Methodological Individualism in Behavioral Economics

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Abstract: This chapter discusses the role of methodological individualism in behavioral economics. Since behavioral economics developed in reaction to traditional microeconomics, the chapter sketches first the latter's understanding of methodological individualism. It argues that traditional microeconomics is based on three principles: the *self-interest principle*, the *rationality principle*, and the *social change principle*. The chapter then discusses experimental findings that led behavioral economists to relax all three principles. It argues that in particular the relaxation of the social change principle pushes the boundaries of methodological individualism since it highlights ways in which social institutions, norms, and rules affect individual processes of preference formation. In doing so, behavioral economics invites intricate discussions of the bi-directional relationship between social institutions and individual actions.

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1 Methodological Individualism in Traditional Microeconomics

In microeconomics, methodological individualism is typically understood as the claim that 'macro' level phenomena – such as market demand or supply – must ultimately be explained on the 'micro' level in terms of the characteristics and choices of individual actors involved (Arrow 1994). Put differently, social scientific explanations of group-level phenomena must be built up from the actions of individuals (Bowles 2004, p. 478). Typically, in microeconomics those actions are further specified by an *action-theoretic mechanism,* i.e., a model of individual choice (Alexander 1987). This chapter argues that the status of the action-theoretic mechanism is an important, but not the only point of differentiation between traditional microeconomics' and behavioral economics' understanding of methodological individualism.

There is a long tradition in economics that understands the action-theoretic mechanism as *intentional individual action* and social phenomena as the *unintended consequence* of the interaction of intentionally acting individuals (Menger [1871] 1985; Hayek [1942-44] 1979). In this tradition, methodological individualism means that economists "shall not be satisfied with any type of explanation of social phenomena which does not lead us ultimately to a human plan." (Lachmann 1969, p. 94). In microeconomics of the mid-twentieth century and onwards ('traditional microeconomics'), the idea of intentionality becomes less important and the action-theoretic mechanism is qualified by the assumptions of rationality and self-interest (Sen 1987). Thus, traditional microeconomics asserts that social phenomena can be explained purely in terms of the characteristics of rational, self-interested agents, the actions available to them, and the constraints that they face (Gintis 2009, p. xiv). In doing so, the commitment to methodological individualism entails a restriction to what arguments microeconomists focus on when explaining social phenomena – *viz.*, individual choice explanations – and which action-theoretic mechanism they employ when modeling individual choice – *viz.*, the homo economicus model. This 'double commitment' forms the heart of methodological individualism in traditional microeconomics and leads to the following three principles:

(i.) *Self-interest principle:* objectives are assumed to be self-interested and located at the level of the individual economic actor.

(ii.) *Rationality principle*: the individual actor behaves rationally given her objectives and beliefs; she always chooses the best feasible option given the constraints she faces.

(iii.) *Social change principle:* changes in social phenomena are caused by individual actors' responses to changes in constraints.

Principles (i.) and (ii.) form the action-theoretic mechanism of traditional microeconomics and principle (iii.) ties back discussions of changes in social phenomena to the level of individual choice. Principle (iii.) is central to explanations in traditional microeconomics: preferences are assumed to be stable so any change in behavior is explained by changes in the 'external' incentive structure, such as income or relative prices (Stigler and Becker 1979, p. 76).[1] Admittedly, the 'double commitment' to individual choice explanations and the specific action-theoretic mechanism of the homo economicus model is a 'thick' description of methodological individualism. Yet, it is justified in the context of traditional microeconomics. While the homo economicus model is often qualified in microeconomics today (Angner 2019), before the ascend of behavioral economics in the last quarter of the twentieth century, the assumptions of self-interest and rationality were considered part and parcel of the methodological 'hard core' of the field (Sen 1987). For instance, Stigler (1981) defends the homo economicus model as the action-theoretic mechanism of microeconomics by arguing that "we live in a world of reasonably well-informed people acting intelligently in pursuit of their self-interests" (p. 190) and when self-interest and ethical values are in conflict "[m]uch of the time, most of the time in fact, the self-interest theory … will win" (p. 176).

A description of markets is an illustration of how traditional microeconomists apply the three principles. On both sides of the market, there are a number of individual actors who are assumed to be rational and self-interested: consumers maximize their utility and producers maximize their profit. Individual consumers choose consumption demands and offer labor, individual producers choose inputs and outputs. These choices depend on many factors, such tastes, attitudes toward risk, beliefs about the future, and constraints. Yet, importantly, these factors are located at the level of the individual consumer and producer (Arrow 1994). They typically exclude any reference to social characteristics and social relationships. Choices on both sides of the market are explained in terms of individual economic actors having their own separate beliefs and objectives (Davis

[1] Becker (1976, p. 5) defends the assumption of preference stability; it "provides a stable foundation for generating predictions about responses to various changes, and prevents the analyst from succumbing to the temptation of simply postulating the required shift in preferences to 'explain' all apparent contradictions to his predictions."

2009). The sum of individual consumer and producer choices gives then rise to market demand and supply which in turn defines the market price.[2] If exogenous shocks occur (e.g., a pandemic or a natural catastrophe happens), market participants face a new set of incentives (e.g., certain goods and services are now needed more, others less). The market price for these goods and services will adjust as a result of individual responses to those new incentives. Hence, whatever happens in a market on an aggregate-social level is ultimately described as the consequence of a series of rational individual reactions to changes in constraints.

