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A behaviorist perspective on how to address negative consumer behaviors

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Abstract

The cognitivist paradigm has dominated the past 50 years of consumer research. Cognitivist theories have provided extensive insights into pre-consumption behaviors (i.e., information gathering, attitude formation, product choice, and product purchase) and the processes that support these behaviors (i.e., attitudes, persuasion, information processing, memory, knowledge, and choice processes). Yet, the cognitivist paradigm has limitations, especially when it comes to addressing detrimental consumption, over-consumption, and perverse incentives in consumption systems. To address these issues, we discuss how a behaviorist paradigm can be used to identify more efficient and effective interventions for societal ills. The behaviorist perspective emphasizes that an alteration of the consumption environment can influence the ease of expressing a behavior and the rewards/punishments associated with this expression. Hence, behaviorism is useful in identifying and implementing intelligent nudges.

KEYWORDS
behaviorism, compulsive buying, conditioning, depression, nudges, sustainability

1 | INTRODUCTION

Virtually all conceptualizations of consumer behavior describe it as a field that studies consumption (Deighton, 2007; Holbrook, 1987; Kardes et al., 2011). For example, MacInnis and Folkes (2010) describe consumer behavior as "… the study of people operating in a consumer role involving the acquisition, consumption, and disposition of marketplace products, services, and experiences." Despite this fact, a relatively small proportion of papers study consumption itself, especially relative to pre-acquisition (e.g., knowledge, attitude, persuasion), acquisition (e.g., choice processes, impulse purchases, habits) and post-consumption (e.g., satisfaction, word-of-mouth, and brand loyalty) behaviors (Simonson et al., 2001; Wang et al., 2015). Although there are many reasons why consumer researchers do not investigate consumption, we contend that the primary reason is paradigmatic. The cognitive paradigm facilitates the study of thought, which is instrumental in pre-acquisition, acquisition, and post-acquisition behaviors, and hinders the study of motor behavior, which is instrumental in consumption.

This paper will discuss the advantages of the behaviorist paradigm for studying consumption. To best appreciate the advantages of behaviorism, we will begin with a short review of the original assumptions underlying the behaviorist paradigm. Next, we will discuss the emergence of the cognitivist paradigm and the reasons cognitivism eventually became the dominant paradigm for investigating consumer behavior. Then we will discuss how the field of consumer research adapted the behaviorist paradigm to make it compatible with the cognitivist paradigm. Then, we will discuss how a return to the historical roots of the behaviorist paradigm has advantages for addressing detrimental consumption, over-consumption, and perverse incentives in consumption systems. Finally, we will show how behaviorist principles can be helpful in addressing issues in five domains: negative behavior online, depression, compulsive buying, wellness, and sustainability.

2 | ORIGINS OF BEHAVIORISM

The origins of psychological inquiry harken back to philosophers' study of the mind. For example, Aristotle investigated sensory and cognitive functions, Ibn al-Haytham investigated perception, and Descartes (Cartesian psychology) explored consciousness. The movement away from the philosophical approach, and toward a more psychological approach, to studying human behavior began in the mid-1700, when a number of leading scientists advocated for a more empirical approach to studying mental events (Hatfield, 2002). The call was for research approaches that had the methodological rigor of research done in physics, physiology, botany, and entomology (Hatfield, 2002). Consequently, leading labs of the 1800's produced insights into sensory perception (Hermon von Helmholtz), the perception of stimulus intensity (Gustav Fechner), just noticeable differences in stimuli (Ernst Weber), introspective insights into information processing, memory, and volitional behavior (Wilhelm Wundt), and investigations into consciousness and introspection (Edward Titchener).

Behaviorism emerged at the beginning of the 20th century. Behaviorism is often portrayed as a reaction to the introspectionist paradigm that was dominant at the time (Anderson, 2000; Atkinson et al., 2000; Hebb, 1966; cites in Costall, 2006). Yet, many historians have rejected this characterization of the emergence of behaviorism, instead arguing that the paradigm emerged owing to institutional pressures (i.e., a call for more relevant, applied research) and its advantages for studying specific types of behavior (Costall, 2006; Hatfield, 2002). Most 19th century psychological inquiry focused on the self-report of sensory perception, using methods that were insufficient for studying complex action. Behaviorism was appropriate for studying complex behaviors like emotional responses (Watson & Rayner, 1920), problem solving (Thorndike, 1898), correcting deviant behavior via behavior modification (Thorndike, 1911), and learning an occupation (Watson, 1924). Understanding how to influence these types of behaviors would help society advance.

Behaviorists believed Darwinism could be extended to human behavior (Watson, 1913). In the same way an environment shaped the traits and behaviors of animals, the environment likely shaped the traits and behaviors of humans. Consequently, behaviorism had four points of emphasis. First, focus on observable behavior. The goal was to identify behaviors that were sensitive to the environment, assess how these behaviors were reinforced, and understand what made a specific behavior more intense, frequent, or persistent. Second, focus on the environment as an initiator of behavior. Researchers wanted to know how stimuli came to cause behavior (i.e., became conditioned), what properties of a stimulus made it an effective elicitor of behavior (e.g., stimulus salience, latent inhibition), how stimuli competed to become future causes of changes in behavior, and what moderated the influence of stimuli on responses. Third, learn how small behaviors can be combined to produce complex behaviors (Crowther-Heyck, 1999). This motivation could be traced to the desire to differentiate psychology from biology. Fourth, deemphasize mental events as explanatory variables. Radical behaviorists assumed that stimuli and/or environments were the only reliable source of behavior. Most behaviorist did not deny mental events but knew that the influence of mental events on behavior was inconsistent and unreliable.

Similar to all paradigm shifts, behaviorism transformed psychology by reorienting the focus of researchers. There were institutional pressures for relevance, and researchers shifted their ongoing research programs toward meaningful behavior without forsaking their own interests. "Perception became discrimination, memory became learning, language became verbal behavior, intelligence became what intelligence tests test" (Miller, 2003, p. 141). The focus was on practical behaviors, including communication (Jacob Kantor), child rearing (Watson), advertising response (Watson), vocational skills (Watson), and habits (Dewey, Pierce).

Behaviorism evolved from the early-1900's to mid-1900's. While behaviorists preferred to use non-mental terminology (e.g., drive, habit strength, drive reduction, homeostasis), analytical behaviorists accepted that mental processes could intervene between the stimulus and the response. For example, Hull (1943) admitted that an identical environment could produce alternative responses. Purposive behaviorists emphasized observable behavior but were more relaxed about the definition of a stimulus environment and the possibility of an intervening process. For example, Tolman (1932) argued that one could infer "internal acts, states, mechanisms, processes, structures, capacities, and properties" as causes of behavior, but that one would have to set up critical tests to differentiate between the mental events. This position was not novel, as similar arguments had been made by Walter Pillsbury (1911) and McDougall (1912) at the advent of behaviorism (Costall, 2006). Collectively, analytical and purposive behaviorists are referred to as neo-behaviorists.

