

Behavioral economics in film: Insights for educators

Marie Briguglio^{1*}, Charity-Joy Acchiardo², Dirk Mateer², Wayne Geerling³

Abstract

Behavioral economics is an increasingly prominent field within economics and we review the case for its incorporation into undergraduate Economics curricula. We argue that behavioral findings can inform the teaching template itself and (economics) education policy more generally. The pedagogical and behavioral literature informs us that learners are more likely to recall economic content when it is presented as a narrative than when it is couched in abstract models. Film is one of the most evolved forms of story-telling, and its use (along with other media) enables learners to master a concept more quickly. This paper presents a database of 30 short film and media scenes and three detailed lesson plans that may be used as jumping-off points for instructors who wish to incorporate behavioral economics concepts alongside the rational-agent model of economic behavior.

JEL Classification: A12; A20; A22; D90; G40

Keywords

behavioral economics — teaching — pedagogy — undergraduate — policy — media

¹ Department of Economics, University of Malta, Msida, Malta

² Department of Economics, The University of Arizona, Tucson, Arizona, USA

³ Department of Economics, Monash University, Clayton, Victoria, Australia

*Corresponding author: marie.briguglio@um.edu.mt

Introduction

The growing application of psychological principles to economics has created an expanding literature in behavioral economics that explores how humans decide and behave in economic situations. Although the psychology of decision-making formed part of Adam Smith's body of work (Smith, 1759; Ashraf, Camerer & Loewenstein, 2005), economic research informed by psychology, and other disciplines has burgeoned in the period following the seminal work of Kahneman and Tversky (1974; 1979). It is now widely accepted that behavioral economics offers a rich toolkit to more fully explain human behavior and to inform policy design. But while the teaching of economics has started to incorporate behavioral insights, teaching *methods* in economics, largely continue to employ a pedagogical model that assumes assimilation, processing and Bayesian updating of information, ignoring insights from behavioral economics itself such as unconscious processing, cognitive effort, availability, salience and framing effects (Mullainathan & Thaler, 2000; Camerer & Loewenstein, 2003; Kahneman, 2011; Laibson & List, 2015).

The human brain is highly tuned toward narratives (Shiller, 2019), and we argue that storytelling, in particular using film clips, can be an alternative teaching tool that may help learners master content in economics. In *Animal Spirits*, Akerlof & Shiller (2009) posit that the stories that people tell have profound effects and deploy a series of anecdotes as the narrative of their book unfolds. A similar approach is taken in Thaler & Sunstein's, *Nudge* (2008) and in Kahneman's, *Thinking Fast and Slow* (2011). In the following sections, we briefly examine the literature for including behavioral economics at

undergraduate level and then present a case for using media clips as a pedagogical tool to teach it with the aid of 30 short scenes linked to key themes in behavioral economics.

Literature

Behavioral economics attempts to increase the realism of economic assumptions to enhance the explanatory and predictive power of economics (Camerer & Loewenstein, 2003). While neo-classical assumptions lend themselves to elegant models to derive insights of the optimal allocation of resources, they do less well at describing actual human decision-making and behavior. Phenomena such as impulsiveness and shortsightedness, the effect of physiological and emotional states, social norms, revenge, altruism, trust, fairness concerns, habit, and resistance to change interfere with, and at times completely bypass, the supposed process of rational decision-making.

These deviations from neoclassical propositions have been synthesized and categorized in various works. Mullainathan & Thaler (2000), for instance, distinguish between bounded rationality, bounded willpower and bounded self-interest. Wilkinson & Klaes (2012) organize themes around foundations (values, preferences, choices, beliefs, expectations, risk, uncertainty), intertemporal choice and strategic interaction. Similar schemas can be noted in Camerer & Loewenstein (2003) and Angner (2016). Thaler (2015) takes an autobiographical approach while others synthesize the field for non-economists (Altman, 2012; Samson, 2017). Most compilations consider the role of behaviorally-informed intervention and its ethical considerations, including, increasingly, choice architecture and nudges (Thaler & Sunstein, 2008).

In focusing explicitly on a paradigm for teaching behavioral economics, Laibson and List (2015) identify six key principles that draw upon these key themes. Their principles are as follows:

1. People may try to optimize, but do not always succeed.
2. Reference points matter to decisions.
3. People have self-control problems.
4. People care about actions, intentions and costs/benefits to others.
5. Some psychological factors matter even at market level.
6. While it is possible to protect people from behavioral biases by limiting choice, such paternalism can be unpopular and problematic.

The first two principles extend the notion of bounded rationality, with a particular focus on the key question of reference points; the third maps to the notion of bounded self-control and the fourth to bounded self-interest. The fifth principle helps explain asset price bubbles and market inefficiencies and the sixth covers policy, choice architecture and ethical issues.

In paying attention to the realism of the modeling assumptions and the institutional parameters affecting decisions, behavioral economics is not only increasingly providing rigorous extensions to the standard neoclassical model but also making considerable inroads into policy-making (Lunn, 2013). The use of behavioral economics has been promoted by the European Commission (2016), the White House (2015), and the World Bank (2015), among others. In the private sector, behavioral economics can be applied to marketing, consumer research, and business consulting in domains ranging from finance to health and energy. Moreover, these advances have led to the recognition of the key proponents of behavioral economics including Matthew Rabin (John Bates Clark medal), Richard Thaler, Daniel Kahneman, Vernon Smith, and Robert Schiller (Nobel Prizes).