Schumpeter (1954, p. 888) sums up this individualist framework: "the self-governing individual constitutes the ultimate unit … all social phenomena resolve themselves into decisions and actions of individuals that need not or cannot be further analyzed in terms of superindividual factors."[3] This means that aggregative analysis that makes use of social entities – such as firms or corporations – are regarded as only provisionally legitimate and ultimately be treated as the resultants of rational choices of individuals (Brennan and Tullock 1982, p. 225). Personifications of the firm or the corporation are only interim theoretical constructs, which can be broken down into a series of rational choices of individuals who form those institutions, such as managers, shareholders, workers, etc.

There are at least two methodological reasons for adopting this individualist approach in microeconomics (Heath 2020). One, the individualist perspective goes beyond the observation of statistical correlations between economic variables (e.g., between levels of market concentration and market prices) and seeks to deliver a causal explanation for social phenomena (e.g., prices are higher in concentrated markets due to the price-setting power of the monopolist that is in turn a result of the inelastic demand of consumers). And, two, the individualist perspective cautions against the "postulate [of] a purpose without a purposive actor" (Elster 1982, p. 454). In other words, it cautions against the identification of a group interest without analyzing what sort of objectives and constraints govern its individual constituents, e.g., the notion of 'class interest' must ultimately derived from the analysis of the interests and constraints of individual class members.

[2] Strictly speaking, each individual takes the price to be given at the moment of choice and the market price that comes to prevail is an outcome of the choices of all individuals (Arrow 1994).
[3] Schumpeter used the term 'sociological individualism' to describe what many people today describe as 'methodological individualism' (Hodgson 2007, p. 213).

If this individualist perspective is ignored, theorists might overlook intricate collective action problems and falsely predict the power of groups with dispersed interests.

2 A Very Brief History of Behavioral Economics

In the second half of the twentieth century, an increasing number of scholars was motivated by a dissatisfaction with the unrealistic assumptions of microeconomics and a conviction to put forth descriptively more accurate models of individual choice using insights from cognitive psychology (Sent 2004). The most prominent spokesman of this 'old school' of behavioral economics was Herbert Simon as illustrated by his prolific work on *bounded rationality* (Simon 1955, 1956, 1959). According to Simon (1955, p. 99), the economist's "task is to replace the global rationality of economic man with a kind of rational behavior that is compatible with the access to information and the computational capacities that are actually possessed by organisms […] in the kinds of environments in which such organisms exist." Simon (1956, p. 29) argues further that this insight leads to the acknowledgment of *satisficing behavior*: individuals "[fall] far short of the ideal of 'maximizing' postulated in economic theory. Evidently, [they] adapt well enough to 'satisfice'; they do not, in general, 'optimize'."

However, the 'old' behavioral economics of Simon never fully crossed over into the economic mainstream, in part because of its explicit effort to radically depart from basic assumptions of rationality in microeconomics, and in part due to its lack of rigorous experimental evidence (Simon 1991, p. 385). Moreover, Friedman's (1953) 'as-if' defense of microeconomics' unrealistic assumptions successfully circumvented the introduction of psychology into economics during the mid-twentieth century. According to Friedman, competition within markets ensures that economic actors on both sides of the market act 'as-if' they followed the maxims of rational, self-interested choice. Therefore, economists would not need to consider the psychological complexity of human decision-making when analyzing markets. Furthermore, Friedman argued that psychological realism is not a methodological value as such. According to Friedman, theories and their underlying assumptions should be judged in terms of their predictive power rather than their proximity to reality.

Friedman's defense strategy came under increasing attack in the second half of the twentieth century. In part due to a lack of predictive power of economic theory and in part because a new

group of behavioral economists convincingly argued that competitive pressure on markets do not easily eliminate market actor's system 1 thinking, i.e., their fast and intuitive way of making decisions (Kahneman 2003, 2011). While being cognitively frugal, system 1 thinking often leads people to make biased choices. Biases persist and influence market outcomes because there are often clear limits to individuals' learning opportunities, e.g., one-off decisions or repeated decisions that lack clear feedback make it difficult for individuals to correct their cognitive biases even in competitive market environments (Mullainathan and Thaler 2000). Also, many market participants – mostly on the supply side – have an incentive not to correct the other market side's system 1 thinking since it is more cost-effective to make money from people's biases than to educate them (Russell and Thaler 1985). For instance, a company might profit more from exploiting people's existing biases that leads them to consume sugary drinks, fatty food, or nicotine products in great quantities than by first educating the consumers about the long-term consequences of those consumption habits and then to market an alternative product. Taken together, proponents of this 'new' behavioral economics argued, *individual psychology* matters for the explanation and prediction of *market outcomes*. This has been a powerful critique of Friedman's aforementioned as-if assumption.