Exiting the 1950's, the behaviorist paradigm had three major weaknesses. First, it produced results with narrow generalization, a problem that was exaggerated by the independent influences of contexts on behavior. Second, the behaviorist paradigm had difficulty producing nuanced behavior. For example, it is well documented that a social interaction is nuanced. Yet, it was difficult for a behaviorist to predict word choice or grammatical structure given a set of stimuli (Chomsky, 1957), despite the claims of behaviorists (Skinner, 1957). Third, the behaviorist paradigm could not reliably generate complex, mental behaviors of consequence. For example, problem solving, creativity, and long-term planning are behaviors of consequence that are not easily produced using behaviorist methods (Miller et al., 1960).

3 | THE COGNITIVE PARADIGM AND ITS COMMONALITIES WITH BEHAVIORISM

The shortcomings of behaviorism were an opportunity for an alternative approach to understanding human behavior—cognitivism. Cognitivism was a return to an emphasis on internal mental events as mediators between stimuli and responses, similar to the perspective expressed by Wundt and approach adopted by Tolman. Cognitivism was aligned with the computer metaphor, a position championed by George A. Miller. The premise was that the mind could decode information into an abstract representation, manipulate it, and generate

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responses based on the transformed information, just like a computer (Crowther-Heyck, 1999).

The computer metaphor buttressed cognitivism in four ways. First, it allowed researchers to address the criticism that all experience is subjectively represented by arguing that subjective representations are processed according set of learned rules (processing code). Further, one could assume that processing code (i.e., the software of the mind) is agnostic to the subjective information (i.e., data) fed to process the code, thus, the problem of relativism is avoided (Crowther-Heyck, 1999; Shannon & Weaver, 1949). Second, cognitivism established a research agenda that invited participation. The goal was to identify pieces of processing code (attention, perception, comprehension, memory, inference, reasoning, etc.) and their relationships. This allowed researchers to focus on mental events, rather than behaviors, as dependent variables. Third, the cognitivist paradigm supported generalizability. Cognitivism is predicated on finding relationships that are independent of the context, a departure from the narrow generalization of behaviorism. Fourth, cognitivism reduced the barriers to doing research. A significant amount of behaviorist research required a lab, animals, staff, and intricate equipment. Cognitivism required paper, pencils, and access to human participants. Thus, the computer metaphor supported efficient and inexpensive methods of data gathering.

Given that both paradigms have strengths, it is not surprising that assumptions, concepts, and methods have bled from one paradigm to another for over 100 years. First, both paradigms share the dualist assumption—the body and the mind are separate entities that can be studied independently. Second, from a methodological perspective, cognitivism is an extension of the stimulus–response approach of behaviorism—the difference being that there is a search of intervening variables, which often explain less than 10% of the variance. Third, both paradigms strive to provide insight into how animals and people organize, learn about, and predict their environment. Fourth, behaviorism has widely adopted cognitive assumptions. Early classical conditioning work by Pavlov recognized that subjects (i.e., dogs) were motivated to predict their environment. Later models (e.g., Rescorla & Wagner, 1972) assume people are information seekers who are trying to understand how to maximize gains and minimize losses.

3.1 | Behaviorism in consumer research

Earlier, we observed that radical behaviorists assumed that stimuli and/or environments are the only source of behavior, whereas neo-behaviorists allowed for mental processes to intervene between stimuli and responses. Both of these perspectives have guided research on consumer behavior. For example, radical behaviorism focuses on how stimulus → response relationships form in classical conditioning, whereas neo-behaviorism focuses on people's motivations to learn stimulus–response relationships (i.e., make causal inferences). As a second example, radical behaviorism focuses on response → outcome relationships in operant conditioning, whereas neo-behaviorism focuses on how perceptions of goal progress influence the desire to act on operant conditioning. We review classical conditioning, operant conditioning, and related behaviorist research in consumer behavior. We annotate these findings with their dominant perspective: RB (radical behaviorism) and N–B (neo-behaviorism). Note that no studies in consumer behavior are exemplars of radical behaviorism; thus, our classification reflects a relative classification. Afterwards, we discuss how cognitivism has blended with radical behaviorism to guide neo-behaviorist consumer research.

3.2 | Classical conditioning theory

Consumer researchers have examined how conditioned stimulus (CS) characteristics, unconditioned stimulus (US) characteristics, unconditioned response (UR) characteristics, and the timing of the CS and US influence the strength and persistence of a conditioned response. Critical findings include (1) intense CS is conditioned more quickly (Hull, 1940) (N-B), (2) CS condition more quickly if they precede or simultaneously occur with the US (Stuart et al., 1987) (RB), (3) CS condition more quickly to stronger US/UR (Allen & Madden, 1985) (RB), (4) responses to a CS can generalize to stimuli that are similar to the CS, even if these stimuli have never been presented with the US (van Osselaer et al., 2004) (N–B), and (5) less reflexive (e.g., cognitive) responses are more sensitive to awareness of the co-occurrence of the CS and US (Hofmann et al., 2010) (N–B). These findings are relevant to two streams of consumer research—evaluative conditioning and predictive learning.

3.2.1 | Evaluative conditioning

Consumer researchers have investigated conditioned affective responses. First, pairing a product with an affect-inducing stimulus (e.g., pleasant or unpleasant music) can alter the affective response to the product (Gorn, 1982) (N–B). Second, evaluative conditioning can occur after a single, 5-s CS–US pairing, but that conditioning is less effective if consumers have been previously exposed to the CS (e.g., a brand) (Stuart et al., 1987) (RB). Third, evaluative conditioning is more effective if a novel brand is conditioned in the context of familiar brands, suggesting that new brands can benefit most from conditioning (Shimp et al., 1991) (RB). Fourth, conditioning is stronger for supraliminal (vs. subliminal) US and for self-reported responses than for implicit measures (Hofmann et al., 2010) (N–B). Finally, evaluative conditioning can be insensitive to contingency awareness (i.e., knowledge that the CS and US co-occur), retrospective changes in the valence of the US (e.g., the UR to the US shifts from positive to negative), and retroactive interference in the CS–US association (Sweldens et al., 2010) (N–B).

3.2.2 | Predictive learning

An alternative application of classical conditioning theory focuses on predictive learning (S→O) (van Osselaer, 2018). The predictive

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learning literature assumes that a consumer tries to minimize the error in predicting an outcome (R). For example, a consumer may use product features (brand name and product attribute) to predict product performance (a quality rating, an experienced benefit). Key findings are that (1) attribute cues compete to predict product performance (van Osselaer, 2018) (RB), (2) early learning about the predictive ability of one cue can block learning about an equally predictive cue (van Osselaer & Alba, 2000) (RB), (3) secondary cues (sub-brands) can protect the ability of primary cues (family brands) to predict positive outcomes when the primary brands are also present with lower quality experiences (Janiszewski & van Osselaer, 2000) (RB), (4) two cues that uniquely predict positive outcomes (two brand names) can jointly predict a more positive outcome (Janiszewski & van Osselaer, 2000; Park et al., 1996; Simonin & Ruth, 1998) (RB), and (5) consumers have difficulty learning that an S (product attribute) can predict a benefit if they have previously learned the same S predicts an alternative benefit (Cunha et al., 2008) (N–B).