Despite the advances made elsewhere, the inclusion of behavioral economics has not been reflected to the same degree in the teaching of economics at undergraduate level, still less in the manner in which the teaching occurs. A cursory review of the principle textbooks used in North America, for instance, finds that only a third include behavioral economics as a chapter-level concept.¹ Leaving behavioral economics out of the undergraduate curriculum runs the risk of disengaging students insofar as they perceive that the theory fails to conform to what they observe in everyday life (Pressman & Holt, 2003). By corollary, behavioral economics seems to be very popular with students (O'Donoghue, 2015), offering more emphasis on how the real world works (Mankiw, 2006).

¹This list includes Acemoglu, Laibson & List, 2018; Arnold, 2020; Colander, 2020; Frank et al., 2019; Hubbard & O'Brien, 2019; Karlan & Morduch, 2020; Mateer & Coppock, 2020; and McEachern, 2019.

The inclusion of more relevant topics not only promises to draw more students into economics (Gwartney, 2012) but also to deepen students' understanding of neoclassical economics itself (Dupont, 2014), at least insofar as exposure to the pitfalls in decision-making reinforces student understanding of the assumptions and implicit axioms underlying rational decision-making models. Furthermore, going beyond the "homo economicus" paradigm, gives students a better understanding of their own behavior, of interpersonal relationships and of pro-social preferences in social dilemma situations (Hellmich, 2019).

The method of teaching economics can also benefit from the adoption of behavioral insights. Generally speaking, economics has been slow to adopt innovative approaches to teaching (Becker, 2004) and is still heavily reliant on technical literature and mathematical models (Ansperger & Varoufakis, 2006), failing to keep pace with changes in learning theory or with the educational technology in the modern classroom (Serva & Fuller, 2004). Rubinstein (2006) takes specific issue with the strong emphasis placed on the mathematical articulation of arguments in economics, contending that students who enter university to study economics instead become experts in mathematical manipulations. Not surprisingly, graduates subsequently struggle to communicate economic ideas to a non-specialist audience (Pomorina, 2012). One reason to diversify the teaching template is that students have different learning preferences. Research shows that people tend to learn abstract, novel concepts more easily when they are presented in both verbal and visual form (Salomon, 1979). Differentiated pedagogical methods expand on the varying ways students' process information and can appeal to a broader, more diverse range of students (Al-Bahrani et al., 2016).

Storytelling can be a powerful teaching tool because it is a basic mode of information sharing (Fisher, 1987). When individuals are engaged by a storyline, they experience the story as if it were actually taking place. They are more likely to accept the story's propositions, manifesting strong emotional engagement with the characters and plot (Green & Brock, 2005; Slater, 2002). Along the same lines, Shiller (2019) argues that the human brain is highly tuned toward narratives – factual or otherwise. Stories, particularly those of human interest and emotion, can help explain certain economic fluctuations. To the extent that economic students behave like other humans (Hellmich, 2019), they are likely to understand, recall, and relate to economic content better when that content is presented as a narrative than when it is couched in abstract models.

Film is a modern form of storytelling that most undergraduate students are experienced consumers of (Acchiardo et al., 2019). Willingham (2009) asserts that visual media makes concepts more accessible to a person than text alone, promoting deep rather than rote learning, and helping with later recall. Berk (2009) reinforces this point in a review of the literature on how students' brains process videos to facilitate learning, concluding that using multimedia increases

comprehension and results in deeper learning. Picault (2019) notes that media acts as a transversal tool that helps learners acquire content through increased engagement. Media clips can facilitate an interactive learning environment that prompts two-way discussion in the form of student-created content (Bransford et al., 2000) and can illustrate complex ideas in a short period of time, connecting learners with theories taught in the classroom to real-world events (Mateer, 2011). Mateer (2011) synthesizes three main advantages in teaching with media from popular culture, namely: (1) it maintains attention and student interest in the theories and concepts being taught; (2) it develops analytical skills to apply theories and concepts to those media; and (3) it breaks down the barrier between formal learning and understanding. Such clips can be used in a variety of ways to improve student learning: in-class lectures and tutorials, out-of-class and offline/online assignments, essays and projects (Geerling, 2012).

In practice, media clips are increasingly available to use as economics teaching resources, with characters ranging from the rational Dr. Spock to the easily biased Homer Simpson. Leet and Houser (2003) were the first to identify feature-length films with wide-ranging interest to economic educators. Subsequently, Mateer (2005) published a workbook that provided 20 short scenes and a series of learning questions to help students understand core economic concepts. Work by Sexton (2006) and Mateer and Li (2008) expanded the set of useful short film scenes. Hall's (2014) edited volume on *The Simpsons* also explains how to use a number of scenes from the show to teach economics. Continuing research in this area is evidenced by meta-sites like Mateer (2012) and Wooten (2018), a growing number of sites dedicated to economics in specific television shows (such as *Seinfeld* [Ghent, et al., 2011]; *The Office* [Kuester et al., 2014]; *Shark Tank* [Acchiardo et al., 2015]; *The Big Bang Theory* [Tierney et al., 2016]), and the increasing use of Critical Commons to post media related to economics in an open access space.

Applications

Table 1 presents a database of 30 media clips demonstrating key behavioral insights, mapped to the main themes that emerge from the literature, namely: (A) bounded rationality, (B) bounded self-control, (C) bounded self-interest, (D) markets and intervention, as well as the six principles (P) of behavioral economics originated by Laibson and List (2015). Users may wish to organize the clips according to different structures and lists. The Appendix to this paper also provides three practical examples of how the clips presented below can be fleshed out as lesson plans, starting with a warm up activity which introduces the theoretical concept, the clip itself, a discussion of the behavior portrayed in this clip and the key takeaways.