Compared to Simon et al., proponents of 'new' behavioral economics have been far more successful in establishing themselves as a field within economics. In 2002, the Nobel Prize in Economics was awarded jointly to Daniel Kahneman and Vernon Smith; Richard Thaler was awarded the Prize in 2017. The reasons for the success of 'new' behavioral economics are manifold and this chapter does not aim to do justice to all of them.[4] One important aspect that contributes to the ongoing success of 'new' behavioral economics is that its proponents do not try to fundamentally challenge the methodological framework of microeconomics, including its commitment to methodological individualism. As Laibson and List (2015, p. 385) point out "behavioral economics is a series of amendments to, not a rejection of, traditional economics." The notion of bounded rationality in 'new' behavioral economics upholds the focus on individual choice and the idea that people try to optimize, i.e., they try to choose the best feasible option. Yet, they fail to achieve their intended goals due to systematic and predictable cognitive biases. In doing so, new behavioral economics takes the rationality assumption of traditional microeconomics as a

[4] See Heukelom (2014) for a comprehensive discussion of the history and success of 'new' behavioral economics.

benchmark from which to consider behavioral deviations. Kahneman (2003, p. 1449f.) clarifies this point: "The rational-agent model was our starting point and the main source of our null hypotheses. […] Theories in behavioral economics have generally retained the basic architecture of the rational model, adding assumptions about cognitive limitations designed to account for specific anomalies." While Simon started from the conviction that traditional microeconomists "were not all that serious" (Sent 2004, p. 750), proponents of 'new' behavioral economics do not attempt to fundamentally change microeconomics methodological framework, e.g., 'new' behavioral economics upholds traditional microeconomics' reliance on maximizing behavior, albeit under budgetary *and* cognitive constraints.

Another factor that has contributed to the success of 'new' behavioral economics is its proponents' reliance on lab and field experimental evidence that supports their theoretical claims (Angner and Loewenstein 2012). Importantly, both lab and field data are focusing on *individual choice*. This illustrates 'new' behavioral economics' commitment to methodological individualism not just on a conceptual-theoretical but also an empirical-practical level. The idea behind this reliance on individual choice data is that controlled lab conditions enable economists to study individual behavior in situations that, in simplified and pure forms, mimic those encountered in markets and other forms of economic interaction. In a nutshell, 'new' behavioral economics follows the individualist methodology of standard microeconomics in that it aims to explain social phenomena by understanding and modeling individual choice.

3 Methodological Individualism in Behavioral Economics

Methodological individualism is rarely explicitly defended or precisely defined in behavioral economics. None of the introductory textbooks discusses the topic (e.g., Angner 2020; Cartwright 2018; Wilkinson and Klaes 2017) and only a handful of articles have been published recently on the topic (e.g., Davis 2015; Frerichs 2019; Lecouteux 2022; Ross 2022). Despite this omission, an implicit advocacy of methodological individualism is as widespread in behavioral economics as it is in traditional microeconomics: "Recent developments in behavioral economics have involved some retreat from rationality, but the individualism of classical and neoclassical economics has been retained. The idea that explanations that are based on individual-level assumptions are superior to, or more satisfying than, those that are not, is deeply rooted in the practice of

economics." (Sugden 2016, p. 1379). Whitman (2022, p. 456) puts it succinctly: "behavioral economics … clearly work(s) within the individualist tradition."

Like traditional microeconomists, behavioral economists study and model the manner in which individual economic actors make choices under conditions of scarcity and the results of those choices for social outcomes, particular markets. Hence, like traditional microeconomics, behavioral economics aims to explain social events in terms of the preferences, beliefs, and constraints of individuals. However, based on a plethora of experimental findings about people's actual behavior, behavioral economists qualify the three principles mentioned in section 1 that lie at the heart of traditional microeconomics' commitment to methodological individualism, *the self-interest principle, the rationality principle*, and *the social change principle*. This section argues that while the relaxation of the self-interest and the rationality principles confirms behavioral economics commitment to methodological individualism, the relaxation of the social change principle pushes the boundaries of individualist methodology in economics.

3.1 Relaxation of the Self-Interest Principle

There are a number of experimental findings about people's actual behavior in game theoretical settings that standard microeconomies cannot easily explain, e.g., why people give a substantial amount of their endowment to others in dictator games (Camerer 2011). This has led behavioral economists to relax the *self-interest principle* of traditional microeconomics and assume *bounded selfishness*: people do not only care about their own welfare but also about those of relevant others. Behavioral economists typically model bounded selfishness by introducing social preferences (such as altruism, inequity aversion, or reciprocal fairness) into individuals' objective functions.

The literature on dictator and ultimatum games initiated the research on social preferences (Güth and Kocher 2014). In dictator games, an anonymous sender and an anonymous recipient are paired. Senders decide how much of their endowment (typically $10) they want to give to the recipients. Recipients are passive in this game. Traditional theory's *self-interest principle* predicts that senders keep $10 for themselves. However, in experiments senders typically propose a division in which the recipient receives between $2 and $4 (Camerer 2011, p. 56). The assumption of social preferences (e.g., inequity aversion or altruism) on behalf of the players helps make sense of the observed findings.

A similar pattern can be observed in ultimatum games, in which the recipient is not passive but can either accept or reject the division. In the event of rejection, both players receive nothing. Here, likely driven by a mix of pro-social and strategic concerns – senders anticipate that many receivers would reject offers that are perceived as too low and thus unfair – the recipient receives slightly higher offers of $4 to $5 compared to the dictator game (Camerer 2011, p. 49).[5] Social preferences also help explain cooperation in n-players public good games in which each player is given an initial endowment (e.g., $10) and each player has the option of transferring a part of their endowment to a public account where it is multiplied by some factor, typically between 1 and 3. Contrary to the prediction of mutual defection based on the self-interest and rationality principles of standard microeconomics, experimental studies find that corporation is remarkably robust and subjects contribute on average 40-60% of their endowment to the public good in a one-shot game, even when varying the monetary stakes or group size (Dawes and Thaler 1988).

