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ECONOMICS OF BEHAVIORAL CHANGE[‡]

Change Behavior, Motivation Will Follow(?): Acquired Taste and Incentives[†]

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If you change people's motivations, you can often change their behavior (e.g., Eccles and Wigfield 2002; Gneezy, Meier, and Rey-Biel 2011). To that end, incentives can be particularly helpful. Someone who is initially unwilling to go to the gym, for example, may go if paid to do so (Charness and Gneezy 2009; Acland and Levy 2015; Babcock et al. 2015; Royer, Stehr, and Sydnor 2015; Carrera et al. 2017). Similarly, someone with an intrinsic preference for longevity may start going to the gym after being diagnosed with diabetes (Kruglanski et al. 2018).

This paper will flip that question around: if you change people's behavior, can you change their motivations? The question is important because behaviors induced by motivation-based incentives, such as going to the gym, are often temporary and do not last long after the incentives are removed.

We argue that the answer to this question is yes. In this paper, we will explore three situations in which changes in behavior appear to trigger changes in motivation: *preference discovery*, *acquired taste*, and *habit formation*. The first two represent cases where motivation is altered through the discovery or acquisition of preferences (a term we use synonymously with tastes), while the latter represents a case where motivation is altered without necessarily changing preferences. In each case, we will explore the mechanisms involved and the role that incentives play, with the ultimate goal of illuminating the interplay among preferences, incentives, and behavior.

I. Preference Discovery

When people engage in new activities or are exposed to new experiences, they often discover preference they did not know they had (Plott 1996; Cooke 2017; Delaney, Jacobson, and Moenig 2020). Consider the case of someone who tries sushi for the first time. Although that person may have had a preference for *not* eating raw fish until that moment, if they engage in a new behavior by trying sushi, they may well perceive the first bite as delicious, revealing a preexisting but hidden preference, which in turn will motivate them to consume it again.

In some cases, the behavior that leads to a preference discovery is unintentional: someone vacationing near the ocean for the first time might find a kayak at their beach house, take it out on the water, and discover that they love ocean kayaking. In other cases, the behavior is deliberate: someone who finds the idea of raw fish unappealing might nevertheless force themselves to try it because their friends rage about it. In still other cases, the behavior is incentivized: someone paid to go to the pool and swim laps might discover that they love swimming as a form of exercise.

In the arena of using incentives to produce lasting behavior change, preference discovery is the simplest case we discuss in this paper because all that people need to do to discover a preexisting or hidden preference is to try a new

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behavior once. Trying that behavior is thus what needs to be incentivized.

Everybody is different, so, naturally, people will often need to engage in exploration to discover their preferred behaviors. If someone claims they do not like reading, it is possible that they simply have not yet discovered a genre that they enjoy, and incentives can be used to encourage exploration. Rather than paying someone to go to the gym as a way of getting them to exercise more, for example, we might pay them to try ten different forms of exercise, with the hope that the person will discover one form that they enjoy.

Some activities are enjoyable only after reaching a certain level of mastery. Downhill skiing can be thrilling but only if you are comfortable on skis. Indeed, the sport is often frightening and frustrating for novices, and it's only after they gain proficiency that they start to find the activity enjoyable. In this situation, they are not acquiring a new preference so much as developing the skills that allow them to discover a preexisting one. Incentivizing lessons therefore can be a way of helping them discover a preference.

II. Acquired Taste

Acquired tastes involve preferences—and feelings of appreciation and enjoyment—that develop over time with repeated exposure, often requiring individuals to overcome initial aversions or indifference (Melchionne 2007). Engaging in initially distasteful behavior may be the result of deliberate effort to change one's taste or may occur spontaneously.

A. *The Process of Acquiring Tastes*

Acquiring tastes requires a sustained behavior that involves overcoming preexisting preferences. In some cases, the behavior may be internally motivated: a person who does not like exercising might commit to doing it because they recognize the benefits, and a person who does not like coffee might start drinking it out of a desire to fit in with friends. Such people engage in an "as if" activity: they are pretending to have a preference with the hope that this pretense will help them overcome their existing preferences and genuinely acquire the new one. People may even deceive themselves into believing they like something when, in reality, they do not—a form of inauthentic acquired taste (Melchionne 2007).

What if somebody else provides an external incentive for the acquisition of a taste in the hopes that the person will come to enjoy the new behavior and maintain a preference for it even after the incentive is discontinued? Parents, for example, might offer their child an incentive (perhaps the prospect of playing a computer game afterward) for reading the first three chapters of a book with the hope that once the child reaches that point in the story, reading the book and finding out what happens next will be enjoyable in its own right and the child will therefore keep reading.

