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Review

Using behavioral economics to promote physical activity

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ABSTRACT

Behavioral economics is a relatively new field of economics that uses experimental techniques to produce insights about human decision-making. One of its key findings is that people's preferences for actions are not absolute, but rather relative to some anchor point, and can therefore be influenced by changing the anchor. Anchor points can be social norms, habits acquired in childhood, or a cultural frame—whether physical activity is presented as fun or as drudgery. Physical activity promotion can benefit by intervening on these anchors, but doing so is most effective when it is undertaken for society as a whole. Behavioral economics accordingly suggests that physical activity promotion should incorporate attempts at a cultural shift to support individual health-promotion efforts.

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Introduction

Researchers under the banner of behavioral economics have begun to critically examine decisions people make, finding that they are highly dependent on habit and social context. One such result—the pull of default options—has vaulted behavioral economics into the mainstream (Halpern et al., 2007). Yet behavioral economics is about more than default options, and its many other insights deserve greater recognition (Frank, 2004). This essay sketches a few of the more interesting among these insights, and suggests examples of how they might be useful for influencing rates of physical activity.

Behavioral economics has grown in part out of earlier work in psychology called “prospect theory”, which holds that people do not have absolute preferences, but rather preferences that are relative to some anchor or reference point (Kahneman and Tversky, 1979; Tversky, and Kahneman, 1992). One of the key contributions of behavioral economics has been to show empirically that preferences are highly malleable, subject to influence by surprisingly trivial

aspects of context. Context is important because we are best at relative judgments and terrible at absolute judgments. It is context that provides the anchors that enable us to make relative judgments.

Norms

One common anchor is social norms. People's behavior is strongly influenced by perceptions of social norms, and adjusting those perceptions is an easy and effective way of changing behavior (Lewis and Neighbors, 2006; Schultz, 1999). This research raises the possibility that one could increase levels of physical activity simply by communicating average physical activity rates to those who are well below the average.

Normative anchors need not be averages, however. Experiments in behavioral economics show that anchors can be quite arbitrary (Ariely et al., 2003, e.g.). Because pregnant women, single mothers, and seniors are constrained by circumstances that make general physical activity recommendations seem unreasonable to them, advertising the stories of people in such groups who are successful at engaging in high levels of physical activity would present their success as normative.

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Framing

The economist Dan Ariely has vividly demonstrated the power of framing to influence decisions (Ariely et al., 2006). Following a brief reading of Walt Whitman, he asked half of the students in his class how much they would pay to hear more of his poetry reading. He asked the other half how much they would need to be paid to listen to more of his poetry reading. The purpose of these questions was to frame the subsequent reading as either a pleasurable experience that one would pay for, or as a burdensome task that one would have to be paid to endure. The framing device here was a simple question: elaborate manipulation is not required. Fig. 1 shows the results of the framing: those for whom the poetry reading had been framed as a pleasant experience were willing to pay for it; those for whom it had been framed as a burden demanded payment. In both frames, the effect was greater the longer the reading was.

This research suggests the importance of framing physical activity not as an obligation to meet recommendations, but rather as fun. The public health community is only half-way there. For example, the CDC website on physical activity has been put together with considerable thoughtfulness, yet the obligation frame is evident:

- “How much do you need?”
- “...an exercise program based on sound scientific research”
- “Regular physical activity is important for good health, and it's especially important if you're trying to lose weight.”

The frame created by these messages is one of duty, and is only partly remediated by a competing frame of fun (“do the fun activities you enjoy and watch the health benefits follow!”).

Contrast the CDC framing with the messages of for-profit fitness companies:

- “Can't wait to get away? There's still space available on these great trips.” (REI)
- “Come see what you're really made of” (Gold's Gym)
- “You're not in this alone” (24-Hour Fitness)
- “Get Game! Have Fun” (Little League Baseball Camp).

While these websites occasionally mention the health benefits of physical activity, the frame is one of personal achievement, social interaction, and fun. Behavioral economics suggests that this framing profoundly alters our understanding of the experience from a burdensome duty (that we must be induced to do), to a rewarding experience (that we pay for).

Habit-formation

While norms can function as anchors, one's own past behavior is an important anchor as well, and a behavioral economics lens can energize critical research into how social policy influences early habits of exercise. Consider activity patterns in early education. A 4-year-old works standing up and has plenty of unstructured time for physical activity. As he enters first grade, he is asked to sit still, and physical activity is often not encouraged, or indeed is punished and stigmatized. Through this socialization process, a powerful frame is set: sitting is normal and good—the default way of learning. This frame suggests a zero-sum tradeoff between sedentary classroom time and recess. In fact, learning may be enhanced by movement (Cardon et al., 2004; Saulny, 2009). Behavioral economics would predict that the use of standing desks and motion-based learning may set an anchor with lifelong benefits for physical activity.

The false economy of targeting

While behavioral economics offers insights for individual behavior change, its real message is that the social-cognitive context matters profoundly to decisions people make around physical activity. The

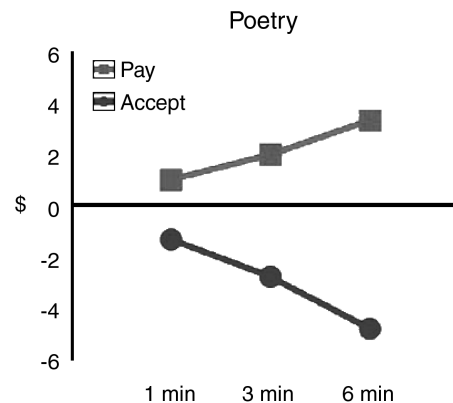


Fig. 1. Beauty is in the ear of the beholder. Depending on whether it has been framed as a pleasurable (squares) or a burdensome (circles) experience, students either are willing to pay for (squares), or demand payment for (circles), listening to a poetry reading.

social-cognitive context includes social norms, habits, and framing (Zimmerman, 2008). Behavioral economics does not provide a blueprint for how to alter this context: that task is outlined by the meta-motivation model (Yancey, 2009).

Behavioral economics suggests that it is more effective and more efficient to intervene not on a small, at-risk group, but rather on the whole society. Changing social norms depends on more than the most sedentary among us (Cohen et al., 2000). We must promote an environment of healthy activity habits in childhood. We must reframe physical activity for the culture as a whole. Not only does behavioral economics point us toward these more ambitious objectives, it suggests that if we fail to change the context for everyone, our efforts to change the individual behavior of anyone will be idling some of our most effective tools.

Conclusion

This brief overview of behavioral economics' application to physical activity research can no more than scratch the surface. Behavioral economics has also produced relevant insights around time preference, loss aversion, mental accounting, and probability assessment. Readers who are interested in learning more about behavioral economics have their choice of many highly readable sources, including popular books such as *Nudge* (Thaler and Sunstein, 2008) and *Predictably Irrational* (Ariely, 2009), as well as comprehensive academic overviews (e.g., Wilkinson, 2008; Camerer et al., 2003).

Conflict of interest statement

The author declares that there are no conflicts of interest.

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