ONE

Introduction

The Individual in Economics

No entity without identity.

(Quine 1969, 23)

[A]n axiomatized theory has a mathematical form that is completely separated from its economic content.

(Debreu 1986, 1265)

[O]ur everyday conception of persons [is] as the basic units of thought, deliberation, and responsibility.

(Rawls 1993, 18, n. 20)

1.1 Individuals Count

This is a book about the conceptualization of the human individual in recent economics. Why this subject? Economics has long been seen as the social science that makes the individual central. Indeed, a leading justification for why much of our social world over the last half-century has been reinterpreted in the language and concepts of economics is that economics makes the human individual central. In this respect, economics seems in step with the world today. It is surely one of the great normative assumptions of contemporary human society – one not held in much of the past – that the human individual counts or should count, that the individual is important, and that individuals have an inherent moral value, despite all the evidence of human practices to the contrary. It is something of a mystery why people have come to believe this, considering the violent past we have inherited and the world we still have in the present; in the long record of human history, individuals have suffered and been sacrificed to "higher" causes in limitless number, often in the cruelest and most inhumane ways possible. With our history, the conclusion should be just the opposite: individuals

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do not count. Nonetheless, it is still ordinarily believed by vast numbers of people everywhere that individuals are important, that this is a fundamental human truth, and that human society should be constructed so that individuals are each valued as a human right. So economics' influence and power in representing the world today, it seems, is due in no small part to its being perceived as defending this deep human commitment.

There are good reasons to believe that economics operates with an inadequate conception of individuality, however, and thus does not and cannot defend this deep human commitment. Worse, a false defense of the individual, in which individuals really do not count in economics but are said to, may threaten this commitment by confusing our understanding of what is needed for saying individuals count in economic life and generally. Economics in the simplest sense is about maximizing production. Is this goal in the service of individuals, or are individuals in service to this goal? How would one know which conclusion is correct? I argued in my previous book on the theory of the individual in economics (Davis 2003) that the standard conception of the individual in economics does not explain the individual, and what people believe to be a conception of the human individual in economics is actually an abstract individual conception that represents individuals indiscriminately as single people, collections of people, parts of people, countries, organizations, animals, machines – indeed anything to which a maximizing function might be attributed. That is, though the standard view is purported to be about single human beings, or at least capable of also representing single human beings, it contains nothing to make it distinctively about human beings. Thus, basically it does not offer an account or defense of the single human being as an individual, because people have no more value in its analysis than all these other "individuals." On this view, economics is only about maximizing production, and individuals are in service to this goal.

However, economics is currently in a period of transition. It is now widely believed that important changes are under way in mainstream economics associated with the rise of a collection of new research programs and strategies of investigation, all of which can be argued to challenge fundamental assumptions in standard neoclassical economics, even if this is not necessarily the intent of those developing these new programs and strategies. Indeed there is now considerable debate about the depth and nature of the critiques that recent economics has advanced, primarily stimulated by the recognition that many of these new approaches directly challenge rationality theory, the recognized core of standard postwar economics. My view is that the recent challenges to standard economics aimed at rationality theory raise an even more fundamental challenge, namely to its assumption that rational individuals are atomistic individuals – the core idea of the abstract individual conception. Rationality theory, many seem to forget, is built around the assumption that individuals are atomistic, so that most do not see that any challenge to rationality theory is ultimately also a challenge to that conception. Thus, the new research programs in economics raise an important question: how will they reconceptualize the human individual as they seek to revise rationality theory? Will they attempt to revise rationality theory on its old atomistic individual basis, or will rethinking rationality mean rethinking individuality? Which path economists choose will say much about the continuing relevance of economics in a world in which people have already decided that individuals count.

