

The performativity thesis and the interactions between economic theories and social reality

A tese da performatividade e as interações entre teorias econômicas e realidade social

Celso Pereira Neris Junior⁽¹⁾

José Ricardo Fucidji⁽²⁾

Rafael Galvão de Almeida⁽³⁾

⁽¹⁾ Universidade Estadual Paulista

⁽²⁾ Universidade Estadual de Campinas

⁽³⁾ Universidade Federal de Minas Gerais

Abstract

Originally proposed by philosopher of language John Austin, and later adapted by other social sciences, the performativity thesis has been known as a critique of the *homo economicus* of mainstream economics. The performativity of economics is the idea that economics gives birth to activities and markets in the economy (rather than merely describe or interpret them). This paper reviews arguments for and against performativity as a useful way of thinking about the economics-economy relationship. Following this survey, we put forward our interpretation, viz., an interactive approach to this subject. By doing so, we argue for its epistemological relevance for economic methodology, *i.e.*, for understanding the relationship between theories and economic models and the events in the economy. Furthermore, we claim that because they are embedded in social reality, mainstream economic theories occupy a particularly resilient position.

Keywords

economic theory, social reality, performativity of economics.

JEL Codes A11, A14, B41.

Resumo

Proposta originalmente pelo filósofo da linguagem John Austin e posteriormente adotada em outras ciências sociais, a tese de performatividade ficou conhecida como uma crítica do homo economicus da teoria econômica mainstream. O que geralmente se entende por performatividade da economia é a ideia de que a teoria econômica cria atividades e mercados no sistema econômico (mais do que meramente os descreve ou interpreta). O artigo apresenta diversos argumentos favoráveis e contrários a esta tese como uma maneira útil de pensar a relação entre a teoria e o sistema econômico. Após essa revisão da literatura, apresentamos nossa interpretação, a saber, uma abordagem interativa do tema. Dessa forma, defendemos a relevância epistemológica da tese para a metodologia econômica, isto é, para o entendimento da relação entre teorias/modelos da ciência econômica e os eventos no mundo econômico. Além disso, argumentamos que, justamente por estarem enraizadas na realidade social, as teorias econômicas dominantes ocupam uma posição particularmente resiliente à crítica.

Palavras-chave

teoria econômica, realidade social, performatividade da economia.

Códigos JEL A11, A14, B41.

1 Introduction

The 2008 economic crisis sparked a public debate aiming to reorient mainstream economics¹. This debate, however, progressed slower than one would expect. Such delay does not stem from the supposed blindness or bad faith on the economists' part. We argue that it is directly related to the ability of mainstream economics to embed itself in the reality. In other words, what is done in the academic realm not only describes the workings of the economy, but also has the potential (either exercised or not) of shaping behaviors, activities and markets in social reality. As Waterman (2020) claimed, mainstream economics earned its position due to its "serviceability", not due to its "correctness". This does not deny the transience of theories, but rather explain the difficulty and costs involved in changing them. We argue that the performativity thesis can help to enlighten how this process works.

This paper is organized as it follows: in section 2 we discuss the origins, applications and conceptual variations of the performativity thesis; in section 3, we classify the reactions to the thesis into three interpretations: ambiguous, critical, and constructive; in section 4 we propose an interactive approach that seems more appropriate and relevant to understand how performativity works; in the concluding remarks we argue that the approach herein proposed has the epistemological advantage of being a better account on the interaction between economic theories and the economy. Moreover, the work contributes to (and welcomes) interdisciplinary collaboration between economics and sociology of knowledge.

2 The performativity thesis

The concept of performativity was first proposed by philosopher of

1 By "mainstream" we mean a set of dominant theories that encompasses post-war neo-classical orthodoxy until 1980, with changes starting to be added after 1980. What defines this set of theories is their prestige, in sociological terms, and their unifying aspect is mathematical formalism, in methodological terms. Due to space limitations, we refer the reader to Colander *et al.* (2004) and Dequech (2007). We assume that our argument holds for most portions of the mainstream. For a critical reading of mainstream performative ambitions after 1980, see Davis (2017).

language John Langshaw Austin (1911-1960)². In *How to Do Things with Words* (1962), he argued that statements have functions that go beyond merely describing facts. Austin sought to shift the paradigm in language studies by proposing that statements not only say something about the world, but they are also *part* of it. That is, the statement participates in the action at the moment it describes it. With the statement, “I pronounce you husband and wife,” you are not simply describing but also legitimating a marriage. In doing so, language has a “performative” function that brings together both contractual (“I bet this will happen”) and declaratory (“I declare war”) functions.