Bounded rationality

In the first example, *It doesn't count if*, comedian Jenny Bede acts out the guilty pleasures one can indulge in. This clip

can be an illustration of mental accounting (Thaler, 1999), which contends that individuals classify personal resources in different mental envelopes and are therefore prone to irrational decision-making in their spending and investment behavior. Classifying calories (“if it’s only half”, “if it’s tiny”, “if you’re sharing”) may lead to more calorific choices than if all calories were placed into a single fungible account. In *The Simpsons*, Homer celebrates his graduation from high-school, lighting his certificate on fire in the belief that, now he has graduated, he will not need it anymore. This act (as many of Homer’s) can be seen as a case of his short-termism and optimism bias (Shepperd et al., 2002).

In an *Old Spice* bodywash advert, a man invites the viewers to admire him, arguing that he is “the man your man could smell like”. Attribute substitution (Kahneman & Frederick, 2002) occurs when an individual has to make a judgment of a target attribute that is computationally complex, and instead substitutes a more easily calculated heuristic attribute. In this case, being a man is substituted with smelling like one. Professor Lambeau from the feature film *Good Will Hunting* hopes to find the student who solved a math problem, not expecting that it was the janitor who solved it. Representativeness bias occurs when we over- or under-estimate the likelihood of an event by comparing it to an existing prototype that already exists in our minds (Frederickson & Kahneman, 1993). In this case, the Professor’s prototype janitor led him to overestimate the chances that the Janitor was up to no good. Similarly, in a *Volkswagen* advert, a father and son wrongly surmise that an old lady must be a careful driver. As the tag states, “Not every old lady is always reliable”. People also tend to judge the likelihood of an event based on how easily an instance comes to mind. This availability heuristic (Tversky & Kahneman, 1974) is illustrated in a commercial where a man has a series of mishaps which make him look like he is slaughtering the cat when his partner walks through the door. The tag line reminds the viewer not to “judge too quickly”.

In further illustrations of biases and heuristics, Olaf, a snowman from the animated feature film *Frozen*, talks about his love of Summer. Lacking experience of heat, Olaf is unaware of its potential effects and blissfully imagines doing “all the things that frozen things do in Summer”. This misprediction of utility (Lowenstein et al., 2003) will lead Olaf to make a sub-optimal decision, effectively reducing him to a puddle. Preference reversal occurs when preferences for bundles are shifted after options are juxtaposed. Underlying standard economic theory is the notion that if bundle A is strictly preferred to a different bundle B, then it cannot be true that bundle B is directly revealed preferred to bundle A (von Neumann & Morgenstern, 1947). To illustrate this, the feature film *Election* presents a dramatic swing in student-body opinions. Students cheer wildly for the candidate when she asks them to vote for her. But they also cheer when she states “Or don’t vote for me, who cares?”.

Scope neglect refers to a cognitive bias which makes people incapable of properly understanding proportionality in the

Source	Type	Concept	Theme	P	Link
It Doesn't Count If (KFC)	Commercial	Mental Accounting	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/mental-accounting-in-it-doesnt-count/view
Homer Goes to College (The Simpsons S5 E3)	Animation Clip	Optimism bias	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/bias-blindness-in-the-simpsons/view
Old Spice	Commercial	Attribute Substitution	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/attribute-substitution-in-bodywash-advert/view
Good Will Hunting	Feature Film	Representativeness	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/availability-in-ameriquet/view
Volkswagen Golf	Commercial	Representativeness	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/representativeness-in-volkswagen-commercial/view
Ameriquet	Commercial	Availability	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/availability-in-ameriquet/view
Frozen	Feature Film	Utility Misprediction	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/utility-misprediction-in-frozen/view
Election	Feature Film	Preference Reversal	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/preference-reversal-in-election/view
This is Spinal Tap	Mockumentary	Scope Neglect	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/scope-neglect-in-spinal-tap/view
Portlandia	TV Series clip	Moral Preferences	Rationality	i.	criticalcommons.org/Members/joyofecon/clips/moral-preferences-in-portlandia/view
Moneyball	Feature Film	Loss aversion	Rationality	ii.	criticalcommons.org/Members/JJWooten/clips/moneyball-prospect-theory
Second Cheapest Wine	Commercial	Anchoring	Rationality	ii.	criticalcommons.org/Members/joyofecon/clips/anchoring-in-second-cheapest-wine/view
I am Peter hear me roar (Family Guy S2 E8)	TV Series clip	Prospect Theory	Rationality	ii.	criticalcommons.org/Members/joyofecon/clips/prospect-theory-in-family-guy/view
Seven	Feature film	Visceral effects	Self-Control	iii.	criticalcommons.org/Members/joyofecon/clips/visceral-effects-in-seven/view
Ulysses	Feature Film	Bounded self-control	Self-Control	iii.	criticalcommons.org/Members/joyofecon/clips/bounded-self-control-in-ulysses/view
Inside Out	Feature Film	Self-Control	Self-Control	iii.	criticalcommons.org/Members/joyofecon/clips/self-control-in-inside-out/view
The Hangover	Feature Film	Time Preferences	Self-Control	iii.	criticalcommons.org/Members/joyofecon/clips/time-preferences-in-the-hangover/view
Thai Life Insurance	Commercial	Warm glow altruism	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/warm-glow-altruism-in-thai-life-insurance/view
Kiatnakin Bank	Commercial	Reciprocity	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/reciprocity-in-kiatnakin-bank/view
The Social Network	Documentary	Social influence	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/social-influence-in-social-network/view
Chicago	Feature Film	Reciprocity	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/reciprocity-in-chicago/view
The Christmas Story	Feature Film	Peer effects	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/peer-effects-in-the-christmas-story/view
Reservoir Dogs	Feature Film	Social Norms	Self-Interest	iv.	criticalcommons.org/Members/joyofecon/clips/social-norms-in-reservoir-dogs/view

