

Nonconsequential Reasoning and Its Consequences

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Abstract

According to *consequentialism*, which underlies the rational theory of choice, decisions should be determined by an assessment of the potential consequences. People, however, do not always consider the relevance of missing information in a consequentialist manner. As a result, they sometimes pursue *noninstrumental* information—information that may appear relevant but ought not alter the decision. Having pursued such information, people misconstrue it as instrumental for the decision and proceed to make choices they would not otherwise have made. This pattern is observed in the context of consumer, medical, and negotiation decisions. In one scenario, for example, participants made a hypothetical decision about whether to purchase a CD player. Those who chose to postpone and then found out about another component's repair cost were less likely to buy the CD player than those who knew about the required repair cost from the start. Because the initial pursuit and ensuing use of obtained information appear exceedingly reasonable, such decision patterns may be difficult to learn to avoid, yielding decisions that are influenced by contextual nuances that ought not matter. Further research may explore cognitive and motivational factors in nonconsequential reasoning and their

normative and prescriptive implications.

Keywords

decision making; uncertainty; consequentialism; information pursuit; self-perception

Decisions are often made in the face of uncertainty. Although information that will resolve the uncertainty can sometimes be obtained, decision makers must determine whether such information is worth pursuing. Imagine that you are considering adding a new CD player to your stereo system and have just come upon an attractive player on sale. However, your amplifier just broke, and you are uncertain whether the warranty will cover repairs. Should you decide about purchasing the CD player, or should you briefly postpone the decision until you resolve the uncertainty regarding the amplifier warranty? There is no need to pursue information about the warranty if this information is not instrumental—that is, if it will not alter your decision. For instance, you may realize that you intend to buy the CD player whether or not you must pay for the amplifier repairs. In this case, information about the warranty is noninstrumental, and you should decide to buy the CD player regardless of this information. More generally, according to what is known as the *sure-thing principle* (STP), if one prefers x to y given any possible state of the world, then one should prefer x to y even when the exact state of the world is not known (Savage, 1954, p. 21).

STP is a cornerstone of the rational theory of choice, and it also holds in decision models that impose less stringent criteria of rationality. It is an important implication of the *consequentialist* view of rational choice, according to which decisions are determined by an assessment of the potential consequences and their likelihood. STP captures a fundamental intuition of what it means for a decision to be determined by the anticipated consequences: If the consequences will not be sufficiently altered by an uncertain event, then this event—however interesting—is irrelevant to the decision.

NONCONSEQUENTIAL REASONING

Consequential reasoning and STP are intuitively compelling, yet people's decisions do not always conform to these normative prescriptions. One study, for example, presented people with hypothetical scenarios offering an attractive vacation package to Hawaii following an exam. Many people chose to purchase the vacation both when they thought that they had passed the exam and when they thought that they had failed. However, in the disjunctive case, when they did not know whether they had passed or failed, many of these same people decided to postpone buying the vacation (Tversky & Shafir, 1992). This is known as a *disjunction effect*. When people passed the exam, they presumably saw the vacation as a time of celebration; when they failed, the vacation became a consolation and time of recovery. When they did not know whether they had passed or failed, however, people lacked a clear rationale for going and, as a result, preferred to learn the outcome before deciding to go.

Another disjunction effect was documented among participants

who played a version of the Prisoner's Dilemma game, in which they accumulated points that were then exchanged for real monetary payoffs (Shafir & Tversky, 1992). On each encounter with a new partner, a player had to choose whether to *cooperate* or *defect*. (In a Prisoner's Dilemma game, each player is better off defecting than cooperating no matter what the other does, yet if both defect they do less well than if they had both cooperated.) Occasionally, the partner's chosen strategy was divulged before the participant had to make his or her own decision. Contrary to STP, many participants defected when they knew their partner's choice—be it cooperation or defection—but cooperated when the partner's choice was not known. Apparently, the impulse to cooperate was greater when the partner's choice remained uncertain than when it was known and defection was seen to yield a greater number of points. The presence of uncertainty can obscure one's preferences, which tend to crystallize once the uncertainty is resolved.