This book thus examines the nature and different directions of development in thinking about the individual in recent economics. I treat recent economics as a heterogeneous collection of new approaches within mainstream economics that advance significant critiques of standard neoclassical economic theory, which has now undergone more than a century of development but no longer seems to be the basis on which economics is developing. The leading new research programs are: game theory, behavioral economics, experimental economics, evolutionary economics, neuroeconomics, complex adaptive systems theory, and the capability approach. I focus on these particular currents in recent economics, and not on the recent economics of non-mainstream heterodox economics, because it is the former, not the latter, that inherits the problematic legacy of the atomistic individual conception and which must accordingly determine how to address, not only what I argue is essentially a failed notion, but one that I believe is likely to be increasingly perceived as such. Of course economics as a discipline is not strongly motivated by philosophical concerns. It is a more pragmatic and applied subject, driven today especially by the exigencies of mathematical modeling and the need to explain the explosion of new market forms, and ultimately responsive to social economic policy concerns. However, this does not mean that philosophical problems do not underlie economic theorizing. They are not absent simply because most economists prefer to think on a different level. Philosophical problems are inherent in economic theorizing and thus play a role behind the scenes. Nonetheless, the recent strategies developed to re-explain the individual will be represented in this book as generally having different motivations and as being tied to the more immediate practical problems of economic theorizing. I will still argue, however, that those strategies exhibit a direction of development that raises fundamental philosophical issues, and that how they address these issues, intentionally or unintentionally, will ultimately be principal determinants of their success and social value.

Section 1.2 begins by briefly outlining the identity framework I use to discuss the individual in economics. Section 1.3 lays out why the traditional atomistic conception of the individual is deeply problematic as a conception of the individual, both in its early psychology-based form and in its postwar abstract individual form. In Section 1.4, I distinguish two main strategies for reconceptualizing individuals in recent economics, linking them to two different types of boundary problems that explanations of single individuals encounter in economics. I go on in Section 1.5 to comment on the nature of the change in recent mainstream economics in terms of the influence of other sciences and disciplines on economics. Section 1.6 addresses the issue of the normative significance of economics' view of the individual, and here I discuss the relationship between economics' individual conception and the subject of human rights, one important normative expression of the view that individuals count. Section 1.7 provides an outline of the argument of the book.

1.2 The Identity Framework

Identity is a central concept in this book, and I use a particular approach to it to organize my investigation of the individual in economics. One reason for this is that the concept is used in many different ways in contemporary social philosophy, social science, and the arts, and this profusion of senses and meanings makes it difficult to use in a systematic and coherent way (cf. Gleason 1983; Brubaker and Cooper 2000). This applies to economics as well, in which the concept has only relatively recently begun to be used, but in which it is also subject to different interpretations, relies on selective cross-field borrowings, and on the whole is poorly articulated and understood (cf. Kirman and Teschl 2004). My particular approach to identity – what I term an ontological-criterial approach to identity – involves asking whether the particular conceptions of things we employ are formulated in such a way as to be successful in identifying the things to which they are intended to refer. With respect to the individual, then, I first ask what the *concept* of an individual requires, or what fundamental criteria are involved in referring to things as individuals, and then ask whether particular *conceptions* of individuals in recent economics capture these requirements and satisfy these criteria in terms of how they are formulated. If they do not capture these requirements, my conclusion is that they fail to identify individuals, as we understand them according to our understanding of the concept of the individual. If they do capture these requirements, how they conceptualize individuals then describes the identity of the individual – or, since the subject here is specifically human individuals, that conceptualization describes the personal identity of individuals – though only, it needs to be added, in terms of what we can learn from how individuals are understood in economic life. Thus, in this type of analysis, the substantive content of what it means to be an individual comes from the conceptions economists use to characterize individuals, when those conceptions fulfill the basic requirements derived from the concept of the individual. I do not attempt to say what the identity of a person consists in but rather attempt to determine what personal identity is according to what our conceptions of individuals in economics imply when they are adequate to the concept of the individual. The method of the book, then, is to move progressively to this understanding by beginning with conceptions of the individual in recent economics that are unsuccessful in capturing what is involved in being an individual, diagnose what it is in these conceptions that makes them fall short, and then move on to conceptions that address these shortfalls, exhibiting what it is about them that makes them successful.

