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Intentional Apple-choice Behaviors: When Amartya Sen Meets John Searle

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Abstract
This paper suggests that Amartya Sen’s conception of rationality could benefit from insights borrowed to John Searle’s philosophy of mind. More precisely, I argue that the work of Searle on intentionality provides a relevant conceptual apparatus to strengthen Sen’s conceptualization of context-dependent preferences in a way that suggests further analytical contributions to the latter’s line of research. The arguments developed in the paper are relevant for three interrelated issues on economic rationality that are currently discussed in economic methodology: (1) methodological dualism and intentionality explanations in economics, (2) the relationships between economics and philosophy, and (3) the recent rise of behavioral economics within the mainstream of economic theory.

Key words: rationality, intentionality, preferences, context-dependency, Amartya Sen, John Searle

Résumé. Le papier suggère que certaines dimensions de la conception de la rationalité économique développée par Amartya Sen peuvent se consolider au travers de la philosophie de l’esprit de John Searle. Plus précisément, la théorie searlienne de l’intentionnalité fournie un appareil conceptuel pertinent pour renforcer la conceptualisation senienne des préférences dépendantes au contexte. Les arguments développés dans le papier concernent trois problèmes contemporains qui sont interconnectés autour de la rationalité économique et discutés en méthodologie de l’économie : (1) le dualisme méthodologique et les explications intentionnalistes en économie, (2) les relations entre économie et philosophie, et (3) l’émergence récente de l’économie comportementale dans le ‘mainstream’ de la théorie économique.

Mots clefs : rationalité, intentionnalité, préférences, dépendance au contexte, Amartya Sen, John Searle

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Introduction

Amartya Sen has been an important actor of the last four decades in articulating the relationships between economics and philosophy in a constructive manner. One line of research in Sen’s approach to economic rationality consists in conceptual and formal inquiry into the context-dependency of preference relations (Sen 2002a, 2002f); and his work in ethics, moral and political philosophy has explicitly influenced his contributions on context-dependent preferences. In this paper, I suggest that the Senian line of research on the context-dependency of preference relations could benefit from insights borrowed to the philosophy of mind. I argue that John Searle’s philosophy of mind (1983, 1992) provides a relevant conceptual apparatus to strengthen the foundations of Senian context-dependent preferences, and to suggest further analytical contributions in this line of research.

More precisely, I will emphasize how the conceptual apparatus developed by Searle in his account of intentionality highlights the ontological dimension of the Senian context-dependency of preferences. Intentionality is a central concept in the philosophy of mind, where it is usually defined as “mind’s directedness at objects and states of affairs, the property of some mental states (thoughts, beliefs, desires) to be about something, their ‘aboutness’” (Rakova 2006, p.90). Sen’s account of context-dependent preferences is made through the use of what he calls “external references to behaviors” (developed in the first section), which, roughly speaking, consists in taking into account behaviorally unobservable features of choices in the formalization of context-dependent preferences. The central argument of this paper is that, with respect to the work of Sen (2002a, 2002f), the Searlean conceptual apparatus for intentionality provides a neat way of conceptualizing the way preferences emerge and guide rational choices through the interactions between individuals’ minds and choice contexts. The development of this argument has to be understood against the background of contemporary issues discussed in economic methodology on the conception of rationality in economics (especially in microeconomics), which I will briefly sketch in this introduction.

Sen’s avoidance of the topic of intentionality in his account of context-dependent preferences is mainly due to the fact that the philosophy of mind is usually considered as a separate field of inquiry from ethics, moral and political philosophy. Less separated from ethics, moral and political philosophy is the philosophy of action where discussions around
the concept of intention are sometimes related to the topic of intentionality in the philosophy of mind. It is understandable that Sen avoided the highly controversial discussions of intention in the philosophy of action (Setyia 2010) to concentrate on the broader issues discussed in his work in ethics, moral and political philosophy. Nevertheless, it has to be noted that the lack of discussion of intentionality in the work of Sen is representative of the state of affair in economics, as has been pointed out by several contributions in economic methodology\(^1\). Some of these contributions have already discussed the potential relevance (and limits) of John Searle’s philosophy of mind for economics or subfields and schools of thought in economics\(^2\). Other methodological contributions have already stressed the relevance of Searle’s philosophy for the work of Sen\(^3\). Taken together, these contributions tackle three central and interconnected methodological issues concerning the conception of rationality in economics: (1) methodological dualism and intentionalistic explanations in the social sciences (i.e., how the methodology of social sciences ought to depart from the methodology of natural sciences due to the specificity of human actions), (2) the relationships between economics and philosophy, and (3) the recent rise of behavioral economics within the mainstream of economic theory. A very enlightening discussion of these points is made by Matthias Klaes (2008). As he puts it:

> “Empirical studies may explain choice behavior in various proportions of individual and social framing effects. This by itself will do little however to advance a conceptual understanding of bounded rationality. A convincing theory of bounded rationality will have to confront the issue head on. Methodologically, this requires

\(^1\) See Wade Hands (2001, pp.66-69, pp.142-143, and esp. pp.334-341) and John Davis (2003 pp.94-96) for insightful appraisals of these contributions, and of the problem of intentionality in economics, economic methodology and philosophy more generally.


engagement with the thorny issue of human intentionality. [...] Yet, given that rational choice theory traditionally conceived does not necessarily purport to be a psychological theory, it seems more than apt to pursue the bounded rationality theme into philosophical debates on practical reasoning.” (Klaes 2008, p.217 and p.219)

This paper is structured in two sections, in which the arguments discussed are indirectly relevant to these methodological issues. A first section discusses the role of Sen’s formalization of context-dependent preferences in his broader conception of rationality developed through cross-disciplinary discussions between economics and philosophy. There, I propose an ‘apple-choice behaviors’ thought experiment inspired by Sen to illustrate the conceptual apparatus of his formalization of context-dependent preferences, and I discuss the reasons and drawbacks of the lack of discussions with the philosophy of mind in his framework. A second section illustrates how Searle’s conceptual apparatus for intentionality can strengthen the Senian account of context-dependent preferences; I do so by means of applying Searle’s conceptual apparatus to some parts of the thought experiment of the first section. A conclusion summarizes the main points of the argument, and discusses more directly their relevance for the methodological issues (1), (2) and (3) discussed in this introduction.