Another way in which nonconsequential reasoning influences choice is by leading people to pursue information that ought to prove noninstrumental. In one study (Bastardi & Shafir, 1998), we asked participants to make a hypothetical choice about whether to buy a new CD player on sale. In addition, they were to assume that their amplifier just broke and needed repairs. In the *simple* condition, participants were told the warranty had expired and they would have to pay \$90 for the amplifier repairs. In the *uncertain* condition, participants were told they would not know until the following day whether the warranty would cover the \$90 repair. These participants were then given the option to postpone their decision about purchasing the CD player until they found out about the war-

ranty. The data were as follows. In the simple condition, in which participants knew they had to pay for the repair, 91% chose to buy the CD player. (Predictably, in a separate control condition, even more were disposed to buy it when they did not have to pay for repairs.) This suggests that most people would buy the CD player whether or not they had to pay for the repairs. Nevertheless, in the uncertain condition, in which the warranty status was unknown, only 26% chose to buy the CD player outright, and a full 69% of participants chose to wait to find out about the \$90 repair before making the decision (the remaining 5% rejected the player outright).

Although information about the \$90 repair was noninstrumental for most participants, more than two thirds were compelled to pursue this information in the uncertain condition. Perhaps they intended to buy the CD player if there would be no repair costs to pay, but were less sure of their preference if they would have to pay for repair. Rather than resolving this question, these respondents may have chosen to postpone the decision in hopes that things would become clearer. People prefer to have compelling rationales for their choices (Shafir, Simonson, & Tversky, 1993), and the motivation for buying the CD player would likely feel clearer after the repair status was resolved than while it was unknown.

Individuals and organizations spend a great deal of resources in the pursuit of information. Such pursuit can involve delays and opportunity costs. Are there any other reasons to avoid the pursuit of noninstrumental information?

CONSEQUENCES OF NONCONSEQUENTIAL REASONING

As it turns out, the very act of pursuing information may lead

people to endow it with instrumental value. For example, participants who chose to wait in the uncertain condition of the CD player study were then asked to make a decision after the uncertainty regarding the \$90 repair was resolved (Bastardi & Shafir, 1998). Like those in the simple condition, the participants who chose to wait were then told the amplifier warranty had expired and that they would have to pay the \$90. Recall that in the simple condition, we observed an unequivocal choice to buy the CD player when the \$90 repair was known about from the start. Nevertheless, among participants who waited and then found out about the \$90 repair, the majority chose to forgo buying the CD player. Ultimately, only 55% chose to buy the CD player in the uncertain condition (including those who first waited and those who did not), compared with 91% in the simple condition.²

The pursuit of information apparently affected choice in ways that the information would not have had it simply been known from the start. The resolution of uncertainty can have straightforward implications for those who await it. Finding out the repair is free constitutes good news and supports a decision to purchase the CD player; in contrast, finding out that one must pay \$90 rather than nothing is bad news and suggests a reason not to buy the CD player (otherwise, why would one have waited?). People tend to form preferences consistent with having chosen to wait, and are thus occasionally led to make decisions they would not otherwise have made. People, we suggest, are often unaware of pursuing noninstrumental information. Instead, they misconstrue such pursuit as an indication that the information is likely to prove instrumental. This conclusion is further supported by a study in which participants con-

fronted the same decision about whether to purchase a CD player in the face of uncertain repair costs, but were provided with a noninstrumental motivation for postponing the decision—they would delay because “the stores are already closed today.” Most participants chose to postpone but were not led to misconstrue the uncertainty about the repair as instrumental for the decision. Once they found out they would have to pay for the \$90 repair, most of these respondents chose to buy the CD player, just as they would have had they known about the repair costs from the start.

RECENT APPLICATIONS

People typically assume that the more information they have, the better. Psychologically, however, information sought may not be the same as information available from the start. The pursuit of information may lead it to have greater weight in ensuing decisions. Important decisions—especially those that affect other people or for which one feels accountable—may exacerbate both the tendency to pursue missing information and the reliance on such information once obtained. Recent research has explored the impact of noninstrumental pursuit in the contexts of medical decisions and dispute resolution.

