

When choices substitute for versus reinforce each other

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When do actions substitute for each other? For example, when does physical exercise substitute for healthy eating? We argue that when actions convey to consumers that they have made progress toward a goal, those actions substitute for other, similar actions, and consumers behave inconsistently. In contrast, when actions convey to consumers that they are committed to a goal, those actions reinforce other, similar actions, and consumers behave consistently. We review variables that define the signals communicated by actions and thus, the likelihood of substitution. This framework explains substitution both in self-regulation (i.e. balancing) and across several phenomena in decision-making, including licensing, variety-seeking, the compromise effect, and scope insensitivity. Additionally, this framework can help marketers and policymakers improve consumer decision-making.

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Consumers sometimes make choices that are consistent with past choices (e.g. selecting a healthy snack after deciding to exercise). Other times, consumers make choices that are inconsistent with past choices (e.g. selecting an indulgent dessert after deciding to exercise) — in which case past choices *substitute* for present choices. We define substitution as the tendency for one action to lower the likelihood that another, similar action will be taken, and we consider the following question: When do past actions substitute for present actions, leading people to behave inconsistently?

Specifically, this article identifies when and why actions substitute. To that end, we review recent research on the dynamics of self-regulation and licensing effects, which investigate how the individual and the context of choices

lead to substitution. We then explore how this framework can explain several previously unrelated phenomena, all of which are characterized by substitution (e.g. variety-seeking, the compromise effect, scope insensitivity).

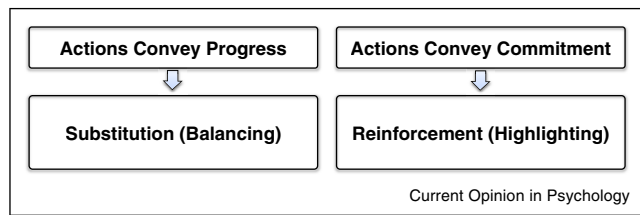
Framing actions as goal progress versus goal commitment

Most goals are pursued over time and involve a sequence of actions. People also typically pursue multiple, often conflicting goals simultaneously. Thus, research exploring the dynamics of self-regulation has examined how people prioritize goals both over time and among other simultaneous goals ([1^{**},2^{**}], see also [3]). This research suggests that, at times, people will balance between goals (i.e. shifting between goals and relaxing efforts on a focal goal), whereas, at other times, people will highlight a specific goal (i.e. engaging in actions that are consistent with that goal; [Figure 1](#)). In short, when people balance between goals, they relax efforts on a focal goal when progress toward that goal is deemed sufficient. When people highlight a goal, on the other hand, they prioritize it and engage in actions that are consistent with that focal goal [4,5^{*},6^{**}]. According to this framework, substitution occurs when people balance between goals, such that choosing one particular action *substitutes* for choosing other, similar actions — thereby freeing people to pursue other goals.

When do people balance? This depends on the meaning that a goal-related action conveys. Actions can either convey commitment to a goal or progress made toward that goal. When actions express commitment, people highlight the goal, such that similar goal-related actions reinforce each other (i.e. there is no goal substitution). When actions express progress, however, people balance between goals, such that goal-related actions *substitute* for each other and allow for maximization of the number of goals that are attended to. Thus, whether a goal-related action is construed as a sign of commitment or a sign of progress has opposite effects on self-regulation. In fact, the exact same action can both substitute for, or reinforce similar actions, depending on how it is interpreted — either as making progress or as expressing commitment.

Specifically, when actions convey commitment, they inform people that a goal is valuable and/or that expectancy of attainment is high (i.e. the expectancy \times value model) [7–9]. Thus, commitment to a goal reinforces the sense that the goal is valuable and worth pursuing. In contrast, when actions convey progress, they inform people that the discrepancy between their current level of progress

Figure 1



Substitution is the outcome of perceiving actions as a signal of progress. Reinforcement is the outcome of perceiving actions as a signal of commitment.

and the level of progress needed to achieve the goal is narrowing. Thus, the need to act is lower [10–12,30].

