater than what she/he can obtain by undertaking a different consumption behavior of the same consumption type of, but alternative to, x^l (blue or red ski slopes), that is, if

$$\sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} + \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} WBx_t^l - \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} Cx_t^l > \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} \quad (1)$$

and

$$\begin{aligned} & \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} + \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} WBx_t^l \\ & - \sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} Cx_t^l > \sum_{t=1}^{Tx^i} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} + \\ & + \sum_{t=1}^{Tx^i} \frac{1}{(1+\gamma)^{t-1}} WBx_t^i - \sum_{t=1}^{Tx^i} \frac{1}{(1+\gamma)^{t-1}} Cx_t^i \quad \forall i \end{aligned} \quad (2)$$

In relations (1) and (2), x^i , with $\{i: 0 < i \leq N\}$, represents N different consumption behaviors, of the same consumption type but alternatives to each

other; $\sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} \overline{BL}$ is the (discounted) sum of gross well-being that the

consumer assumes she/he will get independently of consuming x^i for the

entire time from $t=1$ to Tx^1 ; $\sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} WBx_t^l$ is the (discounted) sum of

gross well-being that the consumer assumes she/he will get from each consumption act x_t^l belonging to x^l in each of the Tx^1 units of time if she/he

undertakes the behavior x^l ; $\sum_{t=1}^{Tx^1} \frac{1}{(1+\gamma)^{t-1}} Cx_t^l$ is the (discounted) sum of the

costs that the consumer will have to pay in each of the Tx^1 units of the time,

if she/he undertakes the behavior x^l (in the case of an ex-ante unique payment, $Cx_{t=1}^l = \overline{Cx}^l$ and $Cx_{t \neq 1}^l = 0 \forall t$), with these costs including monetary, psychological and opportunity costs; Tx^1 is the time horizon for behavior x^l ;

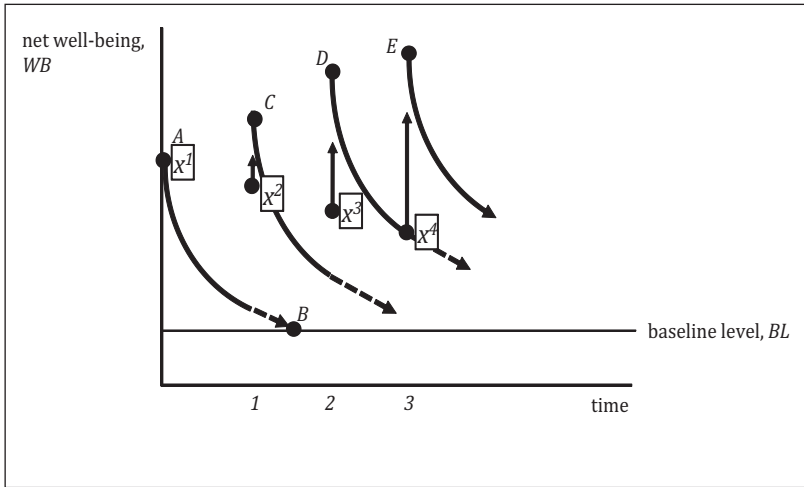


Figure 3. The dynamics.

finally, $\frac{1}{(1+\gamma)^{t-1}}$ is the discount factor (γ is the subjective time preference: the greater γ is, the more the consumer prefers current to future consumption). The same holds for any x^i .

A naïve consumer will assume that, in each of the Tx^i units of the time span, the well-being WBx^i_t that she/he gets from each consumption act x^i_t will be constant, whereas a fully rational consumer will know that the well-being will decrease over time due to hedonic adaptation and passive envy. A fully rational consumer will also know that $WBx^{i \neq 1}_t$ (with $\{i : 1 < i \leq N\}$) will change in different ways, due to skill accumulation, envy, etc. For the sake of simplicity, we will assume that consumers are naïve.¹⁸