Social preferences identified on the individual level can help explain and predict market-level phenomena, e.g., social preferences help explain the attenuated effect of competition on wages (Fehr and Fischbacher 2002) and the counterproductive effect of incentive-based regulation on pro-social behavior (Bowles & Polanía-Reyes, 2012). Crucially, for the discussion of methodological individualism, social preferences identified in the lab play a significant role for explanations of outcomes in natural markets. For instance, sellers who are more pro-social in a lab setting are more successful in natural markets: they achieve higher prices, have better trade relations, and better abilities to signal trustworthiness to buyers (Leibbrandt 2012). Furthermore, in a study with fishermen whose main source of income stems from the use of fishing grounds with open access, those who exhibit social preferences in the laboratory are also more collaborative outside the lab and less likely to exploit the common pool resource (Fehr and Leibbrandt 2011). These studies indicate that social preference play a crucial role in economic decisions with lasting consequences for the people involved. Moreover, they are an important contributing factor to the solution of real-world social dilemmas. There is a rich empirical literature that shows that people in real-life settings are not helplessly trapped in social dilemma situations since, among other

[5] Like standard microeconomics, behavioral economics assumes that incentives still matter for individuals' social preferences. When experimenters exogenously increase the stakes, recipients become more willing to accept unfair offers (Andersen et al. 2011).

things, individuals' hold self-interested *and* other-regarding preferences (Ostrom 2010, p. 648). In this context, a more realistic understanding of the interaction between self-interested and other-regarding concerns allows economists to calibrate agent-based models which yield better predictions of the chances of success of self-organization and bottom-up solutions in social dilemma situations (Poteete et al. 2010). In all this, behavioral economists follow the rationale of methodological individualism that *macro phenomena* (e.g., social cooperation) should ultimately be explained by *micro models* that refer to the properties and predispositions of individuals (e.g., objective functions that incorporate social preferences).

3.2 Relaxation of the Rationality Principle

Experimental evidence and empirical observation suggest that people often make choices that do not align with their interests (Hausman and McPherson 2009). Behavioral economists identify systematic decision biases and bounded willpower as main sources for the observed divergence between actions and interests (Mullainathan and Thaler 2000). Hence, they relax the *rationality principle* of traditional microeconomics and model economic actors as *boundedly rational*.

Bounded willpower captures the phenomenon that people often make plans that entail actions with upfront costs (e.g., to diet or to work out) for a later reward (e.g., to be healthy or good looking). But when it comes to the instantiation of their plans, they are overwhelmed by instant gratification and decide to forgo the larger-later reward for a smaller-sooner one (e.g., eat the burger or watch the Netflix show). A famous study in this context is Read and van Leeuwen (1998) who show that snacks chosen one week in advance are typically healthy, but snacks chosen for immediate consumption are not. This systematic pattern, called *present bias*, leads to time-inconsistent preferences and violates standard rationality axioms. Behavioral economists explain present bias by means of (quasi)hyperbolic discounting which captures the observation that people are relatively patient for options that are farther removed in the future, but discount heavily between the current and the next time period (Laibson 1997; O'Donoghue and Rabin 1999).[6]

Besides bounded willpower, decision heuristics can drive another wedge between people's goals and actions. Heuristics are often useful since they reduce time and cognitive effort by

[6] This is different from the standard assumption of exponential discounting in traditional microeconomics in which the discount factor is independent of the time horizon.

applying simpler judgmental operations, particularly in complex environments. Yet, research in behavioral economics suggests that those heuristics can be biased and lead to systematic errors of judgment (Kahneman 2003). For instance, when making judgments of the likelihood of an event people often give too much attention to salience (availability heuristic), similarity (representativeness heuristic) or arbitrary anchors (anchoring-and-adjustment heuristic). Many of these departures from the rationality principle are captured by *prospect theory* (Kahneman and Tversky 1979). A core insights of prospect theory is that people make decisions based on how circumstances compare to reference points (e.g., their current endowment, a subjective income target, or the income of a peer group). Outcomes are then coded in terms of losses or gains relative to this reference point. Experimental evidence suggests that people are prone to *loss aversion*: they suffer from losses about twice as much as they benefit from gains of the equal magnitude which can explain the *endowment effect* (Kahneman et al. 1990).[7] This means that their value function is steeper for the domain of losses then gains. Also, the gain and loss parts of the value function display diminishing sensitivity: people value the first incremental changes from the reference point more than changes of equal magnitude that are further removed from the reference point. A third feature of prospect theory is the insight that individuals overweight small probabilities and underweight medium to high probabilities.