1. Comprehensive descriptions and external references to behaviors in Sen’s formalization of context-dependent preferences

1.1 Economics and Philosophy in the work of Sen on rationality

The criticisms Sen has addressed to the standard conception of rationality in economics target both the a priori impositions of internal consistency of choice conditions on choice-functions in revealed preference theories and the broadening of self interested motives in preference-based utility functions. Sen has pointed out that both approaches are in fact intertwined around the notion of utility so that the interpretations of choice behaviors in economics amount “to get an empirical rabbit out of a definitional hat” (2002b, p.27). For Sen, the conception of rationality as internal consistency of choice makes no sense without any external reference to behavior because, without such external reference, it implicitly underlies that rational agents only act self-interestedly, which is a psychological motive that
the consistency of choice approach sought to eradicate (see esp. Sen, 1973, 1987, 2002b). In normative economics, where rationality is understood in terms of choices that are equated with welfare maximization, the intertwining of consistency of choice with self-interest poses rather dangerous problems: not only it biases observations of actual behaviors as all being guided solely by the pursuit of individual welfare maximization, but it also biases normative policy recommendations by interpreting welfare criteria such as Pareto optimality as being attainable only through self-interested behavior (see esp. Sen 1987).

The burden of responsibility for this state of affair is, Sen argues, carried by both (1) the lack of analytical clarity on the relationships between the concept of preference and the concepts of choice, utility maximization, motive and welfare, and (2) the relationships between what he calls the “direct” and the “indirect” purposes of rational choice theory (RCT) in economics (Sen 1987, pp.11-12). On Sen’s account, the current state of affair is that the direct purpose of RCT is used for characterizing the substance of rationality (i.e., the constraints for a choice to be rational, such as consistency conditions or self-interest maximization): it should help us to “think and act wisely and judiciously, rather than stupidly or impulsively” (Sen 2002b, p.42). The indirect purpose of RCT is to describe and predict actual behavior, by first characterizing the substance of rationality (i.e., the direct purpose), “and then assuming that actual behavior will coincide with rational behavior” (Sen 2007, pp.20-21). He observes that, in economics,

“[t]he two uses – directly normative and indirectly predictive – are closely linked. Indeed, the latter is basically parasitic on the former, but not vice versa” (Sen 2002b, p.43).

Sen departs from this view by turning it upside down so to speak: he develops the normative direct purpose of RCT from its positive indirect purpose. In other words, he theorizes the substance of rationality with insights obtained from actual behaviors. He does so through interdisciplinary exchanges with ethics, moral and political philosophy, to provide insights on the plurality of motives underlying individual choices and on alternative welfare criteria (see esp. Runciman and Sen 1965; Sen 1974, 1987)4. This research strategy led Sen to

4 Though the theorizing from actual behavior to the substance of rationality is also, to some extent, the research strategy in standard decision theory (on this, see Guala 2000, Starmer 2005, Jallais and Pradier 2005, Mongin 2009), the interdisciplinary exchanges with ethics, moral and political philosophy is proper to Sen and his followers.
criticize the traditional positive/normative dichotomy in economics. He argues that an explicit account of the value judgments that are at play in actual individual decision making could not only improve normative economics regarding welfare criteria, but also improve the substance of rationality in positive economics. His position in economics has been conjointly developed with respect to the broader philosophical problem of the fact/value dichotomy by himself and other philosophers (see Putnam 2002, Sen 2005, and the edited volume by Putnam and Walsh 2012). Roughly speaking, Sen takes the following methodological stance in ethics, political and moral philosophy: he retains the need of public reasoning (or public deliberation) emphasized by Rawls and other transcendental approaches to justice, but rejects their methodological use of a priori concepts such as the veil of ignorance, for a more comparative and empirically grounded approach to justice (Sen 1980, 2006, 2009). Of importance here is the intrinsically social dimension it gives to his approach: ethical and moral norms of behavior are to be found ‘out there’ so to speak, by scrutinizing the ‘‘triple entanglement: of fact, convention and value’’ (Sen 2005, p.112) in society to provide relevant information for understanding these norms, and, by implication, human rationality.

1.2 Context-dependency of preferences in the work of Sen

Sen’s work in ethics, moral and political philosophy provides him the material for formal and axiomatic contributions to the direct purpose of RCT in economics to fight against “[t]he authoritarianism of some context-independent axioms” (Sen 2002b, p.6) of preferences underlying both the rationalization of choice functions and the enlightening of self-interest in the maximization of utility function. One line of conceptual contribution developed by Sen consists in analytical inquiries into the nature of external references to behaviors that can

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5 However, see Ragip Ege, Herrade Igersheim and Charlotte Le Chapelin (2012) for a thorough assessment of Sen’s position between transcendental and comparative theories of Justice.

6 Developing the direct purpose of RCT from its indirect purpose also characterizes the postwar developments of economics-oriented decision theory (see Guala 2010, Starmer 2005, Jallais and Pradier 2005, Mongin 2009), but the development of the direct purpose from its indirect purpose through cross-disciplinary discussions with ethics, moral and political philosophy is proper to Sen’s research strategy in economics.
rationalize choice behaviors which contradict either the most basic internal consistency of choice conditions or the broadest ‘enlightenment’ of self-interest maximization.

I would like to emphasize a key methodological element in this line of contributions, namely: the “‘comprehensive’ description of choice processes and outcomes” (Sen 2002f, p.159, my emphasis) from which Sen derives formal and conceptual contributions to RCT. These contributions start from the premise that preferences underlying choices “over comprehensive outcomes (including the choice process) have to be distinguished from the conditional preferences over culmination outcomes given the acts of choice” (Sen 2002f, p.159), where culmination outcomes basically refer to the standard consequentialist view of the relationships between preferences, choices and outcomes (i.e., either chosen outcomes are identified with preferences or preferred outcomes are identified with choices). Comprehensive outcomes and comprehensive choice processes are descriptions of choice behaviors violating the prima facie reasonableness of either the weakest internal consistency of choice conditions or the broadest ‘enlightened’ self-interest maximization. It is from these descriptions that external references to behaviors that rationalize choice behaviors are extracted and formalized.

To illustrate the comprehensive description of choice processes and outcomes, let’s start by considering the following thought experiment (that is inspired by comprehensive descriptions given by Sen 2002a, 2002f, and extended in order to illustrate more of his conceptual apparatus at once in the analysis that follows):

Imagine a fictional character named Mike, who is at a dinner guest party where there is a plate that, once, was full of apples. At one point, Mike feels like eating an apple. When Mike reaches for the plate there is only one remaining apple so that he has the choice between ‘taking the last’ apple and ‘taking nothing’. Mike knows for a fact that (a) if there had been two apples he would have picked one, as he in fact did the day before at the same kind of dinner guest party facing the exact same choice situation but with one extra apple in the plate, or that (b) if someone else, say, the host, handled him the last apple, he would have accepted the offer, as it also indeed happened the day before, after Mike ate his first apple. But because (c) there is just one apple left and that nobody handles it to him, he prefers to take nothing. Just as he reached this decision, the drunkest guest of the party sees that Mike is fixing the last apple, understands what is going on in Mike’s head, approaches Mike and (d) jokingly yells across the room “to hell with good manners” while handling the last apple to Mike.

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7 See Sen 2002a, 2002b, 2002c, 2002e, 2002f and the references therein for the characterizations of these context-independent axioms, basic internal consistency conditions and broadenings of self-interested motives. Sen does not deny the existence of rationally self-interested behaviors in some economic contexts (on this, see Sen 1984).
apple to Mike: ashamed, Mike declines the offer and responds by pretending that he was absolutely not thinking about that.

