True Consumer Autonomy: A Formalization and Implications

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Abstract

Consumer autonomy is a fundamental topic for marketing ethics scholars. Nonetheless, autonomy's philosophical treatment may have compromised its conceptual clarity. After reviewing the relevant ethics literature on consumer autonomy, the benefits of formally defining consumer autonomy are illustrated, and a novel formalization is adapted from potential performance theory mathematics. The goal is to transfigure a hitherto amorphous topic via a mathematical formalization that defines true autonomy, actual autonomy, reliability of wills, and reliability of product choice. The crucial and surprising result: an action that decreases true autonomy can increase actual autonomy if that action engenders a sufficient increase in one or both types of reliability. Relating the insights from the formalization to the long-standing debates in consumer autonomy suggests fruitful avenues for future research.

Keywords: true autonomy, actual autonomy, reliability of wills, reliability of product choice, multiple-order wills

Introduction

Most moral and ethical philosophers agree that an actions' ethicality should be assessed from a personal autonomy perspective (Buss & Westlund, 2018). For instance, Kantians posit that people without autonomy should not be judged on their behavior's ethicality (Kant, 1999). Pragmatists such as William James and Richard Rorty acknowledge autonomy's essentiality and offer nuanced arguments about autonomy and responsibility when a person influences another person to act unethically (Bratman, 2003, 2006; Fischer & Ravizza, 1998; Fockner, 2013). Scholars in other fields (e.g., medicine and business) recognize that autonomy blends with ethical principles and norms such as respect for human dignity, human rights, and action transparency (Sama & Shoaf, 2005; Gillon, 2003).

Although personal autonomy pertains to all business disciplines, marketing may be the most criticized for violating consumers' autonomy (Hackley, 2009). Consumers value autonomy because it empowers them to make product-related decisions based on personal preferences (Anker, 2020). Ethical issues often arise when marketers violate consumer autonomy. For instance, marketers might breach an ethical transparency principle, fail to respect consumers' dignity and rights, or coerce consumers into acting unethically (e.g., consuming unsustainable products). Marketing practitioners' ubiquitous efforts to influence consumer decision-making confirms autonomy's centrality to marketing ethics (Anker, 2020; Arrington, 1982; Crisp, 1987; Sunstein, 2016; Thaler & Sunstein, 2008).

However, marketing ethicists assess consumer autonomy from different perspectives. Coherentists focus on multi-order consumer desires triggered by marketing interventions that activate a desire on one level (e.g., a desire to buy a candy bar) at the expense of a higher-order desire (e.g., a desire to eat healthily). Inter-level inconsistencies suggest autonomy violations

(e.g., Smith et al., 2013). In contrast, self-determination theorists focus on consumers' post-hoc endorsement of their choices and the processes by which consumers form desires (e.g., Moller et al., 2006). Such discrepant perspectives ensure their proponents' incommensurate treatment of consumer autonomy (Eronen & Romeijn, 2020; Kuhn, 1970; Robinaugh et al., 2021).

Conceptual opacity impedes scholarship about the relationships between theoretical constructs and complicates linking those constructs to empirical facts. Consumer autonomy is more than a philosophical curiosity. One practical concern is well-intentioned actors pursue theoretical debates while ill-intentioned actors engage in autonomy-threatening actions (Shafir, 2016).

In addition, the literature on autonomy-threatening marketing activities (e.g., microtargeting, behavioral nudging) provides no general framework for understanding why consumers cede personal autonomy under certain circumstances. Although underappreciated within existing philosophical perspectives, consumers are active rather than passive participants in autonomy-related matters; hence, properly assessing consumer autonomy requires consumer reflexivity (Christman, 1991; Fuchs, 2001).

To address this incommensurability problem, we propose a mathematical formalization derived from Spearman's (1904) work on reliability and validity. By distinguishing between *true consumer autonomy* as a hypothetical construct and *actual consumer autonomy* as an empirical finding, this formalization is compatible with all moral and ethical philosophies. Consistent with self-determination theory (i.e., people determine their behaviors), featuring consumers' wills should reduce perspective incommensurability and provide a framework for linking theory to practice (Deci, 1971; Deci & Ryan, 2000, 2012; Ryan & Deci, 2000). Although this formalization is not a panacea for consumer autonomy research, it offers opportunities for

constructive disagreement among theorists, a chance to revise or refute previous scholarship, and a basis for iterative conceptual development (Robinaugh et al., 2021).

Consumer autonomy research lacks the conceptual clarity that a mathematical formalization of the concept could overcome. Relative to verbalizations, such formalizations are clearer because the underlying definitions and assumptions are explicit, mathematics is less equivocal than rhetoric, and the consequences can be expressed definitively (Eronen & Romeijn, 2020; Servedio et al., 2014; Smaldino, 2020). Formalizations force researchers to delineate all assumptions and limitations, encouraging collaborative theoretical development in otherwise fragmented fields (Robinaugh et al., 2021). A formalization could better inform philosophical discussions about consumer autonomy's meaning, importance, and relevance for ethical marketing decisions. In a domain replete with inconsistent arguments, the value of increased conceptual clarity cannot be underestimated.

Our exposition proceeds as follows. First, we show the consumer autonomy literature's lack of conceptual unity and argue that a mathematical formalization can help evaluate autonomy violations. Next, we present that formalization. Finally, we discuss practical applications, possible objections, limitations, potential connections to the perceived consumer autonomy literature, and possible future research.

Formalization Benefit #1: Conceptual Clarity

A Web of Science citation index search suggests 'consumer autonomy' is a topic of growing interest to ethics scholars. Journal articles across multiple academic domains included in this index have increased from one or two annually during the 1990s to between 20 and 35 annually since 2016. Among analyzed research domains (Business and Economics, Behavioral Science, Psychology, Communications, and Sociology), Business and Economics contained the

most articles on the topic (69.1% out of 298 articles). The increasing importance of the internet, social media, and related technological advances in marketing likely spurred this growth.

Definitional clarity is critical to advancing scientific inquiry (Hyman, 1990, 2009; Murrow & Hyman, 1994; Skipper & Hyman, 1995). To determine whether the consumer autonomy literature offers such clarity, the scholarly articles in the *Business Source Premier* database were searched using the keywords 'consumer or marketing', 'autonomy or autonomous or free will', and 'ethics or ethical or moral or morality'. This process was supplemented with an organic search (Khamitov et al., 2020; Zorzini et al., 2015). Articles only tangentially related to consumer autonomy were excluded from the analysis.

Table 1 presents the 27 definitional statements in post-1982 articles substantially related to consumer autonomy. Although most of these articles do not formally define consumer autonomy, they often define it implicitly by associating it with other terms (such as 'autonomous choice' or 'autonomous desire') or by negation (i.e., what it is not). Yet, for a definition of consumer autonomy to add meaningfully to marketing thought, ethicists should define it relative to 'what it is' rather than 'what it is not' (i.e., the absence of multiple negative notions).

Table 1 shows the definitions range broadly. Nonetheless, the definitional statements share some features, such as control (18 incidences), will/desire (17 incidences), choice (17 incidences), self-reflection (14 incidences), externally induced (12 incidences), negation (9 incidences), rational (8 incidences), right (3 incidences), and multi-ordered (2 incidences). Many definitional statements indicate that externally influenced choice requires self-reflection, and some statements assume rational choice. Most of these statements entail consumers' control over their choice, and others conceptualize autonomy as a consumer 'right'. Definitional trends suggested by Table 1 include:

- Definition by negation (in 9 of 27 articles) was less popular after the early 2000s.

- Will/desire, choice, and control were the most popular definitional aspects (in 17 or 18 of 27 articles).

- 'Rational' prevailed in pre-2000 definitions.

- 'Right' was rarely mentioned in a definition (in 3 of 27 articles).

- Multi-order wills were mentioned in only two definitions and not after 2013.

----- Place Table 1 here -----

Incommensurate consumer autonomy definitions complicate iterative knowledge production (Robinaugh et al., 2021). Without conceptual clarity, logical chains for theory-building are prone to error and vagueness (Servedio, 2014). Imprecise theories are difficult to falsify, test, and link to the empirical world (Eronen & Romeijn, 2020). Mathematical formalizations can boost conceptual clarity, delineate logical assumptions, ground epistemological iterations, and facilitate a nuanced understanding of relationships between theoretical constructs (Eronen & Romeijn, 2020; Robinaugh et al., 2021). For example, Newton never defined force, mass, or acceleration, yet his equation 'force = mass x acceleration' clarifies their meanings by formally specifying their relationship. Expressing theory explicitly and uniformly encourages collaborative scientific advancement (Lederman, 1993; Robinaugh et al., 2021).

To ground our formalization and coalesce the consumer autonomy literature, we used a word cloud generator to analyze the 27 definitional statements, with 'autonomy', 'autonomous', 'one', 'e.g.', and 'consumer(s)' excluded. The word cloud in Figure 1 shows the most frequently used words are 'choice(s)' (19 instances) and 'desire(s)' (19 instances). Consumers' 'capacity' (7 instances) to 'act' (12 instances) per their desires and effectuate their 'decisions' (10 instances)

'free' (8 instances) from 'external' (8 instances) interference are a common definitional theme.