The literature on hyperbolic discounting and prospect theory are example of the ways in which behavioral economists uphold the individualist methodology of traditional microeconomics while tweaking its action-theoretic mechanism. Both are descriptive theories of how individuals make choices that deviate from the rationality principle of standard expected utility theory. Crucially, since these deviations are systematic on the individual level, they can help explain market-level phenomena.[8] For instance, the model of hyperbolic discounting can explain how innovation in financial products increased liquidity and eliminated commitment opportunities for hyperbolic consumers which has contributed to the ongoing decline in US savings rates (Laibson 1997). Moreover, hyperbolic discounting can elucidate why so many consumers subscribe to long-term contracts (e.g., for a gym or a weekly magazine) but overpay given their actual consumption of

[7] A famous example in this context is the *coffee mug experiment* (Kahneman et al. 1990). Following a random allocation, half of the subjects get a mug and half of the subjects a chocolate bar of approximately the same monetary value. When trade is allowed between coffee mug-subjects and chocolate bar-subjects, fewer than one quarter of subjects will take up this offer. Yet, traditional microeconomics would predict that half of them should trade.
[8] For an overview of the applicability of prospect theory to real-world markets, see Barberis (2013).

the good (DellaVigna and Malmendier 2006). Hyperbolic discounting explains this finding by stipulating that people are overconfident in their future self-control: overconfident consumers overestimate attendance and the cancellation probability of automatically renewed contracts.

Prospect theory can also explain a series of market-level phenomena.[9] For instance, it can make sense of the finding that people buy simultaneously lottery tickets and insurances. Both are small probability events whose relative frequencies of occurring are overestimated (Kahneman and Tversky 1979, p. 263). And loss aversion can clarify the consumer behavior of *mental accounting* where consumers pool gains and losses differently to maximize their experienced value of a series of events (Thaler 1985). Loss aversion can also help explain why economists observe less trade in many real-world markets than what standard theory would predict. For instance, many investors are less willing to sell a stock that has decreased in value than one that has increased in value (Odean 1998). Due to loss aversion, many investors are reluctant to realize capital losses because it would mean that they have to 'declare' a loss. Yet, wealth maximizing behavior would require the opposite since the 'loser stocks' underperform relative to the 'gainer stocks.'

These examples illustrate that the main difference between traditional microeconomics and some of the most famous models and theories in behavioral economics does not lie in different understandings of methodological individualism. Instead, the main difference lies in the belief of behavioral economists that the modification of the action-theoretic mechanism of traditional microeconomics leads to a more adequate descriptive theory of individual choice that can explain a series of real-world market-level phenomena that traditional theory couldn't explain. In doing so, many behavioral economists are committed to an individualist methodology, both in terms of data collection and in terms of model building. Yet the next section argues that a more recent strand in behavioral economics has started pushing the boundaries of methodological individualism.

3.3 Relaxation of the Social Change Principle

Traditional microeconomics explains changes in social phenomena by referring to changes in the constraints individuals face. This *social change principle* of traditional microeconomics is based on the assumption that institutions, norms, and rules do not directly cause changes in individuals'

[9] For a more comprehensive discussion of ways in which prospect theory explains social phenomena outside the lab, see Camerer (2000).

preferences or beliefs; rather, they affect behavior only indirectly via changes in the set of feasible alternatives (Stigler and Becker 1977). In contrast, the aforementioned heuristics-and-biases program suggests that preferences are often *context-dependent*. For instance, it matters for people's risk preferences whether options are framed in terms of potential gains or losses (Kahneman and Tversky 1986) or for the willingness to pay for various consumption items whether people have been exposed to arbitrary anchors or not (Ariely et al. 2003). In doing so, the heuristics-and-biases program expands the *social change principle* and includes the idea that individuals respond not just to economic incentives but also to non-economic factors, such as *informational framing* and *situational cues*.

The heuristics-and-biases program is still close to traditional microeconomics in that it typically models individuals as actors who are constituted of a rational 'inner self' with stable and consistent preferences; yet this actor is assumed to be trapped in a psychological 'shell' (Sugden 2018, pp. 53-76). The idea of this approach is to model individuals as 'faulty econs': individuals aim to instantiate their well-ordered preferences, but their decision-making process is distorted by psychological biases which causes them to make systematic mistakes (Heukelom 2014, pp. 172-180). Context-dependent preferences are understood as *situational deviations* from rationality when intuitive system 1 thinking makes people pay too much attention to normatively-irrelevant factors in the decision environment (such as cues or anchors). Yet if people were given enough time to activate their deliberate system 2 thinking, they would likely see through those irrelevant contextual factors and make decisions that realizes their 'true' preferences (Hoff and Stiglitz 2016, p. 28).[10]

In recent years, a strand in behavioral economics has emerged that does not only acknowledge situational framing effects and preference instability but suggests that individual preferences are shaped on a deeper and more durable level by socio-cultural factors (Fehr and Hoff 2011; Bowles 2016; Hoff and Stiglitz 2016; Hargreaves Hep 2020). Hoff and Stiglitz (2016) call this *strand two behavioral economics* to contrast it with the heuristics-and-biases approach. Strand two argues that institutions and the wider socio-cultural environment are not only *regulative* (in the sense that they affect relative prices and constraints) but they are also *constitutive* (in the sense that they affect

[10] The view of the 'inner' rational agent and the idea of 'true' preferences has been criticized by, among others, Dold (2018) and Sugden (2018).

people's preference development): "prolonged (and sometimes even brief) exposure to a given social context shapes *who people are*." (Hoff and Stiglitz 2016, p. 26). Hence, strand two behavioral economics has contributed to a further relaxation of the *social change principle* in behavioral economics by conceptualizing people's perception and preferences as endogenous to the socio-cultural context they have been exposed to.[11]