Source	Type	Concept	Theme	P	Link
Margaritaville (South Park EP3 S13)	Animation	Pricing bubbles	Markets & Intervention	v.	criticalcommons.org/Members/joyofecon/clips/pricing-bubbles-in-south-park/view
The Big Short	Feature Film	Psychology of markets	Markets & Intervention	v.	criticalcommons.org/Members/joyofecon/clips/psychology-of-markets-in-the-big-short/view
Wall Street: Money Never Sleeps	Feature Film	Over-confidence	Markets & Intervention	v.	criticalcommons.org/Members/joyofecon/clips/over-confidence-in-wall-street-money-never-sleeps/view
Margin Call	Feature Film	Emotion in investment	Markets & Intervention	v.	criticalcommons.org/Members/joyofecon/clips/emotion-in-investment-in-margin-call/view
Cancer Patients Aid Association	Campaign	Nudge	Markets & Intervention	vi.	criticalcommons.org/Members/joyofecon/clips/nudge-in-cancer-patients-aid-association/view
The Matrix	Feature Film	Choice architecture	Markets & Intervention	vi.	criticalcommons.org/Members/joyofecon/clips/choice-architecture-in-the-matrix/view
Armed and Dangerous	Feature Film	Nudge	Markets & Intervention	vi.	criticalcommons.org/Members/joyofecon/clips/nudge-in-armed-and-dangerous/view

Table 1. Behavioral Economics Media Database and Description

size of a problem (Desvouges et al., 1993). In the snippet drawn from a mockumentary film *Spinal Tap*, fake band lead guitarist Nigel Tufnel explains the importance of the number 11 on amplifiers, failing to understand that an increase of 1 on a scale from 0 to 11 has its equivalent on a scale from 0 to 10. In *Portlandia*, two customers attempt to make an informed decision about whether to order chicken based on how it was cultivated (organic, certified, local, free-range). The clip illustrates how rationality is constrained by limits in information, time and human computational capacities (Simon, 1982).

Loss aversion, anchoring and prospect theory speak to the importance of reference points in decision making (Kahneman & Tversky, 1979). Illustrating loss aversion in *Moneyball*, Oakland Athletics' manager Billy Beane states that he enjoys winning, but that he hates losing more than he likes to win. This exemplifies loss aversion, a behavioral response whereby losses are felt with greater emotion than equivalent gains. Prospect theory posits that in the process of decision making, individuals assign value to changes from a reference point and that there is a difference between a loss and a gain (Kahneman & Tversky, 1979). It also predicts risk preference over losses. When Peter Griffen from *Family Man* is faced with a choice between an alluring mystery box over a speedboat, his wife and neighbors accuse Peter of having "done something stupid" in choosing the mystery box.

Another example of the importance of reference points is anchoring bias (Tversky & Kahneman, 1974). In the process of decision-making, individuals often rely on an initial piece of information in order to make subsequent judgements. While a wine connoisseur would consider vineyard, varietal or year as well as price, in the spoof advertorial for the *Second-*

cheapest Wine, viewers are guided to choose wine based on an anchor: the price of the cheapest wine.

Bounded self-control

Examples of loss of self-control and myopic thinking are plentiful in films. In *Ulysses*, the protagonist urges his crew to tie him to the mast, as he prepares to hear the sirens' seductive song. His commitment device ensures that his controlled, thinking self dominates his myopic, intuitive self. This illustrates an example of dual-self and system 1 (automatic, fast) versus system 2 (deliberate, slow) thinking processes (Thaler & Shefrin, 1981; Kahneman, 2011). Actions like over-drinking and over-spending tend to be more common than predicted by standard economic models. In the feature film *The Hangover*, Stu, Alan and Phil wake up hungover and injured in a Las Vegas hotel suite that is in total disarray. Their hangover today is the result of yesterday's decisions, illustrating a temporal dimension to decision making, whereby present events are weighted more heavily than future ones (Frederick, Loewenstein, & O'Donoghue, 2002).

Visceral states like hunger, thirst, sexual desire, drug cravings, physical pain, and fervent emotion may lead people to downplay the importance of future goals and focus on the current state (Loewenstein, 2000). In the final scene of the feature film *Seven*, detective serial killer, John Doe taunts Detective Mills by telling him that he has killed his pregnant wife. Mills experiences wrath and, failing to overcome it, fatally shoots Doe. In so doing he completes Doe's plan rather than his own. Behavioral economics recognises that people lack full self-control (Baumeister et al., 2008), often favoring what feels good over what *is* good (Kahneman & Frederick,

2002). Emotions are actually personified in Pixar's *Inside Out*. Riley's family struggle to have a conversation, distracted by their strong emotions. Riley finally loses her cool and yells "Just leave me alone".

Bounded self-interest

Social interactions and social preferences also make for engaging stories in film. An advertorial by Thai Life Insurance shows a man conducting small acts of kindness without expecting money, fame, or recognition. The commercial asks, "What does he get in return?". We are told he does it to get positive emotions, illustrating the concept of warm glow altruism (Andreoni, 1990). Reciprocity is a social norm that involves responding to another person's action with an equivalent action in exchange (Ariely, 2008). This exchange is tenderly illustrated in an advert from Kiatnakin Bank. A man gives a dog all his own food. Unbeknownst to him, the dog reciprocates "beyond expectation", by blocking a parking spot for the man, protecting his car and even helping him to meet a woman. On a similar theme, in the musical *Chicago*, Roxie Hart is introduced to the prison warden, Matron Morton. She quickly learns that the system which operates in prison is one called "reciprocity", or as Morton puts it, "tit for tat".