3.2.3 | Integrating cognitivism

There are four ways cognitivist concepts have been integrated into consumer research on classical conditioning. The integration of these concepts reflects a transition from radical behaviorism to neo-behaviorism. First, neo-behaviorists study mental behavior, like attitudes or valuation (Moran et al., 2023; Staats & Staats, 1957). Traditionally, radical behaviorist research focused on reflexive behaviors (e.g., salivation and eye blink). Second, neo-behaviorists acknowledge system 1 and system 2 processes (van Osselaer et al., 2004). Traditionally, radical behaviorist research focused on system 1 processes. Neo-behaviorists focus on how system 2 processes (e.g., inferencing, reasoning, and prediction) alter system 1 processes (association, expectation, and salience). Third, neo-behaviorist research gives agency to consciousness. Awareness of the contingency between the US and the CS facilitates learning (Allen & Janiszewski, 1989). Fourth, neo-behaviorists allow for active learning (i.e., learning from feedback), as opposed to assuming passive learning (Gluck & Bower, 1988). Directed attention is a form of active learning, allowing for faster, more efficient learning as well as strategic protection of prior learning (Cunha et al., 2008). This integration of radical behaviorism and cognitive principles has led some to argue that neo-behaviorist conditioning research reflects a methodology (e.g., attitude change owing to a conditioning procedure) rather than provides insight into process (e.g., attitude change owing to a conditioning process) (Bolles, 1979; De Houwer, 2007; Stuart et al., 1987).

3.3 | Operant conditioning theory

Operant conditioning theory (R→O) accounts for how reinforcements and punishments (i.e., outcomes) influence the repetition of a behavior. Behavior (R) increases due to positive reinforcement (O+), which is the delivery of a reward (e.g., a positive outcome), and negative reinforcement (sans O-), which is the termination of an aversive state (e.g., removal of a negative outcome). Behavior decreases due to positive punishment (O−), which is the delivery of a penalty (e.g., a negative outcome), and negative punishment (sans O+), which is the termination of a pleasant state (e.g., removal of a positive outcome). A reinforcement or punishment schedule influences the rate of responding. Reinforcement schedules can be continuous (every response is reinforced) or partial (some responses are reinforced). Partial reinforcement schedules can be fixed or variable and depend on the number of responses or the time since the last reinforcer was delivered (Myers, 2011). A fixed ratio schedule (i.e., reinforce every nth response) creates the fastest rate of responding, whereas a variable interval schedule creates the most sustained pattern of responding.

Operant conditioning is foundational to the consumption of products that provide rewards or remove aversive states. Given that most goods offer continuous reinforcement (i.e., the benefit is realized each time they are consumed), operant conditioning occurs naturally (i.e., the process is always operative). Principles of operant conditioning have been specifically investigated in two consumer domains—general purchase behavior and loyalty programs.

3.3.1 | General purchase behavior

Operant conditioning theory is used in a variety of marketing applications, even if it is not referred to as such. First, repeated purchase behavior has been linked to stimulus→reward habit formation, a behavior that is not cognitively mediated (Ji & Wood, 2007) (RB). Second, a continuous reinforcement schedule is more effective (e.g., an everyday low price schedule led to a 3% sales volume increase) than a variable interval reinforcement schedule (e.g., a Hi–Lo pricing schedule led to a 3% sales volume decrease) (Hoch et al., 1994) (N–B). Third, price promotions targeted at deal-prone customers take advantage of habitual responding to incentives (Shah et al., 2014) (RB). Fourth, frequent shopper cards, an example of a ratio reinforcement schedule, increase the rate of purchase relative to no card (Lin & Bowman, 2022) (N–B).

3.3.2 | Loyalty programs

Loyalty programs, which are typically implemented using continuous reinforcement schedules, are a popular way of increasing purchase behavior (Henderson et al., 2011). Loyalty programs are most effective at building repeat purchase behavior when there are many opportunities for a reward in a short time period, thus, ensuring the reinforcement schedule is continuous (Chaudhuri et al., 2019). Loyalty programs that offer variable interval rewards are more effective at increasing the purchase volume of low volume shoppers, as opposed to high volume shoppers (Kim et al., 2009) (RB). Negative punishment, in the form of a demotion to a lower level in a tiered loyalty program, reduces purchasing (Wagner et al., 2009) (N–B).

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3.3.3 | Integrating cognitivism

Cognitivist concepts have also been integrated into research on operant conditioning (Kirsch et al., 2004; Logan, 1979). First, responses in operant conditioning are volitional—people choose how to behave. Thus, there is considerable opportunity to integrate cognitive concepts that influence choice (e.g., goals, expectations, and progress) into operant conditioning investigations. For example, the goal gradient hypothesis argues that people accelerate the behavior (e.g., coffee buying) as they get closer to a reward (a free cup of coffee after 12 cups) because of perceived goal progress (Kivetz et al., 2006) Second, neo-behaviorists conceptualize operant conditioning as the "learning of expectancies," wherein a participant is actively trying to learn subjective probabilities (Kirsch, 1985). Learned expectancies can influence behavior in the absence of a reinforcer, as is the case with placebo effects (Shiv et al., 2005). Third, neo-behaviorists view operant conditioning as strategic. Subjects make use of mental simulation and remember prior trials, successful or not (Kirsch et al., 2004). For example, learning can occur if people are told about an R→O relationship, in the absence of any responding (Brewer, 1974). Learning occurs when non-reinforced trials (R) occur prior to reinforced trails (R→ O+), which is called latent learning (Tolman & Honzik, 1930). Fourth, operant responding can be suppressed or modified via cognitive control (Liefooghe & De Houwer, 2016). Finally, similar to classical conditioning, many believe that operant conditioning is a collection of methodological procedures rather than a specific process (Liefooghe & De Houwer, 2016).

3.4 | Research using behaviorist methods

Many researchers have explicitly, or implicitly, embraced the idea that behaviorism is a paradigmatic approach that exists independent of its most popular theories. Behaviorism is, at its core, an interest in how the environment encourages, enables, sustains, and extinguishes behavior, without emphasis on intervening mental processes. That is, a behaviorist perspective motivates research questions related to how the environment influence behaviors, even if the research is not purely behaviorist. A behaviorist paradigm influences research in different consumer domains.

Consider, as an example, the research on product modification. Product modifications are alterations to stimuli that increase the ease, or decrease the difficulty, of executing a behavior. For instance, taller (vs. squatter) beverage glasses increase consumption (Raghubir & Krishna, 1999), smaller (vs. larger) dinner plates decrease (increase) serving size and consumption (Wansink & van Ittersum, 2013), larger (vs. smaller) bite sizes increase food consumption (Zijlstra et al., 2009), and a less (vs. more) viscous energy drink increases consumption (de Wijk et al., 2008).

In addition, consider the research on environment modification. Environment modifications include (1) increasing the salience of a behavioral response, (2) increasing the ease of executing a behavior, and (3) increasing the reward associated with a behavior. For example, the ease of eating food (e.g., straw diameter) influences the amount consumed (Bolhuis et al., 2013), placing recycling containers in the location of consumption increases recycling (Ludwig et al., 1998; O'Connor et al., 2010), increasing the accessibility of healthy (unhealthy) food in a cafeteria increases its choice (Cesareo et al., 2022), placing healthy (unhealthy) food items at the point-of-purchase increases their sales (Sigurdsson et al., 2014), and optimizing retail store design increases sales (Webber et al., 2018).