Strand two behavioral economics is motivated by experimental findings that reveal striking cross-cultural differences in outcomes of the games subjects typically play in economics, such as the dictator game, the ultimatum game, or the public goods game (Henrich et al 2001; Henrich et al. 2004). For instance, in ultimatum games subjects from industrialized societies tend to divide the money more equally and reject low offers, while subjects from non-industrialized societies are neither inclined to make equal offers nor to punish those who make low offers (Henrich et al. 2010a). The results suggest that preferences of individuals to be fair in anonymous transactions (and to punish unfairness) increase with the level of the society's market integration. Of course, economists cannot unambiguously conclude from these observed correlations that a market-based society (with its distinct institutions, rules, and norms) causally shapes people's social preferences. It is plausible that market integration has shaped preferences for fairness, e.g., since the quid pro quo rationale is salient in market exchanges and has thus supported the development of fairness preferences. Yet it is also plausible that the casual link runs the other way: stronger fairness preferences have fostered market integration by honoring informal contractual obligations. Strand two behavioral economics has recently begun to disentangle this endogeneity problem and tried to gain a better understanding of when and how the socio-cultural environment affects preferences, by studying, among other things, the effects of *social conflicts*, *laws and regulations*, as well as *cultural and professional identities* on people's preference development.

A series of experimental studies suggest that *social conflicts* between groups and societies can have considerable impact on people's time, risk, and social preferences. Voors et al. (2012) conducted a field experiment in rural Burundi. They find that subjects who happen to live in regions with higher levels of violence have higher discount rates, are more risk-seeking, and

[11] This sociologically enriched version of behavioral economics is supported by insights from evolutionary psychology (Heyes 2018) and anthropology (Henrich 2016, 2020). A core insight is that the socio-cultural environment physically rewires our brains and thereby shapes how we think and what we want.

display more altruistic behavior towards their neighbors. The study suggests that adverse shocks (such as violent conflicts) can significantly alter people's saving and investment decisions that persist even beyond the temporary shocks. In another study, Gneezy and Fessler (2012) find experimental evidence that wartime can have a deep effect on social preferences and within-group cooperation. The authors elicited people's preferences nine months before, during, and a year after the 2006 Israel-Hezbollah war. They find that during wartime, people are more willing to pay costs to sanction greedy behavior and reciprocate generous acts by group members. The study confirms the hypothesis of people's preference for in-group favoritism and suggests that inter-group conflict increases it.

Furthermore, strand two behavioral economics suggests that *laws and regulations* may not just affect people's behavior via changes in constraints and relative prices but more directly by impacting their preference development. In a laboratory experiment, Falk et al. (2006) study the effect of minimum wages on subjects' reservation wages. The study finds that the temporary introduction of a minimum wage leads to a rise in subjects' reservation wages. Crucially, this effect persists after the minimum wage has been removed. In other words, subjects are less willing to work for a given wage after the experience of a minimum wage. The study suggests that minimum wage laws may affect people's behavior by shaping their preferences for fair remuneration and by creating entitlement effects. In a famous field study, Gneezy and Rustichini (2000) analyze the effects of a change in the regulatory regime of day care centers in Israel. At six centers in Haifa a fine was introduced for parents who were late in picking up their children. Contrary to the prediction of traditional microeconomic theory, parents responded to the fine by doubling the fraction of time they arrived late. Similar to the Falk et al. (2006) study, the effect persisted after the regulatory intervention (i.e., the fine) was revoked. In other words, the impact of incentives on preferences exceeds situational framing effects; they constitute part of a learning environment in which preference change can become durable.[12] Bowles (2016, p. 5) hypothesizes that the introduction of economic incentives negatively affects the parents' social preferences by reframing lateness as another commodity they could purchase. In signaling what is considered normatively

[12] According to Bowles (1998, p. 80) this durable preference change is a core aspect of preference endogeneity and differentiates it from mere preference instability: "preferences learned under one set of circumstances become generalized reasons for behavior. Thus, economic institutions may induce specific behaviors – self-regarding, opportunistic, or cooperative, say – which then become part of the behavioral repertoire of the individual."

legitimate, changes in laws and regulations can directly affect people's preferences – a phenomena that is described as the 'expressive function of law' (Sunstein 1996).[13]

Finally, experimental evidence suggests that people internalize norms and values of the *social or professional identities* they are exposed to and those norms and values can be activated by situational cues. In a study of employees of a large international bank, Cohn et al. (2014) find that subjects depict are higher willingness to cheat when their professional identity as bank employees is made salient; yet they behave on average honestly in a control condition without the priming of their professional identity. Interestingly, this effect is specific to bank employees: in control experiments with students and employees from other industries, subjects do not become more dishonest when their professional identity or bank-related items are made salient. The results suggest that the prevailing business culture in the banking industry weakens social preferences. In another set of priming experiments with Asian-American subjects, LeBoeuf et al. (2010) and Benjamin et al. (2010) study the hypothesis that people have multiple identities, and that making one identity more salient than others would evoke different, sometimes conflicting preferences. Both studies corroborate the hypothesis. LeBoeuf et al. (2010) find that priming the subjects by making them think of their Asian heritage impacts their social preferences and leads to a significantly lower defection rate in prisoner's dilemma games. Benjamin et al. (2010) find that the Asian prime impacts subjects' time preferences (they become more patient). These findings suggest that people learn to associate different professional and cultural identifies with different preference rankings. Consequently, "social institutions do not just impose constraints and shape beliefs about others behavior but are also preference elicitation devices, frames and anchors that may render particular identities, and thus particular values and normative commitments, more salient." (Fehr and Hoff 2011, p. 404).