The trailer for the 2010 biographical film *The Social Network* chronicles the making of Facebook. Social influence explains phenomena like conformity and cooperation (Banerjee, 1992; Fehr & Schmidt, 1999), and leveraging this, as Facebook does, "an idea worth millions of dollars... billions". Social pressure sets in during *A Christmas Story* when a young boy, Flick, accepts a dare to stick his tongue onto a frozen flag pole, only to be left alone as his friends follow each other, herd-like, to class. On the other hand, Mr. Pink from *Reservoir Dogs* refuses to act in line with a social norm, preferring to act rationally, in line with the predictions of standard economic theory. As expected, his refusal to contribute a dollar for tips does not go down well with his peers.

Markets and intervention

Reference to the psychology of markets features in clips ranging from the cartoon series *South Park*, to feature films like *The Big Short*, *Wall Street: Money Never Sleeps*, and *Margin Call*. In *South Park*, when Kenny's banker invests in the wrong fund, Kenny loses all his money. Kenny's father laments the errors in consumer decision making even as he himself buys a product which he subsequently returns. An economic crisis sweeps the nation, as one bank after the other closes down, and people are laid off work. In *The Big Short*, Banker Jared Vennett visualizes the global collapse of the economy, triggered by the poor investment decisions of thousands of mortgage holders. Both clips illustrate the link between psychology at the individual level and entire markets (Banerjee, 1992; Shiller, 2013).

In *Wall Street*, Gordon Gekko explains the tulip speculation fever and highlights the role that ego plays in investment and in the collapse of markets. He describes a fellow investor as having "an ego the size of Antarctica", in so doing pointing

towards a psychological factor that has received considerable attention in financial markets – overconfidence (Moore & Healy, 2008). As he removes one block at a time from a tower of Jenga blocks, the entire tower eventually comes crashing down. Out of fear and a desire to cut their losses, emotional investors are often driven to "buy high, sell low", the very opposite of what they should be doing. In 2009, investors stampeded out of stock funds in response to the sharply falling markets. In *Margin Call*, when the firm's financial analyst draws attention to imminent financial ruin, Jared Cohen's solution is to "sell them all" to limit the firm's exposure. But others caution him against this, warning him that "You will kill the market for years".

Choice architecture refers to the different ways in which choices can be presented to decision makers to influence their outcomes (Thaler & Sunstein, 2008). Its role and potential problems are illustrated in the final set of film clips in Table 1. In India, Ogilvy employ a nudge in an anti-smoking campaign for the Cancer Patients Aid Association. A chanting lighter, fitted at cigarette shops in place of the regular lighters, plays a tune typically used in funerals. While this does not restrict freedom of choice, it causes a change in behavior. The clip shows smokers stepping back in horror and discarding their cigarettes as they are reminded of the link between smoking and death. While advocates of libertarian paternalism embrace this as a way to overcome biased-decision making and still allowing freedom of choice, critics argue that nudges may undermine respect for individual human agency and moral autonomy (Thaler, 2015).

Issues of agency and autonomy lie at the heart of the scene from *The Matrix* when Morpheus explains the insidious nature of the matrix to Neo. "It is the world pulled over your eyes to blind you from the truth", he says, offering him the choice of a blue pill or a red pill to determine how much he will know. Default mechanisms are meant to encourage better choices while still allowing the freedom of choice (Johnson & Goldstein, 2004). In a clip from *Armed and Dangerous*, a group of new security company recruits are introduced to their union representatives who opt them into a pension payment scheme, by default. Unlike the other recruits, Normal has several questions about this. The fact that this provokes laughter in itself can prompt a discussion on the extent to which default options allow freedom of choice.

Conclusion

Deviations from neoclassical propositions have been synthesized and categorized in various works, with some of the key themes being those related to the limited cognitive abilities that constrain human problem solving, those pertaining to time preferences and limited self-control, and those focusing on other-regarding preferences. Such deviations can impact entire markets and economies. Understanding these phenomena offers insights for intervention but also flags the need to consider ethical issues around paternalism.

Despite making huge inroads in research and policy, be-

behavioral economics remain underrepresented in economics courses and its teaching methods. We address this shortcoming by harnessing the power of storytelling found in film. To overcome status quo bias (Samuelson & Zeckhauser, 1988) which may be prevalent among instructors, we provide 30 media clips and three detailed lesson plans, substantially lowering the transaction costs of integrating behavioral economics concepts into the economic curricula. The clips we have proposed help to bring behavioral concepts to life, complementing the teaching of behavioral economics by applying the very lessons emerging from the discipline.

There is ample room for additional pedagogical contributions beyond the scope of this paper. Indeed, there is an ongoing need to keep the instructional examples we use fresh and relevant. Compiling new materials on open-access websites would significantly broaden usage.

Acknowledgements

The authors wish to thank David Addison, Gary Magee and Martese Pfeiffer Paris for their insightful comments and feedback.

