Behavioral economics, gender economics, and feminist economics: friends or foes?

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Keywords: behavioral economics, feminist economics, gender economics, standard rationality, ecological rationality.

JEL codes: B41; B54

Abstract. An analysis of the possible connection between behavioral economics, gender economics and feminist economics requires an introductory clarification about the twofold nature of behavioral economics as well as the differences between gender economics and feminist economics. On one hand, behavioral economics may be considered as neoclassical behavioral economics (or 'as-if' behavioral economics), which adopts a neoclassical *normative* model of rationality and explains bias and mistakes as deviations from that model. On the other hand, behavioral economics could be envisioned as ´smart behavioral economics´ that adopts ecological rationality to explain that simple strategies, when adapted to the environment, will produce clever decisions. Smart behavioral economics rejects standard rationality of neoclassical economics. Although both feminist economics and gender economics consider 'gender' as a cultural and social construct that had determined specific distinctions in social roles and individual behavior, they present fundamental differences, which are derived from the rationality they adopt. Feminist economics fully rejects neoclassical economics model of rationality as a determining factor for the development of patriarchy, and adopts a more complex cognitive approach. Despite recent developments that focused on equity rather than efficiency, gender economics had followed New Home Economics (NHE) that adopts the rational choice framework as a consistent model to describe gendered phenomena. The aim of this paper therefore is to demonstrate that the concept of rationality adopted by 'smart' behavioral economics makes it consistent with feminist economics, while the concept of rationality adopted by 'as-if' behavioral economics makes it consistent with gender economics.

1. The notion of rationality in neoclassical economics and behavioral economics

The notion and the nature of rationality is crucial within economics. Neoclassical economics had adopted rational choice theory; i.e., a standard rationality grounded on two postulates: full rationality and maximization of an expected utility function, which implies a mechanism of optimization under a certain constraints (scarcity). This notion of rationality is directly derived

from Western philosophy, which separated mind and body according to Descartes. His dualism corresponds to thinking about solutions based on a logical principle (instrumental rationality), and is able to relate to 'cause and effect' as well as 'means and ends'. Its dualism consists of the rejection of anything other than rational thinking as the essential process for comprehension: in other words, anything derived from the senses, including emotions, is fallacious. Later, the dualism of Descartes was further developed by Hume and Kant: Hume's instrumentalism gave rise to the well-known distinction between positive and normative approach to knowledge, while Kant's transcendental subjectivism denied any recognition of the social dimension of reason and the act of reasoning[1].

Although mainstream philosophy has largely abandoned the notion of standard (or instrumental) rationality, it is still dominant in neoclassical economics. Hayek's definition of knowledge and cognitivism (1937; 1952; 1967; 1979; 1988) as well as Simon's bounded rationality (Simon 1955; 1957) extensive criticism arose against the neoclassical model of constrained optimization because of its connection with behaviorism and its vociferous rejection of psychology. Vernon Smith (2008) claims that behavioral economics had a central role in problematizing neoclassical model of rationality. Behavioral economics as introduced by Tversky and Kahneman (1974), and by Kahneman and Tversky (1979) emerged as a firm departure from neoclassical economics. It was later developed as an application of cognitive psychology on economic issues (Thaler 1991; Rabin 1998; Mullainathan and Thaler 2001; Thaler and Sunstein 2008), and further differentiated into behavioral game theory (Camerer 2003). Nevertheless, according to some economists, behavioral economics and neoclassical economics have recently been converging (Laibson and Zeckhauser 1998; Boettke at al. 2013; Whitman and Rizzo 2015; Altman 2017a)[2]. The main reasons for their mutual convergence are twofold: on one hand lies the implicit central role of psychology in neoclassical economics, while on the other, the tacit acceptance of the neoclassical normative model of behavioral economics.

[1] According to Heikes (2010) despite Descarte's dualism, Hume's instrumentalism, and Kant's lack of recognition of the social dimension of reason, they have gained some credit. Namely, Descarte's idea that human beings possess reason in equal measure, Hume's endorsement of the importance of passions, and Kant's commitment to the universality of reason to enrich their notion of rationality.

[2] Contrary to this approach, see Angner and Loewenstein (2012).