The first of the two criteria I treat as required by the concept of the individual, one originally emphasized by Aristotle, is the *individuation criterion* (Aristotle 1924; Ross 1923). This criterion requires that for any candidate conception of an individual, if that conception indeed refers to and identifies individuals in terms of the way it is formulated, it follows that individuals in that conception are somehow successfully represented as distinct and independent beings. If this is not the case, then the candidate conception is not about individuals, despite any claims that it is. That is, it exhibits a misuse of language. The second criterion, one central to personal identity analysis in twentieth-century philosophy in connection with the idea of the self existing through time (Noonan 1991), is the *reidentification criterion*. This criterion requires that individuals that have already been shown to be distinct and independent in some conception of them can be reidentified as distinct and independent in those same terms across some process of change. That is, despite change in some or even many of an individual's characteristics, what makes that individual distinct and independent continues to be true of the individual after this change. The reidentification criterion, then, presupposes the individuation criterion, but failure of the reidentification criterion does not imply failure of the individuation criterion. We might show something to be distinct and independent on some basis at one point but not on that same basis at another, making individuality highly episodic. This point is important in this book, because I will argue that some conceptions of the individual in recent economics do succeed in showing individuals to be distinct and independent but then fail to show how they are enduringly so. Thus, the larger goal in the survey here is to locate and explain conceptions of the individual in economics that satisfy both criteria. Not all domains of investigation concerned with individuals need to have this more comprehensive goal, but I argue that economics needs to treat individuals as enduringly distinct for the following reasons.

First, economics treats intertemporal choice or choice across time as an essential part of the theory of economic behavior. Intertemporal choice assumes that people make choices they believe will affect them in the future. However, this becomes meaningless if our present selves cannot somehow be reidentified with our future selves. In economics, that is, people must be enduringly individual. Second, increasingly the most important kinds of economic activity that individuals engage in – education and training, family decisions, investment in such things as housing, saving for retirement, health care choices, and so forth – all presuppose that individuals endure through change. People's economic lives revolve around their expected survival. Indeed as income and wealth levels rise across the world, these types of long-term consumption rise as a share of all consumption, so that the character of individuals as enduring beings is becoming historically more important worldwide. Third, though it is an implicit and sometimes a suppressed premise of standard economics, individuals are thought to have an ability or capacity that they exercise in making choices. Saying people possess ability or capacity means there is something enduring about them apart from all their choices. For all three of these reasons, then, conceptions of the individual in economics need to satisfy both the individuation and reidentification criteria. In the following section, however, I argue that the standard atomistic individual conception of economics cannot satisfy either of these criteria, implying that the standard *Homo economicus* atomistic individual conception fails as a representation of human individuals.

1.3 The Atomistic Individual Conception: *Homo Economicus*

The traditional *Homo economicus* conception, as in the Robinson Crusoe fable, describes the individual as an isolated being, meaning one defined in terms of characteristics that are specific to the individual alone. These characteristics are normally taken to be preferences, but because all individuals possess preferences, they need rather to be characterized specifically as the individual's *own* preferences. Indeed Crusoe and Friday could have identical preferences over all things, but on the standard view they would still be defined as atomistic beings because they each possess those identical preferences as their own. That is, it is the ownership of preferences that matters, so what makes Crusoe an atomistic being is not simply having preferences but Crusoe having his *own* preferences. This is essentially what it means to say that preferences are exogenous. Economists can easily allow that preferences are socially influenced in terms of how people come to have them, but once individuals actually have them, they are then exogenous in the sense of being strictly their own.