Moreover, consider behavioral economics. Behavioral economics investigates stimulus-based nudges that encourage a desired behavior (Szaszi et al., 2018; Thaler & Sunstein, 2009). Stimulus-based alterations to the choice environment include (1) changing the set of available options, (2) increasing the salience of an option, (3) lowering the effort of selecting an option (e.g., automatic pension enrollment), (4) increasing the rewards associated with an option, and (5) changing the presentation order of options (e.g., primacy effect). Behavioral economics has been used to investigate health choices (Cornil & Chandon, 2016; Romero & Biswas, 2016), food choices (VanEpps et al., 2016; Wilcox et al., 2009), environmental behavior (Tam et al., 2013), financial decisions (Agarwal et al., 2015; Thaler & Benartzi, 2004), and prosocial behavior (Ahn et al., 2014). Thus, some of the research in consumer behavior may not be explicitly behaviorist, but it uses behaviorist principles to answer important research questions.

4 | EXPANDING THE DOMAIN OF BEHAVIORISM

The applications of behaviorism in consumer research have been guided by the topics that were of general interest to researchers regardless of paradigm (e.g., advertising effectiveness, brand loyalty, choice, goal-directed behavior, and persuasion). We contend that there is an opportunity to step back and assess the major strengths of behaviorism. We can then apply this paradigm to research questions that are aligned with those strengths.

4.1 | The advantages of behaviorism

There are six major strengths of the behaviorist paradigm. First, the paradigm does not assume an organism has an innate structure that allows it to learn (e.g., Paiget's innate schemas). There is behavior, there is feedback, and there are learned contingencies. Second, the paradigm focuses on dynamic behavior. The focus is on how behavior changes over time (Miller & Frick, 1949). Classical conditioning, operant conditioning, shaping behavior, and habit formation are models that allow one to predict changes in the rate, intensity, and persistence of behavior. Third, the paradigm focuses on effect sizes. The goal is to understand how to facilitate positive behavior and extinguish negative behavior. The larger the change in behavior, the more relevant the intervention. Fourth, there is an emphasis on ecological validity. Environments are responsible for behavior. Changes in an

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environment result in changes in an effect size. Hence, understanding the characteristics of an environment that create an effect provides insight into the replicability of the effect. Fifth, the behaviorist paradigm is not constrained by theory. Behaviorist contributions do not require a mediating cognitive process; thus, research questions are not confined to a specific theoretical perspective. This allows a researcher to be more inductive, though many would disagree due to the emphasis on descriptive models that predict changes in a specific behavior over time (e.g., Janiszewski & van Osselaer, 2000). Finally, the paradigm encourages a focus on substantive issues. If one is interested in behavior, then it is beneficial to study consequential behavior.

The advantage of adopting a behaviorist paradigm to study consumption comes from the insights it will provide. Behaviorism facilitates the study of (a) which consumption behaviors consumers initiate, (b) how much of the behavior they express, (c) the length of the behavior, (d) the intensity of the behavior, and (e) the cessation of the behavior. Moreover, observing behavior over time is the norm, rather than the exception, in a behaviorist research program. Thus, within-subject designs that focus on ongoing consumption (Chintagunta & Labroo, 2020) are more prevalent in behaviorist research.

The remainder of this paper discusses five research areas where there is an opportunity to apply behaviorism to the study of consumer behaviors that can be harmful to consumers and society. In three of these areas, we apply behavioral theory directly to propose solutions to mitigate these behaviors (negative online behavior, compulsive buying, and depression), whereas in two areas, we take advantage of behaviorist principles to develop solutions (wellness and sustainability).

4.2 | Using operant conditioning theory to understand negative online behavior

People tend to share a lot of negative information in their online posts (Hansen et al., 2011; Stieglitz & Dang-Xuan, 2013), make antagonistic comments on social media (Jenaro et al., 2018; Lowry et al., 2016), and invite arguments in the online world (Mohajon, 2020). People doomscroll (i.e., continuously scroll through bad news), even though it causes stress, anger, and sadness (Price et al., 2022). People actively consume misinformation, especially information that defames others and provides a basis for arguments online (Shu et al., 2017). These behaviors are counterintuitive and counterproductive.

4.2.1 | A behaviorist explanation

The online environment makes it easy to execute behaviors. A person can easily click on a story, share posts, respond to someone's comment, or create their own posts. Consequently, associations are easy to learn and act upon. Further, associations can develop implicitly, especially when there many opportunities to observe behavior (Brailovskaia & Teichert, 2020). Thus, from a behaviorist perspective, it is easy to understand why people develop online habits. But why are certain behaviors reinforced?

Negative online behaviors are reinforced via operant conditioning. When it comes to posting, negative (vs. positive) news gathers more likes, comments, and shares (Hornik et al., 2015; Zhang et al., 2021), which we collectively call social attention. Simply posting a negative opinion, that is not news, tends to generate controversy, and again more comments and shares (Pfeffer et al., 2014). The operant conditioning hypothesis is that social attention is a positive reinforcer that is stronger than positive punishment (i.e., negative feedback from posting negative information). The implication is that online behavior is driven by the desire to generate as much social attention as possible, not by having positive social interactions. As a person repeats negative behavior, and it is reinforced by a high amount of social attention, an S→R→O cycle develops (S = cue that invites negative behavior, R = engage in negative behavior, O = experience reinforcement via social attention).

An additional component of behaviorism is observational learning (i.e., the formation of implicit associations), according to which people model their behaviors via direct observation of others' behaviors (Lowry et al., 2016; Zimmerman & Ybarra, 2016). The internet is a perfect environment for observing the behaviors of others, along with its consequences, in real time. People observe others being negative, and how this negative behavior is rewarded via increased social attention. This represents an indirect way in which associations between negative behavior and social attention are formed (S→O associations).

4.2.2 | A behaviorist solution

The description of how people learn associations that can explain their negative behavior online makes it clear that an approach to address this behavior will be more effective if it is based on the understanding that all behavior results from an individual's interaction with their environment. Behaviorism offers such approach, and is especially useful in an environment where information flows quickly and interactions are abundant. A behaviorist could address the problem of negative online behavior by altering an individual's behavior in four ways. First, one could develop procedures for removing the stimuli in S→R→O associations from the online environment. People can choose who they follow online and which topics they prefer, such as when Twitter asks users if they want to see posts about football, politics, or the economy. To avoid all the negative behavior that occurs in their environment, platforms could allow users to calibrate the valence of the posts they see. If someone is involved in a negative cycle where they only click on negative information and engage in doomscrolling, having the chance to select exposure a priori may help people avoid such behavior, similar to when addicts avoid addictive behaviors (e.g., an alcoholic who avoids following people who post about drinking). Here, instead, the "addiction" is to an overall information valence. While this may seem hard to implement, it is not far removed from what Instagram has done. Amid research findings that not

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receiving enough social attention to posts impacts people's self-esteem negatively, the platform decided to allow people to control whether the number of likes they get on their posts is shown (Heilweil, 2021). Second, if it is impossible to remove triggering stimuli from the environment, one could discourage the negative responses in S→R→O associations. One strategy revolves around the concepts of exposure, response–prevention, and defusion. This strategy involves exposing a person to the stimuli that trigger the response and then using incentives to suppress the response (Eilers & Hayes, 2015). Thus, rather than trying to create a different association (e.g., "positive behavior leads to more social attention"), this behaviorist strategy would modify the behavioral response, which decreases the likelihood that the behavior is repeated.