The presumption that neoclassical economics is immune of any form of psychology when describing human rational behavior is problematic[3]. The history of rational choice theory, from Jevons-Bentham's hedonism to Weber's notion of instrumental rationality, and from the post-war axiomatization of economic behavior to Becker's attempt to unify social sciences by his ´notion of ´economic behavior´, shows that rational choice theory is definitely not immune from psychological factors (Sen 1977). Quite the opposite: neoclassical economics is grounded on psychology, since practical reasoning is the only form of reasoning able to explain choice in realistic terms, which is the divide between logical thinking and decision theory that are bridged by psychology[4].

Behavioral economics had described deviations from the standard model by humans as bias, mistakes, errors, which do not allow for maximizing expected utility function. Many economists (Berg, 2003, 2010; Smith 2005; Bruni and Sudgen 2007; Berg and Gigerenzer 2010; Gigerenzer et al. 2012) cast doubt on considering the existence of a doctrine on behavioral economics bias as an alternative to rational choice theory, and who claimed a normative compatibility between neoclassical and behavioral economics. Behavioral economics understood that the neoclassical model is inadequate due to human cognitive illusions that lead them to systematically make incorrect predictions. Hence, behavioral economics adds realistic hypotheses in order to explain bias and mistakes without changing the structure of the model. Thus, behavioral economics implicitly considers neoclassical model as valid from a *normative* perspective. The normative compatibility between neoclassical and behavioral economics converged towards what it has been recently defined as 'neoclassical behavioral economics', or 'as-if behavioral economics' (Berg and Gigerenzer 2010). 'As-if behavioral economics' is a combination of neoclassical economics plus new psychological parameters that are able to 'fit' decision outcome data rather than specifying more realistic or empirically supported psychological processes that genuinely *explain* these data (Berg and Gigerenzer 2010, 133). The well-known 'as-if' formula was used by Friedman (1953) to explain that, while humans do not solve problems by using neoclassical optimization, they still believe 'as-if' they do.

[3] As Camerer recalls, Pareto strongly maintained the urgency of divorcing economics and psychology, "by simply assuming that unobserved utility is necessarily revealed by choice" (Camerer 2006, 89), and putting aside any psychological factors into what he called "residuals" and "derivations" (he later introduced these ideas in his last work dealing with sociology).

[4] For a constrasting approach, see Herfeld 2013.

As Whitman and Rizzo (2015) argued, the acceptance of neoclassical rationality axioms had led behavioral economics to behavioral paternalism; i.e., a set of policies prescribed in order "to make people to better off *according to their own (true) preferences*" (410), either in Sunstein and Thaler's version (2003), or in Camerer *et al*. (2003). According to Smith (2005) both 'as-if' behavioral economists and neoclassical economists interpret economic rationality as a "self-aware, calculating process of maximization", and "have identified rationality almost entirely as expected utility (including expected profit, or wealth) maximization" (Smith 2005, 136-7). Following Hayek's critique to Cartesian rationalism, Smith names this rationality 'constructivist', and he claimed that behavioral economists do not reject constructivist rationality: they only "have proposed modifications in both the utility and probability weighting functions of standard expected utility theory, and thus revised the specification of optimality in expected utility theory" (Smith 2005, 145).

Smith (2008), Gigerenzer *et al*. (1999; 2011), and Gigerenzer (2007, 2011; 2012; 2015) introduced ecological rationality as a possible alternative to standard rationality. Gigerenzer uses cognitive strategies, heuristics in particular, to explain individual decisions in real terms, and Smith replaces heuristics with institutions and social norms by giving more emphasis on institutional environment (2003; 2008). Both versions of ecological rationality are developments of Simon's bounded rationality (Simon 1955; 1957; 2001) and Hayek's critique of the neoclassical ´pure logic of choice´ (Hayek 1937; 1948). Simon criticized the inconsistency of neoclassical economics intended as a mechanism that was either tautological (because it explains only the logical choice of maximization for given a budget constrain) or useless (because of his lack of realism). According to Simon, "human beings have reasons for what they do, but they seldom maximize utility, (…) given the complexities and uncertainties of the choice situations they face" (Simon 2001, 57). Hayek introduced psychology into economics in order to find a plausible description of decision-making, which would be able to give a broader and more realistic explanation to individual behavior (Hayek 1948; 1952). Moreover, he strengthened the idea that knowledge is not a given collection of data, based on revealed preferences and costs, but a learning process of both formal and informal rules based on social dynamics. (Hayek 1992). Hayek's analysis of the mind as a self-organizing and 'complex dynamic system' allows him to criticize neoclassical social atomism as a product of hyper-rationalism (Di Iorio 2015) and to suggest 'the need to move beyond models of economic behavior that assume unrealistic individual capability' (Butos and McQuade 2015).