However, representing an individual in terms of any set of *own* characteristics, preferences, or anything else defined as exclusively one's *own*, does not explain being individual or being an individual; it merely presupposes it in a circular way. Expanded out, it effectively says, "all things *x* will count as individuals, we will then give these *x*'s such-and-such a characterization, and we will then say *x* is an individual in virtue of that characterization." Or, if you were to operationalize this procedure by claiming, say, that it enabled you to pick out distinct and independent individuals, this would be equivalent to first picking out what you want to call individuals, then ascribing to each of them some set of distinguishing characteristics, and then saying that they can be individuated in terms of those characteristics. In contrast, in a noncircular individuation procedure, you need to be able to refer to a set of features in the world without presupposing that they belong to a certain kind of thing already taken to be an individual and then show that those features of the world delimit and individuate something that you will say is to be taken as a certain kind of individual. For example, in Ronald Coase's theory of the firm (Coase 1937), in terms of features of the world, we distinguish nonmarket exchange from market exchange, and then we define the firm as an individual thing as a domain of nonmarket exchange. That is, we successfully individuate firms in terms of a particular type of exchange without at the same time referring to firms as independent entities; nonmarket exchange thus functions as a noncircular individuation criterion for firms.[1]

So the traditional atomistic individual conception does not explain individuality but merely stipulates a certain use of the term "individual." Remarkably, postwar neoclassicism has embraced this conclusion, while at the same time denying it to be a criticism by making circularity with

[1] I interpret Coase's analysis here as not making essential reference to the entrepreneur who distinguishes between contracting out and internally provided services. If the individuality of the firm depends on the individuality of the entrepreneur defined in terms of a set of own subjective preferences, then the firm fails to be individuated as a distinct and independent agent in a noncircular way.

respect to the individual a logical virtue in its now standard axiomatic representation of *Homo economicus*. Thus, individuals are identical to their utility functions because the formal conditions imposed on preferences – that preferences are complete, reflexive, transitive, continuous, and strongly monotonic – jointly guarantee that there exists a continuous utility function that represents those preferences. Individuals are assured of having their *own* preferences, then, not because the preference behavior we observe in the world in fact delimits and individuates people. Indeed there is much evidence in the form of patterns of shared tastes that the preference behavior we observe in the world fails to individuate people. Rather, individuals have their *own* preferences because "preferences" are axiomatically required to be "well-behaved" in order to represent the single individual to whom they are logically ascribed. People are consequently individuated as single individuals formally, not empirically. This state of affairs, of course, reflects the half-century-long flight of neoclassical economics from psychology – from early marginalism and cardinal utility theory to ordinalism and indifference analysis to Paul Samuelson and revealed preference to the formal and axiomatic representation of individuals in the postwar period. As Nicola Giocoli puts it,

> We started from the classic notion of a rational agent inherited from the early marginalist writers, who viewed the agent as a relentless maximizer who aimed at pursuing his/her own goals and desires, and ended with the shrinking of rationality to a formal requirement of consistency, where the notion of agency was so stripped down of its human peculiarities as to become an all-purpose concept valid for real individuals as well as for groups or machines. (Giocoli 2003b, 3)

Economists of course still speak informally of preferences as if they were psychological phenomena, but what they really mean by the term is a formal ordering relation constructed so as to allow equilibrium market analysis. "Preferences" need to be "well-behaved" so that "choices" are rational, meaning that they support a functional representation of individuals that guarantees down-sloping demand and up-sloping supply curves when prices are parametrically varied. In this abstract individual *Homo economicus* conception that has replaced the old prewar psychological *Homo economicus* conception, rationality and individuality are co-defined, not in connection with human behavior, but by reference to the logical-mathematical properties of equilibrium analysis. As Gerhard Debreu says, "An axiomatized theory has a mathematical form that is completely separated from its economic content" (Debreu 1986, 1265). On this view, it follows, we could say that anything can be an "individual" in contemporary neoclassical economics as long as it fulfills the requirements of supply-and-demand equilibrium analysis. But actually, the correct implication for Debreu is that abstract individual conception really refers to nothing in the world whatsoever.