Action substitution results from perceived goal progress

The extent to which people adopt different representations of goal-related actions (expressing commitment versus making progress) systematically affects action choice, such that only progress allows for substitution. For example, Fishbach and Dhar [1**] demonstrated that perceived progress toward the goal of weight loss caused dieters to choose a chocolate bar over an apple because the perceived weight loss subsequently substituted for a healthy food choice, thus liberating people to pursue inconsistent goals (e.g. enjoying taste). Importantly, even merely *planning* to make progress in the future can yield substitution via choice of inconsistent actions.

Additionally, whereas research on balancing does not imply a certain order between the two substitutable actions, research on licensing explores situations in which an initial virtuous action substitutes for a subsequent vice action (i.e. virtue-vice order). In these cases, an initial action can ‘license’ — or substitute for — other, inconsistent actions. Similar to balancing, licensing involves relaxing pursuit of a goal (often adherence to a moral standard) after progress has been made and is deemed sufficient. Monin and Miller [13], for example, find that when people are provided with an opportunity to express non-prejudiced attitudes, they become more likely to engage in discriminatory behavior. In other words, earlier egalitarian actions substituted for subsequent egalitarian actions [32]. Similarly, Effron *et al.* [14] show that expressing a preference to vote for Barack Obama subsequently licenses people to prefer hiring a white candidate for a job.

These licensing phenomena extend to consumer choice. Khan and Dhar [15*] found that people who committed to a charitable act felt licensed to choose luxury items (i.e. exhibiting substitution) over utilitarian items (i.e. maintaining consistency), as a result. Mazar and Zhong [16] similarly show that cheating behavior can be induced by

the purchase of ‘green’ (i.e. environmentally friendly) products, and Jordan *et al.* [17] demonstrate that even merely recalling past moral actions is sufficient to reduce prosocial intentions in the present.

These licensing patterns arise because people often juggle conflicting motives. People typically wish to regard themselves as prosocial, for instance, but also maintain a strong, yet conflicting degree of self-interest. Therefore, after expressing a prosocial preference or making a prosocial choice, people experience the accrual of moral ‘credits’ (i.e. progress toward the goal of being prosocial), which licenses the subsequent pursuit of a conflicting motive (e.g. acting in self-interest).

When to expect substitution

We have argued that perceptions of goal progress underlie substitution. However, this is merely one potential interpretation of goal-related actions. Further, substitution is by no means the dominant response to past actions, particularly given that people often choose actions that are similar to past choices, revealing behavioral consistency [18,19].

Previous research explored ways of suggesting to people that their actions convey commitment or progress, in order to motivate them to choose similar actions or substitute (Table 1). For instance, certain post-action questions (e.g. ‘Do you feel committed?’ versus ‘Do you feel that you have made progress?’) systematically frame people’s interpretation of their actions as either expressing commitment or making progress and thus impact their subsequent tendency to substitute [1*,31,34]. These framing questions also influence the meaning of expectations of future goal pursuit [20]. Specifically, when framed as commitment to the goal, future expectations increase motivation for goal-congruent actions; when framed as progress toward the goal, these expectations increase motivation for goal-incongruent actions (i.e. substitution).

Similarly, the construal of actions as concrete (versus abstract) can give rise to substitution. Specifically, concrete construals yield greater action substitution [5*,33]. When people focus on the concrete meaning of their goal-related actions, they tend to infer progress, which decreases motivation to engage in similar actions. However, when people focus instead on the abstract meaning of their goal-related actions, they tend to perceive them as expressing commitment, which increases motivation to pursue similar actions. For example, one study found that actions scheduled for the near future (which were therefore concrete) signaled progress on a subgoal, whereas actions scheduled for the distant future (therefore, abstract) signaled commitment to a superordinate goal. Therefore, proximal actions (e.g. working out, studying,

Table 1

Factors that influence the signal in action (progress versus commitment) and hence, substitution.