Third, one could remove the reinforcer (O). Platforms could add a negativity threshold after which responses to a post are disabled, so that there is no social attention incentive to share negative information. Finally, platforms could deconstruct the R in S→R→O associations. Not all negative content is equal, and researchers may use tools available to generate knowledge on what it is about online content that invites repeated negative behavior. While negative content (e.g., negative news and antagonistic opinions) generates more social attention, it is possible that other characteristics of this content, not simply "being negative," generate attention. For example, researchers could help develop social media algorithms that differentiate content that is popular but only has negative consequences (e.g., "triggers negative emotions" and "promotes reactive behavior") from content that also has positive consequences (e.g., "gets the point across quickly" and "signals popularity"). If content that also has positive consequences were made more available, then there would be a higher probability that these positive consequences would become associated with the social attention benefit, strengthening positive S→R associations.

A more radical solution to negative online behavior is to alter the audience's response to negative posts, hence altering the outcome experienced by the individual or company generating the content. First, measures of media engagement (O) could be altered to provide both engagement (social attention) and sentiment (social censure) information (Kim & Yang, 2017). There are many metrics of social censure. One of them, which is very direct, is the availability of a dislike button. The nature of the outcome could be altered by enabling a dislike button only for posts that the platform deems negative in nature. This would allow positive content to generate social attention and negative content to generate both social attention and social censure (i.e., ration of dislikes to likes). Second, platforms could alter algorithms that determine the prominence of specific types of information which, in turn, determine its diffusion. The objective would be to create a positivity premium, as opposed to a negativity premium, by advantaging positive content. Of course, there is an assumption that the reason why negative content generates more social attention is that people *prefer* negative content, which creates a reinforcement cycle where more negative content is shown to users who have consumed such content before. This, however, is a purely cognitive assumption and neglects the fact that this "preference" may in fact be driven by repeated exposure to negative stimuli.

Third, social networks could create "popularity clusters" so that "everyone can be famous somewhere." In effect, this would require algorithms that facilitate the dissemination of topical positive content to appropriate target markets. This would mean that, while negative content could still generate social attention locally, positive content would be more likely to expand the audience an individual (e.g., an influencer) can reach. This would create a positive reinforcement cycle, where positive behavior attracts new audiences that consume positive content, providing a reward for developing further content that is mostly positive. Finally, in our current social media world, we measure people's popularity based on followers and engagement (i.e., a social attention metric). This kind of metric provides a signal to those deciding whether to follow someone, as having many followers is used as evidence that the person should be followed. However, this metric does not show why a person has many followers. A better metric would assign points for positive behavior and deduct points for negative behavior. This would create a system where popularity suffers from being negative, increasing the change that those who want to be popular will focus on generating and interacting with positive content.

4.3 | Using classical and operant conditioning to address compulsive buying

Compulsive buying is "chronic repetitive purchasing that becomes a primary response to negative events or feelings" (O'Guinn & Faber, 1989, p. 155). Compulsive buying is part of a class of behaviors called compulsive consumption, which includes compulsive buying, cleaning, drug use, eating, exercising, gambling, hoarding, and social media use (Black, 2022; Faber et al., 1995; O'Guinn & Faber, 1989). Of these behaviors, compulsive buying is prevalent in the population (4.9%), and even higher among students (8.3%) and samples that only include shoppers (16.2%) (Maraz et al., 2016). Compulsive buying results in (1) excessive debt (58.3%), (2) guilt (45.8%), (3) missed loan payments (41.7%), (4) social criticism (33.3%), and (5) criminal legal problems (8.3%) (Christenson et al., 1994).

4.3.1 | A behaviorist explanation

There are two behaviorist explanations of compulsive behavior. The first explanation depends on the idea that aversive states are more motivating than desirable states (Zorrilla & Koob, 2019). Instrumental behaviors occur because of a desire to experience a positive state—that is, the behavior generates positive reinforcement. Impulsive buying is one example of instrumental behavior. In contrast, compulsive behavior occurs because of a desire to terminate an aversive state—that is, the behavior generates negative reinforcement (O'Guinn & Faber, 1989). Consistent with this observation, compulsive behaviors (1) are prone to occur in people who are depressed (Lejoyeux et al., 1995), (2) are used to alleviate negative mood states (Müller

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et al., 2012), and (3) are often anticipatory responses that prevent negative emotions (Zorrilla & Koob, 2019).

The second explanation depends on how operant and classical conditioning combine to encourage a behavior to transition from instrumental to compulsive (Everitt & Robbins, 2016; Talmi et al., 2008; Watson et al., 2014). Initially, responses to the environment are instrumental, in that there is an expectation that a specific response will lead to a specific outcome (locating and buying a special product→ euphoria). Over time, environmental cues (retail store, shopping app, and social media influencer) that precede the instrumental response (shopping) become classically conditioned to the outcome (retail store→expect euphoria) and associated with the behavior (retail store→shopping). Consequently, conditioned cues (retail store) automatically activate responses (shopping) that do not always deliver rewards (euphoria). The potential for multiple CS, and the persistence of conditioned responses with only partial reinforcement (less euphoria), hyper-motivates the instrument behavior so that it becomes compulsive.

4.3.2 | A behaviorist solution

Strategies for discouraging compulsive behavior depend on the explanation of the behavior. When there is evidence that the compulsive behavior depends on negative reinforcement, it is best to address the operant response and outcome. First, one could make the execution of the operant behavior more effortful. Retailers know that shoppers do not buy so much from their phones simply due to preference. Instead, much of this behavior is driven by the ease involved in the shopping process. Being aware of this, there are payment companies that, for example, store a shopper's card and shipping information and use it for every retailer, avoiding the need to enter information every time someone makes a purchase from their browser. Another example is Apple Pay, which can be used seamlessly across retailers. A compulsive shopper could counteract these strategies, deleting stored accounts at retailers and the autofill option from shopping devices so that transactions require more effort. This would create an environment where negative reinforcement (e.g., avoid sadness) would become less beneficial given the amount of interaction with the environment necessary to engage in the behavior. Second, one could make it easier to engage in alternative rewarding behaviors. Alternative rewarding behaviors might include an option to listen to one's favorite music when attempting to open a shopping app, place donation bins in a visible place in the house to facilitate the act of helping others instead of hoarding, or lighting a scented candle when beginning to engage in compulsive eating. These strategies are very different from those of a cognitive approach, which would predict that the behavior would persist as long as the goal behind the behavior is active, but consistent with the behaviorist idea that changes to the environment can stop or redirect behavior.