Austin states that there are “felicity conditions” for the performative act to occur. Such conditions refer to the conformity between the declaratory act and the conventional procedures, in which the actors have an active role. The procedure must be performed by the participants correctly and completely, with visible effects afterwards (Austin, 1962, p. 14-15). Without these conditions, the “performative rite” does not occur and the statement is just “unhappy.” In the example of marriage, “I pronounce you husband and wife” must meet certain conditions, such as being lawful, consensual, and being validated by an authority (which emphasizes the “contract side”), in addition to being witnessed by trustworthy people, and the spouses continuing the marriage after the performative act.

Michel Callon was one of the first authors to apply performativity to economics. He defines economics as “all activities, academic or otherwise ... aimed at understanding and analyzing or equipping markets” (Callon, 2005, p. 9). Just like statements in Austin’s theory, economics seeks not only to describe an existing state of affairs, but also to provide a set of devices and practices that shape behaviors and institutions and thereby build economic environments. Callon calls them the “market environment”, and economics is part of its infrastructure.

For Callon, economic theory has little concern for the interaction between economics and the marketplace. Quoting Douglass North, he states that “it is a peculiar fact that economic literature contains so little discussion of the central institution that neoclassical economics discusses – the

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 2 Although, as usual, predecessors can be found in earlier periods. For example, Ashworth (2003, p. 78) wrote an example from the Medieval Age: “In his discussion of sacraments, [Thomas] Aquinas also recognized the factive or performative nature of language (‘I baptize you’, ‘I pronounce you man and wife’)”.

market” (North, 1977, p. 710; Callon, 1998, p. 1). Callon is not only interested in the several forms of organization in which economic transactions can be carried out, but also in proposing the thesis that economies tend to behave as predicted by the theory because of the “economization” of social relations. Economics provides a series of “calculative agencies” and “cognitive prostheses” that are incorporated into markets.

A calculative agency, according to Vosselman (2014), is not only the result of the diffusion of values, norms, and worldviews that serve as intermediaries between the market and economic agents, through abstract ideas or theories; it is also the result of social institutions that underpin certain practices (“socio-technical institutions”). As we shall see later, economics operates in an environment in which the discourse on markets interacts with business practices.

In addition to these calculative agencies, there are also non-calculative agencies, which are outside the scope of most mainstream economic research. Through the latter, the “less logical” aspects of economics, which do not involve calculations and risk, but emotions and uncertainty, are also incorporated into the discipline. Performativity would explain how these agencies influence the construction of the subject matter, *i.e.* the economy. This process of “economizing” social life, for Callon, results in the incorporation into the economy of activities, behaviors, spheres, and fields that are not yet part of it. This means that, as economic calculation spreads across the realms of social reality, it is possible to have a world, or parts of it, “fabricated” by economics (Çalışkan; Callon, 2009, pp. 370, 374-376, 392).

Callon seems to reverse the logic of evolutionary economics when he writes that “it is not the environment that decides and selects the utterances that will survive; it is the utterances that determine the environment necessary for their survival” (Callon, 2007, p. 332). Thus, he suggests that, by modifying the environment that best ensures their survival, these statements, ideas, and theories expand their sphere of influence through the scientists and institutions that adopt them. The larger the network of a given social actor, the greater the influence of all sub-actors in her network. In return, those who depend on these sets of statements – in this case, economists – can reap the rewards that guarantee their professional success. From a practical point of view, the more widely used, certified and verified as scientific a theory is, the more prestigious it becomes. With greater prestige, more journals will publish research based on it, more re-

search funding will be allocated to projects drawn on it, and it will gain more advantages not only in academia, but in the economic world at large.