Ecological rationality focuses the study of decision making on two key points: (1) the environmental regularities, which are able to influence decision strategies of people, and (2) the ability of people to adapt the use of specific strategies to particular environmental regularities. Ecological rationality is based on the analysis of the conditions under which either a given heuristic or institutions and social norms are likely to succeed or to fail as adaptive tools to decision-making process. By proposing an alternative to the idea that human mind is an 'information machine', ecological rationality studies vacillate between individuals and their own environment, staring from "the observation that practical norms for real-world decisions are not made in isolation, but result from interaction between the mind and the environment" (Shabnam 2015, 105).

When behavioral economics adopts ecological rationality, it becomes 'smart' according to Altman *et al*. (2017) and is in contrast to neoclassical behavioral economics or 'as-if' behavioral economics. According to Altman (2017a), smart behavioral economics emphasizes the notion of 'rational inefficiency' that is able to develop a model that considers inefficient behaviors (in neoclassical economics terms) as rational and intelligent outcomes. Kahneman's recent works (2003; 2012) on the relationship between psychology and behavioral economics seem to converge towards smart behavioral economics. He puts emphasis on the unrealistic features of the standard model of rationality and encourages the introduction of emotion, belief and moral codes in the model to include a more comprehensive understanding of human behavior, based not only on rational decision-making, but also on intuitive judgments. Kahneman explained that human minds face more than a hundred and fifty cognitive biases that can lead individuals into making wrong decisions, which are the effects of the interaction between the intuitive and feelings-based System 1, a quick thinking process in contrast to the analytical and reason-based System 2, which is a deliberative approach that monitors System 1. Although System 1 has been considered irrational, it is often logical and useful. Conversely, System 2 can produce poor and at times irrational results. Although Kahneman did not analyze gender dimension, his alternative model is grounded on intuitive thought, affective valence, emotion, mood, ambiguity, uncertainty, and social pressure; the framing effect converges into feminist economics as detailed by Austen and Jefferson (2008) and by Nelson (2003; 2006; 2009).

2. Rationality and Gender

Rational choice theory only partially captures the real nature of human psychology. Grounded on Weber's division of human action into four ideal types (rational choice theory and practical reasoning for rational actions; tradition and emotions for non-rational actions), rational choice

theory prevails and discriminates from the emotional part of human reasoning. When applied to decision theory, game theory and social choice theory, this mechanism reveals its androcentrism: it assumes that masculine values shape individual behavior and social roles, and accordingly female behavior and women's social norms are deviations thereof. Furthermore, considering that women were more emotional and less rational than men had justified a secular thread of discrimination against females, regardless of age, in a male-dominated society (England 1989; Anderson 1994, 2002; Cudd 2002).

As previously stated, the masculine concept of rationality, which privileges reason over emotion, can be dated back to Descartes' model based on the purification of everything stemming from sensitive perceptions (including feelings and emotions) in order to achieve the purity of logical inference (Bordo 1987a; Nelson 1996). Descartes' notion of rationality is perceived as masculine, or male-oriented, because it stresses purity and detachment in contrast to 'sympathetic thinking', which is much closer to a feminine approach[5].