Thus, if (1) and (2) hold, the consumer will undertake the behavior x^l . By undertaking this behavior, the consumer's well-being rises above its baseline level. For example, on the first day of consumption ($t=1$), her/his net well-being $NWBx^1_{t=1} = \overline{BL} + WBx^1_{t=1} - Cx^1_{t=1}$ may correspond to Point A in Figure 3. Now, a dynamic process of habituation starts. Slowly, the novelty of the behavior disappears, and her/his net well-being begins declining. The following difference equation may represent the dynamics of this decline:

$$NWBx^1_t = NWBx^1_{t-1} - \lambda^1_t \cdot \alpha^1_t \cdot (NWBx^1_{t-1} - \overline{BL}) \tag{3}$$

With $\{t : 1 < t \leq Tx1\}$; $\overline{NWBx^1}_{t=1} = \overline{BL} + WBx^1_{t=1} - Cx^1_{t=1}$; $0 < \alpha^1_t < 1$ and $\alpha^1_t = 1$ if $NWBx^1_{t-1} \leq \overline{BL} + \varepsilon$, and ε close to zero, to account for the circumstance that people consider the baseline level of well-being to be

reached when they are close enough to it so that the dynamics is not asymptotic; $\lambda_t^1 = 1$ each time unit (e.g. day) the consumer undertakes the behavior, and $\lambda_t^1 = 0$ each time unit she/he does not undertake the behavior. Finally, $NWBx_t^1$ represents net well-being in t . For the sake of simplicity, let us assume that our representative consumer undertakes the behavior every time unit, such that $\lambda_t^1 = 1 \forall t$. In such a framework, in each time unit t , the consumer's net well-being is given by the previous time unit's net well-being, derived from consumption act, minus the progressive loss of well-being derived from habituation $\alpha_t^1 \cdot (NWBx_{t-1}^1 - \overline{BL})$. Over time, the well-being tends toward its baseline level \overline{BL} .

It is fully possible that such a dynamics ends abruptly. The subject can fall instantaneously to the baseline level of well-being due to social interaction, that is, envy: yesterday, our neighbor bought an incredibly fast new car, and we were immediately dissatisfied with our fantastic but slower car. Exogenous shocks are indeed quite common if we add envy to the model. In any case, even if we do not consider shocks, inevitably the well-being that a subject can extract from x^1 falls toward the baseline, and will, sooner or later, reach it.

However, as we have discussed in the preceding sections, in the meantime, habituation occurs alongside training, skill accumulation, increasing aspirations, etc. Thus, the subject becomes progressively aware of the possibility of extracting more well-being from more intense choices, which had been previously discarded, for example, x^2 . The following difference equation might represent the dynamics:¹⁹

$$WBx_t^2 = WBx_{t-1}^2 + \lambda_t^1 \cdot \beta_t^2 \cdot WBx_{t-1}^2 \quad (4)$$

Also in this case a positive shock (envy, again) might suddenly enhance well-being and jeopardize the dynamics.

In the absence of exogenous shocks, if well-being derived from the less intense behavior (x^1) has diminished, and well-being derived from the more intense behavior (x^2) has increased, it can easily happen that, at a certain time (Z), before habituation has carried well-being to the baseline,

$$\begin{aligned} & \sum_{t=1}^{Tx2} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} + \sum_{t=1}^{Tx2} \frac{1}{(1+\gamma)^{t-1}} WBx_t^2 \\ & - \sum_{t=1}^{Tx2} \frac{1}{(1+\gamma)^{t-1}} Cx_t^2 > \sum_{t=Z}^{Tx1} \frac{1}{(1+\gamma)^{t-1}} \overline{BL} + \\ & + \sum_{t=Z}^{Tx1} \frac{1}{(1+\gamma)^{t-1}} WBx_t^1 - \sum_{t=Z}^{Tx1} \frac{1}{(1+\gamma)^{t-1}} Cx_t^1 \end{aligned} \quad (5)$$

In such a circumstance, a rational consumer will find it convenient to shift from the old behavior (x^1) to the more intense new behavior (x^2), that is, escalate. She/he can increase intertemporal well-being by undertaking the more intense behavior, in turn reaching Point *C* in Figure 3.²⁰

Meanwhile, an ultra-naïve consumer who considers only her/his short-term well-being will escalate, in this case, when:

$$\overline{BL} + WBx_t^2 - Cx_t^2 > \overline{BL} + WBx_t^1 - Cx_t^1 \quad (6)$$

On the contrary, when undertaking the “old” behavior, net well-being would have continued its descending path toward Point *B*.