This brief review of studies illustrates some ways in which strand two behavioral economics highlights 'deep social determinants' of preferences. Among those determinants are institutions, norms, rules, and social practices that provide people with *cultural mental models* (Hoff and Stiglitz, 2016, p. 36). Those mental models "shape the way we attend to, interpret, remember, and respond emotionally to the information we encounter and possess" (DiMaggio 1997, 274). Mental

[13] The effectiveness of default rules (e.g., in the context of retirement savings, insurance plans, and organ donation) is sometimes explained along similar lines; see Fehr and Hoff (2011).

models affect people's preference formation since they are the way people categorize the world around them, including products, people, political parties, lifestyles, etc. (Dold and Lewis 2022). Individuals are not defined by a single mental model. Instead, they hold multiple models that their mind can draw upon to interpret a given situation. The selection of a model in any given situation happens largely unconsciously and "is guided by cultural cues available in the environment" (DiMaggio 1997, 275).[14] Also, the repertoire of mental models is not static but develops in the process of individuals' exposure to different institutions, norms, rules, and social practices (Frerichs 2019, pp. 11-12.) Consequently, the wider socio-cultural environment and the context at the moment of choice constantly interact. While the wider environment provides a pool of mental models individuals are exposed to, the situational context primes and activates concrete mental models.

4 Bounded Individualism and Why It Matters

When behavioral economists qualify the action-theoretic mechanism of traditional microeconomics in the heuristics-and-biases approach, they are still committed to methodological individualism. In fact, relaxing the *self-interest principle* and the *rationality principle* has been motivated by the idea to ground explanations of social outcomes (e.g., the observation of consumer behavior on markets) in psychologically more realistic theories of individual behavior (e.g., prospect theory or hyperbolic discounting). The assumptions of self-interest and rationality are not necessary conditions for a methodologically individualist perspective. As Arrow (1994, p. 4) points out "[t]he individualist viewpoint is in principle compatible with bounded rationality, with violations of the rationality axioms, and with the biases in judgment characteristic of human beings. The additional step to rational choice is, of course, of the greatest practical importance to theory formation, but it is not in principle necessary for the individualist viewpoint."

In contrast, the relaxation of the *social change principle* and the discussion of endogenous preferences illustrate that a more recent strand in behavioral economics supports a 'bounded' understanding of methodological individualism. It is bounded since it does not solely emphasize that social aggregates need to be built up from individual choices but also acknowledges the

[14] For instance, when primed of their professional identify, bankers do not choose the lens through which to analyze the choice options; rather their active mental model is the outcome of an unconscious reaction to environmental cues (Hoff and Stiglitz, 2016, p. 39).

influence of social aggregates – such as institutions, norms, and rules – on individuals' mental models and their preferences. In contrast to the heuristics-and-biases program which is based on the idea of stable cognitive biases that are shared across individuals and societies, strand two behavioral economics stresses that mental models vary within and between societies and they can change over time. Individuals' socio-cultural environment may alter the process by which people come to acquire mental models and hence influence individuals' preferences over time. Social institutions, norms, and rules structure interactions both by providing a pool of mental models and by creating situations in which certain mental models are repeatedly primed and activated. The more a certain model is activated – e.g., a model of rivalry or competition – the higher the chance that this model becomes a general trait of the individual across domains. Bowles (2016, p. 117) points out that "[the] way in which we come to have our particular preferences is much like the way in which we come to have our particular accents. The process takes place early in life, is for the most part unwitting, and depends critically on our social interactions with others."[15]

These insights of strand two behavioral economics have implications for several issues in economics. The remainder of this chapter highlights two of them: how economists may need to be more nuanced when interpreting experimental results and when doing comparative institutional analysis.

Interpretation of experimental results: The heuristics-and-biases program typically interprets behavioral patterns revealed by subjects in lab experiments as outcomes of invariant cognitive properties and 'biases' of atomistic agents (Frerichs 2019). In contrast, strand two behavioral economics provides a different perspective. Behavioral patterns revealed in the lab can inform the theorist not so much about invariant cognitive properties or 'biases' but about the structure of social institutions, norms, and rules the individual has been exposed to (Hargreaves Heap 2022; Lecouteux 2022). For instance, experimental economists have claimed that their results suggest that poor consumers are more present biased than their richer counterparts (Ashraf et al. 2006; Tanaka et al. 2016) and women are more risk averse than men (Croson and Gneezy 2009). This perspective concentrates economists' attention to individual psychology, i.e., the cognitive faculties of individuals are the dominant explanation of their behavior. In contrast, strand two behavioral economics emphasizes social factors that have led to the observed differences in time

[15] For a discussion of historical, social survey, and ethnographic data supporting this view, see Bowles (1998).

and risk preferences. Impulsive behavior might be the result of structural poverty or peer group behavior that caused the internalization of a mental model of short-term 'scarcity thinking' (De Bruijn and Antonides 2021). And differences in risk preferences between women and men might not be the result of 'natural' differences in cognition but of a repeated exposure to social narratives that propagate risk seeking behavior for boys and risk aversion for girls (Lecouteux 2022). Importantly, this shift in explanatory emphasis away from individual cognition to social factors matters both for scientific explanations and for policy discourse. If it is true that many observed preferences are "invariant only over a particular society or a particular era, or even over a particular social or professional group within a society" (Simon 1990, p. 16), economists have to be cautious with scientific generalizations of their behavioral models (Henrich et al. 2010b). Moreover, a policy discourse based on the assumption of invariant cognitive properties likely leads to different policies than emphasizing the 'heterogeneity' and 'plasticity' of people (Frerichs 2019). For instance, if individual cognition is identified as the source of present bias, then policy discussions will likely focus on 'micro-interventions' meant to help individual consumers to overcome their 'biases,' e.g., by means of default rules in saving contracts. However, if structural factors are identified as the cause of short-term behavior, policy discussions will likely be about institutional reforms, e.g., by directly targeting socioeconomic imbalances through poverty alleviation or educational campaigns.