In this story, Mike faces four choice situations (a) two apples in a plate, (b) the last apple handled by the host, (c) the last apple in a plate, and (d) the last apple handled by the yelling drunkiest guest. If we give up on the comprehensive description, the culmination outcomes collapse into the two choice menus: {'apple'; 'apple'; ‘nothing’} for situation a, and {'apple'; ‘nothing’} for situations b, c and d. According to internal consistency of choice approaches to revealed preference, Mike’s choice behavior is consistent (hence Mike is rational) between situations a and b, and between situations c and d, but Mike’s choice behavior is generally inconsistent (hence Mike is irrational) across the four situations: his revealed preferences violate every weak internal consistency of choice condition referenced by Sen (2002a, 2002f). But all the same, given the comprehensive description Mike cannot be deemed irrational since there are reasons to explain his choice behavior in every situations. The variety and multiplicity of such reasons can be very wide. Sen (2002a, 2002f) considers non-exhaustive lists of non-mutually exclusive reasons, which can be separated into two broad groups. On the one hand, there can be reasons that imply an external reference to behaviors related to the identity of the chooser (Sen 2002f, pp.161-162):

(1) “Reputation and indirect effects”: e.g., Mike wants to have an ‘apple lover’ reputation in situation a, a ‘good guest’ reputation in situation b, to avoid an ‘apple grabber’ reputation in situation c, to avoid being associated with the drunkest guest and/or the reputation of being a person that cares too much about other people judgments in situation d

(2) “Social commitment and moral imperatives”: e.g., Mike could have an implicit or explicit self-imposed ethics of never taking himself the last apple whatsoever in situation c

(3) “Direct welfare effects”: e.g., Mike might genuinely enjoy the eating of an apple in situations a and b, and by sympathy, also genuinely enjoy that someone else will benefit from the last apple in situations a and c

(4) “Conventional rule following”: e.g., Mike is following rules of ‘proper dinner guest party behavior’ in situation a, b, c and d
On the other hand, there can be reasons that imply an external reference to behaviors related to the nature of the choice menus (Sen 2002a, pp.130-131):

(5) “Positional choice”: e.g., the culmination outcome ‘apple’ is comprehensively not the same when there is another ‘apple’ and ‘nothing’ in the choice menu, i.e., it is ‘another apple’ in situation a, as when there is just ‘nothing’ in the choice menu, i.e., it is ‘the last apple’ in situations b, c, and d

(6) “Epistemic value of the menu”: where one extra option in a choice menu brings information about the situation, including extra information about the other options of the menu. This type of reason does not fit our story very well; Sen usually illustrate these by the example of a person who “given the choice between having tea at a distant acquaintance’s home (x), and not going there (y) […] chooses to have tea (x), [but] nevertheless choose to go away (y), if offered – by that acquaintance – a choice over having tea (x) going away (y), and having some cocaine (z). The menu offered may provide information about the situation” (Sen 2002a, pp.130-131)

(7) “Freedom to reject”: when a choice is made not for the sake of the chosen culmination outcome, but rather for the sake of comprehensively rejecting the other outcomes of the choice menu. This type of reason also does not fit our story very well; Sen (ibid) illustrates this as follow: “The point of fasting in the form of not eating (y), given the possibility of eating well (z), may become less clear when the only alternative is to be partly famished anyway (x)”.

According to Sen (2002f, pp.162-163), in economics, rationalization of choice behaviors by (1) are typical of the formalization of self-interest maximization, which can also rationalize by (3) when interdependent preferences are taken into account in utility functions; while existing formalization in evolutionary game theory can rationalize by (4). But none of these approaches can rationalize by (2) or by mixtures of all of these reasons while keeping analytical tractability. It is also important to notice that rationalizations by (5), (6) and (7) of a choice function cannot be made through a redefinition of consistency conditions that would index outcomes on their respective choice sets because that would render these conditions “vacuous” since
“[consistency conditions] have cutting power only when “the same” alternative can be picked from different sets – precisely what is ruled out by this recharacterization” (Sen 2002f, p.170).

In order to get some form of parsimonious analytical tractability concerning these different types of external references to behaviors Sen has proposed the formalization of “parametric dependence” of preferences on the chooser (e.g., Mike, the host or the drunkest guest), on the menu (e.g., one or two apples), and on their interactions (2002f pp. 167-168) by indexing preference relations (not the options in the menus) on two parameters (identity of the chooser, and choice sets). He has also discussed broader cases of “background dependency” of preferences where preference relations are indexed on a set which may or may not intercept with the set of choice menus (Sen 2002d [1992]). This latter type of formalization has been, however, much less investigated by Sen as compared to the two (chooser and menu dependencies) former ones.

1.3 Economics and Philosophy in the work of Sen on context-dependent preferences

It is important to stress that, for Sen, the parametric dependence of preferences on external reference to behaviors are guided by the epistemological goal of broadening the mathematical discipline of maximization for economics, where it “has often paralleled the modeling of maximization in physics and related discipline” (Sen 2002f, p.159), in which:

“since no volitional choice is involved (we presume) […] maximization typically occurs without a deliberate “maximizer.” […] But maximizing behavior differs from nonvolitional maximization because of the fundamental relevance of the choice act, which has to be placed in a central position in analyzing maximizing behavior” (ibid).

Furthermore, Sen’s formal apparatus for comprehensive maximization in economics (partly) illustrated here is codependent both with his work in normative economics where he

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8 See also, in the same paper, the related theorems he derived from this formalization on the relationships between menu independence of preference and menu independence of choice function (the former entails the latter but not vice-versa, Theorem 3.1), the possibility of maximization but not optimization with menu dependent preferences (Theorem 5.6), and his axiomatization of self-imposed constraints (of the form of reason (2) above, Theorem 6.1).
draws policy recommendations from this apparatus and with his work in ethics, moral and political philosophy, where the substance of reasons and their consistency for choices is much more discussed than it is in his work in economics. Sen labels his broad conception of rationality “reasoned scrutiny” (2002b, 2009) which imposes only non-formal constraints on choices to be considered as rational. These constraints are, roughly speaking, that the reasons (including among others (1)-(7) above) individuals hold for their choices (a) have to survive thorough reflexive scrutiny from the individuals themselves (Sen 2002b), and (b) are able to enter reasoned public scrutiny, not necessarily for being universally adopted, but at least for being reasonably discussed (Sen 2009).