However, habituation also applies to this second consumption behavior, meaning that a new dynamic starts from *C*. The consumer once again begins falling back toward the baseline level and so on, consumption behavior after consumption behavior.

Based on the above considerations, a crucial implication emerges. By escalating, the subjects raise their intertemporal well-being. For a subject, it is hence advantageous to begin by undertaking the less intense consumption behavior; then, when hedonic adaptation and envy have reduced well-being derived from less intense consumption behaviors, and skill accumulation, envy, and rising aspirations have enhanced the well-being derived from more intense consumption behaviors, there is a shift to more intense consumption behaviors. As a consequence, by escalating, she/he raises her/his intertemporal well-being. Any different consumption path would generate less aggregate well-being.

However, the number of disposable higher-level accessible consumption alternatives has a relevant impact on consumers’ behavior. Indeed, in the presence of a great number of higher-level consumption alternatives, a subject’s best behavior would be to escalate as soon as Condition 5 is realized. On the contrary, when accessible alternatives are small in number, it is convenient to leave habituation to do its job and reach the baseline level before escalating. The point is clarified in Figure 4 below, in which the assumption is made that there are only four possible consumption behaviors within the subject’s life expectancy time span: x^1 , x^2 , x^3 , and x^4 . In “Scenario 1,” the subject leaves escalation to do its job and reaches the baseline before escalating. In “Scenario 2,” the subject escalates as soon as Condition 5 is realized, that is, as soon as the sum of (discounted) well-being deriving from consumption behavior x^{i+1} becomes greater than the sum of (discounted) well-being deriving from consumption behavior x^i . It is immediately clear that the sum of the areas representing cumulative well-being below the solid curves (which depict Scenario 1) is greater than the sum of the areas below

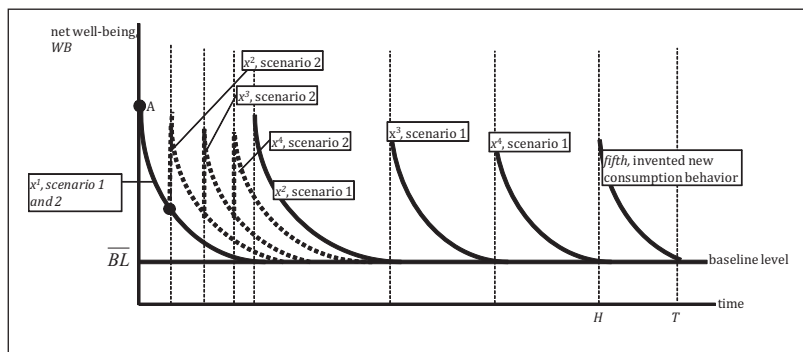


Figure 4. Inventing new consumption behaviors.

the dot curves (which depict Scenario 2). By following the dot curves, the baseline level is reached sooner than by following the solid curves. Figure 4 also shows that, if anyone could invent a fifth consumption behavior and generate envy in others, envious people might escalate and fill the gap between the end of the exploitation of consumption behavior x^d (Point H) and the end of the time considered here (Point T). In other words, people could reduce the time in which, having undertaken all the disposable consumption behaviors, they stay at the baseline level of well-being.

Hence, escalation allows a single subject to raise her/his subject's intertemporal well-being. Failing to do so, for example, due to budget constraints, leaves the subject with frustration and dissatisfaction, but these cannot be considered consequences of escalation or envy. On the contrary, they are consequences of failing to escalate. If the budget constraint allows for escalating, escalation is still the best solution. Furthermore, the greater number of alternative consumption behaviors leading to escalation exist, the more often escalation occurs, the better.

Conclusion

In the previous sections, we have shown that, while escalation is an important phenomenon with numerous empirical recurrences, economic theory has virtually ignored it. We have proposed a definition of escalation, based on subjects' desire to obtain "more" and undertake "more intense" consumption behaviors. We have linked its manifestation to several psychological principles and models, such as accumulation of consumption skills, hedonic adaptation, envy, positional effects, conspicuous consumption, rising aspirations, the desire for novelty/variety, or even the possible existence