Comparative institutional analysis: Typically, economists take preferences as antecedent to institutional analysis and understand institutions as instrumental, regulative devices that constrain individual behavior (Arrow 1994). Yet if strand two behavioral economics is correct, institutions are also constitutive and preferences are endogenous to different institutional arrangements.[16] In this case, economists cannot explain the emergence of a particular set of institutions by referring to the exogenous preferences of the parties to the exchange as it is typically done in neoinstitutionalism (McCloskey 2022). And for prescriptive purposes, economists cannot simply rely on preference satisfaction as the standard of welfare to recommend one institutional arrangement over another because preferences may change across institutions (Hargreaves Heap 2020). Consequently, discussions of the relative merits of different institutions need to go beyond

[16] For instance, experimental evidence suggests that social preferences change when the same exchange is organized in a market as compared to a non-market setting (Bowles 2016).

efficiency considerations: a choice of institutions becomes a choice of sets of preferences individuals will likely develop. What is thus required is a discussion of which preferences and values a society wants to propagate, i.e., what constitutes a "good society" (Hoff & Stiglitz, 2016, p. 51). For instance, when economists discuss the advantages of competition in organizing social affairs (e.g., by promoting the idea of meritocracy), they cannot solely refer to positive incentive effects of selection contests (Sen 2000). Instead, they also need to consider how the implementation of the meritocracy principle in various areas of social life would change the actors involved, e.g., by inculcating habits of rivalry and resentment (Dold and Gewecke, forthcoming; Sandel 2020). Frank Knight made this point 100 years ago in his famous essay *The Ethics of Competition* (1923, p. 586): "An examination of the ethics of [an] economic system must consider the question of the kind of wants which it tends to generate or nourish as well as its treatment of wants as they exist at any given time."[17]

Strand two behavioral economics can also illuminate a discussion of the quality of the process through which preferences are formed under different institutional arrangements. For instance, it can open a discussion of whether individuals were exposed to social situations or 'experiments of living' that allowed them to reason about which preferences to hold (Dold and Lewis, forthcoming). In this sense, strand two behavioral economics may be "less concerned with forms of preference satisfaction and more concerned with individual autonomy." (Hargeaves Heap 2013, p. 985). A focus on autonomy can help disentangle dysfunctional preference-norm equilibria that economists traditionally have a hard time analyzing, such as the Indian caste system (Hoff et al. 2011) or racial segregation (Lang and and Kahn-Lang Spitzer 2020). These are examples of shared cultural mental models that people are not born with but most likely form during their upbringings (Kinzler and Spelke 2011). An autonomy-oriented perspective would ask whether, in forming those cultural mental models, people were exposed to 'experiments in living' that allowed them to reason about which preferences to hold. In this regard, autonomy can be understood as an individual's degree of cognitive independence from a specific situational or socio-cultural context

[17] Knight (1923, p. 587) further explicates: "the issue as to the influence of the economic system on character … should at least be raised. Emphasis will be placed on the particular phase of competitive emulation as a motive and of success in a contest as an ethical value. The competitive economic order must be partly responsible for making emulation and rivalry the outstanding quality in the character of the Western peoples who have adopted and developed it."

(Whitman 2022); it means that "the cause of human behavior is more inside the individual than outside it." (Di Iorio 2013, p. 153).

In summary, the analytical focus of strand two behavioral economic shifts away from the decisions of isolated individuals with given preferences to the preference-shaping power of the context in which decisions are made. In doing so, strand two behavioral economics acknowledges the bidirectional relationship between social institutions and individual action. Individual preferences and group level institutions are conceptualized as coevolving (Bowels 2004, chs. 11-13). People's preferences and actions contribute to the emergence and stability of institutional arrangements and hence must be seen as the product of individual action. For instance, the distribution of mental models in a population at any given point in time (e.g., perceptions of gender or racial differences), influences the emergence of social equilibria in various areas of social life and stabilizes certain norms (e.g., gender and racial equality).[18] Yet, those social equilibria also exert causal influence on individuals' processes of preference development by creating priming effects and repeatedly exposing people to certain mental models. In this sense, institutions, norms, and rules emerge from individual choices and individual choices are in turn shaped by institutions, norms, and rules. Ultimately, the concrete phenomenon at hand might inform economists about which direction of causality they need to focus on. The traditional approach that explains behavior change in terms of changes in incentives might be helpful in standard market analyses with shorter time horizons. Here, the assumption that preferences are unaffected by changes in constraints might be well-justified. Yet, upholding this assumption stringently might prevent economists from a deeper understanding of many social issues, including dysfunctional preference-norm equilibria and market phenomena with longer time horizons.

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[18] Strand two behavioral economics also

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