----- Place Figure 1 here -----

Thus, the diverse prior definitions suggest that a formalization of consumer autonomy should entail consumer choice (i.e., consumer behavior), consumer desires (i.e., 'wills'), and the possibility of external interference.

Formalization Benefit #2: Evaluating Autonomy Violations

A clear definition of 'consumer autonomy' has implications for decision-makers wishing to account for ethics in general and autonomy in particular. Consider advertising as an example domain. Advertising scholars have criticized deceptive ads (Hyman, 1990; Hyman et al. 1994), sponsor-disguised advertorials (Tansey et al., 1996), host selling (Shanahan & Hyman, 2001), puffery in ads (Preston, 1996), ads relying on non-consensual persuasion techniques (e.g., ads with subliminal appeals, psychoactive ads; Crisp, 1987; Hyman & Skipper, 1993; Hyman & Tansey, 1990; Moore, 1982; Smith et al., 2013), ads targeting children and other vulnerable populations (Barrett, 2000; Hyman, 2009; Kunkel, 1988; Shanahan et al., 2003), inappropriate-themed ads (e.g., wartime ads depicting combat; Tansey et al., 1992), condescending and paternalistic ads (Rothschild, 1999), and obtrusive ads (e.g., billboards) for violating consumer autonomy (Bishop, 2000; Lutz, 1995; Nebenzhal & Jaffe, 1998; Sneddon, 2001). Some scholars argue that only cognitive advertising appeals are acceptable, as they communicate rational facts and thus pose no threat to consumer autonomy (Crisp, 1987). Kantian philosophy suggests that irrational ads threaten moral autonomy achieved by people's duty to moral law instead of happiness (Villarán, 2017). In contrast, other scholars suggest all advertising—regardless of appeal type (i.e., rational or irrational)—attempts to persuade and mold attitudes (Emamalizadeh, 1985; Hyman, 2009). Thus, advertising represents an external influence that can endanger

consumer autonomy by muddling consumers' ability to make and enact consumption-related decisions.

An impractical solution for this ethical dilemma is to ban all advertising (Hyman 1990, 2009). In contrast, a practical solution could identify the most autonomy-violating ads in a consumer-centric manner. This process would enable advertisers to act more ethically and public policymakers to regulate these actions. Therefore, there is a need to link the theoretical domain of consumer autonomy to the empirical domain of advertising. To link theory with the empirical domain, a structured formalization is critically important (Eronen & Romeijn, 2020; Smaldino, 2020). Imagine a marketing communications manager trying to determine which of two ads reduced consumer autonomy less. A formalization could rigorously identify the more problematic ad, which would inform a more ethical marketing decision.

Because ads influence consumers' attitudes about their purchases and the subjective norms associated with a materialistic and hedonic lifestyle, they affect 'will formation' via processes that consumers tend to reject when ascribed to the pursuit of corporate profits instead of concern for societal well-being (Mehta, 2000; Priester et al., 2004; Sirgy et al., 2012). Perhaps advertising scholars' focus on 'shallow autonomy' (e.g., consumers' autonomous choices) instead of 'deep autonomy' (i.e., consumers' openness to alternative lifestyles, such as voluntary simplicity, gleaned from metapreference self-reflection) is misguided (Sneddon, 2001). Instead of influencing specific consumption choices, could advertising's ability to install 'alien motivations' in consumers' value systems make it ethically problematic? Do "[a]ll the ads put together constitute a cultural bombardment with an ideology of acquisitiveness" (Waide, 1987, p.76)? Is implicit ad content—consumerist norms, expectations, aspirations, and beliefs with a substantial cumulative effect due to pervasiveness—problematic (Lippke, 1989)?

A structured formalization of consumer autonomy can link this theoretical discussion with the empirical domain by using a cumulative assessment of consumer choices rather than marketing activity (i.e., ads). Hence, a formalization could help marketing ethicists rate various marketing manipulations by ethicality and encourage a pro-consumer orientation by systematically considering consumers' autonomy-related attitudes and preferences (Sunstein, 2016; Zyphur & Pierides, 2017).

A common rebuttal to advertising criticisms is as follows. Because consumers' minds are not tabula rasas, 'will formation' does not occur in ad-induced vacuums; instead, it is traceable to interactions between marketing communications and established attitudes and beliefs. When marketers' efforts dovetail with consumers' existing attitudes, ads reinforce consumer autonomy (Anker et al., 2010). A marketer cannot manipulate or coerce consumers into accepting their current attitudes and preferences (Cunningham, 2003). Inconsistencies between marketers' and consumers' values and beliefs encourage consumer self-reflection, reinforcing autonomy. Consumers select an ideology and concede to some manipulation while maintaining most of their autonomy (Cunningham, 2003). "When a person pays to buy and read a fashion magazine like Vogue or GQ, they are actively choosing to let themselves be manipulated by image ads….If people are misled or duped, it is because they want to be" (Bishop, 2000. pp.388-393). If this reasoning prevails, business ethicists could systematically assess consumer autonomy concessions based on a precise formalization. Marketers and public policymakers also could use such a formalization to detect trends in autonomy-reducing ads.

Mathematical Formalization of Consumer Autonomy

Inspired by the two benefits outlined above, the proposed formalization of consumer autonomy assumes a realist perspective under which (a) consumers' product choices are

observable and measurable, and (b) consumers' wills are not directly observable but exist and are measurable. Although this ontological commitment dovetails with most consumer researchers' beliefs about psychological constructs, it does not imply a more extreme realist commitment regarding any theory's truth (Hunt, 1992, 2012). Assuming consumers' product choices and unobservable psychological constructs (e.g., wills) exist does not imply any theory about causal relations between constructs, choices, or construct-choice configurations. Here, 'wills' is used like Fishbein and Ajzen (2010) used 'behavioral intentions'. Despite the ongoing debate about whether wills must be conscious and controlled (e.g., Trafimow, 2018), the posited formalization does not depend on its resolution.

Consider the following example. Patricia has a strong preference for frugality, yet she succumbs to emotion-laden advertising and purchases a timeshare in Florida. Hence, Patricia's will to be frugal and her product choice mismatch. Although marketers cannot dictate the wills that should or should not concern consumers, will and binary product choice can be positive or negative. The resulting four will-choice pairs reduce to two general ones: will and product choice match or mismatch. Although many factors can cause Patricia to have matching or mismatching wills and product choices, these factors also reduce to two general ones: systematic or stochastic factors, with the latter reducing the reliability of Patricia's wills or product choices.

'Reliability' here parallels its traditional designation under classical test theory, i.e., true score variance divided by observed score variance (see Spearman, 1904 for the initial treatment; see Gulliksen, 1987 and Lord & Novick, 1968 for well-cited reviews). Generalizing this designation to this context, the reliability of consumer's wills (choice behaviors) is the within-consumer correlation between wills (choice behaviors) at time$_1$ with wills at time$_2$. Keeping true autonomy constant, the larger these correlations, the greater the correlation between wills and

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behaviors, i.e., actual autonomy. Empirical precedent supports interpreting reliability at the person level (e.g., Rice, Trafimow, & Hunt, 2010; Rice et al., 2011; Rice et al., 2011; Trafimow & Rice, 2009). Because researchers cannot determine reliability directly, they rely on several approaches to estimate it (e.g., internal consistency, alternative forms, test-retest). When taking a test at $time_1$ has little or no effect on scores associated with taking an identical test at $time_2$, which generally pertains in potential performance theory studies, calculating test-retest reliability is a reasonable estimation approach.

In a completely deterministic universe, the reliability of Patricia's wills and product choices equal 1, so any matching or mismatching of her wills and choices would be due to systematic factors. In an entirely stochastic universe, the reliability of Patricia's wills and product choices equal 0, so any matching or mismatching would be random. Systematic and stochastic factors influence will and product choice matching in our universe. If *true consumer autonomy* reflects the proportion of matches between wills and product choices in a completely deterministic universe where all reliabilities equal 1, *actual consumer autonomy* reflects the proportion of matches between wills and product choices in our universe.

The reliability of consumers' wills neither conceptually nor empirically equals 1. Perhaps counterintuitively, stochastic environmental events cause imperfectly reliable product choices. Shoppers may buy a lesser preferred brand when they randomly encounter misinformation (e.g., a deceptive ad or a friend's erroneous claim) or their local supermarket is stocked-out of their preferred brand due to a delivery truck accident (Bass, 1974; Hyman, 1990). Alternatively, they may buy a personally suboptimal brand (i.e., less proximate than the most proximate brand to their ideally configured product) based on cognitive biases or simplistic purchase-decision heuristics (e.g., due to cognitive accessibility, buying a snack spotted in a random passerby's

hands; Kahneman et al., 1982; Louviere et al., 1994; Oxoby & Finnigan, 2007; Tversky & Kahneman, 1974). Hence, the reliabilities of consumers' wills and product choices are less than 1 in our universe.

In a marketing context, true consumer autonomy reflects the proportion of cases in which consumers behave according to their will to buy or not buy products available in a completely deterministic universe. In contrast, actual autonomy reflects the proportion of cases where consumers behave according to their will in our universe, where stochastic factors (e.g., mother-in-law visits and purchasing her preferred hand soap; Bass, 1974) influence wills and product choices.