of an innate tendency to escalate inherent to human nature. We have also proposed a formal model that demonstrates that escalating can be an advantageous intertemporal choice in terms of subjects' well-being. The model also proves that always discovering new, more extreme behaviors and generating envy in others to induce envious people to replicate the behaviors of the reference group can boost escalation and raise well-being. Put another way, people need to escalate, and the more, the better. However, not everyone escalates, and even people who can escalate do not always do so, since several counteracting forces hamper escalation. And the propensity to escalation seems to be decreasing as consumption behaviors become more intense, that is, it falls as escalation goes on so that few people undertake the most extreme consumption behaviors: another consequence of the operating of the counteracting forces. Among these counteracting forces, the monetary and psychological costs of more intense consumption behaviors play central roles (social stigma, preference for the status quo, conformism, risk aversion, aversion to ostentation, frugality, immunity to envy, etc.), by physical impediments, by the incapability of undertaking the proper skill accumulation process, by wrong expectations and exogenous shocks. Thus, actual escalation, and/or its speed, depends on which forces (and principles) prevail: those that boost escalation or those that hamper it.

However, what remains confirmed is that more often people escalate, the greater their well-being. We believe that this is the main conclusion of taking escalation into adequate consideration. As a consequence, subjects who aim to raise their well-being should knowingly transform consumption behaviors that satisfy a need, such as drinking, eating or having sex, into consumption behaviors which can leave room for escalation, such as drinking better wines or beers, eating in Michelin one-two-three-star restaurants, becoming vegetarian-vegan-frutitarian, or escalating to harder sex. In this way, the number of possible escalating behaviors increases along with well-being. Furthermore, subjects should always search for alternatives to their consumption behaviors, imitating others' behaviors, or inventing new behaviors for themselves.

In any case, change, and we suggest a change to more intense consumption behaviors, is the best choice for raising subjective well-being: choosing the status quo might be comfortable, but definitely cannot be a well-being enhancing strategy.

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Compliance with ethical standards

The research does not involve human participants and/or animals.

Notes

1. Apart from the circumstance that scholar contributions on consumption almost never propose a definition of what consumption is, the few definitions that one can find in theoretical literature range from consumption intended as a destruction of consumption goods, to consumption intended as purchase of goods and services by individuals, that is, expenditure (see e.g. Boulding, 1945; Roach et al., 2019: 5–6).
2. In this paper, we will extensively use examples based on the difficulty of ski slopes. Worldwide, this classification is represented by colors, but these colors may vary from country to country. Here we will use the following classification: green for the easiest slopes, blue for easy slopes, red for medium difficulty slopes, and black for the most difficult slopes.
3. In some cases, costs are monetary, whereas in others, they are opportunity or psychological costs; for the sake of simplicity we will assume, à la Becker, that all these costs can be measured in monetary terms. Moreover, the same is true for benefits, that is, well-being.
4. Finding empirical confirmation for escalating behaviors is both simple and difficult. It is simple, since it is easy to find some higher grade consumption behaviors that rise their share as time passes: while per capita low-quality wine consumption has decreased worldwide in the last two decades (Rodríguez-Donate et al., 2019), consumers have re-oriented their preferences toward higher-quality wines, that is, wines with designation of origin (DO) or protected geographical indication (MERCASA, 2014); Gustavsen and Rickertsen stated that “period effects in wine consumption reflect variation over years (. . .) such as increased consumption because of increased availability or more interest in wine culture over time” (Gustavsen and Rickertsen, 2018: 44); Amarone wine production rose by 1700% in the time span 1972–2016, and its share over total Valpolicella area wine production rose from 4% to 44% (these results can be extracted from Valpolicella, 2020); Vegans rose by 350% in UK in the time span 2006–2016 (Hancox, 2018); etc. It is difficult, since to track the evolution of single subjects’ behaviors over time requires microeconomic data not so easy to find, even if it is in any case possible: for example, the share of libertine couples seeking single males for sexual intercourse, that is, engaging in more

extreme sexual acts, rose from 23% to 63% in the time span 2007–2020 in an important internet site for which past data are disposable (D’Orlando, 2010: 297; Morenasex, 2007, 2020). However, anecdotal evidence is straightforward: skiers escalate from green to black slopes, boat owners escalate to bigger boats, fast cars owners escalate to faster cars, etc. Empirical evidence is incontrovertible in all the cases of consumption behaviors which require skill accumulation: people cannot ski black slopes before learning to ski, so if someone is skiing black slopes inevitably she/he is coming from easier slopes, that is, she/he has escalated.