B. *Mechanisms for Acquired Tastes*

Several psychological phenomena suggest mechanisms by which repeated engagement in a behavior can result in an acquired taste. One is known as the *mere-exposure effect* (Bornstein and Craver-Lemley 2022), a term coined in 1968 (Zajonc 1968). The idea is simple: when people are repeatedly exposed to stimuli, they often develop more positive attitudes toward them. People tend to prefer familiar art and music to unfamiliar art and music, for example. This suggests that repeated exposure alone can play an important role in changing motivation.

A second phenomenon is *habituation* (Thompson 2009), which refers to a decreasing response to a stimulus after frequent exposure. Strong odors may initially come across as unpleasant, but after several minutes of exposure, people often get used to them and at times no longer even detect them. This has an obvious motivational implication: with repeated exposure, people get used to the unpleasant aspects of a stimulus (e.g., bitterness of coffee) and therefore no longer find it to be a deterrent or an obstacle.

A third phenomenon is *conditioning*. Learning the association between a taste and an outcome can result in a preference (or aversion) for the taste (Havermans and van den Heuvel 2023). Conditioned food preferences (Sclafani 1991) result, for example, when a taste is paired with a consequence of ingesting the substance in question. Animals and people who experience a unique taste paired with an unpleasant consequence, such as nausea, will avoid that taste well into the future, whereas if they experience a unique taste paired with a pleasant consequence, such as satiety, they will seek out that taste well into the future. This is a familiar mechanism, as any coffee drinker knows: the bitter taste of coffee may initially seem unpleasant, but with repeated exposure to its caffeine effects, people may associate it with pleasurable outcomes, which in turn leads people to experience the taste as pleasurable.

C. *Acquired Instrumental Behavior*

As described in the classic Law of Effect (Thorndike 1927), a behavior that consistently results in a desired outcome will be repeated. When this happens, we call it an "acquired instrumental behavior." Many acquired tastes, such as wine, cigars, and exercise, entail behaviors that are reinforced by positive feelings—an alcohol buzz, a nicotine high, an endorphin rush. Acquired instrumental behavior does not represent a true acquired taste but rather learning a new way to achieve an outcome that has always been desirable, such as healthier life outcomes.

It can be difficult to distinguish whether a person has truly changed their preferences (come to enjoy the behavior itself) or has learned that a somewhat unpleasant activity results in a rewarding outcome. If you have acquired a taste, it means you now enjoy the activity in its own right regardless of the consequences, whereas acquired instrumental behaviors are undertaken primarily for their outcomes. If a person regularly drinks coffee because the behavior results in a caffeine hit or social approval, that behavior is instrumental. By contrast, if that person truly enjoys the taste of coffee in its own right, they would presumably be happy to drink good decaffeinated coffee without anybody around to see them doing it.

The following thought exercise may help in illuminating the distinction between an instrumental behavior and an acquired preference: imagine that you give a person a magic button that they can press to get the outcome without performing the activity. Will they use this magic button? If yes, we conclude that the person did not change their taste for the activity itself but is rather doing it for the outcome, which is what we call acquired instrumental behavior.

D. *Conditions for Triggering the Initial Behavior*

The acquisition of taste happens in a two-phase process. In the first phase, something induces the individual to engage in an as-yet-disliked behavior. In the second phase, the behavior has become self-sustaining because a new preference has been formed. As one Jewish author instructed over fifteen hundred years ago, "A man should always occupy himself with Torah and good deeds, even if it is not for their own sake (but for a reward), for doing so will lead to doing them for their own sake" (Pesachim 50b).

A crucial question for our discussion is whether individuals must make a conscious decision to change their tastes or whether this change can be motivated with external incentives alone. If individuals are resistant to altering their preferences, simply pushing them to try a new activity may change the behavior temporarily but not suffice to lead to an acquired taste. Future research could test this question.

III. Habit Formation

Habits are behaviors that are initially incentivized but then maintained after the incentive is removed (Wood and Runger 2016). For example, someone might initially start going to the gym regularly because they are offered a free membership but then continue to go even after the incentive is removed. This concept is parallel to acquired tastes in the sense that both involve an initially forced behavior that becomes self-sustaining, but the habit concept is distinct in that it does not rely on the development of a new preference—instead the self-sustaining behavior is motivated by past engagement in the behavior.

Habitual behavior is defined differently in the fields of psychology and economics. In psychology (Wood and Runger 2016), a habit is formed through repeated behavior such that an association develops between the context and the behavior. Once a behavior has become habitual, it is then typically characterized by insensitivity to changes in the incentives or outcomes of the behavior. Imagine someone who bikes home from campus every day after class. In this case, there is a repeated behavior (biking home) with a contextual cue (end of class), which leads to a rewarding outcome (getting home)—and together all of this results in an acquired habit. The habitual behavior is then elicited automatically in the presence of the cue, even if the incentive or motivation changes. For example, the person may automatically bike home even on a day when they have a dinner out scheduled.