According to Callon (2007, pp. 348-351), performativity should foster a convergence of the social sciences and a better consideration of the politics and organization of economic activities (*idem*, 2010, pp. 163-164), which are guided by “cognitive prostheses” (Çalışkan and Callon, 2009, p. 380). Theories and instruments are prostheses that materialize in institutions³ that are efficient enough to allow calculations and to compare alternatives. These institutions, also called economizing behaviors, allow to expand the field of human action into the economic sphere⁴. As a consequence, “the implications of economization... are not limited to the (re)formatting of individuals. They also extend to the (re)configuration of social relations” (Çalışkan; Callon, 2009, p. 381). Thus, it can be said that economics is a program of economization of social reality. Let us see how this is possible using two examples: the Fontagne-en-Sologne strawberry market and the Black-Scholes derivative pricing model.

The study of the Fontagne-en-Sologne strawberry market in France is among some of the best-known empirical studies on the performativity of economics. According to Garcia-Parpet (2007 [1986]), this commune's strawberry market was designed according to the general equilibrium model of neoclassical economics by a lawyer whose only contact with economics had been during his Master's degree courses. Using the latest auction management technology at the time, and after numerous attempts to persuade the commune producers to join the system, the market operated so efficiently that, within two years, it became a benchmark for agricultural markets. Its improved information exchange system enabled farmers to upgrade their product quality and achieve more lucrative prices.

On the other hand, Donald MacKenzie's (2006, 2007) study of the financial market is a more elaborate example of the performativity of economics, which combines the process of “economizing” of social relations, the creation of “calculative agencies” and the view of institutions as “cognitive prostheses”. For Herrmann-Pillath (2010, p. 246), MacKenzie's work

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3 Following Dequech (2009, p. 85), “institutions are understood here, in a broad sense, as socially shared systems of rules of behavior or thinking that have some recurrence”.

4 Institutional economists similarly argue that institutions are more than the “rules of the game”. They not only limit human action but also promote and expand them (*e.g.* Hodgson, 2002, p. 215).

demonstrated that economic theory plays a central role in the construction of events in the economic realm, through the Black-Scholes model, elaborated by Fischer Black, Myron Scholes and Robert Merton⁵. MacKenzie argues that there was a concomitant process of construction and application of the economic theory *vis-à-vis* the (re)configuration of relations within a given social domain, *i.e.* the derivatives market. Economic theory equipped financial markets with a pricing model, agents began trading according to it and, over time, the model became more faithful to the reality it represented — and *vice-versa*. The reality of the market was becoming increasingly more faithful to the model that represented it.

Before this model, there was no unified method to calculate derivative prices. Furthermore, there was a great deal of controversy about their legality. What made the Black-Scholes model so enticing to market participants, at the time of its introduction, were the “cheat sheets”, calculated and distributed by Fischer and Black themselves (MacKenzie, 2006, p. 160-162). They contained theoretical prices computed by them “for all the options traded in the US”. The sheets were cognitive prostheses in their purest sense, because they allowed simplifying calculations of complex differential equations, and thereby allowing their users to obtain faster results. Thus they could give a potential advantage in seeking arbitrage gains.

Over time it was noted that the price calculated by this model accurately predicted the prices observed in trading sessions (Rubinstein, 1985)⁶. In the end, Stephen Ross (1987, p. 332, emphasis added) wrote in the *Palgrave* entry on ‘Finance’: “Given that a theory works so well, the best empirical work will be used more as a *tool* than as a test... when judged by its ability to explain empirical data, option-pricing theory is the most successful theory not only in finance but in all economic science”. Just a few months after this assessment was made, the crash of October 19, 1987 struck. The S&P 500 Index fell 20%, with simultaneous declines in

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5 Black and Scholes published their model in 1973. Merton developed the model and coined the term “Black-Scholes model” also in 1973. Scholes and Merton were awarded with the Nobel Memorial Prize in Economics in 1997. Black was mentioned in the Nobel address, but he had died in 1995.