Feminist philosophers often criticize Descartes' dualism as a primary source of patriarchy (Bordo 1987a, 1987b; Longino 1990; Harding 1993; Ross Smith and Kornbeger 2004; Heikes 2012). Likewise, many psychologists underscored that the gender-biased concept of rationality, intended as the logical and objective faculty of thinking, is related to the stereotype of masculinity, which is fallacious because it considers objectivity as innate (Oliver 1991). According to Keller (1985), although cognitive faculty might be innate, the ability to use it is acquired and it depends on the social framework; gender differentiation is part of the learning process. In response to Cartesian dualism, many feminist philosophers propose a more complex concept of rationality, which is able either to incorporate "connectedness to others" in Husserl's terms (Soloveitchik 1992) or "ethics of care and responsibility" according to Kant (Friedman 2000).

The debate around the nature of rationality in relation to gender has involved economists who were critics of rational choice theory´s imperialism, which involves reasoning in non-economic issues (Luker 1991), and uses metaphors of masculinity to construct ideals of rationality and objectivity (Bordo 1987b; Nelson 1996; Barker 1999). By emphasizing Descartes´ dichotomy between embodiment and rationality, neoclassical economics depicts the abstract and deductive view, which represents scientific thinking as masculine that lies in contrast to a more concrete and intuitive knowledge of material life that is portrayed as being feminine. As Nelson pointed

[5] In contrast and for a gender-neutral notion of rationality in Descartes' comments, see Lloyd (1984).

out: “in the Cartesian view, the abstract, general, separated, detached, emotionless, ‘masculine’ approach taken to represent scientific thinking, is radically removed from, and clearly seen as superior to, the concrete, particular, connected, embodied, passionate, ‘feminine’ reality of material life” (Nelson 1996).

Amongst feminist economists, the debate centered on the gendered nature of rationality began with the urgency “to understand the distribution by gender of *conceptions of rationality*” (Harding 1982, 227). As Jones (2004) summarized, there are three different ways of considering the relationship between rationality and gender within economics:

- The classical vision (ideals of standard rationality works for both men and women);
- The different voice (standard rationality is incomplete and must be modified to include emotions);
- The strong critical stance (standard rationality is fallacious and must be reformed).

Neoclassical economists accept the ´classical vision´ (women are included into the standard model of rationality) because economic interactions are strategically oriented; human beings are homogenous; human behavior is complex and social relationships are reduced to an individual’s dynamic situation. Gender economists who directly follow New Home Economics (NHE) belong to this group. Other gender economists, more focused on equity rather than efficiency, are aware of the limits of the model of standard rationality and try to modify it, without completely rejecting it. Hence, they support the ´different voice´ (the feminine sphere of emotion must be embedded in the rational model that requires it to be enriched). Feminist economists reject the neoclassical model. They follow a ´strong critical stance´, based on the concept of economics in terms of real-world issues concerning women, men and children, rather than as merely the examination of choice under conditions of scarcity (Atherton 2002; Ferber and Nelson 2003). As Harding claims: “one cannot simply ‘add women’ as objects of knowledge to the existing bodies of our social and natural knowledge” (Harding 1982, 215).

Feminist economics develops a challenging perspective that involves a deep revision of the neoclassical economics and a newer and more radical economic thinking that begins with a rejection of instrumental rationality, which, besides being an inadequate tool to describe human decision-making behavior, is androcentric and sexist. (Folbre 1994; Nelson 1995; Fraser 2013).

Instrumental rationality is *androcentric* because it created and reinforced the masculine stereotype of human psychology, based on the idealization of efficiency and logical strength; feminine stereotype, on the other hand, was subjectively grounded on psychological issues,

namely, passion, feeling and emotion (Ferber and Nelson 1993; Barker 1995; Harding 1995; Grapard 1995; Nelson 1996, 2003, 2006, 2009, 2014). Feminist economics rejects the key tenet of standard rationality: a stylized rational economic agent, modeled as a ′self-sufficient adult′ whose self-interest reinforces the primacy of efficiency in the trade-off between efficiency and equity (Ferber & Nelson, 1993, 2003; Folbre, 1994, 2009; Pearse and Connell 2015).