References

- Acchiardo, C., A. Al-Bahrani, D. Patel, & B. J. Sheridan (January 2015). Dive in! Tips for teaching economics through Shark Tank. Paper presented at the meeting of the American Economic Association, Boston, MA. Retrieved on August 26, 2017, from aeaweb.org/conference/2015/retrieve.php?pdfid=1226.
- Acchiardo, C., D. Calhoun, M. Kirts, & G. D. Mateer. A Pixar is worth a thousand words. Forthcoming in the *Journal of Economics Teaching*.
- Acemoglu, D., D. Laibson & J. A. List (2015). *Economics*. Boston: Pearson.
- Akerlof, G. A., & R. J. Shiller (2009). *Animal spirits: How human psychology drives the economy, and why it matters for global capitalism*. Princeton: Princeton University Press.
- Al-Bahrani, A., K. Holder, D. Patel, & J. Wooten (2016). Art of Econ: Incorporating the arts through active learning assignments in principles courses. *Journal of Economics and Finance Education*, 15(2), 1–16.
- Altman, M. (2012). *Behavioral Economics for Dummies*. Mississauga Ontario: John Wiley & Sons.
- Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal*, 100(401), 464–477.
- Angner, E. (2016). *A Course in Behavioral Economics*, 2e. Basingstoke: Palgrave Macmillan.
- Ariely, D. (2008). *Predictably irrational*. New York, NY: Harper Audio.
- Arnold, R. (2020). *Economics*, 13e. Boston: Cengage.
- Arnsperger, C., & Y. Varoufakis (2006). What Is Neoclassical Economics? The three axioms responsible for its theoretical oeuvre, practical irrelevance and, thus, discursive power. *Panoeconomicus*, 53(1), 5–18.
- Ashraf, N., C. F. Camerer, & G. Loewenstein (2005). Adam Smith, behavioral economist. *The Journal of Economic Perspectives*, 19(3), 131–146.
- Banerjee, A. (1992). A simple model of herd behavior. *Quarterly Journal of Economics*, 107, 797–817.
- Baumeister, R. F., Sparks, E. A., Stillman, T. F., & Vohs, K. D. (2008). Free will in consumer behavior: self-control, ego depletion, and choice. *Journal of Consumer Psychology*, 18(1), 4–13.
- Becker, W. E. (2004). Economics for a Higher Education. *International Review of Economics Education*, 3(1), 52–62.
- Benartzi, S., & Thaler, R. H. (1995). Myopic loss aversion and the equity premium puzzle. *The Quarterly Journal of Economics*, 110(1), 73–92.
- Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5(1), 1–21.
- Bransford, J., A. Brown, & R. Cocking (2000). *How people learn: Brain, mind, experience and school, expanded edition*. Washington: National Academy Press.
- Camerer, C. F. & Loewenstein, G. (2003). “Behavioral Economics: Past, Present, Future.” In: *Advances in Behavioral Economics*. Princeton University Press.
- Colander, D. (2020). *Economics*, 11e. New York: McGraw-Hill Education.
- Desvousges, W. H., et al. (1993). Measuring natural resource damages with contingent valuation: tests of validity and reliability. *Contingent valuation: A critical assessment*, 91–93.
- Dupont, B. (2014). Father knows best: Using Adam Smith to teach transactions costs. *The Journal of Economic Education*, 45(4), 320–329.
- European Commission (2016). *Behavioral Insights Applied to Policy: European Report 2016*. Retrieved on August 28, 2017, from publications.jrc.ec.europa.eu/repository/bitstream/JRC100146/kjna27726enn_new.pdf.

- Fehr, E. & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *The Quarterly Journal of Economics*, 114, 817–868.
- Fisher, W. R. (1987). *Human communication as narration: Toward a philosophy of reason, value, and action*. Columbia, S.C.: University of South Carolina Press.
- Frank, R. & B. Bernanke (2019). *Principles of Economics*, 7e. New York: McGraw-Hill Education.
- Frederick, S., Loewenstein, G., & O'Donoghue, T. (2002). Time discounting and time preference: A critical review. *Journal of Economic Literature*, 40, 351–401.
- Fredrickson, B. L., & Kahneman, D. (1993). Duration neglect in retrospective evaluations of affective episodes. *Journal of Personality and Social Psychology*, 65(1), 45–55.
- Geerling, W. (2012). Bringing the 'Dismal Science' to Life: Teaching economics Through Multimedia. *International Review of Economic Education*, 11, 81–90.
- Ghent, L. S., A. Grant, & G. Lesica (2011). The economics of Seinfeld. *The Journal of Economic Education*, 42(3), 317–318.
- Green, M., & T. Brock (2005). "Persuasiveness of narratives." In T. Brock & M. Green (Eds.), *Persuasion: Psychological Insights and Perspectives* (2nd ed.), 117–142. Thousand Oaks, Calif.: SAGE Publications.
- Gwartney, J. (2012). What should we be teaching in basic economics courses? *The Journal of Economic Education*, 43(3), 300–307.
- Hall, J. (Ed.) (2014). *Homer economicus: The Simpsons and economics*. Stanford, Calif.: Stanford Economics and Finance, an imprint of Stanford University Press.
- Hartford, T. (March 21, 2014). Behavioral economics and public policy. *The Financial Times*. Retrieved on August 28, 2017, from ft.com/content/9d7d31a4-aea8-11e3-aaa6-00144feab7de.
- Hellmich, S. N. (2019). Are people trained in economics "different", and if so, why? A literature review. *The American Economist*, 64(2), 246–268.
- Hubbard, R. G., & A. P. O'Brien. (2019). *Essentials of Economics*, 7e. London: Pearson.
- Johnson, E. J., & Goldstein, D. G. (2004). Defaults and donation decisions. *Transplantation*, 78(12), 1713–1716.
- Kahneman, D. (2011). *Thinking, Fast and Slow*. London: Allen Lane.
- Kahneman, D., & Frederick, S. (2002). "Representativeness revisited: Attribute substitution in intuitive judgment." In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics of intuitive judgment: Extensions and applications*, 49–81. New York: Cambridge University Press.
- Kahneman, D., & A. Tversky (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47, 263–291.
- Karlan, D., & J. Morduch (2020). *Microeconomics*, 3e. New York: McGraw-Hill Education.
- Kuester, D. D., G. D. Mateer, & C. J. Youderian (2014). The economics of the office. *The Journal of Economic Education*, 45(4), 392–392.
- Laibson, D. & J. A. List (2015). Principles of (behavioral) economics. *The American Economic Review*, 105(5), 385–390.
- Leet, D., & S. Houser (2003). Economics goes to Hollywood: Using classic films and documentaries to create an undergraduate economics course. *The Journal of Economic Education*, 34(4), 326–332.
- Loewenstein, G., O'Donoghue, T., & Rabin, M. (2003). Projection bias in predicting future utility. *Quarterly Journal of Economics*, 118(4), 1209–1248.
- Loewenstein, George (2000). Emotions in economic theory and economic behavior. *American Economic Review*, 90(2), 426–432.
- Lunn, P. D. (2013). Behavioral economics and policymaking: Learning from the early adopters. *The Economic and Social Review*, 43(3, Autumn), 423–449.
- Mankiw, N. G. (2006). *The Macroeconomist as Scientist and Engineer*. Retrieved on August 28, 2017, from scholar.harvard.edu/files/mankiw/files/macroeconomist_as_scientist.pdf.
- Mateer, G. D. (2005). *Economics in the Movies*. Mason, Ohio: Thomson South-Western.
- Mateer, G. D. (2011). *Using Media to Enhance Teaching and Learning, Starting Point: Teaching and Learning Economics*. Retrieved on June 24, 2017, from serc.carleton.edu/sp/library/media/index.html.
- Mateer, G. D. (2012). Econ 1-0-What? *The Journal of Economic Education*, 43(4), 440–440.
- Mateer, G. D. & L. Coppock (2020). *Principles of Economics*, 3e. New York: W. W. Norton.
- Mateer, G. D., & E. F. Stephenson (2011). Using film clips to teach public choice economics. *Journal of Economics and Finance Education*, 10(1), 28–36.