The field of economics defines a habit as a behavior that is facilitated by previous engagement in the same behavior. Thus, initial engagement in the behavior alters the costs and benefits associated with the activity, which in turn lowers the barriers to future engagement in the same behavior. Consequently, as in the psychology scheme, the behavior is maintained even after initial external incentives are removed. This is the central assumption of the Becker and Murphy (1988) model, which proposes that an individual's utility from consumption is influenced by past consumption, or the "stock of behavior." Note that this change in behavior is not necessarily due to an acquired taste but could simply be the result of a lower marginal cost of performing the activity. This model identifies conditions under which past consumption can raise the marginal utility of present consumption, thereby affecting future behavior.

Past behavior can also affect consumption through information. After someone has exercised at the gym a number of times due to an incentive, they might know where to park, how to find the locker room, when the lap pool tends to be crowded, and how long it takes to shower and change after a workout. For somebody who has acquired this information, the cost of exercising at this gym has been reduced.

Habit is a nuanced concept, and its relationship to acquired tastes varies depending on the individual and the specific activity in question. While habitual behavior does not rely on an acquired or altered preference, the line between habitual behavior and acquired tastes is not always clear-cut; some behaviors may straddle both categories. In both cases, initial engagement in a behavior under an incentive results in sustained engagement after the incentive is discontinued. In the case of acquired taste, the mechanism is a change in preference (swimming now feels exhilarating), whereas in the case of habit formation, the mechanism is that the person has built a stock of behavior that lowers the cost of engaging in the activity in the future (getting to the pool is now easier).

IV. Conclusion

Can changing behavior result in changes in motivation? We argue that the answer is yes. Indeed, three distinct phenomena (discovered preferences, acquired tastes, and habit formation) each represent cases where initial behavior results in a newly revealed or newly formed preference. Incentives have the potential to serve as catalysts for the acquisition of new tastes, but their effectiveness is not guaranteed. The decision to change one's taste, the presence of habit formation, and the interplay between preferences and outcomes all shape the impact of incentives. Future research should continue to explore the mechanisms underlying taste acquisition and the role of incentives in facilitating this process, shedding light on the intriguing interplay between human preferences, behaviors, and external motivators.

Here are three takeaways that we hope can be used for designing incentives and guiding future research.

Preference Discovery.—Individuals may not be aware of their preferences until they engage with certain activities. The initial exposure to a novel experience can lead to a shift in motivation. Policy makers wishing to change behavior can provide incentives contingent on trying several different activities. Potentially, people will be surprised to discover that at least one of these activities, which they did not expect to like, is enjoyable for them. Because some activities are enjoyable only after the person reaches a certain level of mastery, incentives can be used to induce people to master an activity, thereby revealing a preference.

Acquired Taste.—Repeated engagement in a specific behavior may lead to a change in preference over time such that the person now enjoys the behavior itself. Policy makers wishing to change behavior can incentivize people to engage in the activity repeatedly—until their preferences change, and they start enjoying it. Acquired preferences can be distinguished from acquired instrumental behaviors because, in the latter case, the person does the activity because of its desired outcome. The routine wearing of seat belts in a car, for example, is likely driven by the outcome (safety), not enjoyment of the behavior itself.

Habit Formation.—Habits are characterized as behaviors that are maintained even after any incentive is discontinued. After repeatedly engaging in a behavior, a person builds a stock of behavior that lowers the cost of engaging in the activity in the future. Habit formation can be encouraged by incentivizing people to perform the activity for a period of time, and eliminating an existing habit can be incentivized by reducing stock in the behavior. For example, one could incentivize a person to stop smoking for a while, with the hope that after a period in which the stock of behavior is lower, the person will not go back to smoking (Volpp et al. 2011; see the discussion in Gneezy, Kajackaite, and Meier 2020).

We conclude with an example that illustrates strategies tying the takeaways together. Consider a parent who wants their kid to eat healthier. First, they can encourage their child to try a variety of vegetables and fruits, perhaps by incentivizing the child to try at least one bite of any new food served, thus fostering exploration to "discover a taste" among the many available healthy choices and preparation methods. Second, the parent might use incentives to persuade the child to repeatedly eat their least disliked vegetable, aiming for the child to develop a liking for it, or "acquire a taste" for it. Third, the parents could make the serving of such dishes part of every dinner at home with the hope that it will become a habit. These methods are not only effective for influencing others; they can also be self-applied by individuals seeking to improve their own diets.

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