Yet, as hermetically secure as abstract Crusoe is in formal space, there are now widespread doubts regarding the applicability of the standard account of rational behavior to the real world as the result of an increasing volume of evidence produced by psychologists that people do not behave as they "rationally" should. This has had a significant impact on the direction of development of recent economics, but I believe what will be even more important in the long run for creating doubt about economics' rationality paradigm than the evidence regarding "anomalies" in choice theory is the wide-ranging debate and research outside economics throughout science regarding the nature of rationality, especially in mathematics, computational science, physics, engineering, communications sciences, and artificial intelligence studies, all of which regard a key test of what is rational as what computational processes can be engineered into physical mechanisms. Here, ironically, war and the design of armaments historically have had the lead, as rocketry, "smart" engineering systems, computable processes of all kinds, information science, and multiple forms of created or artificial intelligence have increasingly commanded the interpretation of what gets counted as rational (Clark 1998; Mirowski 2002; Klein 1998, 1999). One important conclusion that this approach to rationality produces is that rationality is always bounded by the historical state of scientific development with regard to how computational processes can be technically implemented and embedded in engineered hardware. Applied to economic behavior, if people are a kind of hardware, then their rationality is similarly bounded in terms of the computational or cognitive processes they are able to exercise at any point in time, where this reflects the historical state of development of a range of kinds of institutions, many sorts of computational tools and devices, education and training, social organization, and so forth.

What I draw from this is that if human rationality is materially bounded because of the way it is embedded in the world, then it seems fair to say that individuality is also bounded in virtue of the way it is embedded in the world. In this book I interpret the boundedness of individuality in terms of the space in which our explanations of individuals as enduringly distinct successfully operate. I argue that generally speaking this space is bounded in two directions reflecting the two identity criteria presupposed by the concept of an individual. The individuation criterion requires that individuals be distinct and independent. For individuals to be distinct and independent, they must hold together as single whole beings and cannot fragment or break up into multiple selves. Thus, one bound on successful single-individual explanations lies in how our representations of individuals enable us to say why they do not fragment into collections of sub-personal multiple selves. The reidentification criterion requires that individuals maintain their individual distinctness across change, especially when this change causes them to share many of their characteristics with others. They do not dissolve or disappear into the mass of people or society generally but can be reidentified as enduringly distinct individuals. Thus, the second bound on successful single-individual explanations lies in how our representations of individuals allow us to say why they do not become part of the supra-personal social world.

Nathaniel Wilcox has distinguished these sub-personal and supra-personal bounds in an especially clear way with respect to his explanation of what single agents are. The sub-personal bound concerns the "*fission* of agency," whereas the supra-personal bound concerns the many "*fusions* of agency" possible in social life (Wilcox 2008, 527). His view is not motivated by identity criteria but shares with my view the idea that our explanations of what individuals are break down where our discourse shifts to the sub-personal and supra-personal world. In those domains we have different explanatory goals tied to concerns we have with different types of entities, for example, cognitive structures that operate "within" individuals and social groups that operate "above" them. Single individuals or agents effectively drop out of these types of explanations. They concern coordinate domains of human explanation that share boundaries with single-individual types of explanations where they leave off and we return to the domain of single-individual explanations. The task for the latter, then, is to mark off and map out the explanatory space in which single individuals are our object, framing this in terms of the sub-personal and supra-personal bounds that structure it. Moreover, given that human knowledge is in a continual state of development, this marking off and accounting for where the bounds on single-individual explanations lie requires continual interpretation and reinterpretation. This book's examination of recent economics confines this interpretive process to new thinking about individuals in economics and how it addresses the bounds on their explanation as enduringly distinct.

1.4 Two Strategies and Two Problems for Reconceptualizing Individuals in Recent Economics

Whereas an important motivation for much of the new research in mainstream economics is the belief that standard rationality theory does not adequately explain choice behavior, I will argue that there are two broadly