Therefore, feminist economists emphasized the necessity to rethink the male-oriented notion of standard rationality that defines economics as 'malestream' by an emphasis on logical validity and value-neutrality as masculine domains, while excluding women who are associated with extra-rational knowledge (Pujol 1992; Sahakian 2012). The dichotomy between an efficient masculine sphere and an emotional feminine sphere was adopted in order to describe a human mode of reasoning and to clarify the psychological differences between sexes. Feminist economists criticized this dichotomy, which leads towards two different views of the world. On one side is the existence of a closed system that is mechanically determined and dominated by rational (or quasi-rational) agents, whereas human interactions are strategically oriented, without taking any account of other hypotheses about human behavior (Pujol 1992). On the other side, which resembles an open and flexible system that is subjected to complex cultural structures where feelings and emotions are fundamental sources of knowledge (Alcoff 1995; Nelson 2003).

Instrumental rationality is *sexist* because it exalts masculine qualities (logical reasoning and efficiency) against feminine qualities (emotion and sensitivity) in a very stereotypical manner, which often leads to methodological fallacies. The well-known story of Robinson Crusoe is an emblematic example of the marginalization of women as well as of the naturalization of racism: "his relationship with his partner Friday becomes the model relationship in economic theory, where at first glance gender and invisible work do not seem to be an issue in this two-person set up. In larger models women are taken for granted and their reproductive work is seen as an endless trouble-free supply" (Schönpflug 2008, 27). Another example is given by the so-called confirmation bias in the relationship between risk aversion and gender: Nelson (2014) pointed out that the idea that women are more risk averse than men is a stereotype, which is confirmed by models that often are designed around prior beliefs (biases).

By offering an alternative model to instrumental rationality, some feminist economists adopted Hayek's critique of reductionism as well as his rejection of Cartesian rationalism (intended as an overrated belief in the powers of individual reason (Hayek [1966] 1967; 1988)) in order to shed light on patriarchy and paternalism as constructed institutions (Bordo 1987a; Nelson

1996). According to Hayek, the Cartesian theory of the mind has inspired modern attempts to explain social life as a rational design. Hayek regarded human reason as a limited, mental phenomena involving physiological and cultural evolution as the natural emergence of moral rules intended as realistic adaptive strategies, which enable social life to exist. According to feminist economists, the masculine-oriented notion of reason had shaped gendered norms, which have always been hierarchical and determined the subjection of women (MacKinnon 1987; Barker and Schumm 2009). Thus, it can be concluded that male-oriented hierarchy of gender norms led to patriarchy and paternalism. In patriarchy, men have a primary role in any field; in paternalism, men interferes with women against her will, either to better her situation or to protect them from harm (Dworkin 2006). Although paternalism can be either a gender-neutral category or a within-gender category, men systematically applied it to women in private and public life in order to reinforce their power over women. Furthermore, the focus on masculine-oriented reason has biased the nature of economics as a social discipline and has isolated economic theory outside cultural studies.

Scientific professions were not immune to patriarchy and paternalism: the battle of many early feminists to get women into male dominated scientific professions started with the critique of the gendered-nature of scientific knowledge (Longino 1988; Wade Hands 2001). Many feminist scholars carried on the project for the elimination of masculine stances in the content of scientific inquiry in order to gain an emancipatory movement within science that was able to reduce the role of patriarchy and to include a feminine perspective (Longino 1990).

3. Gender in neoclassical economics, NHE, and (neoclassical) 'as-if' behavioral economics.

A conceptual overview of gender in neoclassical economics should start from the evidence that neoclassical economics is gender neutral as well as class-neutral, race-neutral, and so forth. Neoclassical neutrality is justified by the postulates of rational choice theory upon which it is rooted: rational choice theory abstractly assumes men and women are equal and disregards the role of patriarchy in the economic systems by ignoring that power relationships are asymmetrical. Several explicit examples add clarity to the methods in which neoclassical economics deal with gender issues. First, labor: it is a simple trade-off between work and leisure, which ignores that women's job seeking is also determined by childbearing, and the additional burden of social and cultural conventions. Second, consumer choice: according to neoclassical economics, it is a trade-off between opportunity costs and benefits given a budget constrain, but it ignores that women's unpaid labor at home makes their budget constrain lower.

And third, the gender wage gap: according to neoclassical economics it is a matter of human capital theory (the stock of knowledge embodied in the ability to perform labor). It ignores social restrictions imposed on women, especially in underdeveloped countries, while making decisions in education (Wolley 1993; Dewan 1995; Beneria 1995) and fails to take into account the fact that the cost of producing future educated workers, which mandates the input of women, should be embedded as part of producing human and social capital (Folbre 2008, 2009, 2012).