The Senian literature on external reference brings undeniable contributions to our analytical and epistemological understanding of rational choices and the related practical implications. When, four decades ago, Sen started to urge economists to broaden the scope of information relevant to the theorizing of individual rationality beyond choices, he claimed that the behaviorist stance of RCT has “on one hand, […] overstate[d] the difficulties of introspection […] and on the other, […] underestimate[d] the problems of studying preferences” (Sen 1973, p.258). The developing literature on the axiomatics of external reference to behaviors is a manifestation that Sen’s concerns on the study of preferences have been taken seriously (see the referenced literature in Bossert and Suzumura 2011, and in Bhattacharyya et. al. 2011). Sen’s use of introspection in his thought experiments has been an important methodological aspect of his critical work on rationality to attack economists’ dogmatism on the avoidance of “the peep into the head of the consumer” (Sen 1973, p.243).

The next section tries to make further developments to Sen’s peep into individuals’ heads, by illustrating how an interdisciplinary discussion between the Senian literature on external references to behavior and John Searle’s philosophy of mind, especially his account of intentionality, provides an ontological understanding of what is going on in individuals’ heads that corresponds to these external references to behaviors, which, in turn, suggests further insights for analytical and epistemological contributions to this literature.

2. The Intentionality of Sen’s external references developed from John Searle’s philosophy of mind
2.1 Epistemology and ontology, subjectivity and objectivity

A crucial point in Searle’s philosophy of mind is his articulation of the relationships between epistemology, ontology, objectivity and subjectivity. He often stresses that usually, in analytic philosophy, the notions of “objectivity” and “subjectivity” are solely used in their epistemological senses:

“We often speak of judgments as being “subjective” when we mean that their truth or falsity is not a simple matter of fact, but depends on certain attitudes, feelings, and points of view of the makers and the hearers of the judgment. An example of such a judgments might be “Van Gogh is a better artist than Matisse”. In this sense of “subjectivity”, we contrast such subjective judgments with completely objective judgments, such as “Matisse lived in Nice during the year 1917.” For such objective judgments, we can ascertain what sorts of facts in the world make them true or false independent of anybody’s attitudes or feelings about them.” (Searle 1992, p.94).

This traditional sense of the distinction between objectivity and subjectivity is purely epistemological, and “the third-person character of the epistemology should not blind us to the fact that the actual ontology of mental states is a first-person ontology” (Searle 1992, p.16). To be clear, on Searle’s account, the (traditional) epistemological sense of the (traditional) distinction between objectivity and subjectivity concerns the status of claims about features of the world: if they have truth conditions which are only matters of objective judgments in that they refer to facts of the world, they are epistemologically objective claims, if their truth conditions also refers to “attitudes, feelings and points of view of the makers and the hearer of the judgment” they are epistemologically subjective claims.

For Searle, besides the epistemological sense of the distinction (which he accepts), it is important to be clear on the ontological sense of the distinction between objectivity and subjectivity, which lies on the mode of existence of features of the world. Ontologically objective features of the world have an existence that is independent of human beings’ thoughts and actions: trees, mountains, oceans, planets, apples and humans physical bodies;

“All of these are observer independent in the sense that their existence does not depend on human attitudes” (Searle 2004, p.4, my emphasis).

Ontologically subjective features of the world have an existence that is dependent on human beings’ thoughts and actions: (un)conscious/mental/intentional states, words, dinner guest parties, unicorns,
“[m]oney, property, government, football games, and cocktail parties are what they are, in large part, because that's what we think they are. All of these are observer relative or observer dependent” (ibid, my emphasis).

The key point here is that ontologically subjective features of the world can be studied from an epistemologically objective point of view. In other words, it is an epistemologically objective fact that there are such things as intentional states, words, dinner guest parties, and individuals engaging in introspective deliberations to undertake rational actions.

A first step in the clarification of the ontological structure of Sen’s conceptual apparatus is that chooser-dependency of preferences will usually make external references to features of the world that are ontologically subjective, from which further ontologically subjective reasons can be derived, e.g., the host’s identity at a dinner guest party is defined by a set of observer-dependent social and institutional rules, from which Mike can derive his reasons for his choices. Menu-dependency of preferences will, for their parts, usually make external references to features of the world that are ontologically objective from which ontologically subjective reasons can be derived, e.g., it is an observer-independent fact that there is one apple in a plate, from which Mike can derive an ontologically subjective reason for not taking the last apple from the plate.

I said ‘usually’ in the previous paragraph because there can be cases of chooser-dependency of preferences that make external references to ontologically objective features related to the physical position of the chooser (Mike can see a worm in one apple from one perspective and not from another one, and subsequently derive different reasons for not picking or picking the apple). Similarly, there can be cases of menu-dependency of preferences that makes external references to ontologically subjective features of the world related to the social constitution of the menus (if Mike has to fill out a form for choosing or not choosing an apple, the way the form is presented and written is an ontologically subjective feature of the world). However, these cases are epistemologically ruled out in the Senian literature on external references to behaviors (where the physical position of the chooser and the social constitution of the menus are not considered as relevant choice information) and in economics (where the identity of the chooser along with his physical position and the relative contents of intercepting menus along with their social constitutions are not considered as relevant choice information).
The interplay between objectivity and subjectivity is also an important point for Sen in his philosophical writings on “positional objectivity” – from which the parametric dependence of preferences is inspired – where he claims that:

“excluding special mental tendencies […] would go against the general approach of seeing objectivity in positional terms […], it might well be useful to see a phenomenon that has clearly subjective features as being also positionally objective […] since this would then help us to focus on causal links that have important explanatory roles” (Sen 2002g, p.475)

Although he also claims that

“subjectivity and positional objectivity do, in general, remain different; the possibility of overlap does not undermine this basic distinction” (ibid).

Hence, both the Senian literature on external reference to behaviors and Searle’s philosophy of mind aim at giving epistemologically objective accounts of ontologically subjective features of the world. I claim that the “causal links that have important explanatory roles” that Sen is speculating about can be developed through Searle’s account of intentionality, in a way that clarifies the overlapping between objectivity and subjectivity in the Senian accounts of context-dependent preferences, and in the way that suggests what epistemologically objective constraints could be put on rationality to complement Sen’s requirements of reasoned self scrutiny.9

9 It has to be noted that in the few instances where Sen talks about intentionality, he argues against the relevance of this notion, as for example, when he discusses the rationalizing power of the epistemic value of menus: “it can certainly be argued that in the “intentional” (as opposed to “extensional”) sense the alternative x is no longer the same. But an “intentional” definition of alternatives would be, in general, quite hopeless in invoking inter-menu consistency, especially when […] the intentional characterization changes precisely with the alternatives available for choice (i.e., with the menus offered).” (Sen 2002a, p.131) But it seems that, here, Sen is confusing the mental sense of “intentional” as used in the philosophy of mind with the linguistic and logical senses of “intensional” as used in the philosophy of language and in logic (See Moscati 2012 for an epistemological discussion of the role of extensionality in mathematical economics). As Searle puts it: “You will not understand the current philosophical literature on intentionality unless you see the difference between intentionality-with-a-t and intensionality-with-an-s. These are often confused, even by professional philosophers. Intentionality-with-a-t […] is that property of the mind by which it is directed at or about or of objects and states of affairs in the world independent of itself. Intensionality-with-an-s is opposed to extensionality. It is a property of certain sentences, statements, and other linguistic entities by which they fail to meet certain tests for
2.2 The intentionality of apple-choice behaviors

Searle’s account of intentionality sticks with the traditional distinction between: on the one hand, cognitive intentional states, such as beliefs, that are the basis of theoretical reason (or ‘pure reason’ in Kantian terms) dealing with the question ‘How do we know? (and what can we know?)’; and on the other hand, volitional intentional states, such as desires and preferences, that are at the basis of practical reason which deals with the question ‘How do we act?’. Searle’s account of intentionality provides a conceptual apparatus which explains the nature of different intentional states and the relationships among them. It is perhaps more convenient for the reader to have the following table from start, which contains a (non-exhaustive) taxonomy of intentional states and some important Searlean concepts that will be presented and illustrated.