	Progress-induced substitution	Commitment-induced reinforcement
Framing questions	“Does choosing Action X made you feel that you have made progress?”	“Does choosing Action X made you feel committed?”
Construal of actions	Concrete	Abstract
Structure of choice set	Mixing together choice options that represent different underlying goals signals complementarity	Separating choice options that represent different underlying goals signals competition
Pursuer’s personal characteristics	Committed individuals and/or experts	Uncommitted individuals and/or novices

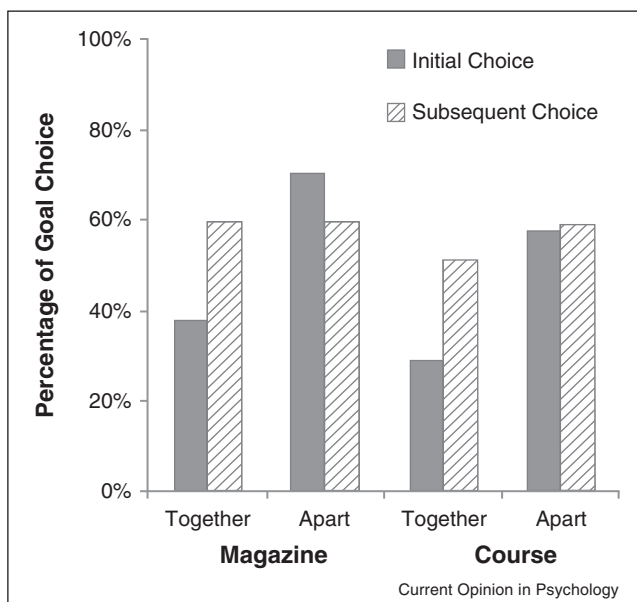
etc.) were more likely to substitute for similar actions than the same actions scheduled for farther in the future.

Moreover, the structure of the choice set can cause substitution — in particular, whether the arrangement of choice options implies that the underlying goals complement or compete [6•]. When people are faced with a choice set that mixes together alternatives that represent different underlying goals, the alternatives can suggest complementarity, and choosers balance between them (i.e. substitution). On the other hand, if people choose from alternatives that are presented separately and organized by the underlying goals they represent, the alternatives can suggest competition, and choosers are more likely to highlight by choosing consistent alternatives. For example, when researchers presented people with a menu

of healthy and unhealthy items mixed together, the majority of participants chose to have an unhealthy course initially and a healthy course subsequently (a pattern reflecting substitution). When the menu clearly separated healthy and unhealthy alternatives, however, the majority of participants chose a healthy option both initially and subsequently (maintaining consistency). Further, the same pattern emerged when participants were choosing between lowbrow and highbrow magazines (e.g. *Cosmopolitan* versus the *Economist*) for an upcoming flight and for a subsequent, connecting flight (Figure 2).

Finally, factors related to the pursuers themselves — and, in particular, pursuers’ goal commitment and expertise — matter, as well [21–23,29]. In the early stages of goal pursuit (when commitment is relatively less certain), people tend to construe what they have accomplished as signs of commitment, which promotes consistency. In the later stages of goal pursuit, however, people are generally more confident in their commitment, given that they have greater experience with and expertise in pursuing the goal. As such, goal-related actions are instead viewed as signs of progress, and people are more likely to substitute. This is the reason committed individuals may lighten up on work toward a goal when they consider their completed (versus missing) actions. Uncommitted individuals, on the other hand, work harder after considering their completed (versus missing) actions.

Figure 2



When the options were presented apart, participants made consistent choices that mainly highlighted the virtuous goal (highbrow magazines, healthy foods). When the options were mixed together, participants balanced, choosing indulgent options for immediate consumption and virtuous options for later consumption.

Substitution underlies a variety of choice effects

A wider view of the decision-making literature renders yet more examples of effects that implicate this propensity to substitute (or make tradeoffs). The same underlying processes unify these disparate phenomena and are summarized in Table 2. For example, consider variety-seeking — the finding that people often make choices that reflect variety, typically at the expense of repeated choice of favored items [24,25]. When people choose two different items from a choice set, rather than two identical, yet more preferred items, they can be thought of as balancing between the underlying goals, rather than maintaining consistency. Indeed, perceived progress (versus commitment) should be associated with greater

Table 2

Substitution underlies a variety of choice effects.