The main reason for using the term 'true consumer autonomy' hearkens back to classical test theory or classical true score theory. The mathematics subsequently adapted here derives from classical true score theory and more proximately from potential performance theory, which pertains to persons and groups (Trafimow & Rice, 2008).

The central assumption of classical true score theory is a person's 'observed score' is attributable to a 'true score' plus a random error component. In turn, a person's true score is the expectation of observed scores across indefinite independent test-taking occasions. Thus, the random error components average out to zero across indefinite test-taking occasions, thereby leaving a person's true score uncontaminated by random error. Unlike observed scores and reliabilities, which are accessible directly, such reasoning renders the true score a hypothetical construct because administering independent tests indefinitely is impossible.

Analogously, a consumer's true autonomy is a hypothetical construct that is unassessable directly, unlike perceived consumer autonomy and reliabilities. However, classical true score theory and the current analysis differ because researchers generally apply classical true score

theory across persons, whereas the mathematics adapted here is applicable within persons (Trafimow & Rice, 2008).

Trafimow and Rice (2008) includes mathematics that relates ability and reliability to actual successes. Although the equations presented are complex and general, simplifying assumptions can avoid complexity without weakening the philosophical arguments related to autonomy. In that vein, assume binary choice (e.g., choosing or not choosing something), true autonomy exceeds 50%, and equal marginal frequencies. However, these assumptions are not requisite to the subsequent demonstrations and arguments.

Under the three simplifying assumptions and using terminology specific to the present arguments about autonomy, the mathematics in Trafimow and Rice (2008) reduces to Equation 1:

$$S = \frac{2s - 1 + \sqrt{r_{xx\prime}r_{yy\prime}}}{2\sqrt{r_{xx\prime}r_{yy\prime}}}, \tag{1}$$

where

S is a consumer's true autonomy,

s is a consumer's actual autonomy,

$r_{xx\prime}$ is the reliability of a consumer's wills, and

$r_{yy\prime}$ is the reliability of a consumer's product choices.

Given starting assumptions about the proportion of matches and the reliabilities of wills and product choice, Equation 1 renders possible the calculation of true consumer autonomy that cannot be measured directly. Because randomness and reliability relate inversely and reflect external influences, reliability is an inverse measure of randomness relative to consumers' wills and product choices. Hence, Equation 1 and the following equations clarify that randomness pertains to autonomy assessment.

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To simplify further, combine the two reliabilities into a single reliability index. That is, let $R = r_{xx'}r_{yy'}$ so Equation 1 becomes Equation 2 below:

$$S = \frac{2s-1+\sqrt{R}}{2\sqrt{R}} .$$

(2)

To intuit how Equation 2 operates, suppose there is no randomness in consumers' wills or product choices (i.e., the reliability index equals 1). In that case, true consumer autonomy S equals actual consumer autonomy s. More generally, Figure 2 shows how varying s and R influence S.

----- Place Figure 2 here -----

Although Equations 1 and 2 are empirically useful because actual consumer autonomy and reliability are measurable, it is more philosophically informative to algebraically re-arrange Equation 2 to render actual consumer autonomy a function of true autonomy and a reliability index.

$$s = \frac{2S\sqrt{R}+1-\sqrt{R}}{2}$$

(3)

Equation 3 highlights the deleterious effects of randomness on actual consumer autonomy. If either wills or product choices are entirely random, the reliability index equals 0. In that case, Equation 3 reduces to a value of 0.5, which means actual consumer autonomy equals 0.5 regardless of true consumer autonomy. More generally, Figure 3 shows how varying true consumer autonomy and the reliability index influence actual consumer autonomy.

----- Place Figure 3 here -----

Equation 3 has an important philosophical implication: because true consumer autonomy and the reliability product influence actual consumer autonomy, a change in one can equal or exceed a change in the other. For example, suppose exposure to an ad causes true consumer autonomy to decrease from 0.95 to 0.93. The apparent philosophical conclusion, ceteris paribus,

is the ad is morally problematic. However, what if that ad causes the reliability index to increase from 0.20 to 0.80? In that case, an interesting mathematical phenomenon poses a fascinating philosophical question. Specifically, actual consumer autonomy sans the ad is $s = \frac{2 \cdot 0.95\sqrt{0.20} + 1 - \sqrt{0.20}}{2} = 0.70$, but actual consumer autonomy with the ad is $s = \frac{2 \cdot 0.93\sqrt{0.80} + 1 - \sqrt{0.80}}{2} = 0.88 > 0.70$. Relative to actual consumer autonomy, a decrease in true consumer autonomy would be beneficial if accompanied by a sufficiently large increase in the reliability product.

This example is far from fanciful. Consider the 'decreased consumer autonomy' argument against using emotional advertising appeals to compel consumers to eat more healthfully. For argument's sake, assume such appeals decrease true consumer autonomy but increase behavioral reliability (Trafimow, 2015). Now reconsider the preceding example, which shows a sufficient increase in reliability can overcome a decrease in true consumer autonomy, thereby inducing a net gain in actual consumer autonomy. Even when a reliability index gain accompanies a true consumer autonomy decrease, the net effect could be detrimental. For example, imagine true consumer autonomy decreases from 0.95 to 0.85, and reliability increases from 0.70 to 0.75. In that case, actual consumer autonomy decreases from 0.88 to 0.80, the converse of the previous example. Thus, a change in true consumer autonomy may outweigh a change in the reliability product.

Multiple-Order Wills and Speculative Mathematics

The previous formalization addresses the match between consumers' wills and product choices. Continuing the Patricia example, she may have a first-order will to be frugal, which influences her second-order will to save money for graduate school, which influences her third-order will to land a dream job, which influences her fourth-order will to flourish. 'Consumer wills' are similar to 'consumer goals', which are *cognitive representations of consumers' desired*

end-states (Chartrand et al., 2008). Consumer researchers distinguish between different goal levels (similar to wills levels), ranging from the highest abstract goals to the lowest concrete goals. This range spans from consumers' life values (e.g., flourishing), to life projects (e.g., having a successful career), to immediate concerns (e.g., obtaining a graduate degree), to consumption intentions (e.g., purchasing money-saving products), to benefit/feature preferences (e.g., preferring low-cost products; Huffman et al., 2003).

If Patricia purchases an expensive timeshare, her product choice is inconsistent with her first-order frugality will, but not with her fourth-order flourishing will (which includes an aspiration to travel). Patricia realizes actual autonomy from a fourth-order but not a first-order perspective. Actual consumer autonomy can be considered 'primary' from a first-order perspective that matches product choices with first-order wills, 'secondary' from a second-order perspective that matches product choices with second-order wills, et cetera. Using this terminology, Patricia would exhibit fourth-order autonomy by purchasing a timeshare because her product choice matches her fourth-order will. Still, she would exhibit low first-order autonomy because her product choice mismatches her first-order will.

Primary, secondary, tertiary, et cetera true and actual consumer autonomy exist in our universe. Many psychological theories, such as the well-known theory of reasoned action, posit the mechanisms people use to reconcile cognition and affect at different levels (e.g., Ajzen & Fishbein, 1980; Fishbein, 1980; Fishbein & Ajzen, 1975, 2010). For example, reasoned action assumes people eventually reconcile different categories and levels of beliefs and evaluations into a single behavioral intention or will that pertains to a single behavior. Consistent with the preceding equations, each will-behavior pair either matches or mismatches. The theory of reasoned action can account for higher- and lower-order affect and cognition and resolve them

into a single will that pertains to a single behavior. Hence, psychology theories that address different and sometimes competing motivations recognize that conflicting motivations can induce a single will to perform a behavior.

Moving beyond psychology theories to consider different order wills mathematically, Equation 3 can be re-written as follows:

$$s_A = \frac{\sum_{i=1}^n s_i * W_i}{n} = \frac{\sum_{i=1}^n (2S_i\sqrt{R}+1-\sqrt{R})*W_i}{2n} \tag{4}$$

where

s_A is a consumer's actual autonomy across all levels,

s_i is a consumer's actual autonomy on level i,

S_i is a consumer's true autonomy on level i,

W_i is the weight assigned to a consumer's autonomy on level i, and

n is the number of autonomy levels.

Similarly, Equation 2 can be re-arranged to express true autonomy across all levels. Equation 4, which weighs the importance of each consumer's autonomy level, can determine actual autonomy across multiple will levels.

Including weights in the model allows for nuanced interpretations of consumer autonomy. Consider consumers' varying decision strategies (Bettman et al., 1998). Instead of choosing from the available options (e.g., choosing pizza over a healthful yogurt smoothie despite a second-order preference for staying healthy), Sam might choose based on a product attribute (e.g., price), thus rendering his choice consistent with a different second-order preference (e.g., to be frugal). In this example, Sam's choice behavior is consistent with one second-order preference but inconsistent with another second-order preference. Weighting the importance of each higher-order preference for each consumer allows assessment of overall

consumer autonomy despite seeming preference conflicts.

Some consumer behaviorists contend consumer preferences often are constructed spontaneously rather than deeply held (Amir & Levav, 2008; Lichtenstein & Slovic, 2006; Payne et al., 1992). Consumers may try to minimize their cognitive effort or negative emotion for spontaneous product choices while maximizing decision accuracy or justifiability (Bettman et al., 1998). Regardless, researchers can conceptualize autonomy via a weighted model that accounts for each preference's importance to each consumer.