Let’s first notice that standard approaches in the philosophy of action, as well as the implicit account of intentionality in RCT and economics (along with the Senian literature on external references) take beliefs (probabilistic or perfect knowledge of outcomes) and desires (given or construed preferences relations on outcomes) to be the basic explanatory mental states for rational actions and decisions: usually, beliefs and desires combine to form an intention for an action. However, in Searle’s account:

“Beliefs and desires are not the primary forms, rather they are etiolated forms of more primordial experiences in perceiving and doing. Intention, for example, is not a fancy form of desire; it would be more accurate to think of desire as a faded form of intention, intention with the Intentional causation bleached out.” (Searle 1983, p.36)

extensionality. The connection between the two is that many sentences about intentional-with-a-t states are intensional-with-an-s sentences. (2004, pp.172-174)”
In other words, the major departure from Searle lies on the fact he turns the traditional explanatory scheme upside down so to speak, by considering, more basic, biological, intentional states such as perception and intention as playing a key role in the explanation of beliefs, desires and actions. Therefore, in what follows I will emphasize the contrasts between the Searlean explanatory roles of beliefs/desires and perceptions/intentions since, one could argue, it is there that lies the major implications for the use of RCT in economics including the Senian literature on external references to behaviors.

The starting point of the Searlean conceptual apparatus for Intentionality is the conceptualization of *intentional states* as being composed of two parts: on the one hand, their *psychological mode* (e.g., perception, belief, intention, desires etc.), and, on the other hand, their *intentional contents* (e.g., apples in a plate, taking an apple, eating an apple etc.). The distinction is important because it is possible to be in the same psychological mode but with different intentional contents, and hence be in different intentional states (e.g., perceiving or believing or desiring *that* there are apples in a plate).

Then, the directedness of intentional states, on Searle’s account, hinges on the two ways they can relate to the world, or, in his terms, intentional states’ *directions of fit*. On the one hand, intentional states such as believing and perceiving have an intentional content in the mind of the individual that is suppose to fit how the world is (e.g., there are apples in a plate): they have a *mind-to-world* direction of fit that Searle symbolizes with a downward arrow ↓. On the other hand, intentional states such as intending and desiring have to make the world change so that the world fits the intentional content that the individual has in mind (e.g. taking an apple): they have a *world-to-mind* direction of fit that Searle symbolizes with an upward arrow ↑. Then, Searle conceptualizes the conditions which make the direction of fit of an

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10 Two non-central points are worthy to mention regarding the concept of direction of fit. Firstly, there are intentional states that have a null or a presupposed direction of fit, e.g., “if I am sorry that I stepped on your foot, or I am glad that the sun is shining, I take it for granted that I stepped on your foot and that the sun is shining […]. [These intentional states] “presuppose” a fitting relation rather than assert it or try to bring it about” (Searle 2004, p.118). Secondly, “[s]ince fitting is a symmetrical relationship it might seem puzzling that there can be different directions of fit. If a fits b, b fits a. Perhaps it will alleviate this worry to consider an uncontroversial nonlinguistic case: If Cinderella goes into a shoe store to buy a new pair of shoes, she takes her foot size as given and seeks shoes to fit (shoe-to-foot direction of fit). But when the prince seeks the owner of the shoe, he takes the shoe as given and seeks a foot to fit the shoe (foot-to-shoe direction of fit).” (Searle 1983, p.8, fn.2)
intentional state actually fit (or fail to fit) either the world or the mind in terms of *conditions of satisfactions*, which are determined by the intentional contents.

We can illustrate the conceptual apparatus exposed so far by making explicit the belief and desire implicit in the examples discussed in the previous section using Searle’s formalization of intentional states $S(p)$, where $S$ stands for different psychological modes, and $p$ stands for their respective *propositional contents* which represent the intentional contents and their conditions of satisfactions$^{11}$. When Mike is believing ($S$) that ‘there is one apple in the plate’ ($p$), what makes the belief true (in his mind) is represented by the condition of satisfaction of this belief, namely that ‘there is one apple in the plate’ (in the world): his belief has a mind-to-world $\downarrow$ direction of fit, it can be satisfied only if it fits the world (i.e., what is in the ontologically objective plate), and his belief remains false if it does not (ontologically subjectively) change to fit the world. But when Mike is desiring ($S$) that ‘there are two apples in a plate’ ($p$), what makes the desire fulfilled (in the world) is represented by the condition of satisfaction of this desire, namely that ‘there are two apples in the plate’ (in his mind): his desire has a world-to-mind direction of fit $\uparrow$, it can be satisfied only if the world fits the desire (i.e., what is ontologically subjectively in his mind), and his desire remains unfulfilled if the world does not (ontologically objectively) change to fit his desire. Under this account, beliefs and desires have conditions of satisfactions *represented* by their intentional contents.

Here,

> “the notion of representation […] is just a shorthand for a constellation of independently motivated notions such as conditions of satisfaction, Intentional content, direction of fit, etc[…] [s]tates such as belief or desire need not be conscious states […] since a person can have a belief [e.g., that the earth is round] or a desire [e.g., to finish his ph.D dissertation] when he is not thinking about it and he can be truly said to have such states even when asleep” (Searle 1983, p.45, examples added).

Moreover,

> “since all representation – whether done by the mind, language, pictures or anything else – is always under certain aspects and not others, the conditions of satisfaction are represented under certain aspects” (Searle 1983, p.13).

$^{11}$ It is important to be clear that, though this analysis of Intentionality is partly made by the use of propositional content: “Language is derived from Intentionality and not conversely” (Searle 1983, p.5).
This means that Mike’s beliefs and desires have certain aspectual shapes that are not entirely captured by their propositional contents. Parts of these aspectual shapes could be made explicit by adding such precisions as ‘real apples as fruits and not as the decorative ones made out of plastic etc.’ but it is impossible to give an exhaustive explicit account of their aspectual shapes in their propositional contents. Furthermore, beliefs and desires can be about ontologically subjective objects that do not have any ontologically objective existence, e.g. Mike can believe that ‘rules of proper dinner guest party behavior preclude smashing apples onto a wall’, as well as he can believe that ‘unicorns do not exist’ and he can desire to ‘follow rules of proper dinner guest party behavior’ as well as he can desire that ‘unicorns exist’. Hence, as shown by their far reaching aspectual shapes and referring capacities, there are few ontological constraints on the intentional contents of beliefs and desires.