Substitution	Reinforcement
Balancing	Highlighting
Licensing	Dissonance/self-perception
Variety-seeking	Consistency-seeking
Compromise effect	Resisting compromises (polarization)
Scope sensitivity	Scope insensitivity

variety-seeking. For instance, a person choosing between different flavors of her favorite snack will likely choose more variety if she considers consumption of each snack as satisfying her craving for that flavor (progress) than as expressing her preference for that flavor (commitment). Moreover, the mere observation that people exhibit more variety-seeking in consumption than in expressing attitudes suggests that when progress is more easily inferred (products satiate more than attitudes), choice substitution is more likely.

Similarly, the compromise effect presents a potentially analogous dynamic [26]. Different attributes for products can represent different underlying goals. For example, an apartment can vary by cost (associated with the goal of saving money) and distance to work (associated with the goal of reducing commute time). When substitution is more likely, people balance between pursuit of the goals represented by each attribute (e.g. saving money and reducing commute time). Thus, the choice share of an alternative that becomes a compromise option increases, allowing consumers to make progress toward both goals. Scope insensitivity [27,28], too, can be construed in related terms. When people exhibit sensitivity to the magnitude or scope of a problem, their actions reflect substitution. Consider an initiative that saves 10 versus 10 000 lives. When people are sensitive to scope, the same donation amount will make more progress in the former case (i.e. saving 10 lives) because the scope of the problem is lower; thus, people give less to the initiative (and presumably, more to other initiatives). When people are *insensitive* to scope, however, they reveal an unwillingness to make tradeoffs, such that a smaller problem will not similarly call for less action (e.g. people donate the same amount, regardless of whether the initiative saves 10 versus 10 000 lives). When people are *insensitive* to scope, they are less concerned with making progress than with expressing commitment, and thus substitution is less likely.

The commonalities between these (and potentially other) decision-making phenomena suggest a common denominator: substitution. It is likely, therefore, that they share the same theoretical underpinnings. We have argued that the perception of progress underlies substitution. Can other factors also play a similar role? Several promising candidates include: choosing among magnitudes versus

core values, the ease with which tradeoffs can be made, and the distinction between diminishing and increasing utility. For example, when a food choice is construed in terms of core values (e.g. healthfulness), rather than simple quantities (e.g. calories), consumers may be less likely to substitute. Thus, the propensity to balance between goals (e.g. selecting an indulgent dessert after deciding to exercise), seek variety (e.g. choosing different, rather than identical snacks when making simultaneous choices), compromise (e.g. preferring a middle option among foods that require tradeoffs between taste and nutrition), and exhibit scope sensitivity (e.g. altering consumption based on different portion sizes) may all be reduced when attributes are viewed as core values. Similarly, if tradeoffs are simply more difficult to make (e.g. between eating and exercising as opposed to between two food offerings) or if products and features are characterized by increasing versus diminishing utility (e.g. consecutive episodes of a television crime drama versus a comedy show), decision-makers could be less likely to substitute, which, in turn, would reduce balancing, variety-seeking, the compromise effect, and scope sensitivity.

Conclusions

In this article, we reviewed research examining substitution in consumer behavior. We argue that substitution underlies a variety of phenomena in decision making, including balancing (as opposed to highlighting), licensing effects, variety-seeking, the compromise effect, and scope insensitivity.

The practical implications of this work are worth emphasizing. Given that both marketers and policymakers are fundamentally interested in how to motivate people, the research reviewed here can potentially help them help consumers make better decisions. For example, restricting the availability of unhealthy food options would necessarily increase choices of healthy food options in the immediate term. But such a strategy would also likely fail to serve as a sign of commitment — and thus lead to balancing and increased consumption of unhealthy options in subsequent choice. Instead, the marketer or the policymaker can consider framing past and future healthy choices in terms of commitment, encourage abstract construal of healthy choices, and present healthy options as separated from unhealthy ones, which would all encourage a commitment frame of healthy consumption and reduce substitution. Notably, at other times, substitution might be desirable and encouraged — for instance, after giving in to temptation (e.g. eating unhealthily) or for goals that are equally desirable (e.g. two financial investments). In these latter instances, the marketer or policymaker should take the opposite strategies to increase (versus decrease) substitution. More broadly, equipping consumers with strategies that increase or decrease substitution may make both individuals and society better off in the long run.

Conflict of interest statement

Nothing declared.

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