Continuous Product Choice

Consumers ' wills and product choices may match in discrete choice contexts. Does this analysis pertain to continuous or almost continuous behavior, such as donating money to charity? A person could give 0, 1, 2, …, n dollars to a charitable organization. For continuous rather than discrete choice behavior, correlation is superior to matching wills to behaviors due to infinite possible values (i.e., for two continuous variables, the probability of an exact match approaches zero). The greater the within-participant correlation between wills and behaviors, the greater the actual autonomy.

Reasoning similar to that described previously prevails. Applying the well-known attenuation formula (e.g., Spearman, 1904) to autonomy suggests Equation 5a and dis-attenuating implies Equation 5b:

$$\rho_a = \rho_T \sqrt{r_{xx'} r_{yy'}}, \tag{5a}$$

$$\rho_t = \frac{\rho_a}{\sqrt{r_{xx'} r_{yy'}}} \tag{5b}$$

where

ρ_a is actual autonomy expressed as a correlation coefficient, and

ρ_t is true autonomy expressed as a correlation coefficient.

Using the previously described formalization for defining a reliability index to simplify equations with two reliability coefficients converts Equation 5b into Equation 6:

$$\rho_t = \frac{\rho_a}{\sqrt{R}} \qquad (6)$$

If true autonomy is greater than or equal to zero, it exceeds actual autonomy. Figure 4, which is analogous to Figure 2, illustrates this fact at different true autonomy and reliability levels. Empirically, researchers can use Equation 5 to calculate true autonomy.

----- Place Figure 4 here -----

Algebraic rearrangement transforms Equation 6 into Equation 7, which shows actual autonomy as a function of true autonomy and the reliability index.

$$\rho_a = \rho_t \sqrt{R}. \qquad (7)$$

Like Equation 3, Equation 7 is not empirically useful but can highlight the philosophical consequences of changes in true autonomy and the reliability index. Figure 5, which is analogous to Figure 3, shows how varying true autonomy and the reliability index influence actual autonomy.

----- Place Figure 5 here -----

As shown previously with binary behavior, a reliability index increase can increase, decrease, or not affect true autonomy. For example, if the true autonomy correlation coefficient decreases from 0.90 to 0.80, but the reliability index increases from 0.2 to 0.8, the actual autonomy correlation coefficient increases from 0.40 to 0.72. However, under the same decrease in the true autonomy correlation coefficient, if the reliability index increases from 0.7 to 0.8, the actual autonomy coefficient decreases from 0.75 to 0.72. Changing from dichotomous to continuous cases does not change the philosophical implications.

Possible Objections to the Proposed Formalization

Objections to the proposed formalization might stem from the different philosophical views of business ethicists. The formalization proposed here is flexible. Instead of being anchored to a major ethics tradition (e.g., deontology, utilitarianism, pragmatics), it was designed for practical use by marketing ethicists based on a 'local' perspective. 'Going local' implies the following assumptions.

Realism

Although the proposed formalization is independent of any major ethics tradition, it is grounded in a realist perspective. Hence, the empirical underpinnings are consumers make product choices, those choices are measurable, and psychological constructs like behavioral intentions or wills are measurable and meaningful primitives. Like the undefined word 'mass' (Lederman, 1993), definitional ambiguities need not imply non-existence. The pro-consumer orientation taken here assumes a consumer's wills and product choices are real (Zyphur & Pierides, 2017).

The caveat: empirical realism need not imply theoretical realism. Business ethicists can believe consumers have behavioral intentions and make product choices without assuming theories that connect related constructs are true. Using the proposed formalization does not demand committing to any psychological theory. More broadly, it requires no commitment to theoretical realism or antirealism; that is, whether theories are true with a capital T, convenient fictions, or descriptions of idealized universes.

The preceding might entail defining autonomy so 'will causes behavior'. In that case, committing to a theory that includes a causal link between will and behavior appears undeniable. However, appearances are deceiving. First, many theories posit a causal link between will (or

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synonyms like behavioral intention) and behavior. These theories include additional constructs and additional causal linkages. It is not incoherent to accept the causal link between will and behavior without accepting these theories' other assumptions. Thus, we reiterate that realism at the theory level is unnecessary.

Second, a causal link between will and behavior may be unnecessary. If autonomy's definition includes this link, it is necessary by definitional fiat. However, definitional fiat is objectionable when better definitions exist. Two problems with causation-dependent definitions are the many causation conceptualizations and the lack of philosophical consensus about which, if any, is correct. Thus, a causation-dependent definition of autonomy would be vague due to multiple causation conceptualizations. Hume contended that correlations are observable, but mental inferences to causal explanations require leaps of faith (Buckle, 2007). Alternatively, an autonomy definition could depend on a match rather than a causal link between will and behavior; in Humean terms, a correlation between will and behavior.

A 'matching' definition of autonomy is nonsensical if people cannot cause their behavior. However, this assumption presupposes causation by definitional fiat. Imagine (a) James has 100 wills and performs 100 will-related behaviors, and (b) a mad scientist forces James' wills and behaviors to match perfectly, so their correlation equals '1' and autonomy—as presented here—is maximized. In this fanciful example, James' behaviors are attributable to his wills, precluding the ability to distinguish causal-sense from matching-sense autonomy. If the mad scientist forced some will-behavior mismatches, distinguishing the lack of autonomy from a causal versus matching sense would be impossible. Assuming will-behavior correlations are causal does not compromise the proposed formalization.

Finally, the formalization requires no commitment to positivism, pragmatism, realism, or

other philosophy of science tradition. However, people may disagree about what these traditions entail. For example, Pierce and James considered themselves pragmatists but disagreed about what it means to be a pragmatist (Thayer, 1968). The proposed formalization is agnostic about such issues but not necessarily discommoded by difficulties in characterizing positivism and pragmaticism. Not committing to a philosophy of science tradition is consistent with a reluctance to force causation into an autonomy conceptualization.

Higher-Order Wills

The proposed formalization focuses on the connection between consumers' 'wills or intentions' and observable product choices. Differentiating consumers' wills and product choices encourages a dualistic argument (e.g., wills are immaterial artifacts of minds and behaviors manifest corporeally). However, it is only necessary that wills and behaviors are distinguishable, with wills a potential but neither necessary nor sufficient cause of product choice. Consistent with confluence theory, causality in a reverse direction can exist (Trafimow, 2009).

Another issue is higher-order wills (Anker, 2020; Christman, 1991; Smith et al., 2013). Although an infinitude of such wills may exist, human information processing and empirical limitations dictate reducing that infinitude to a manageable set. However, neither ignoring higher-order wills nor truncating them at an empirically tractable level is ideal. Hence, the approach to higher-order wills suggested here may be conceptually satisfactory but empirically suboptimal.

Autonomy in a Deterministic Universe

Can autonomy exist in a completely deterministic universe without free will? Suppose genetics and environments determine all wills and behaviors, which precludes autonomy. Adding randomness does not alter the situation because it is unclear how situationally driven behaviors

can be autonomous. Autonomy devolves into meaninglessness if only will unconstrained by genetic, environmental, and random factors is autonomous. A more useful definition might assume wills are proximate, in which case it is reasonable to consider whether wills—whatever the antecedent factors—and behaviors match. For example, Jill might 'will' to eat a Mozart Kugel and then eat one, which would count as a will-behavior match; or she might not find the package of Mozart Kugel and not eat one, which would count as a mismatch. In a perfectly deterministic universe, consumers can 'will' to eat or not eat a Mozart Kugel and then eat one or not. Thus, will-behavior matches or mismatches can exist in a perfectly deterministic universe.

Discussion

Although viewable as a loss of consumer autonomy, modern marketing techniques such as persuasive advertising or behavioral nudging could decrease behavioral randomness, thus boosting autonomy by improving the reliability of consumers' wills and product choices. Even when consumers cannot control their shopping environment, thereby reducing true autonomy, actual consumer autonomy could increase if the increase in reliability indices exceeds the reduction in true autonomy. Equation 3 shows this effect for binary product choices, and Equation 6 shows it for continuous product choices. However, Equations 3 and 7 imply an insufficient increase in the reliability indices can decrease true and actual consumer autonomy.

Through nudging, grocers could induce shoppers to buy more healthful produce (Payne & Niculescu, 2018; Payne et al., 2016). An autonomy argument pertains because nudging works automatically, with little or no conscious processing. If grocers bypass shoppers' awareness, shoppers lose conscious behavioral control, reflecting a loss of true autonomy. Perhaps repeated nudging reduces unreliability by similarly influencing each shopper. Of course, grocers can boost reliability without reducing true autonomy by alerting shoppers about being nudged, thus

conferring additional conscious behavioral control. Whether post-alert nudging would continue to work is an empirical question.

Ethics-related nudging questions suggest that more nuanced philosophical arguments about autonomy could account for true consumer autonomy and reliability. Arguing that an action decreases true autonomy when accompanied by an associated increase in reliability is insufficient. Arguing for particular values of true consumer autonomy and reliability is problematic. Different consumers may reason similarly but conclude differently about actual autonomy when assigning subjective values to true autonomy and reliability.