Developed by Becker, the NHE model extended rational choice theory to issues that were traditionally related to the well-being of women, such as marriage and fertility, and health and education (Becker 1976; 1981; 1985)[6]. NHE and neoclassical economics share a Bayesian economic agent (Savage 1954) and the principle according to which any potential choice has an opportunity cost (for example, the rational allocation of time as a scarce resource implies that is should be divided into work, childcare, household and leisure in order to minimize costs). Many gender economists share the NHE model by showing the way gender roles influenced individuals' rank of their preferences; they consider any gender gap (education, political representativeness, access to labor, wages, and so forth) as a market failure and gender inequality as a non-optimal situation.

An outcry of criticism to this approach came from feminist economists who pointed out that the tendency of gender economics to consider gender differences as preferences, without exploring their social dynamics, reinforces rather than challenges existing gender stereotypes and the status quo. Moreover, following Becker's family decision-making, the NHE assumes that family members share a joint utility function in spite of the fact that a considerable body of evidentiary literature had emphasized differences and conflicts among family members (Folbre 2006). In addition, the use of Becker's model, which represents each family's preferences as identical to that of the male head of the family, is unrealistic and offensive. It is unrealistic because it implies a male-oriented household led by an altruistic husband and a self-interested wife. It is offensive, for example, when it assumes a direct correlation exists between a higher

[6] People get married "when the utility expected from marriage exceeds that expected from remaining single or from additional search for a more suitable mate" (Becker 1974, 10). Children are durable goods, and their quality is directly related to the amount of income used for them. Fertility depends on income, child costs, knowledge, uncertainty, and tastes. About health, Becker wrote: "the economic approach implies that there is an 'optimal' expected length of life, where the value in utility of an additional year is less than the utility foregone by using time and other resources to obtain that year" (Becker, 1976, 9). On education, he wrote: "persons only choose to follow scholarly or other intellectual or artistic pursuits if they expect the benefits, both monetary and physic, to exceed those available in alternative occupations" (Becker 1976, 11).

rate of divorce and the higher salaries of women (Pollack 2003; Chibnik 2011). Finally, NHE justified and reinforced the model based on the "virtues of specialization within the family", which is fallacious: it claims that women stay at home because of the gender wage gap in labor market, and it turns around by claiming that gender wage gap is due to women's choice to specialize in homework (Ferber 1995).

Recent developments in gender economics criticized NHE at least in two directions.

First, many gender economists have been more motivated by a concern for equity rather than for efficiency. For example, Blau, Ferber and Winkler (2010) show that it is important to take account of institutional factors and alternative perspectives, especially when dealing with gender inequality in the labor market and in the household. Nevertheless, they do not overcome the rational choice framework when dealing with gender issues on the following issues: they consider family as an economic unit, and use comparative advantages to explain why working in the house is confined to women; the human capital model describes the gender labor and wage gaps. They persist in emphasizing that "economics is still about opportunity costs and rationality (…) and it is probably more realistic to assume that people tend to try to maximize their well-being rather than they are indifferent to it" (Blau et al. 2010, 3).

Second, gender economics had problematized the unrealistic features of the model of rationality used by NHE to handle gender issues. The concern about the realism inherent in the standard model of rationality creates a connection between gender economics and neoclassical ('as-if') behavioral economics. The connection is focused on the direction that gender economics might follow a modified instrumental rationality, enriched by psychological biases, which makes it possible to model and predict irrational and biased behaviors and to develop a more realistic decision making theory that is able to include gender biases (Bohnet 2016). Academic journals publish many applications of this type of behavioral economics relative to gender issues.

In overall terms, gender-specific behaviors have been highlighted in several categories:

(1) Cooperation and peer mentoring: the evidence suggests that if women are provided with both financial resources (microcredit) and social support (in the form of examples of positive experiences by other women), many external and internal barriers to risk-taking might be eased[7].