- Mateer, G. D., & H. Li (2008). Movie scenes for economics. *The Journal of Economic Education*, 39(3), 303–303.
- McEachern, W. A. (2019). *A Contemporary Introduction*, 11e. Boston: Cengage.
- Moore, D. A., & P. J. Healy (2008). The trouble with overconfidence. *Psychological Review*, 115(2), 502–517.
- Mullainathan, S., & R.H. Thaler (2000). *Behavioral economics* (No. w7948). National Bureau of Economic Research.
- Picault, J. (2019). The Economics Instructor’s Toolbox. *International Review of Economics Education* (forthcoming).
- Pomorina, I. (2012). Economics Graduates’ Skills and Employability. *The Economics Network*. Retrieved on June 23, 2017, from <https://www.economicsnetwork.ac.uk/sites/default/files/Ashley/EN%20Employers%20Survey%202012%20-%20Executive%20Summary%282%29.pdf>.
- Pressman, S., & R. Holt (2003). Teaching Post Keynesian economics to undergraduate students. *Journal of Post Keynesian Economics*, 26(1), 169–186.
- Rubinstein, A. (2006). A Sceptic’s Comment on the Study of Economics. *The Economic Journal*, 116(510).
- Samson, A. (2017). The behavioral economics guide 2017 (with an introduction by Cass Sunstein). Retrieved on May 15, 2020 from behavioraleconomics.com/BEGuide2017.pdf.
- Samuelson, W., & R. Zeckhauser (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty*, 1(1), 7–59.
- Salomon, G. (1979). *Interaction of media, cognition and learning: An exploration of how symbolic forms cultivate mental skills and affect knowledge acquisition*. San Francisco: Jossey-Bass.
- Serva, M. A., & M. A. Fuller (2004). Aligning what we do and what we measure in business schools: Incorporating active learning and effective media use in the assessment of instruction *Journal of Management education*, 28(1), 19–38.
- Sexton, R. L. (2006). Using short movie and television clips in the economics principles class. *The Journal of Economic Education*, 37(4), 406–417.
- Shepperd, J. A., P. Carroll, J. Grace, & M. Terry (2002). Exploring the causes of comparative optimism. *Psychologica Belgica*, 42, 65–98.
- Shiller, R. J. (2013, December 8). Speculative asset prices. Nobel Prize Lecture, Oslo. Retrieved on May 15, 2020 from nobelprize.org/nobel_prizes/economic-sciences/laureates/2013/shiller-lecture.pdf.
- Shiller, R. J. (2017). Narrative Economics. *American Economic Review*, 107(4): 967–1004. doi:10.1257/aer.107.4.967.
- Simon, H. A. (1982). *Models of Bounded Rationality*. Cambridge, MA: MIT Press.
- Slater, M. D. (2002). “Entertainment education and the persuasive impact of narratives.” In M. C. Green, J. J. Strange, J. Jeffrey & T. C. Brock (Eds.), *Narrative impact: Social and cognitive foundations*, 157–181. Mahwah, NJ: Lawrence Erlbaum Associates Publishers.
- Smith, A. (1759). *The theory of moral sentiments*. London: A. Miller.
- Thaler, R. H. (1999). Mental accounting matters. *Journal of Behavioral decision making*, 12(3), 183–206.
- Thaler, R. H. (2015). *Misbehaving: The making of behavioral economics*. New York: W.W. Norton.
- Thaler, R. H., & C. Sunstein (2008). *Nudge: Improving decisions about health, wealth and happiness*. New Haven, Conn.: Yale University Press.
- Thaler, R. H., & H. M. Shefrin (1981). An economic theory of self-control. *Journal of Political Economy*, 89(2), 392–406.
- The White House, Office of the Press Secretary (2015). *Executive Order – Using Behavioral Science Insights to Better Serve the American People*. [press release] 15 September 2015. Retrieved on June 24, 2017, from obamawhitehouse.archives.gov/the-press-office/2015/09/15/executive-order-using-behavioral-science-insights-better-serve-american.
- Tierney, J., G. D. Mateer, B. Smith, J. Wooten, & W. Geerling (2016). Bazinganomics: Economics of The Big Bang Theory. *The Journal of Economic Education*, 47(2), 192.
- Tversky, A., & D. Kahneman (1974). Judgment under uncertainty: Heuristics and biases. *Science. New Series*, 185(4157), 1124–1131.
- Von Neumann, J., & O. Morgenstern (1947). *Theory of games and economic behavior*. Princeton, NJ: Princeton University Press.
- Wilkinson, N., & M. Klaes (2012). *An introduction to behavioral economics*, 2e. Basingstoke: Palgrave Macmillan.