According to Searle, more basic, biological, intentional states such as perceiving and intending have further constraints on their Intentionality due to their ontological specificity of being “Intentional and causal transaction[s] between mind and the world” (Searle 1983, p.49, my emphasis). The causal feature of the transactions is that the direction of fit of these intentional states are caused (not just represented) by their intentional contents. Searle translates this ontological feature logically by making parts of these intentional states figure themselves into their own conditions of satisfaction: in Searle’s terms, basic, biological, intentional states are causally self-referential, they have a direction of causation from their conditions of satisfaction that cause their direction of fit to be in the opposite direction. We can illustrate this by making explicit the perception and intention implicit in our apple example. When Mike is perceiving (S) ‘one apple in a plate there’ (p), the conditions of satisfaction for his perception to be veridical (in his mind) are that: the fact that there (in the world) is one apple in a plate (and not something else) is causing his perceiving (in his mind) one apple in a plate there; his perception has a mind-to-world direction of fit ↓ (the ontologically subjective perception of the apple has to fit the ontologically objective apple in the world) which is caused by the world-to-mind direction of causation ↑ (the ontologically objective apple in the world has to cause the ontologically subjective perception of the apple) of the conditions of satisfaction (the ontologically objective existence of the apple); if something else is causing his perception of the apple, then the perception is not veridical (the conditions of satisfaction are not satisfied) whether or not there is one apple in a plate. When Mike is intending (S) ‘the action to pick one apple’ (p), the conditions of satisfaction for his
intention to be carried out (in the world) are that: the fact that the action (in his mind) to pick one apple (and not something else) is causing his intending (in the world) the action to pick one apple; his intention has a world-to-mind ↑ direction of fit (the way he ontologically objectively intends to change the world has to fit the ontologically subjective action he has in mind) that is caused by the mind-to-world direction of causation ↓ (the action he ontologically subjectively has in mind cause the way he intends to ontologically objectively change the world) of the condition of satisfaction (the ontologically subjective action to pick one apple); if something else is causing his intention to pick one apple, the intention is not properly carried out (the conditions of satisfaction are not satisfied) whether or not he actually undertakes the action to pick one apple.

Hence, on Searle’s account, the causal self-referentiality of perceptions and intentions puts ontological constraints on their intentional contents that do not exist for beliefs and desires. To put it crudely, perception and intention are about the things they are about because the things they are about have, respectively, ontologically objective (apple in the world) and subjective (action in the mind) existences of which the individual is directly aware: there cannot be satisfied unconscious perceptions and satisfied unconscious intentions as there can be satisfied unconscious beliefs and satisfied unconscious desires on Searle’s account of intentionality. To put it less crudely, the aspectual shapes of “perception[s] [are] fixed by the sheer physical features of the situation” (Searle 1983, p.50), while the aspectual shapes of intentions are fixed by the sheer mental features of the situation.

Given that, as mentioned earlier, intentions are usually taken to be combinations of desires/preferences and beliefs/perfect-or-probabilistic-knowledge-of-outcomes in economics (implicitly), in decision theory and other theories of rational actions (explicitly), I will concentrate on the justifications of their specific ontological status in Searle’s account, while dropping here his parallel justifications for perceptions which are less relevant for the object of this paper.

Searle stresses that intentions have two specificities compared to beliefs and desires: (1) they are the only volitional states that are causally self-referential: “whereas there are lots of states of affairs which are not believed to obtain or desired to obtain, there are no actions without intentions” (Searle 1983, p.82); and (2) “even though an event represented in the content of my intention occurs, it isn’t necessarily the satisfaction of my intention […], it has to come about ‘in the right way’, and this again has no analogue for beliefs and desires”
In the recent history of analytic philosophy of mind and analytic philosophy of action there are plenty of puzzles to the thesis that intentions are the causes of intentional actions, or that intentional actions can have causal explanations, which pose a great conceptual challenge for giving an account of intentions that “come about ‘in the right way’”. I cannot illustrate all types of such puzzles here, but the important thing to notice is that Searle claims to resolve them all by making a distinction (ontologically and logically justified) between what he calls prior intentions and intentions in action. Let’s first illustrate one type of these puzzles called ‘deviant’ or ‘wayward’ causal chains, and then turn to Searle’s distinction between prior intentions and intentions in action.

Basically deviant causal chains are counter examples to the thesis that intention causes actions sharing a basic logical structure: an individual has an intention to perform an action, his intention causes him to perform the action, but all the same he did not act intentionally. Consider the following ‘apple-version’ of a simple deviant causal chain (a variation on the first deviant causal chain example from Chisholm 1966). Imagine that Mike intends to eat an apple, his intention to eat an apple is so overwhelming that he does not even pay attention to where he walks so that he stumbles and falls, head first, mouth opened, on an apple that he happens to eat. It is indeed very hard to consider that here Mike has eaten the apple intentionally. While such counter example appears to be rather overdone at the surface, it is important to keep in mind that deviant causal chains examples are constructed for the purpose of bringing insights on, or checking specific definitions of, fundamental concepts such as intentions, actions and causations (Stout 2010).

With that in mind, let’s now turn to Searle’s distinction between prior intention and intention in action: prior intentions have their whole actions represented and caused by their conditions of satisfaction in their intentional content, while intentions in action do not have this form of representational intentionality in their conditions of satisfaction, they have a presentational intentionality so that it is just the bodily movement and the related phenomenological experience of the action (not the whole action) that is presented and caused by their intentional contents. For instance imagine that Mike, is wondering around at a dinner guest party looking for an apple to eat (prior intention), when he finds the plate of apples he picks one and eats it (intention in action); Mike is here performing an intentional

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12 On Searle’s account, the concept of presentation is just a subclass of representation and not vice-versa (Searle 1983, p.46).
action *because* he was looking forward to do what he did (conditions of satisfaction of the prior intention) and *because* he experienced the bodily movements of the eating of an apple (conditions of satisfaction of the intention in action). The presentational intentionality of intentions in actions does not preclude them to have direction of fit, intentional content, conditions of satisfaction and direction of causation. To illustrate, contrast the previous account of Mike’s intention (which was indeed an account of his prior intention) to eat an apple given p.18 with the following account of Mike’s intention in action to eat an apple. When Mike is currently intending ($S =$ intention in action) ‘*his picking and his eating of an apple*’ ($p$), the conditions of satisfaction for his intention in action to be carried out (in the world) are that: the experience of (in his mind) the picking and the eating of the apple (and not something else) is causing his bodily movements (in the world) to pick and eat one apple; his intention in action has a world-to-mind $\uparrow$ direction of fit (the way he is ontologically objectively changing the world has to fit the ontologically subjective experience in his mind) that is caused by the mind-to-world direction of causation $\downarrow$ (the ontologically subjective experience he has in mind is causing his bodily movement to ontologically objectively change the world\textsuperscript{13}) of the conditions of satisfaction (the ontologically subjective picking and eating of the apple).