Alternatively, when compulsive behavior depends on a contextual CS generating additional motivation for the operant behavior, it is best to manage the presence of the CS or the strength of CS associations to reward outcomes. First, one could eliminate stimuli (e.g., shopping app and social media influencers) strongly associated with the consequences (e.g., euphoria) of a response (e.g., shopping) from a person's environment (Müller et al., 2015). For example, an individual could eliminate access to social media as part of their morning routine. The individual may not make a conscious connection between social media use and their buying ("I do not click on the ads or on the purchase button during breakfast"). Yet, starting the day with social media may reinforce a connection between pleasure and buying (see influencers wearing nice things and see nice things readily available to buy), which later leads to buying. Second, one could weaken or alter the associations to the CS so as to develop associations that do not encourage compulsive behavior. For example, if one's desk is a contextual CS cue that motivates compulsive food consumption (e.g., eat food→feel good), one could weaken the CS response (e.g., desk→eat food) by linking the CS to another response (e.g., desk→organize). None of these strategies involve directly changing how an individual thinks about a response, but only how the environment allows for a response, which may then change cognitions about the response.

A behaviorist perspective can also be effective at the group level. For example, buying material goods that are status symbols or fill a void (i.e., products one believes one should have) increases loneliness, whereas impulse purchases do not (Pieters, 2013). In turn, the experience of loneliness from status-signaling and void-filling purchases encourages additional purchases of these types. Thus, loneliness is acting as a CS that hyper-motivates materialistic purchases. One solution to this problem is to remove the loneliness CS by creating a stronger sense of community. A sense of community can (1) reduce the motivation to use the act of shopping to achieve a reward and (2) provide an alternative behavior that generates rewards (social interaction→rewards).

Behaviorism can also be used to address brand pathologies (Buchanan-Oliver & Schau, 2019). Brand pathologies include brand dependencies, brand addictions, and compulsive buying (Fournier & Alvarez, 2013). As such, they can involve excessive spending on products from certain brands, interpreting brand meaning as a license to be abusive toward others, and ostracizing those who buy from competitors (Buchanan-Oliver & Schau, 2019; Muniz & O'guinn, 2001). A behaviorist approach to attenuating maladaptive brand behavior would focus on altering the seemingly positive associations that support the negative behavior. For example, if being involved with user communities is a CS that triggers the maladaptive behavior, then a person could leave or mute the user communities. Or, if engaging in positive word-of-mouth about a brand results in more motivation to spend, then a person should limit their opportunities to engage in word-of-mouth. Further, if adaptive and maladaptive brand behaviors compete for expression, then one could try to increase the positive rewards associated with the adaptive behaviors. For example, a person could reward themselves with some time off for self-care after they resist the urge to be negative toward people who are not fans of the brand. Likewise, a person could write social media posts about how to use products to improve the well-being of others (i.e., a

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behavior that would result in popularity), as opposed to forcefully declaring one brand is superior to all others (i.e., a behavior designed to win an argument).

4.4 | Using classical and operant conditioning to address depression

Depression is a state of sadness characterized by a lack of motivation, low self-worth, and guilt. It is caused by genetics and environmental factors, with environmental factors accounting for approximately 50% of the cases (Lesch, 2004). The impact of the environment on depression is supported by reports that depression in U.S. adults increased from 7% pre-pandemic to 28% mid-pandemic (Panchal et al., 2020). Environmental factors that contribute to depression include stress (Hammen, 2005), job loss (Price et al., 2002), financial hardship (Butterworth et al., 2009), social media use (Keles et al., 2020), a poor diet (Hu et al., 2019; Quirk et al., 2013), lack of exposure to sunlight (Molin et al., 1996), and an inactive lifestyle (Sigmon et al., 2010).

The development of depression can be explained by S–R and S–O relationships, and in fact constant interaction with the same environment, over and over again, takes the brain on a path that makes it hard to get out of a negative path that keeps reinforcing the causes and consequences of depression. We will illustrate this point by showing how depression is the result of how people interact with their environment (S–R), how these behaviors reinforce similar subsequent behaviors, and how changes in the environment can modify responses and help avoid further depression.

4.4.1 | A behaviorist explanation

A behaviorist perspective can explain how depression develops and persists. Depression can develop when certain stimuli become associated with negative emotional states (classical conditioning; Mineka & Oehlberg, 2008) and persist when behaviors that previously generated positive emotional states (operant conditioning) fail to deliver rewards or are simply not expressed (Dygdon & Dienes, 2013).

To explain the onset of depression, consider a person who is temporarily experiencing more negative events (US) in their lives (e.g., negative emotions, stress, fatigue, and loneliness) than is typical (Hammen, 2005). To the extent these negative events (US) are preceded by stimuli (CS) that can predict the event, negative responses (CR) can be experienced even though the event has not occurred. For example, if work (US) creates extreme stress (UR), routines that are associated with work (CS) (e.g., a morning consumption routine) can create stress and anxiety (CR) in the absence of work (e.g., on weekends). Moreover, negative conditioned responses can occur from multiple conditioned stimuli (e.g., house [CS]→conflict with spouse [US]→ negative emotions [UR]; smartphone [CS]→social media impression management [US]→fatigue [UR]; apartment [CS]→lack of social interaction [US]→loneliness). An accumulation of negative conditioned responses, to cues that are prevalent in a person's environment, can create a persistent state of negative emotion that is experienced as depression.

Operantly conditioned responses often protect a person from the onset of depression. People use hedonic products, including entertainment, exercise, social events, and food to generate positive rewards. These rewards are the equivalent of consumption-based antidepressants. When people enter a state of depression, they become less likely to experience a positive response to the consumption of hedonic products, with positive hedonic responses being either dulled or eliminated (Dygdon & Dienes, 2013). This has two consequences: (1) hedonic consumption does not create a positive affective state and (2) sources of hedonic consumption become less associated with positive rewards. Further, the general listlessness created by depression results in people having less drive to act, an additional suppressant on hedonic behavior.

4.4.2 | A behaviorist solution

There are, of course, many ways to treat depression. The most common form of therapy is cognitive behavioral therapy, which goes beyond changing a person's thinking and tries to change their behavioral patterns (Comşa et al., 2020). While cognitive behavioral therapy uses some behaviorist principles, its approach is more focused on how a person uses their cognitions to change behavior, such as when a person faces their fears instead of avoiding them and practices staying calm before certain triggers influence behaviors. Our perspective is different in that it accepts the role that cognitions can play in changing behavioral patterns but mostly focuses on changing aspects of the environment which can then influence cognition and behavior.

There are several ways in which this approach can help individuals with depression. First, a behaviorist could help by finding and eliminating stimuli (CS) from a person's environment that cause negative responses (CR). Consider our earlier example, of someone who is experiencing extreme stress and becoming depressed about work, with negative responses that occur from the very beginning of the day. Addressing depression would involve changing a morning routine, even if specific aspects of this routine do not seem directly related to the causes of the depression (i.e., are not specific to a person's job). Second, it is possible to extinguish the CS–US→UR relationship. Consider an individual who feels lonely in their apartment and ends up associating the apartment with loneliness. Extinguishing this association would not necessarily involve just interacting with people, in general. It would involve increased social interactions in the apartment so that the apartment does not solely predict loneliness.