A superior empirical solution would estimate true consumer autonomy and reliability. Although reliability is measurable in an autonomy context, true consumer autonomy is a hypothetical construct that cannot be observed or measured directly. Fortunately, the empirical solution entails the match between wills and product choices—i.e., actual consumer autonomy— which is observable and measurable. To estimate true consumer autonomy, marketing ethicists can either insert the obtained values into the preceding equations or adapt the more general and complex equations from Trafimow and Rice (2008).

Practical Morality

Randomness-inclusive increases or decreases in autonomy affect consumers' expected utility calculations because randomness influences product choice probabilities. Suppose a chosen product increases expected utility but decreases true consumer autonomy. A utilitarian or pragmatist might conclude that increasing expected utility justifies decreasing true consumer autonomy, thereby ratifying the choice. In contrast, a deontologist likely would avoid decreasing consumer autonomy by rejecting the choice. Fortunately, the present analysis can reconcile these opposing positions. Most deontologists and pragmatists would accept a product choice that

substantially increased a consumer's reliability indices, thus increasing actual autonomy while decreasing true autonomy.

What If Reliability Decreases?

Marketing actions that raise the reliability indices can boost actual consumer autonomy even if true consumer autonomy declines. However, marketing actions that maintain true consumer autonomy but lower these indices decrease actual consumer autonomy. As anything that increases randomness decreases the reliability indices, the proposed formalization reveals an immorality conundrum. Efforts to increase randomness could create utility gains. Nonetheless, marketers should avoid randomness-boosting actions because they reduce reliability and actual consumer autonomy. Such actions include inundating consumers with excessive product alternatives that overwhelm their choice-making capacity (Gilde & Chilson, 2016). As Schwartz (2004) notes,

> Autonomy and freedom of choice are critical to our well being, and choice is
> critical to freedom and autonomy. Nonetheless, though modern Americans have
> more choice than any group of people ever has before, and thus, presumably,
> more freedom and autonomy, we don't seem to be benefiting from it
> psychologically (p.5).

Hence, the formalization presented here conforms with the consumer choice (e.g., using satisficing versus maximizing strategies) and happiness literature.

Subjective Utility of Varying Autonomy Levels

Suppose a marketer's action decreased actual consumer autonomy by 3% but conferred other advantages. Would the conferred advantages outweigh the decrease in actual consumer autonomy? Ostensibly, a 3% decrease might have different implications depending on the initial

actual autonomy. For example, suppose a marketer's action reduced actual consumer autonomy from 0.53 to 0.50. A consumer with such low actual autonomy would resist a marketer's action that further reduced autonomy. In contrast, imagine a consumer with an actual autonomy of 0.73, so a 3% decrease would lower actual autonomy to 0.70. Consumers might believe a 3% decrease in autonomy is less severe in the latter case, and agreement with an autonomy-reducing action is likelier.

Other plausible scenarios exist. For example, when actual autonomy is high (low), consumers may believe that even a slight decrease (increase) is meaningful. If the relationship between 'actual consumer autonomy changes' and subjective utility is nonmonotonic, changes to high or low autonomy are germane to subjective utility assessment.

Extreme Wills and Individual Differences

Suppose Jim wills to buy a ticket for a suborbital flight on Jeff Bezos' New Shepard but fails due to limited funds, ticket scarcity, and other issues. Although he experiences a behavior-will mismatch, common sense suggests autonomy calculations should exclude mismatches caused by an irrational will. However, determining what is rational or irrational may be ambiguous. A 'day trader' might will 'to make quick millions in the stock market', where the probability of success is low but not zero. Does a low probability render a will irrational? What if the probability is slightly higher? Determining a probability threshold that partitions rational from irrational wills is problematic.

Perhaps rationality is irrelevant. The Jim example implies autonomy is an individual difference variable influenced by the likelihood of translating wills into related behaviors. Many behavior-will mismatches are likely if Jim has many infeasible wills. In contrast, Joe will experience many behavior-will matches if all his wills are feasible. Due more to their mentality

and less to environmental differences, Joe has higher actual autonomy than Jim.

Applying the Formalization to Marketing Ethics

If wills are similar to intentions, measuring wills is straightforward because researchers have measured intentions for decades. Of course, measuring the reliability of wills and behaviors is doable by measuring everything twice. For example, imagine a survey of consumers asked for ten choices of 'frequently purchased consumer non-durable goods' (e.g., candy bar, soft drink) they willed during the last week and the ones they purchased. A week later, they responded to the same survey. The within-consumer correlation for the ten 'will' scores between the two occasions could serve as a 'will' reliability measure. A similar correlation for the ten purchases could serve as a 'product choice' reliability measure.

Although common sense suggests that nudging should decrease consumer autonomy, it does not account for increased reliability. Consider the following pre-post study. A researcher could ask consumers upon awakening to assess their will to use their home gym that day; before bed, these consumers would report on that day's usage. Study participants would continue in this manner for four weeks. Thus, there would be four Monday data points, four Tuesday data points, et cetera, which the researcher could use to calculate a reliability measure of wills and choices for each consumer. The researcher would count each day with a will-choice match (mismatch) as a success (failure). Each consumer's actual autonomy score is the proportion of successes. The researcher uses the previously adapted math to calculate each consumer's true autonomy. (Note: For examples and mathematical simulations in consumer contexts, see Trafimow et al., 2016.)

Next, the researcher performs a nudging manipulation—showing a health guru's 30-minute video urging consumers to increase their home gym usage—and then repeats the previously described data collection procedure. Again, the researcher would calculate each

consumer's true autonomy. Based on central tendency measures from both sets of calculations, the researcher can estimate the effect of nudging on both kinds of reliability, actual autonomy, and true autonomy. The researcher could conduct a separate between-subjects study (i.e., randomly assign consumers to a no-nudge versus nudge conditions).

Finally, the researcher wants to increase actual consumer autonomy for home gym usage. Based on the proportion of will-choice matches (i.e., actual autonomy), the video manipulation might fail in the sense that the mean proportion of successes before and after the manipulation is identical. Although a failed manipulation could cause this result, an alternative explanation is the manipulation worked in different directions for reliability and true consumer autonomy. If the different directions balance each other, actual consumer autonomy remains unchanged.

A knowledgeable salesperson should have a good intuition about whether relevant wills, behaviors, or both will become more reliable. If that intuition is positive, there is less reason to worry about true autonomy's potentially negative effects. More generally, making reliability and true autonomy salient may benefit salespeople regardless of data collection or formal analysis.

Conclusion

Consumer autonomy in marketing ethics has a long history (Arrington, 1982; Crisp, 1987; Thaler & Sunstein, 2008; Hackley, 2009; Sunstein, 2016; Anker, 2020). Furthermore, modern marketers continually face new challenges with consumer autonomy implications. For example, easy information access online (e.g., online reviews) increases consumers' sense of control, autonomy, and empowerment, yet can cause information overload that degrades autonomy (Hu & Krishen, 2019). Marketers amassing consumers' personal data raises concerns about privacy threats to autonomy (Cluley, 2020). The internet of things—such as smart devices and voice-interfacing digital assistants—affects autonomy and causes consumers to question

their growing digital-device dependence and need to set usage boundaries (László, 2020). With the rise of artificial intelligence and associated algorithm-based personalization, marketers can exercise increasing control over consumers' choices (Wertenbroch et al., 2020). For example, microtargeting and online recommendation algorithms that suggest future consumption based on consumers' past behaviors can violate autonomy despite any 'fine print' in the accepted 'terms & conditions' agreement (Anker, 2020; Wedrtenbroch et al., 2020).

Consumer autonomy is essential to deciding whether many marketing actions are ethical. As exemplified earlier by the ongoing advertising ethics debate, consumer autonomy conceived as the link between wills and behaviors matters for marketing ethics. Although marketing ethicists may disagree about the extent of autonomy's importance, none dismiss it as irrelevant. The marketing ethics literature features an amorphous conceptualization of autonomy despite its eminence. The proposed formalization introduces a precise structure, adapted from the mathematics of potential performance theory, for pondering autonomy and marketing ethics.

Scholars should attend more to the philosophical implications of mathematical theories. The posited formalization illustrates the value of this recommendation. No marketing ethicist has differentiated true consumer autonomy from actual consumer autonomy. Still, their difference emerges from potential performance theory mathematics, which is more than an ad hoc device for assessing the ethicality of marketing actions (Trafimow & Rice, 2008).

Regardless of inspiration, social scientists propose theories that entail a focal construct unconnected to other constructs except via post hoc studies. For example, intelligence theories focus on general intelligence and various intelligence dimensions (e.g., verbal, quantitative, spatial). The same is true for self-esteem, subjective well-being, and the like. In contrast, Newton's undefined notion of 'mass' has meaning by dint of its connection to force and

acceleration (Lederman, 1993). Formatively defining household affluence as a composite of lifestyle, psychographic, and income/net-worth components augments its value to marketing theory (Hyman et al., 2002). The proposed formalization for consumer autonomy follows this latter approach by relying on four variables: true autonomy, actual autonomy, reliability of wills, and reliability of product choices. The two autonomy components are distinct but mathematically related, as neither is a subset of the other.