The distinction between prior intention and intention in action is important because (1) there are no prior intention without an intention in action represented in their intentional contents, (2) there are plenty of intentional actions without prior intentions but (3) there are no intentional actions without intentions in action; hence intentions in actions are necessary for intentional actions in a way prior intentions are not. Moreover, the presentational form of intentionality puts constraints on the aspcectual shapes of the intentional contents of intentions in action (where the experience of acting has to cause the action) that are not required by the representational forms of intentionality of prior intentions (where the representation of the action has to cause the action). However, in cases where there is a prior intention, its aspcectual shape translate into the intentional content of the corresponding intention in action “by transitivity of intentional causation” (Searle 1983, p.94); hence, in such cases, the bodily movement presented in the intention in action has to correspond to the representation of the

\textsuperscript{13} This point is maybe best understood as being what free will is about for Searle (a point that he has further developed in Searle 2001, 2007).
bodily movement in the prior intention for the action to be considered as intentional on Searle’s account.

We can now re-assess the deviant causal chain example by pointing out that Mike’s bodily movement, in his intention in action, of eating an apple on the ground after he felt does not correspond to the representation of the bodily movement of eating an apple he had in his prior intention. Even if it would have been the case that, say, for certain religious reasons, Mike did have a prior intention representing his bodily movement of eating the apple by falling head first, mouth opened, on the apple, all the same he would not have acted intentionally since his prior intention does not represent the bodily movement of eating an apple as *stumbling and falling*; until these conditions of satisfaction are not represented in the intentional content of his prior intention, we cannot say that he acted intentionally, on Searle’s account, he just tried to do so but did not succeed. In short, it is the representation or (its causally intentional transitivity to) the experienced presentation of the bodily movement of acting that has to cause the action for the intention to come about “in the right way” and hence for the action to be considered as an intentional action on Searle’s account.

We have seen so far that the distinction between, on the one hand, elaborate intentional states such as beliefs and desires, and, on the other hand, more basic intentional states such as perception and intention, lies in (1) the causal self-referentiality of the latter by virtue of which they have a direction of causation that the former do not have and (2) in the presentational form of intentionality of perception and intention in action.

The crucial point to understand the relationships between elaborate and basic mental states in Searle’s account is that beliefs and desires emerge because the mind (not the brain) is a *Network* of intentional states\(^\text{14}\), where the conditions of satisfaction of intentional states can be mutually influenced or determined by one another. In other words, the Network connects intentional states altogether. But the Network it is part of a broader *Background*: a set of non-intentional and presentational capacities, which are “feature[s] of our representations of reality, and not […] feature[s] of the reality represented” (Searle 1992, pp.191-192). There are two interconnected dimensions of the Background: a “deep” (neuro-physiological or psychological) Background that permits to account for biological/brute facts about human beings, such as eating, seeing, intending etc., and a “local” (cultural or sociological)

\(^{14}\) Including mental states, such as emotions, which do not have any direction of fit.
Background that permits to account for social/institutional facts such as dinner guest parties, understanding a movie, paying for a beer and other kinds of social know-how. It is from the Background that particular intentional states (of the Network) can have particular conditions of satisfactions with particular aspectual shapes. For instance, Mike only perceives an apple in a plate from a certain perspective and lighting conditions because he has a nervous system including, among other things, a brain, two eyes etc. (from a physiological background); and when at a dinner guest party, he believes that there is an apple in a plate, it is because (besides his perception) he knows that apples are fruits of certain shape, form, size, and more likely not to be plastic fake ones at dinner guest parties where guests are suppose to eat etc. (from a sociological background).

This account of Intentionality in terms of Network and Background brings an explanatory component concerning the emergence of intentional states, including elaborate ones such as beliefs and desires, which bears on the problem of the formation of preferences in economics. Let’s take an example to show how Searle’s conceptual apparatus for intentionality could explicit some types of relationships between Sen’s chooser and menu dependencies of preference with respect to the problem of the formation of preferences. Imagine that, when given a choice between a big apple and a small apple in two different situations, say, (1) at a dinner guest party, and (2) at a convivial dinner with close friends, Mike makes different choices: he chooses the smaller at the dinner guest party and the bigger at the convivial dinner with close friends.

In Searlean terms, the presentation of the two apples (in the world) is the condition of satisfaction which (by virtue of the deep, chooser-dependent, background) causes ↑ Mikes’ perception ↓ of them, which provides the conditions of satisfaction (by virtue of both the social know-how contained in the local, chooser and menu dependent, Background and the Network) for the beliefs that ↓ ‘there are two apples in a plate’ and that ‘it is appropriate to take one apple’; when this is part of Mike’s Network, it can cause ↓ the conditions of satisfactions (by virtue of both the social know-how contained in the local, chooser and menu dependent, Background and the Network) for prior intentions ↑ that differ in terms of their aspectual shapes regarding the way by which it is appropriate to take one or the other apple. And if the intentional causal transitivity between the prior intentions and the intentions in action “bleached out” (Searle 1983, p.36, quoted at the beginning of this subsection), then the intentional content of the prior intention provides the conditions of satisfaction (by virtue of
the Network) for desires ↑ “as a faded form of intention” (ibid) that differs in terms of their aspectual shapes regarding the appropriateness of the apples in the two choice situations.

In Senian terms, this is a case where there is, at first sight, no parametric dependence of preferences on the chooser or on the menu since in both situations the choosers and the menus are identical. However, the Searlean account reveals a slight “chooser-dependency” in that it is not the identity of the chooser but rather his social identity which is comprehensible only by an external reference to the choice situation. This is not a real problem in Sen’s framework since he has a thorough account of social identity (see Sen 2001a, 2001b, 2002c; see also Davis 2008). Indeed the difference, in the first section, between the handling of the apple by the host and by the yelling drunkest guest, was already an account of chooser-dependency relying on social identity. Furthermore, the Searlean account also reveals a slight “menu-dependency” because, although both menus are identical from an ontologically objective point of view (big apple, small apple), they are different from an ontologically subjective point of view whereby the comprehensive difference in the aspectual shapes of appropriateness of both outcomes reversed itself in the two choice situations by virtue of the relationships between the ontologically subjective social identity of the chooser and the ontologically objective difference in the sizes of the apples.