In a study involving medical decisions (Redelmeier, Shafir, & Aujla, 2000), experienced nurses were surveyed regarding whether they would donate a kidney to a hypothetical elderly relative with renal failure. Half the nurses were to assume that they were compatible donors; of these, 44% expressed willingness to donate and the rest were unwilling. The other nurses were told that their status was unknown and asked whether

they would be willing to be tested for compatibility. Note that a majority of those who knew they were compatible chose not to donate. Thus, a majority would presumably have no reason to test for compatibility. Nonetheless, faced with a difficult decision (which perhaps they hoped to avoid if found incompatible), most nurses (69%) chose to undergo testing. When these nurses obtained their test results (which indicated compatibility), they were asked whether they would be willing to donate, and a great majority (93%) said they were willing. In fact, overall stated willingness to donate increased from 44% when the nurses knew they were compatible to 65% when they could elect to be tested and then found out they were compatible. Similar effects using hypothetical scenarios have now been documented among surgeons specializing in prostate cancer, physicians retired from general practice, and college students responding as medical patients.

In situations of dispute, protesting groups often have to decide whether to accept a compromise offer or to continue their struggle in hopes of getting a better deal. In such cases, there can be uncertainty about the prospects of getting a better deal or even about the costs of prolonged dispute. In one study (Bastardi & Young, 1999), students responded to a hypothetical scenario based on a real ongoing dispute between the campus bookstore and a student group protesting unfair prices. Respondents took the role of the latter group. In the *simple* condition, the majority voted to accept a compromise rather than protest, though it was made clear that the university would take no disciplinary action if the group protested. In the *uncertain* condition, however, the majority voted to postpone the group's decision in order to find out whether the university would take disciplinary ac-

tion if the group protested. When these students learned that there would be no disciplinary action (and, thus, that the cost of continuing the struggle would be low), the majority voted to protest, reversing the outcome of a comparable vote in the simple condition.

SELF-PERCEPTION, MISCONSTRUAL, AND SELF-ERASING VIOLATIONS

When internal attitudes are unclear, people construct or infer their attitudes partly on the basis of external cues, including their own behavior (for more on self-perception, see Bem, 1972). This often leads them to construct preferences that are consistent with earlier decisions. However, people can be unaware of the processes by which they reached those decisions (Nisbett & Wilson, 1977). As a result, they are apt to misconstrue earlier decision behaviors and then form preferences consistent with such misconstrual, thus making choices they would not otherwise make. The tendency for a later decision to be made in a manner consistent with a misconstrued earlier behavior has been observed in studies involving compliance (pressure to comply with a request leads people to alter an ensuing judgment), overjustification (a reward alters people's perceived motivation for an activity), and behavioral prediction (prior misprediction shapes subsequent behavior). (See Bastardi & Shafir, 1998, for further discussion and examples.)

A noteworthy feature of these decision patterns is that they appear exceedingly reasonable. Early errors often alter ensuing behavior, rendering the errors *self-erasing* and, consequently, not easy to learn to avoid (Sherman, 1980).

What is more sensible than to pursue missing information and then use it once it is available? People initially pursue noninstrumental information, but then proceed to make choices that endow the obtained information with instrumental value, thereby “erasing” the initial mistake. At no point need the decision maker suspect a failure of consequential reasoning or the violation of a compelling principle of choice.

FUTURE DIRECTIONS AND CONCLUDING REMARKS

Possible motivational influences contributing to the decision patterns we have described await further investigation. People may be led to pursue noninstrumental information out of a desire to be thorough, or to appear responsible. They may then experience *cognitive dissonance* (Festinger, 1957)—that is, an uncomfortable tension due to a perceived discrepancy between their actual preference and that implied by the information obtained. The need to reduce such dissonance may alter the preferences expressed.

Whenever discrepant preferences are observed, a question arises as to which is the “true” preference. Intuitively, the preference expressed when all relevant information is readily available

seems to be the most “pure.” Occasionally, however, the initial absence and subsequent pursuit of a piece of information may give it the attention it deserves and otherwise might fail to receive. Further research might explore the conditions under which information is accorded optimal weight.

Contrary to the classical analysis, people tend to approach decision problems not with clearly established preferences, but rather with the need to construct their preference in the context of making a decision. In these contexts, simple principles that would be endorsed upon reflection can be violated at the moment of decision. The misconstrual of such violations can distort people’s perception of past preferences and alter the preferences they express next. Better understanding of such patterns may improve the decisions people make.

Recommended Reading

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Notes

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2. Although this was a hypothetical decision, similar patterns have been observed with decisions involving actual payoffs, including a raffle for a stereo cassette player and a decision to accept or reject a monetary offer in an Ultimatum Game (see Bastardi & Shafir, 1998).

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