6 From an interview with Ariel Rubinstein: “I walked [to the most active part of the stock market] and looked at the [market price] screen and saw that it had prices identical to the [Black-Scholes] price sheet. I said to myself ‘the academy has triumphed!’” (MacKenzie, 2007, p. 62).

international markets. The event would be called “The Black Monday” (Kindleberger; Aliber, 2005, p. 99). This event also set up the end of the correspondence between the Black-Scholes model and the behavior observed in derivatives market.

Then, why did such correspondence occurred in first place? To answer this question, MacKenzie (2006, p. 16-20) proposed three forms of performativity:

- a) generic: one aspect of economics (a theory, model, concept, procedure, dataset, etc.) is used by market participants, policy makers, regulators, among others;
- b) effective: the use of a particular aspect of economics has an effect on the economic process – there is a concomitant process of use and influence of the object of study over a domain of social reality;
- c) Barnesian⁷: the use of one element of economics creates economic processes rather than describing them. In other words, there is a possibility that economic processes or outcomes may be altered to better match the model. Practical use of a theory or model can also modify economic processes and make them less like their theoretical description. In this latter case, divorce between the real world and economic models becomes salient, in a process MacKenzie dubbed “counter-performativity”⁸.

Thus, according to MacKenzie, the Black-Scholes model was performative in the Barnesian sense before the Black Monday. After that, Rubinstein’s correspondence lost its value. Some authors have argued that overuse of the model may have been one of the factors that led to the crash (MacKenzie, 2006, p. 259; Carlson, 2007).

Similarly, the Fontagne-en-Sologne strawberry market thrived for years until technological and institutional changes made its *modus operandi* inefficient (Garcia-Parpet, 2007 [1986], p. 49). Changes in auction technology and the distribution system, such as the rise of supermarkets, as well as the migration of producers to other products, forced market managers to

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 7 Initially called "Austinian performativity," MacKenzie changed the adjective because Austin’s approach is purely linguistic and has to be adapted to the social sciences. MacKenzie adopted the term “Barnesian performativity” in honor of his supervisor Barry Barnes, one of the first scholars to introduce the concept in the social sciences (MacKenzie, 2007).

8 This insufficient (if any) consideration of performative failures is the point on which Bristet (2019, p. 16; Part III) draws his critique: economics does not always perform the economy and often the latter resists and modifies the former.

also change to keep up with the times. As a result, the traits that made the Fontagne-en-Sologne market so distinctive were diluted. This perception of the transience of economic theories and social reality would thus be an advantage of the performativity thesis over less (ontologically) sophisticated theories. However, this thesis is still the subject of controversy due to misinterpretation by some authors or even exaggeration by its proponents, as we will see in the following section.

3 Debates on the performativity of economics

Both the definition and interpretation of the performativity thesis received a varied treatment in the literature. Without intending to encompass the full range of interpretations, we select those that seem relevant to our argument and, in the next section, we explain why we believe that performativity is useful for discussions in economic methodology. In this section, we group interpretations into three categories: a) ambiguous interpretations, which are criticisms that point out to limits or show an unwillingness to work with the thesis in terms of economic sociology; b) critical interpretations, which are those that deny the epistemological value of the thesis or even point out the danger and errors involved in its adoption; and c) constructive interpretations, which clarify, correct and enrich aspects of the original thesis. We hope our paper will be a contribution to this third group.

3.1 Ambiguous interpretations of the performativity thesis

According to Santos and Rodrigues (2009, p. 990), performativity is social engineering: “economists can produce through their engineering efforts the ‘calculating agencies’ postulated by neoclassical theory, that is, *homo economicus*”. According to the authors, the performativity thesis implies that economists have the power to create behaviors or even markets in the economy. This statement about the performativity thesis is related to the idea of “creating calculative agencies”. However, we find this argument to be mistaken. Our understanding is that the performativity thesis instead proposes the exact opposite. Namely, that it is *economics* itself, not the economists, that is capable of *shaping* – not *creating* – behaviors and

markets. If interpreted as the claim that the economist or economic theory creates something unilaterally, the thesis will be hardly supported.