Third, one could retrospectively change the valence of the US. For example, consider an individual who constantly uses their phone to access social media and is depressed due to negative feelings associated with seeing others' seemingly more exciting life. Changing the valence of the US would involve changing the negative UR to a positive UR by altering the nature of social media interactions. For example, the individual could focus uniquely on posting their own content, hide content of close others who use social media to

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constantly signal status, and follow more informative content, at least until a more positive association developed. Fourth, an effective strategy would involve identifying the actual rewards associated with certain situations and create opportunities for engaging in the rewarding behavior (Lejuez et al., 2001). Consider a case of depression where the cause is hard to identify. A person may lose their job and be in financial difficulty as a result, "financial difficulty" being the actual cause of depression. Alternatively, a person may lose their job, become depressed, and believe that this is happening for not having the reward of financial security. While the person spends most of their time trying to feel better by thinking of ways of having financial security, the real cause of the depression may be the "lack of daily tasks with people who have the same goal as me." While having financial security is important, maybe joining a team (e.g., sports, volunteer at a charity, and join a book club) is the behavior most likely to substitute the reward that is lacking and causing depression. Similarly, a person who loses a close relative may believe the depression comes from not interacting with that person anymore, but part of it may be the reward associated with consumption episodes that occurred with that person. "Going to a certain restaurant on Sundays" may be a reward instead of going to that restaurant with the person who passed away; "getting a treat for people I love" may be a reward instead of getting a treat for the person who passed away;" "rooting for a certain football team" may be the reward instead of rooting for this team because the person also did. In each of these examples, evaluating, reaching a better understanding, and reengineering what the rewards are from may be the key to treating depression.

A behaviorist perspective can also be effective when trying to address depression at a more aggregate level (e.g., groups, communities, and societies). For example, consider the higher incidence of depression in the elderly. Two important causes of depression in the elderly are loneliness (Aylaz et al., 2012) and inactivity/lack of purpose (Gomes et al., 2017). Rather than looking at these causes at the individual level, a behaviorist approach would analyze and reimagine the environment in order to stop make it unfriendly to depression. Environments that are structured to provide community, a sense of purpose, and a feeling of usefulness result in less depression (Pérès et al., 2021). A sense of community comes from a social network, social routine (e.g., intergenerational eating), social interaction (e.g., campaigns that facilitate interactions between non-elderly and the elderly), and addressing the digital divide (Domènech-Abella et al., 2017; Lim et al., 2020; Pérès et al., 2021). Similar analyses and interventions could be conducted for other high-incidence groups (e.g., adolescents).

As is the case with other negative behaviors, a behaviorist approach can be used to identity and treat depression at a more aggregate level. It starts with a large-scale study that points to important aspects (i.e., stimuli, relationships, responses, outcomes) of the life of entire communities and isolates aspects of the environment that may cause negative affect, mental health issues, and ultimately depression. Similar studies have been conducted to understand racism (Matsuda et al., 2020), clinical decision making (Smith, 2013), and how to achieve behavioral changes in communities (Dowdy et al., 2021). For example, a study of why children perform poorly in math generated a package of procedures to improve math skills and help parents improve their teaching of math skills, resulting in generalized improvements in reading fluency (Gortmaker et al., 2007). In fact, a behaviorist approach has been applied in areas such as family, health, safety, problem behaviors in schools, and community engagement (Luyben, 2009).

At a more global scale, the incidence of depression varies significantly among countries (Kessler & Bromet, 2013). Depression is even expressed in different ways in different cultures (e.g., Americans talk about their anxiety and sadness whereas Chinese talk about their boredom and physical pain; Kleinman, 2004). If we understand anxiety and pain as responses (R) to a depressing environment, then it may be possible to change the environment in order to change the aggregate response of citizens (i.e., eliminate anxiety and treat physical pain). A behaviorist approach would examine critical environmental aspects (i.e., stimuli, relationships, responses, outcomes) of cultures and isolate aspects that cause the negative responses that result in depression as well as the positive behaviors that generate rewards. Structuring environments to promote a healthy lifestyle—increase access to healthy food (Saghafian et al., 2018), promote physical activity (Mammen & Faulkner, 2013), and encourage mindfulness meditation (Schreiner & Malcolm, 2008)—could reduce aggregate levels of depression.

Finally, consider the counterintuitive finding that the woman–man depression gap is larger in countries where there is more (vs. less) gender equity (Hopcroft & Bradley, 2007). This difference has been attributed to working women having conflicting roles (Wu & Demaris, 1996) and the fact that women are treated unfairly at work (Sgourev, 2006). A behaviorist would attribute depression gaps to how women interact (R) with their environment (S). For example, in societies with more gender equity, women are expected to signal success through conspicuous consumption (Ordabayeva & Chandon, 2011). At the same time, almost all societies have unequal pay for equal work, meaning that social equity outpaces salary equity. Thus, a woman's consumption response is expected to be similar to a man's, even though economic resources are different, which generates a negative outcome (depression). This behavioral analysis would suggest that a possible solution to attenuate the depression gap is to eliminate the need to demonstrate success via conspicuous consumption (i.e., promote a different response).

4.5 | Using behaviorist principles to address wellness

The business of wellness had worldwide revenues of $2.2 trillion in 2020 (Health & Nutrition $946B, Physical Activity $738B, Public Health & Prevention $375B, Mental $131B; Workplace $49B; Global Wellness Institute, 2021). Despite this investment, health-care costs were $8.8 trillion in 2021 (Pharmaceutical Technology, 2020). Many of these costs are avoidable. It is estimated that the U.S. could save $117B per year in health care costs if all adults where aerobically active (150 min of moderate aerobic or 75 min of vigorous aerobic

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activity per week) (Carlson et al., 2015). Similarly, the United States could save $58B in health-care costs annually if people ate 100 cal less per day (Doll et al., 2009).

Advice on how to achieve healthy living is delivered by public policy officials, medical personal, physical exercise trainers, wellness coaches, industry pundits, influencers, media, and so on. All of these sources have one thing in common: they try to influence healthy living using information, the assumption being that cognitive processes determine behavior (Keller et al., 2020). Yet, there is evidence that an information-based approach to wellness is marginally effective (Cadario & Chandon, 2020; Dubois et al., 2021). Further, there is widespread consensus that certain societies (e.g., U.S. and Europe) have experienced decreased wellness over time (Pineda et al., 2018; Wang et al., 2020; WHO, 2021). The implication is that cognitive approaches to wellness are ineffective.

4.5.1 | A behaviorist explanation

Behaviorists assume that environments support and promote unhealthy behavior (Diez Roux & Mair, 2010; Freudenberg, 2012; Taylor et al., 1997). People engage in available behaviors that offer the highest immediate rewards, controlling for effort. Unhealthy behaviors are typically more readily available and more quickly reinforced. Unhealthy behaviors (e.g., eating fatty foods, consuming alcohol, and excessive screen time) tend to be (1) unambiguously hedonic, (2) convenient and effortless, and (3) immediately rewarding. In contrast, healthy behaviors (e.g., healthy eating, drinking water, and exercise) tend to be (1) ambiguously beneficial, (2) effortful, and (3) rewarded after a considerable delay. These are consistent with food choices (Chandon & Wansink, 2011; Farley et al., 2010), recreational activities (Manson et al., 2004; Saunders et al., 2014), lifestyle choices (Freudenberg, 2012), and how Western culture and capitalism enable unhealthy consumption (Elander et al., 2000; Stuart et al., 2020).