What the Searlean account suggests here is that, beyond mere terminological identity, Sen’s formalizations of “background dependency” of preferences by indexing preference relations on a set which may or may not intercept with the set of choice menus (Sen 2002d), could become a key analytical bridge for the relationships between menu dependencies and chooser dependencies of preferences (Sen 2002f), if the background set came to be filled by, and/or structured around, the Searlean conceptual apparatus for intentionality (with its clear cut logical relations entailed by ontological features of the underlying phenomena), illustrated in this subsection. In this way, the rationality of preference relations could be constrained by the (epistemologically objective) features of individuals’ (ontologically subjective) intentionality underlying their (ontologically objective) choice behaviors, rather than by the theorists’ (epistemologically subjective) analytical conveniences related to such or such conceptions of rationality.
Conclusion

I have tried to make the case that John Searle’s philosophy of mind can ground the intentional-hence-ontological foundations of the Senian account of context-dependent preferences in a way that suggests further analytical contributions. In the first section, I tried (1) to illustrate the Senian account of context-dependent preferences by means of an apple-choice thought experiment, and (2) to show how this account had to be understood against the backdrop of his broader conception of rationality as reasoned self-scrutiny that he has built from his interdisciplinary rethinking of the relationships between and within economics and philosophy, on the one hand, and positive and normative economics, on the other hand. In the second section, I tried to illustrate how the Searlean conceptual apparatus for intentionality (1) worked in practice on very simple minded examples derived from the apple-choice thought experiment of the first section and (2) would suggest further analytical contributions to the Senian way of formalizing context-dependent preferences by filling a background set on which preference relations would be indexed (Sen 2002d) to account for the relationship between the indexations of (the same) preference relations on the identity of the chooser and on the choice sets (Sen 2002f). I agree that the economic meaning of these types of apple-choice behaviors are rather limited to say the least, and would like to emphasize, once again, that it is how the Searlean conceptual apparatus for intentionality works and how it can complement the Senian accounts of context-dependent preferences that I have sought to illustrate in this paper.\(^\text{15}\)

Although the emphasis has been put on how the fundamental concepts of Searle’s account of intentionality and intentional states (psychological mode, intentional content, direction of fit, condition of satisfaction, direction of causation, and causal self-referentiality) worked, it has to be stressed that other concepts such as aspeecuational shapes, on the one hand,

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\(^\text{15}\) I should perhaps stress that I did not seek to provide a genealogical account of the concepts used by Searle (i.e., from which philosophers and from which field of philosophy they come from) however interesting that might be. Similarly, I did not seek to investigate whether such and such dimensions of Searle’s epistemological positions in such and such field of philosophy is methodologically sound for economics (most of the referenced literature in the introduction already discuss this issue). Furthermore I also did not seek to make a grand unifying bridge between economics and philosophy by discussing the broad Senian and Searlean projects (though I will briefly comment on this issue below). And also did not seek to contextualize the Searlean account of intentionality against its opponents, although, of course, he has his critics.
and social and institutional facts and rules, on the other hand, are also thoroughly investigated in the work of Searle. The former is part of his account of consciousness (Searle 1992, 1997) which (1) is currently becoming relevant in (at least some parts of) the interdisciplinary relationships between philosophy (of mind) and neurobiology (Vicari 2009), and (2) grounds his account of intentionality. The latter is part of his accounts of speech acts (Searle 1969, 1976, 1979) and social ontology (Searle 1995, 2010), which are grounded in his account of intentionality. Hence, filling the Senian background set by the Searlean conceptual apparatus suggested here would not rest on the vagueness that the analyses offered in the second section may have conveyed with respect to concepts that were not at the center of the arguments, but nonetheless played an important role in the intentionalistic explanations of apple-choice behaviors.

I would like to conclude with some brief remarks concerning the arguments of the first and second sections concerning the methodological issues discussed in introduction. In line with the motivations of the Senian conceptualization of context-dependent preferences presented in the first section, Klaes argues that “[w]hile ad-hoc rationalization of observed behavior abound, they stretch the traditional rational actor paradigm to its explanatory limits” (2008, p.217). To go beyond these limits, Klaes claims that:

“The rational actor paradigm at the core of modern economics is not usually discussed in the context of human intentionality. If it is ever put into a broader perspective at all, then this is done as part of the recent literature on economic psychology that emerged from the bounded rationality literature. Yet, given that rational choice theory traditionally conceived does not necessarily purport to be a psychological theory, it seems more than apt to pursue the bounded rationality theme into philosophical debates on practical reasoning.” (ibid, p.219, my emphasize)

The issues raised by Sen concerning RCT are starting to be discussed in relations with the issues raised by behavioral economics concerning RCT (e.g., Dietrich and List 2013, Bossert and Suzumura 2010; see also Kahneman 1994), but no references to the underlying issue of intentionality is made in these developments. I think that the Senian literature on external references to behaviors can be seen as a step toward a serious methodological dualism in economics because of two interrelated characteristics of this approach emphasized in the first section, namely: (1) its formal and axiomatic contributions along with Sen’s epistemological position on adapting the mathematical discipline of maximization for economics to account for the specificity of volitional behaviors, and (2) its embededness within the broader rethinking of the positive/normative relationships in economics and the
fact/value/convention trichotomy inspired by Sen (Putnam and Walsh 2012). As I see it, the philosophy of Searle completes this step towards a serious methodological dualism in economics by contributing to the Senian interdisciplinary perspective on the relationships between economics and philosophy. Searle is a particularly interesting candidate for furthering the range of philosophy in the interdisciplinarity with economics because he has always been keen on justifying the coherence (and relationships) of his positions in the fields where he has contributed (mainly in the philosophy of mind, language, action and society), and has tried to give an account of the coherence (and relationships) of the dominant traditions he has attacked in these fields. For instance, Searle’s accounts of consciousness and intentionality have been critically engaged into philosophical debates on both (a) the mind (Searle 1983, 1992, 1997, 2002) and (b) practical reasoning (Searle, 1983, 2001). Hence, Searle provides something perhaps more important than the type of further analytical contributions suggested in the second section: in addition to the philosophical debates on practical reasoning made relevant for economics by Sen (Peter and Schmid 2007), the work of Searle, when discussed along with the one of Sen, provides bridges towards and between philosophical debates that might be relevant for the issues around rationality in economics, as it is in fact the point of Klaes (2008). Among these debates, the so called ‘analytic/continental divide’ (e.g., Engel 2002, Soulez 2000 and the references therein) has not yet been seriously addressed in the literature in economic methodology on rationality. The analytic/continental divide is especially relevant for the methodological issues on rationality in economics because (1) Searle defends the “analytical” camp without been dogmatic about it, hence his work has been able to initiate discussions with the “continental” camp (e.g., Searle 2008, Braddon-Mitchell 2001, Schnädelbach 2001, Sebbah 2000) and (2) the critical role of introspection in Sen’s framework pointed out at the end of the first section clearly is a key point of contention in the methodological issues on rationality in economics, as well as it is an important point of contention in the analytic/continental divide in philosophy.
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