[7] This is the case in the gender entrepreneurship gap, i.e., the gap between men and women in taking the risk of becoming entrepreneurs. Evidence proves that that entrepreneurship gap is reduced when women

(2) Preferences over technologies, expenditures, and investment, and how these are related to the control of household income: women are sometimes unable to exercise their preferences if their husbands wield strong decision-making power[8].

(3) Preferences over competition: women seem to be less competitive, though this gap is reduced in higher ranked job positions (Croson and Gneezy 2009).

(4) Disparity between the efficacy of women and men in negotiation is a source of gender wage gap due to women´s tendency to avoid salary negotiation (Leibbrandt and List 2014; Douglas and Miller 2015; Heilman and Kusev 2017).

(5) Attitudes towards risk: lack of trust by women in financial institutions is due to their risk aversion behavior and attitude (Cassar and Katz 2016).

The use of these categories highlights gender-specific behavior and supports the idea that gender roles are shaped by reinforcement of past behavioral norms, and explained in terms of conditioning (Guerin 1992; Solnick 2001). Although it is more realistic than a simple mechanism of constrained optimization, this gender–behavioral approach does not refute the normative notion of standard rationality, and persists in adopting a rational choice framework. Cooperation and peer mentoring (1) is based on the idea that altruism can be more rational than selfish behavior. Preferences over intra-household decisions (2) and over competition (3), and the tendency to avoid salary negotiation (4) suggest that parties following a gender-wealth-maximizing default rule, which is a form of the application of ultimatum game to gender issues, such as gender wage gap or the influence of gender stereotypes in gender discrimination (Fabre at al. 2015). About the presumed risk aversion by women (5), Nelson (2014) explored the power of gender stereotyping in economics by demonstrating that the well know example of 'women are more risk adverse than men' is less robust than it has been claimed, and it is itself biased by the influence of stereotyping in economic research. Biases, in fact, occur because of the tendency of investigators to choose results that confirm 'essentialist prior beliefs' (statistical

have access to financial support (microcredit), and when other female entrepreneurs mentor them (Butler *et al*. 2003).

[8] It is a matter of women's empowerment to fight against social structures that coerce women to be subordinate to men. In many cases, a set rule, which formally brings women to the decision making level does not ensure substantial role for them within the intra-house decision-making process, and the existing gender gap in decision-making persists in favor of men, both in the developing and developed world (Kabeer 2005; Duflo 2012).

fallacy). Furthermore, the supposed less risk-aversion by women might be related to cultural pressure in order to conform to gender expectations rather than with sex differentiation.

4. The relationship between feminist economics and smart behavioral economics

Feminist economics cannot accept the connection between gender economics and behavioral economics as described above. If behavioral economics persists to consider human behavior according to the model of individual maximization, although enriched with biases, mistakes, and so forth, feminist economics cannot but reject it as a form of neoclassical behavioral economics, or 'as-if' behavioral economics described by Berg and Gigerenzer (2010). One of the best examples of the incompatibility between feminist economics and neoclassical behavioral economics is detailed by Kabeer (Kabeer 2013) on the article by Duflo about women's empowerment and economic development (Duflo 2012). According to Duflo, an affirmative action in favor of women may be required for gender equity, but it will not automatically be compatible with the pursuit of growth. Kabeer notes that that conclusion is driven by the acceptance of neoclassical model of constrained optimization, and even when Duflo claims the positive correlation between women's rights and per capita GDP, she applies a cost-benefit calculus. Kabeer insists on the fact that gender economics approach should be more focused on the institutional structures of human constraints, instead of merely applying the neoclassical model of human behavior to gender issues.

If behavioral economics becomes 'smart' as in Altman *et al*. (2017), the convergence with feminist economics becomes possible, and includes the adoption of ecological rationality and a challenging research agenda on the analysis of individuals-environment relations (Austen 2017). In summarizing what was previously stated, ecological rationality presents an anti-Bayesian unified theory of epistemic (logical) rationality and practical (heuristic) reasoning, which is not regarded as a source of bias and mistakes but as the natural complement of epistemic rationality in human decision-making as Kahneman combined systems 1 and 2. Ecological rationality as a unified theory of epistemic rationality and practical reasoning allows the following: (1) to model a cognitive approach based on the interaction between mental patterns and social dynamics according to Hayek; (2) to include emotions as fundamental components of decision-making cognitive model; and (3) to emphasize the role of moral agency.