The performativity of economics is a network effect and not the result of deliberate human action. It is not result from the intentional activity of economists that participate in the market, but from the theories they produce, that are embedded in the relationships that constitute the economic and social realms. Thus, they shape the *loci* of action of the economic agents, *i.e.* the markets. In this sense, Santos and Rodrigues (2009, p. 990) accept the claim that economics is performative, contributing to the commodification of social life. However, the authors argue that this construction happens due to “economic engineering”. Again, the interpretation seems mistaken to us, since the performative process is heterogeneous, being both “economic” and “social”. Moreover, Callon assumes not only the existence of calculative agencies, but also non-calculative ones in the markets (Vosselman, 2014, pp. 186-187; Callon, 1998, pp. 38-40).

In contrast to the idea that economics is an instrument to build markets, we argue that economics itself is an actor that is rooted in social reality. Thus, our understanding is that performativity is not manifested by the deliberate actions of economists aiming to shape society, but rather in the theoretical statements that economists make. Such statements by economists are “[actors] that are made to act through other [actors] in concrete and contingent sociotechnical networks” (Vosselman, 2014, p. 187). In other words, specific material conditions are required for the statements to fulfill the felicity conditions. The idea that performativity can create something *ex nihilo* is denied by Callon himself (2007, p. 327): performativity is not about creating but about making *it happen*. The idea of “lock-in” demonstrates that theories have a historical dimension and that they are born and maintained through the agents’ role in social reality. In his words:

Lock-in denotes the mechanisms by which the evolution of a market or institution becomes irreversible. Choices and decisions made during the previous period have the power to limit the range of possible choices and decisions in the subsequent period. Progressively, the range of possible options narrows, closes, and locks in so that agents have no choice but to renew the choices made earlier. They are prisoners, trapped in nets from which they have neither the resources nor the desire to escape; they are submerged in the same structures they helped to manufacture (Callon, 1998, p. 48).

We acknowledge, however, one aspect of this criticism: by treating economics itself as an actor in socio-technical networks, Callon seems to give economics too much autonomy. Understood in this way the performativ-

ity thesis seems to go too far, since it not only (re)affirms the superiority of a particular (mainstream) approach, imprisoning economics to that particular approach. This is the interpretation of Mirowski and Nik-Khah (2007), for example, who emphasize the conservatism of the performativity thesis when it states, against most critics of rational choice theory, that *homo economicus* exists because the economy is embedded in economics. Indeed, read this way, the thesis should be strongly questioned. Callon seems to acknowledge this when he states that the "organizational mode" (the market) is immersed within neoclassical theory and not in society (Callon, 1998, p. 29-30). This problem of separation between the world in the models and social reality is the subject of the following criticisms.

3.2 Critical interpretations of the performativity thesis

The claim that the economy is embedded in economics – and not the other way round – is problematic because, among other things, it implies that the economy, as part of social reality, is the inexorable product of a model of interpretation formulated within economics. Miller (2002, 2005) discusses this issue from an anthropological perspective. For him, the problem with the performativity thesis is that it does not separate the real (the social reality) from the virtual (the models that seek to capture this reality). Miller argues that the power of economic theory lies in its discourses, rather than being an actor in a sociotechnical network. The analogy he makes between priests and economists is illustrative (Miller, 2005, p. 5). Like the former, economists spread the gospel of the market, and countries must follow it. International bodies, such as the International Monetary Fund, act as part of an economic episcopate. Therefore, the other countries must conform to the capitalist tenets, or be punished for their heresy.

The idea of performativity, in this sense, would then be related to a successful attempt by economics at virtually controlling the world, as if it was the highest stage of economics imperialism. However, according to Miller (2005), there is a gap between economic theory and how markets actually work. A theoretical market is an ideological model, not an empirical phenomenon, intending to create normative conditions for exchange (Miller, 2005). He criticizes the notion of "economization" (or "calculativity") embodied in "socio-technical agencies" or, in general, in the decision-making

process of agents and institutions. Nevertheless, from the performativity examples discussed above (strawberry and derivatives markets), it is possible to see that there is indeed a way to incorporate decision-making mechanisms (cognitive prostheses) in certain environments, which Miller seems to deny.