4.5.2 | A behaviorist solution

Behaviorist approaches to improving wellness can be piecemeal or holistic behavioral interventions. These interventions are designed to impact critical outcomes linked to chronic disease and reduced longevity. The critical outcomes are BMI < 30, systolic blood pressure < 130, diastolic blood pressure < 85, fasting glucose < 107, LDL cholesterol < 100, no creatinine in urine, no smoking, and low stress. Meeting critical outcomes is correlated with a lifespan increase of 10 years in men (Clarke et al., 2009) and 12 years in women (Baer et al., 2011) (see van Oort et al., 2021 for the impact of individual critical outcomes). Less than 5% of the population achieves these outcomes.

To date, many researchers have identified interventions that alter a key behavior which, in turn, expands the range of healthy behaviors and leads to desirable critical outcomes. For example, 3 days a week of aerobic exercise (e.g., Corbett et al., 2018), an improved diet (Meckling et al., 2002), and mindfulness stress-reduction training (Greeson & Chin, 2019) have all been effective at achieving critical outcomes in the short term. Yet, the most successful programs are systemic. For example, the Cleveland Clinic altered the work environment (e.g., removed junk food from the cafeteria, removed foods containing sugar from all vending machines, banned tobacco from the work campus, integrated small, easily accessible fitness centers into individual buildings, improved outdoor landscaping, and added paths to encourage walking). It also provided a 15% health insurance rate discount for enrollment in a wellness plan and a 30% discount for achieving critical outcomes (Pauer & O'Donnell, 2020). The clinic reduced health-care costs by approximately $3500 per year per employee in 2018 (Roizen, 2021).

The research opportunity is not to conduct a Cleveland Clinic quasi-experiment in another context. Instead, a behaviorist would identify potential environmental alterations and rewards and investigate how these factors would interact to influence behavior. For example, one might analyze how cafeteria menu changes, school vending machine product adjustments, and a municipal soda tax synergistically combine to alter the consumption behavior of children. One could also assess the conditions under which these changes generalize to out-of-school environments (e.g., home consumption). Existing examples of synergistic interventions are (1) a sponsored exercise program plus work hour reduction that synergistically increase health metrics (von Thiele Schwarz et al., 2008); (2) signage for healthy food bundles and price discounts that synergistically influence purchase of the healthy food bundle (Carroll et al., 2018); and (3) making healthy food choice salient, discounting these options, and increasing the price of unhealthy options that increase the sales of healthy options beyond the summed main effects of the three interventions (Hoenink et al., 2020).

4.6 | Using behaviorist principles to address sustainability

Climate change is the biggest challenge in the history of mankind. Mankind's failure to live a sustainable lifestyle is costly. The global economic benefits of sustainable energy production and use ($321 billion), sustainable urban planning (i.e., eliminate urban sprawl) ($1.4 trillion), sustainable agriculture ($2 trillion), sustainable water management ($94 billion), and a circular economy ($262 billion) exceed $3 trillion yearly (American Society of Civil Engineers & Value of Water Campaign, 2020; Global Commission on the Economy and Climate, 2018; Griffith & Calisch, 2020). Further, sustainability is listed as the number one issue of concern by world citizens including those in the United States (67% "serious problem"; Washington Post-ABC News Poll, 2021), Europe (78% "very serious"; Eurobarometer Survey, 2021), Australia (58% "very serious"; Park et al., 2020), and China (Ge & Lin, 2021). Yet, over 50 years of promoting sustainable living has had limited impact on consumption behavior (El Haffar et al., 2020; Kaaronen, 2017; Kennedy et al., 2009; York et al., 2003; York & McGee, 2016).

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Sustainable consumption initiatives have mostly adopted an information processing approach to changing individual behaviors of individual citizens (Ito, 2015; Kaaronen, 2017; White et al., 2019). Recycling, using public transportation, bike riding, home energy consumption, water usage, and buying local are examples of sustainable behaviors that policy makers have targeted. Sustainability programs promote education, enable the opportunity to participate, and (in some cases) offer incentives to act (e.g., Austin, Texas Zero Waste Strategic Plan, 2021). For example, a recycling program might devote resources to educating the population on why recycling is important, helping consumers learn how to identify recyclable materials, and secure sufficient resources to have weekly curbside pick-up. This approach to sustainable consumption is knowledge-based and process-oriented.

4.6.1 | A behaviorist explanation

Behaviorists assume that unsustainable consumption occurs because environments are structured to produce this outcome (Debord, 2004; Stuart et al., 2020). Marxist philosophy proposes that the causal relationship between production and consumption is reversed—that production increases product accessibility which in turn enables additional consumption (Schnaiberg, 1980). This view is supported by Jevon's paradox, which states that increasing the efficiency of resource usage increases, rather than decreases, the amount of the resource consumed. Consequently, consumption-oriented policies, reforms, and initiatives that promote efficiency in fact make society less sustainable (Alcott, 2005; Clack & York, 2005). The implication is, consistent with the behaviorist explanation, the macro-environment of consumption overrides demand-reduction approaches to sustainable living.

4.6.2 | A behaviorist solution

An alternative paradigm for encouraging sustainability is a behavioral systems approach. This approach assumes consumption is part of an integrated system and that public policy should focus on system outcomes, not individual behaviors (Krapfl, 2016). A systems analysis can be used to identify impactful behaviors and influential rewards (i.e., operant conditioning). It identifies leverage points that unlock a new way of behaving (cusp behaviors) or that create foundational behaviors that lead to cumulative behavioral changes (ratchet behaviors) (Bosch & Fuqua, 2001; Kaaronen, 2017). For example, a community might identify zero landfill waste as a desirable outcome when pursuing a circular economy. Zero landfill waste could then be broken into subgoals like zero food waste, zero plastic waste, and zero non-organic waste. A cusp behavior might be to encourage repurposing. Grocery stores and restaurants repurpose when they donate soon-to-expire food to the hungry. Individual citizens repurpose when they divert non-organic waste to other consumers (e.g., use Curb Alert, donate to Salvation Army, and donate to Goodwill). These are examples of cusp behaviors because a repurposing behavior in one domain should encourage repurposing behaviors in other domains.

A ratchet behavior might be transforming organic waste that cannot be repurposed, as when consumers compost. A composting behavior might generalize and encourage more efficient purchase (i.e., reduce purchases because food always goes bad) and consumption (i.e., eat the food before it goes bad) of highly perishable foods. Repurposing and transforming become two critical classes of behavior that can be generalized and adapted across domains to enable the goal of zero waste. The research opportunity is to identify the characteristics of cusp and ratchet behaviors that make them effective, the moderators that facilitate the growth of cusp and ratchet behaviors, and the factors that promote the spread of behaviors across domains.

5 | CONCLUSION

Consumer behavior research strives to investigate consumption, but most of the time it fails to do so. The best way to implement a consumption-focused research program is to adopt a behaviorist perspective to consumer behavior. While some behaviorist theories and principles have been part of the past of consumer research, we propose that the best way to fully understand and impact consumption is to view it like a behaviorist does—many everyday consumption behaviors are the result of a person's interaction with their environment, not cognitions about their behavior. We have discussed five research opportunities that focus on understanding the impact of environmental changes on negative consumer behavior at the individual or societal level. Adopting a behaviorist approach will better equip consumer behavior researchers to understand these and other serious issues that continue to affect society.

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