Feminist economics and smart behavioral economics converge on points 1, 2 and 3. The interaction between mental patterns and social dynamics (1) allows feminist economics to explain gendered behavior and smart behavioral economics to integrate complexity in decision-

making process. The inclusion of emotion in the model of rationality (2) allows feminist economics to overcome the stereotyped dichotomy between a masculine-logic and a feminine-emotional approach to reasoning and allows smart behavioral economics to consider the central role of practical reasoning in understanding problem-solving processes. The importance of a moral agency in describing rational nature of agents (3) permits feminist economics to introduce fairness and justice (Jaggar 1992; Barker and Schumm 2009; Gaus 2011; Nelson 2006) in a model of 'autonomous rationality' that challenges standard moral theory (Moller Okin 1989; Heikes 2010; 2012). Moral agency allows smart behavioral economics to develop a model of social rationality able to combine other-regarding motives (reciprocity and fairness) as well as universal motives (according to the Kantian concept of categorical imperative) with the traditional self-regarding agent (Gintis 2017).

Both feminist economics and smart behavioral economics consider morality and rationality in related terms; however, the conflict between morality and rationality as purely imaginary (Nida-Rümelin 1997). This argument is central in the critique of neoclassical economics, which insists on displaying gendered-neutrality and objectivity. In neoclassical economics, rational choice has become the dominant paradigm and morality has been set apart. This disjunction has become an aberration: "a curious combination of naiveté and arrogance; ignoring the moral dimension distorts the basic model of human behavior which lies at the heart of neoclassical paradigm's methodological individualism" (Coughlin 1991).

The connection between feminist economics and smart behavioral economics, which starts from a radical critique to a rational choice framework, goes beyond it; both include the central role of social identities (ecologies), including gender, in the decision-making process and social dynamics. On one hand, smart behavioral economics deals with feminist economics issues, such as unjustifiable stereotyping (as seen in Nelson's analysis on risk-aversion); the nature of human capital (as seen in Folbre's investigations); the social formation of preferences; the gendered asymmetries in power relations; cooperative behavior; multiple sources of motivation. On the other hand, feminist economics concerns smart behavioral economics general themes, such as the use of mentality models to explain institutions, social norms as informal rules, and cultural reinforcement in a venue dependent process.

5. Concluding remarks

The role of gender in constructing our understanding of rationality is a central theme: it has shaped individual behavior as well as social dynamics and social norms. While feminist economics rejects standard rationality, gender economics involves equity rather than efficiency; nonetheless, the rational choice framework accepted by NHE continues to persist. A possible convergence between behavioral economics, either with gender economics or with feminist economics, depends on the nature of behavioral economics and upon which model of rationality behavioral economics adopts.

As a critique to neoclassical economics, behavioral economics was originally founded on the heuristics-and-biases program developed from Simon's model of bounded rationality (based on the satisficing principle rather than maximizing behavior) as well as Hayek's insight into the limits of the powers of human reasoning. Later, it diverged along two different theoretical pathways. On one hand, it shifted to a 'bias and systematic error system' (focused on the idea that people rely on heuristics because they lack rationality) and it has gradually converged towards neoclassical behavioral economics or 'as-if' behavioral economics. Neoclassical behavioral economics adds some 'psychological realism' to the expected utility function in order to explain the bias of economic agents and errors (Rabin1998; Thaler 1991) without rejecting the normative model of standard rationality. On the other hand, behavioral economics developed in a 'smart behavioral economics' mode, which adopts an ecological rationality that is able to include bounded and procedural rationality, fast and frugal heuristics (Altman 2017a, 2017b) as well as the institutional and sociological determinants of decision making (according to Smith 2008).

Therefore, if behavioral economics is intended as an 'as-if' behavioral economics, or neoclassical behavioral economics, it becomes compatible with NHE and gender economics; if behavioral economics is intended as a 'smart behavioral economics', a convergence with feminist economics is not only possible, but also inspiring, as some recent studies have shown.

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