Limitations

As philosophers have not differentiated true autonomy from actual autonomy, the issue of what most closely approximates consumer autonomy remains. True consumer autonomy is the purer concept from a deontological perspective because it is uncontaminated by randomness and closer to deontologists' ideation of autonomy. However, one counterargument is that failing to consider the ubiquity of randomness is a critical oversight. Potential performance theory assumes systematic and random variance. Measurement and statistical theory often distinguishes between systematic and random variance (Trafimow, 2018). Although systematic variance is important, random variance is mathematically and ethically relevant. The interplay between systematic and random factors, exemplified by the distinction between true and actual autonomy, has ethical consequences. Moreover, utilitarians and pragmatists would almost certainly agree about the potential importance of random effects. Thus, the purity notion fails to provide a definitive case for true autonomy most closely approximating philosophical notions about autonomy.

Another limitation is the ontological commitment to realism. Anti-realists might argue that choices, and especially wills, are not real, and if real, unmeasurable. If constructs such as wills are unmeasurable, the proposed formalization is only interesting conceptually. However, this argument is problematic, as an overly strenuous denial of wills could imply autonomy does

not exist. Denying wills exist means denying consumers can make autonomous choices. As this denial requires explaining what autonomy entails, anti-realists must explain what drives choices to qualify as autonomous or not autonomous.

Future Research

Table 2 lists previously unanswered questions about consumer autonomy and possible answers based on the proposed formalization. Fully answering these questions requires more comprehensive treatments.

----- Place Table 2 here -----

Product choice reliability differs across consumers. Consider this series of intra-person response consistency experiments (i.e., reliability; Trafimow & Rice, 2015). In initial experiments, participants answered questions on multiple topics twice rather than once, thereby allowing each person's empirical reliability measurement. The result: intra-person response reliability was highly consistent across topics. In later experiments, participants twice-answered nonsense questions with nonsensical answers. The result: the more nonsensical the questions, the greater the intra-person reliabilities across topics. In essence, reliability—the inverse indicator of randomness—is an individual difference characteristic (Trafimow & Rice, 2015). Hence, randomness affects people differently. Applied to consumer autonomy, if randomness decreases actual autonomy, then actual autonomy may depend partly on individual differences in reliability and the feasibility of wills. Hence, future research on consumers' true autonomy, reliability, and actual autonomy as individual difference characteristics is warranted.

Imagine asking consumers, "How much autonomy do you perceive Consumer X has in choosing Product Y?" This question would puzzle most consumers. They might vaguely believe that autonomy means 'consumers can do what they want to do'. Consequently, most consumers

would say something like, "Yes, Consumer X is unconstrained in choosing Product Y, so she has high autonomy." Alternatively, if choosing Product Y included a threat to kill Consumer X for choosing Product Z, most consumers would believe that Consumer X has little autonomy.

Most consumers would underestimate the degree of choice randomness for actual autonomy, thereby overestimating actual consumer autonomy. Although they will not know that true consumer autonomy relates to classical true score theory, true autonomy approximates actual autonomy in high-reliability cases, and both might approximate perceived autonomy. Because most consumers perceive autonomy as a feeling or mood rather than a product choice, autonomy entailing a will-product choice match is foreign to them.

Does perceived consumer autonomy relate to the proposed formalization? If the relationship is good, perceived consumer autonomy might succeed without formal quantification. If the relationship is poor, then formalizing perceived autonomy is critical. For different consumers, perceived autonomy may correlate well or poorly with actual autonomy and true autonomy. If true, then individual differences may influence perceived consumer autonomy.

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Table 1
Definitional Statements Related to Consumer Autonomy

Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
Arrington (1982, p. 6)	This is a complex, multifaceted concept, and we need to approach it through the more determinate notions of (a) autonomous <u>desire</u>, (b) <u>rational</u> desire and <u>choice</u>, (c) free choice, and (d) <u>control</u> or manipulation.	y	y	y				y		
Crisp (1987, pp.417-418)	A <u>desire</u> is autonomous and at least prima facie rational if it is not <u>induced</u> in the agent without his knowledge and for no good reason, and allows ordinary processes of <u>decision-making</u> to occur.		y	y		y	y	y		
Dworkin (1988, p.20), Nebenzahl & Jaffe (1998, p.807)	[A]utonomy is conceived of as a <u>second-order capacity</u> of persons to <u>reflect critically</u> upon their first-order preferences, desires, wishes [e.g., a desire for a Club med vacation]...and the capacity to accept or attempt to change these in light of <u>higher-order preferences and values</u>.				y					y
Lippke (1989, p.40)	Autonomous persons are competent in the sense of being active and generally successful in <u>giving effect to their intentions</u>… autonomous individuals should be understood as ones who <u>scrutinize</u> the political, social, and economic institutions under which they live. Autonomous individuals want to <u>shape their own lives</u>.	y	y	y	y	y		y		
Christman (1991, p.11)	A person P is autonomous relative to some <u>desire</u> D if it is the case that P did not resist the <u>development</u> of D when attending to this process of development, or P would not have resisted that development had P attended to the process; The lack of <u>resistance</u> to the development of D did not take place (or would not have) under the influence of factors that inhibit <u>self-reflection</u>; The self-reflection involved in condition (i) is		y		y	y	y	y		

Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
	(minimally) rational and involves no self-deception.									
Noggle (1995, p.57)	Whatever we think autonomy is, if one acts on an alien desire, one does not act autonomously. There is often a sense of subjective disassociation from these desires: the person moved by them typically does not see them as part of her self.	y	y			y	y			
Nebenzahl & Jaffe (1998, p.807)	Consumers' desires will be autonomous if they are not induced by some outside influence.					y	y			
Attas (1999, pp. 54-55)	The first meaning of autonomy is one that views it as a psychological capacity. This includes the capacity and disposition to choose rationally, to be willing to subject one's choices to critical scrutiny, and to be able to review and to reject them when one concludes that this is required, not to accept blindly and unconditionally....The other meaning of autonomy is the right to autonomy. It is a right that the exercise of one's autonomy not be obstructed. It is a right to do what you really want to do and against manipulation by others.	y	y	y	y		y	y	y	
Bishop (2000, p. 382)	(1) Autonomy of choice (external autonomy): can a person in fact act on a desire that they have? (2) Autonomy of desire (or internal autonomy): is a person's having a desire, or their decision to act on it, autonomous? (3) Social autonomy: how does social context enhance or restrict either choice (external autonomy) or decisions about desires or actions (internal autonomy).	y	y	y		y				

Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
Rippe (2000, p. 75)	In an autonomy-centred food policy, the government does not act against the autonomous <u>will</u> of the consumer, but makes <u>information</u> available to help him or her to make autonomous <u>decisions.</u>	y	y							
Sneddon (2001, pp.16, 22)	(1) Making autonomous choices/decisions - shallow autonomy (2) Being an autonomous person - deep autonomy What makes a person autonomous? What is involved in <u>self-rule</u>? Central to this notion is <u>having and exercising control</u> over one's life...Deep autonomy requires two things: (1) <u>openness</u> to possible ways of living, and (2) conceptual richness rooted in language.	y		y	y					
Cunning-ham (2003, p.229)	Central to all discussions of autonomy...is the notion of <u>self-governance</u>….[A]utonomy is violated when one is made to hold an alien <u>desire</u> that does not correspond with her <u>beliefs</u>.	y			y	y	y			
Christman & Anderson (2005, p. 3)	The notion of autonomy still finds its core meaning in the idea of being one's own person, directed by considerations, <u>desires</u>, conditions, and characteristics that are not simply <u>imposed externally</u> on one, but are part of what can somehow be considered one's <u>authentic self</u>....[I]n general the focus is on the person's competent <u>self-direction</u> <u>free</u> of manipulative and <u>"external" forces</u> – in a word, "self-government."	y	y			y				
Moller, Ryan, & Deci (2006, p.104)	To be autonomously motivated involves feeling a <u>sense of choice</u> and <u>volition</u> as a person fully <u>endorses</u> his or her own actions or decisions. People are autonomous when they do something they find interesting or personally important.…Choice (i.e., autonomous choice) requires a decision that is accompanied by the experience of <u>endorsement</u> and <u>willingness</u>.		y	y	y					

Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
Caruana, Crane, & Fitchett (2008, p.255)	[C]onsumers are autonomous individuals, capable of freely rationalizing about and mobilizing <u>choices</u> in the market…locus of autonomy to encompass the consumer's <u>cognitive abilities</u> and ultimate <u>power</u> to translate cognition into (purchase) behavior.	y		y				y		
Siipi & Uusitalo (2008, p. 355); Siipi & Uusitalo (2011, p. 150)	Autonomy of choice refers to an individual's <u>self-determination</u> regarding her <u>choices</u>…. [T]he individual's autonomous choice is made by herself and is truly and genuinely hers. Three conditions should be met…for the individual's choice to be autonomous. First, she is <u>competent</u>. Second, she has <u>authentic desires</u> and <u>beliefs</u>. And, third, she has <u>power</u> to implement her beliefs and desires into <u>choices</u>.	y	y	y	y					
Anker (2010, p.521)	Autonomous agency is a question of <u>alignment</u> or match between effective and fundamental <u>desires</u>, whereas being autonomous is a question of <u>endorsement</u> of one's fundamental desires in light of <u>critical reflection</u>.		y		y					
De Tavernier (2012, p. 897)	[For] personal autonomy, <u>self-rule</u> means at minimum being free from paternalist <u>influences</u> and controlling meddling <u>by others</u> and from information deficiency, preventing responsible <u>choices</u> and intentional <u>action.</u>…[A]utonomy has to be considered on a <u>continuum</u> from completely present to fully absent….[T]o be qualified as autonomous, actions do need only a reasonable degree of <u>understanding</u> and freedom from <u>coercion</u>.	y		y	y	y				
Popescu & Baruh (2013, p. 277)	[A]utonomy of <u>choice</u> free from <u>constraining influences</u>.	y		y						

Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
Smith, Goldstein, & Johnson (2013, pp.162-163)	'Consumer autonomy': the right of consumers to make their own decisions. Consumer autonomy involves people's self-determination as consumers. It reflects preferences about preferences ('metapreferences') as well as immediate needs and wants.		y	y					y	y
Alba and Zheng (2015, p. 334)	If people lack autonomy, unfettered choice differs from other points on the continuum primarily in whether the ultimate decision is determined by factors "internal" to the consumer (e.g., genetic predispositions, personal history), by an external agent, or by some combination of the two (as when the hidden persuader unlocks a deep-seated motivation).		y	y	y	y	y			
Villaran (2015)	Autonomy of the will is the sole principle of all moral laws and of duties in keeping with them….In simpler terms, autonomy comes with honoring the moral law or categorical imperative….Positive freedom, in other words, is the ability to act autonomously, to choose the moral law.		y						y	
Chackal (2016, p. 124-125)	Autonomy is conceived as a capacity of rational beings to promote their intellectual development and improve their moral being… the capacity to think and act for oneself… One may be able to think for oneself, but unable to act on his ideas because of social and political impediments...	y			y			y		
Dieterle (2016, p. 350)	Autonomy is the capacity to live one's life as one sees fit; to act according to reasons one has chosen for oneself… Informed consent is a necessary element of autonomous choice.	y		y	y					
Groß & Vriens (2019, p. 339)	Consumers' autonomy [is] their autonomy to make choices based on own interests, needs, wishes, etc., instead of displaying socially desirable conduct.	y	y	y						

| Source	Definition	Control	Will/Desire	Choice	Self-reflective	Externally Induced	Negation	Rational	Right	Multi-ordered
Anker (2020, pp.2-3)	Personal autonomy is the ability to figure out what one has good reasons to do, to align one's motivations with these reasons, and act accordingly….Consumer autonomy is associated with both internal conditions (e.g., cognitive and volitional capacities) and external conditions (e.g., epistemic market conditions)....Autonomous choice… require[s] access to material information and [the] absence of external influence....A decision to accept a proposed marketing exchange is autonomous to the extent that: (i) the consumer has had easy access…to information that is relevant, proportionate, sufficient and understandable to the average, targeted consumer; and (ii) the decision is formed in response to the consumer's critical reflection on the information.	y	y	y	y	y	y	y		
Werten-broch et al. (2020, p.2)	[C]onsumers' ability to make and enact decisions on their own, free from external influences imposed by other agents.	y		y		y	y			
'Yes' Total		18	17	17	14	12	9	8	3	2

Note: Text underlined for emphasis and not in the cited article.

Table 2
Formalization-induced Insights into Unanswered Questions about Consumer Autonomy

| Unanswered Question	Formalization-induced Insights into Answering the Question
Is consumer autonomy a purely hypothetical construct unachievable in daily consumer decision-making?	The formalization distinguishes between *true consumer autonomy* as a hypothetical construct and *actual consumer autonomy* as an empirical finding.
Can discussions about consumer autonomy shift from marketer-oriented to consumer-oriented?	The formalization focuses on the objective, quantifiable evaluation of will and behavior matches for each consumer, thereby assuming a pro-consumer orientation.
If all product choice is subject to a 'choice architecture', is consumer choice ever autonomous?	The formalization avoids a binary approach that treats each product choice as either autonomous or non-autonomous. Instead, consumer autonomy is quantified based on the degree it is autonomous.
Can consensual nudging preserve rather than erode consumer autonomy?	The formalization suggests consensual nudging can preserve consumer autonomy by accounting for increased behavioral reliability.
How do multiple-order wills affect consumer autonomy?	The formalization properly accounts for multiple-order wills by weighting each higher-order preference's importance to each consumer.
Is consumer autonomy describable in terms of a degree or continuum?	The formalization provides a nuanced assessment of consumer autonomy on a continuous scale ranging from 0 to 1, thus operationalizing it as a matter of degree.
Can willingly relinquishing a degree of personal consumer autonomy benefit consumers?	The formalization suggests that reducing consumers' true autonomy is not morally problematic when its decrease leads to increased actual autonomy. However, consumers' willingness to accept such tradeoffs depends on their initial actual autonomy.
Can willingly relinquishing a degree of personal consumer autonomy benefit society?	By prioritizing communal flourishing, interventions that increase actual autonomy can benefit society.
Does a low probability of success render a will 'irrational'?	Rationality may be superfluous to assessing actual consumer autonomy.

Note: The consumer autonomy literature inspired these unanswered questions about consumer autonomy. In particular, these questions draw from Anker (2020), Shafir (2016), Sunstein (2016), Wertenbroch (2016), and Wertenbroch et al. (2020).

Figure 1
Word Cloud for Consumer Autonomy Definitions

Note: Built with https://www.wordclouds.co.uk/

Figure 2
Effect of Actual Autonomy on True Autonomy at Different Reliability Levels
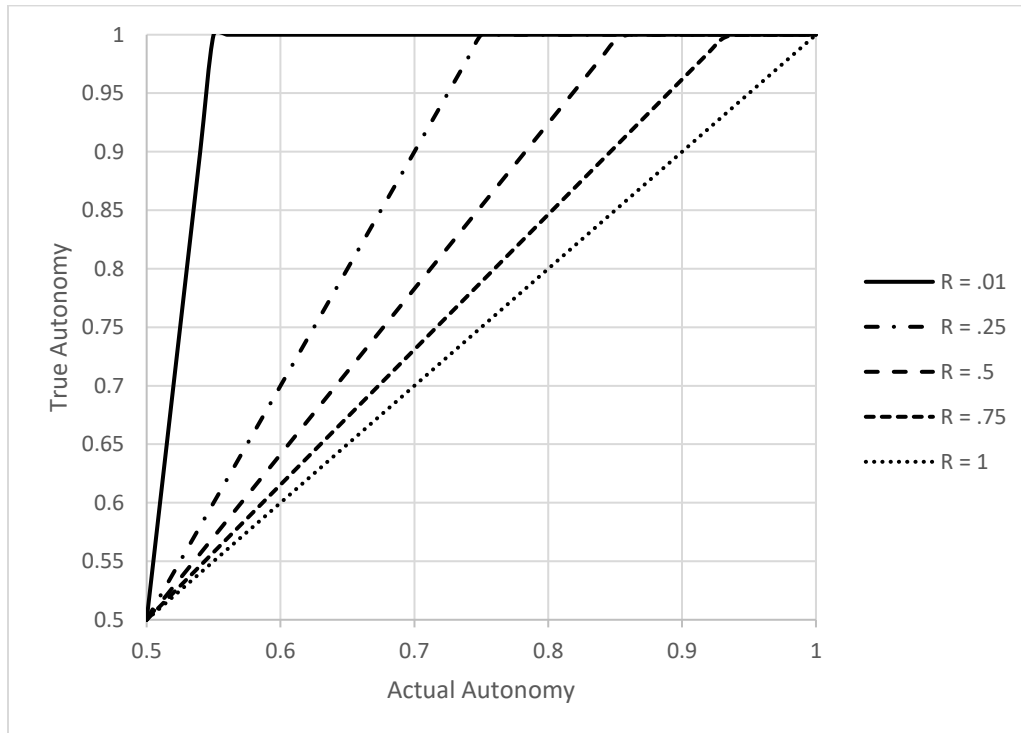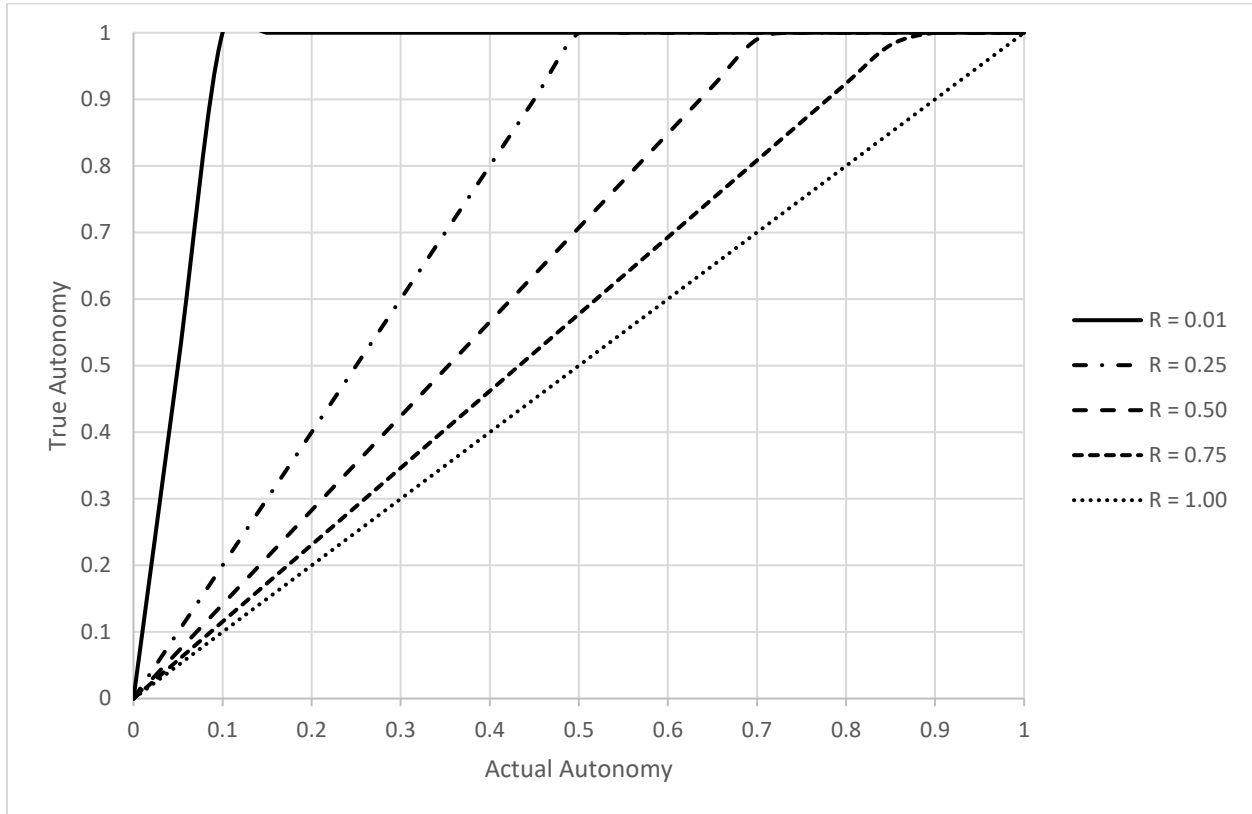