For Miller, decision-making is not a matter of disentanglement, but a totalizing affair. That is, the devices by which the economy is shaped by economics are not purely economic, but are mixed with other processes in which economics is rooted. In his view, Callon, by contrast, is merely reproducing a notion already existing among economists about the power and “superiority” their theories have over social life (Fourcade *et al.*, 2015). Miller draws attention, then, to the fact that economics does not have this ability to shape the economy, because both domains are rooted in a larger social reality.

As we propose, it is precisely because it is rooted in a social reality marked by changes brought about by interactions between individuals, symbols, discourses, powers, etc., that economics can interactively shape the economy. We understand it different from Callon, by pointing out that there are differences, gaps, displacements, and translations between the economy and economics. Callon (2005, p. 11) reduces the issue to a battle between the social sciences: the ultimate goal of the social sciences is to engage in “different anthropological projects that struggle to impose their conceptions and their execution”. Economics is involved in this struggle for power in the social sciences, seeking to reinforce its “superiority” (Fourcade *et al.*, 2015).

Another similar criticism comes from Mäki (2013). For him, economic theories do not shape the economy, nor do they investigate it. It is the *people* who do it, in their various roles within society. They are exposed to research results and they learn, directly or indirectly, about the content of economic theories, their explanations and predictions. Perhaps they can be persuasive enough to induce people into changing their beliefs and motivations – which in turn impacts on the economy. To him, the flow of these complex bonds is an indirect causal relationship rather than a constitutive one, as in Austin’s original statement. Mäki (2013, pp. 450-451) even considers a reversal in the performativity thesis – in the sense that the economy performs economics – but he does not develop it, since he

finds little sense in this formulation, from an Austinian point of view⁹. We will return to this idea in the interactive approach we propose, but before proceeding, we point out some constructive interpretations that will be useful to our argument.

3.3 Constructive criticism of the thesis

In the light of what has been discussed, an important step in our proposition on the interactive nature of performativity is to attempt solving its ambiguities and criticisms. In the first case, we need to clarify what the thesis means; in the second, we should stop it from going too far. The performativity thesis can be taken as an explanation of the reason why some theories become mainstream and to understand how these theories can go beyond the academic walls. The reinforcement of this position is linked to a dynamic interaction between ideas, institutions, and behaviors.

On this issue, using the theory of sociotechnical networks, Brisset (2016) argues that people act in markets according not only to their expectations, but also to the expectations regarding the behavior of other agents, such as in Keynes's "beauty contest". In turn, these expectations are based on an information set and on economic theories, which the agents share. Assumed in this way, a theory gradually becomes a coordination device (Ferraro *et al.*, 2005, p. 9; Callon, 2007, p. 322), either deliberately or not. Thus the strongest and most prestigious theories may reinforce their dominance. We see a two-way process of reaffirming the status of a theory, which is due not only to its broader acceptance within economics, but also to its use in the economy.

The second constructive point concerns the relationship between agency and structure. Brisset (2016) highlights two arguments by Bruno Latour (2005, 2011) on this. The first is that Latour opposes the understanding of social structure at the macro level as an aggregation of individual behaviors. For Latour, the social sciences cannot conflate all agencies with actions by other agencies – society, culture, structure, fields, individuals, or

9 The point of Mäki's critique (2013, pp. 451-452) is that the Austinian concept of performativity refers to constitutive, non-descriptive, and non-causal statements. The interactions among phenomena studied by economic sociology are causal – so it has nothing to do with Austin's original formulation. Worse, by mistaking constitutive relations for causal ones, the nature of economic phenomena could be obscured by performativity.

whatever else – that would in itself be social. From this it follows that the individual must not be reduced to the action of the “calculative agency”.

This second argument is in line with what has been stated earlier, that there is no *a priori* common world to be theorized (Latour, 2011, p. 40). And this is crucial: to perform a realm of reality, a theory must become a social device and must be socially accepted in a world made up of distinct social structures. That is, one must take into account the motivations of individuals, their cognitive structure, and the consensus within society that motivates action, powers, ideology, etc. This implies that power of economics is more an interactive than a hierarchical process. These are the points we try to summarize below.