5. Hedonic adaptation, innovativeness and the desire for novelty/variety can by alone explain escalation if the consumption behavior actually undertaken includes yet *all* the less intense ones, as in the case of skiing on red slopes (which, in general, also includes skiing on stretches of the slope that are easier and could be considered as blue and green slopes), engaging in harder sexual acts (which include softer ones), etc. In these cases, one can only escape boredom and/or habituation by engaging in more intense consumption acts or behaviors. However, for this to happen, the subject must have escalated in the past, that is, he has already experienced *all* less intense behaviors, such that only more intense behaviors remain as novelties. In other words, in such a context, past escalation is the cause of future escalation.
6. For a discussion on the theme of complete or incomplete adaptation and the setpoint hypothesis, see Easterlin (2003) and Lucas et al. (2003).
7. Consumption skills were discussed in depth by Scitovsky (1992). Scitovsky’s approach has been extensively applied in the theoretical analysis of happiness (see, e.g. Bianchi, 2007), art (see, e.g. Chartrand, 1987; Hutter and Shusterman, 2006), sport (see, e.g. Gratton and Taylor, 2000), fashion (see, e.g. Corneo and Jeanne, 1999), tourism (see, e.g. Richards, 2001), and gastronomy (see, e.g. Richards, 2002).
8. Inevitably, escalation happens if the new information increase expected well-being derived from alternative consumption behaviors: nothing prevents us from receiving bad news and seeing our expected well-being undermined. In this case, escalation does not happen.
9. We will address the aspiration treadmill at the end of this section.
10. In the cases in which information and skill accumulation drives the well-being coming from the alternatives (x^2 in this case) above the level of initial (i.e. before habituation) well-being coming from the initial choice (x^1 in this case), the main cause of escalation is information and skill accumulation; otherwise, the main cause of escalation is boredom, that is, hedonic adaptation. Both outcomes are possible.
11. To make the graphic representation easier to read, we are making the implicit assumption that, in the first phase, accumulation of new information and of consumption skills only impacts x^2 , and not x^3 and x^4 : skiing for a long time green slopes enables us to ski (and extract more well-being from) blue slopes, but not to ski red or black slopes. However, our main conclusions are not based on this assumption.

12. As we discussed above, if more intense consumption behaviors generate more well-being, while being more difficult to be undertaken, accumulation of consumption skills can fully and by alone explain escalation.
13. A review of the economics literature on envy can be found in Chaudhuri (1985), Hammond (1989), Mui (1995), and Kolm (1995).
14. In most cases, studies on envy have focused on the quantitative level of consumption rather than on the escalation to more intense consumption behaviors (see, e.g. Grolleau et al., 2006). On the contrary, here we consider envy as a cause of the escalation to higher-level consumption behaviors, not as a cause of escalation to more consumption.
15. Net well-being of more intense consumption behaviors depends also upon the monetary and psychological costs of escalation, that are discussed in section 3.4 below.
16. Other elements that can affect the escalation process are those that modify the cost and the well-being of previously undertaken consumption choices, both of endogenous and exogenous origin.
17. Here, we consider well-being as consumer's overall satisfaction on a daily basis, and the baseline level is the overall satisfaction derived from the activities the consumer is already engaged with.
18. Assuming that consumers are naïve does not affect the main conclusions of the model, since, as we shall see below, sophisticated consumers and naïve consumers will behave in similar ways.
19. Skill accumulation impacts on the well-being that the subject can extract from x^2 , but skill accumulates through the consumption of x^1 , so λ refers to x^1 .
20. It is worth noting that, in Figure 3 skill accumulation, rising aspirations and envy are assumed to more than compensate for the initial difference in levels of well-being, net of habituation (i.e. before the depletion caused by habituation), of the different behaviors. If skill accumulation and envy do not fully compensate for the initial difference in levels of well-being, Point *C* will have a lower ordinate than Point *A*, and Point *D* will have a lower ordinate than Point *C*; if skill accumulation and envy exactly compensate for the initial difference in levels of well-being, Point *C* will have the same ordinate as Point *A*, as will Point *D*. In both cases, nothing would change in the logic of the model.

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