True autonomy is expressed along the vertical axis as a function of actual autonomy ranging along the horizontal axis from 0.50 to 1.00, assuming reliability indices of 0.01, 0.25, 0.50, 0.75, or 1.00. Note that the highest value possible for true autonomy is 1.00.

Figure 3
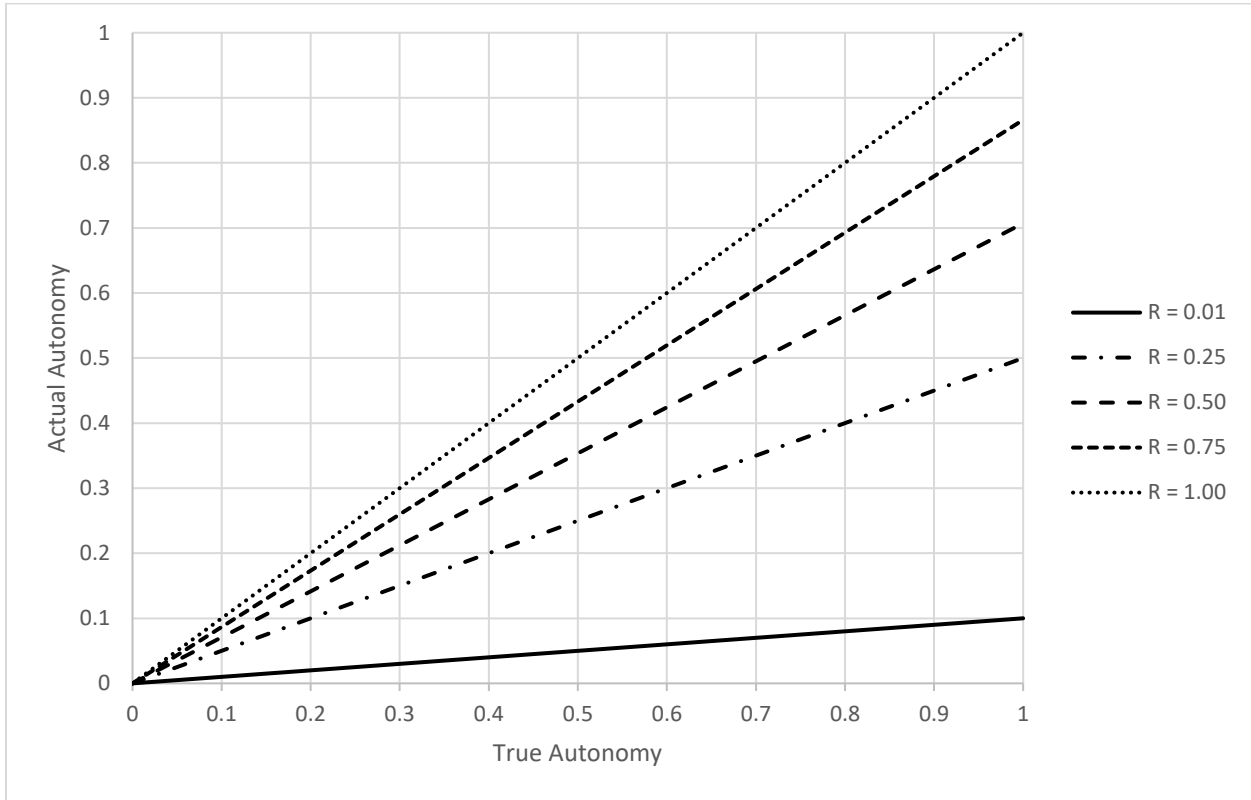**Effect of True Autonomy on Actual Autonomy at Different Reliability Levels**
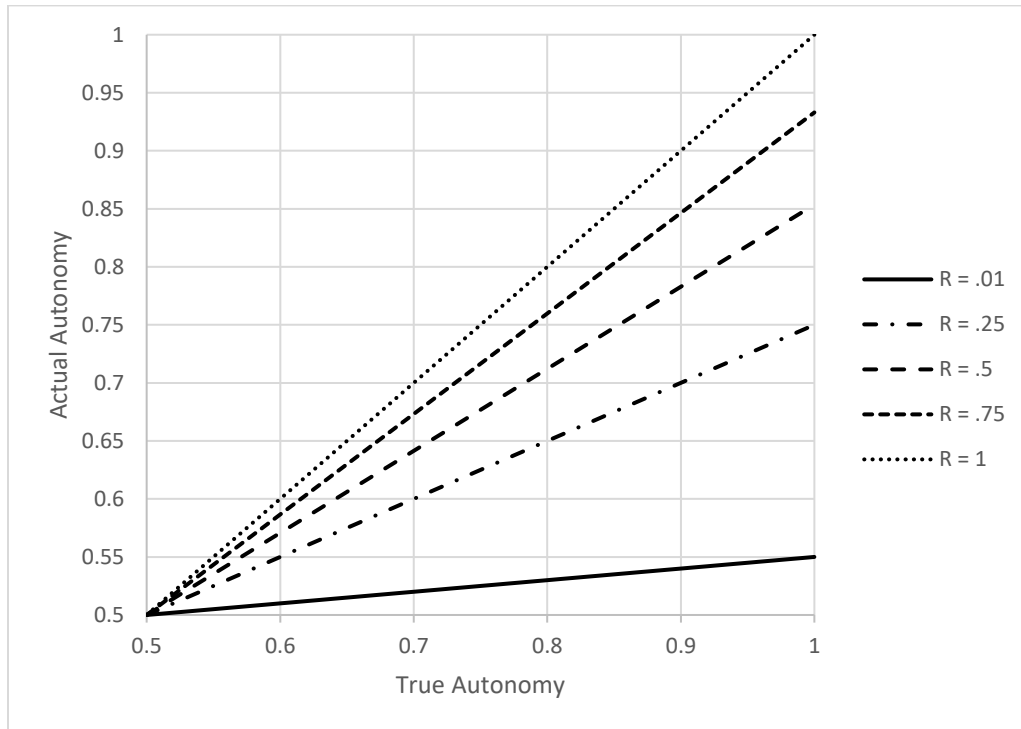
Actual autonomy is expressed along the vertical axis as a function of true autonomy ranging along the horizontal axis from 0.50 to 1.00, assuming reliability indices of 0.01, 0.25, 0.50, 0.75, or 1.00.

Figure 4
True Autonomy as a Function of Above-zero Actual Autonomy and Reliability Levels

True autonomy is expressed along the vertical axis as a correlation coefficient and a function of actual autonomy ranging along the horizontal axis from 0 to 1, assuming reliability indices of 0.01, 0.25, 0.50, 0.75, or 1.00. Note that the highest value possible for true autonomy is 1.00.

Figure 5
Actual Autonomy as a Function of Above-zero True Autonomy and Reliability Levels

Actual autonomy is expressed along the vertical axis as a correlation coefficient and a function of true autonomy ranging along the horizontal axis from 0 to 1, assuming reliability indices of 0.01, 0.25, 0.50, 0.75, or 1.00.