- Willingham, D. T. (2009). *Why don't students like school? A cognitive scientist answers questions about how the mind works and what it means for the classroom*. San Francisco: John Wiley Sons.
- Wooten, J. (2018). Economics Media Library. *Journal of Economic Education*, 49(4), 364–365.
- World Bank Group (2017). *World Development Report*. Retrieved on August 28, 2017, from worldbank.org/en/publication/wdr/wdr-archive.

Appendix: Illustrative Lesson Plans

Lesson Plan 1

Concept: Loss Aversion

Clip: Moneyball

Length: 15 seconds



Take away

Students should understand that loss aversion means that potential losses and gains are treated asymmetrically. Students should also recognize that loss aversion is a potential cause of many other behavioral biases.

As a warm-up activity ask students: “When was the last time you participated in something that could result in a win or a loss? How did you feel about either prospect?” Provide an example. Discuss student responses to the prompt and introduce them to the term, loss aversion.

Show the students the clip and ask them to consider the following: 1) Why do you think the manager in the clip, Billy Beane, was more distraught about losing than excited about winning? 2) How does loss aversion differ from risk aversion? One of the key points you need to make is how to differentiate between **loss aversion and risk aversion**. While risk aversion refers to aversion to uncertainty of outcomes, loss aversion is the behavioral response to winning or losing (irrespective of the certainty with which the loss or the gain may occur). More generally, loss aversion is captured by the expression: “losses loom larger than gains”. Loss aversion has been used to explain the endowment effect, sunk cost fallacy, and the status quo bias.

Lesson Plan 2

Concept: Anchoring

Clip: Second Cheapest Wine

Length: 1 minute 30 seconds



Take away

Students should understand anchors often influence consider decisions. Students should also be able to identify the anchor in a decision-making process.

As a warm-up activity ask students: “When was the last time you shopped for something, where you knew very little about the attributes or the typical prices of the product you were considering?” Provide an example. Discuss student responses to the prompt and introduce them to the term, anchoring.

Show students the clip and ask them to consider the following: 1) Why do you think the novice wine purchasers were attracted to the Second Cheapest Wine? 2) What was the anchor in the clip? Unless you are a sommelier there are so many dimensions to consider which make selecting a wine difficult. The producers at College Humor, who regularly look for the funny in the mundane, realized this and created a spoof advertisement which describes how non-expert college-aged wine drinkers make this decision. College-aged wine drinkers are not experts, nor do they have big budgets. They are mostly looking for a decent wine at an entry-level price. College students could behave as traditional theory expects and compute a cost-benefit analysis of the merits of each wine to maximize their utility, but they do not do this. Instead, they anchor their decision to readily available information. Studies have shown consumers consistently avoid the least expensive wine on the menu, assuming price indicates quality. But without prior knowledge of a specific wine they have very limited information from the menu to make their selection and tend to choose based on initial information. Many will choose year, and the skit features this too.

Lesson Plan 3

Concept: Warm glow altruism

Clip: Thai Life Insurance

Length: 3 minutes

models of self-interest but is observed in behavioral experiments on reciprocity.



Take away

Students will be able to recognize warm glow altruism. Students should also understand that altruism is one of a diverse range of social preferences.

As a warm-up activity ask students: “When was the last time you did something for someone else without any consideration or expectation of receiving something in return? Why then, did you do it?” Explain. Discuss student responses to the prompt and introduce them to the term warm glow altruism.

Show students the clip and ask them to consider the following: 1) Why do you think the man in the clip was so generous with his time and resources? 2) Is warm glow altruism consistent with the assumption that people are rational and self-interested? Altruism is a natural introduction to behavioral economics for many students. When teaching standard economic models, the assumption that the actor is completely self-interested is one of the first to be questioned by students learning economics, since many students can recall times when they, or others, seem to have put aside their own wants to help someone else. However, economists distinguish between different forms of altruism. Warm glow altruism is altruism that is impure or self-interested because of the positive emotional feeling the benefactor receives from his acts of kindness. This, of course, may be rational. If the marginal benefit to the person of doing good to others outweighs the marginal benefit of using the resources to consume things himself or herself, then this type of behavior is consistent with standard neoclassical economics. An additional consideration for our hero is his social preferences. Besides positive emotions, the narrator notes that our hero gets to live in a world that is made more beautiful as a result of his kindness. This is due, at least in part, to the positive reciprocity his actions trigger. Others give smiles, hugs, and even more generous helpings of rice in response to the social behavior he exhibits. This increased cooperation exceeds predictions in traditional