4 An interactive approach to the performativity of economics

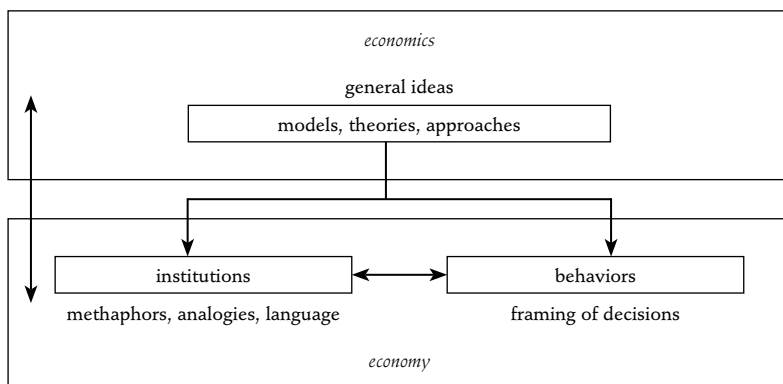
In our view, the performativity of economics is related to the attempt – either deliberate or not – at shaping the economy according to the models of representation and interpretation produced within economics. Economists and their peers are the agents that perform the economy by attaching theoretical discourses to their devices that can influence the environments in which they operate. This definition implies that shaping is a process related to the influence of academia, but it is not all. In our perspective, the felicity conditions for this performative act hinge on the interaction between ideas, institutions and behaviors of individual agents within social reality¹⁰. We illustrate this in Figure 1.

According to Figure 1, models developed within economics may be applied to the economy through the acts done by particular economic institutions. These institutions make them more palatable to the public through metaphors, analogies and languages, which are cognitive devices shaping the view of decision-makers. Thus, the economy may show results similar

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10 In the same vein, Brisset (2017, pp. 13-15) criticizes the interpretation given by MacKenzie (2006) to the derivative market conformation to the Black-Sholes model. For Brisset, the derivatives market did not conform to the theoretical pricing model for two reasons: a) price distribution was already leptocurtic before the introduction of the model; b) the conformation of actual price to the predicted one depends on conventions (that is, the action of market participants), thus there is the potential for counter-performativity, given the diversity of market participants' assessments.

to those predicted by the theory or, conversely, may behave differently than predicted (counter-performativity). In turn, the fact that agents have a cognitive structure that is not reduced to “economization” – because they have other motivations related to the institutional, political, social, technological and ideological contexts in which they are situated – implies that they also have power (even if not fully exercised) to change economics when interacting with institutions (Mäki's, 2013, p. 450, “reverse performativity”).

Figure 1 An interactive approach to the performativity thesis



Source: Herrmann-Pillath (2013, p. 142), adapted by the authors.

It follows that the economist, or any other agent equipped with an economic theory, is an actor within social structures. This implies that it is not the individual who is responsible for unilaterally performing the economy. He is part of a network of relationships that is beyond economics. Moreover, the actions and behaviors of individuals in the social structure are always mediated by structural inheritance (rules, relationships and social positions) from the previous generation. In the economy, for example, individuals both reproduce and change existing structures through social activity. Those structural aspects modified in the present will, in turn, be bequeathed to future generations. This is Margaret Archer’s (1995) transformational model of social activity, which influenced critical realism in economics (Lawson, 1997, 2003).

When we present performativity in this way, we move away from authors who analyze it as a passive adoption of cognitive prostheses in the economy. They claim that such prostheses are behind the process where-

by the economy becomes more like the economic models (Çalışkan; Callon, 2009; MacKenzie, 2006), and it helps us to think in a more dynamic way (Brisset, 2017; Herrmann-Pillath, 2013). In other words, we propose that the interaction happens in a reality with social agents subjected to several motivations and reasons that interact with each other, being also subject to unpredictable results *ex post*. In this sense, performing is an action, intentional or spontaneous, of agents that use the economic models and theories to interpret, analyze and influence reality. More than saying economics perform something, we intend to show that economists and the policy- and theory-making institutions offer elements to mediate the reality, with their coordination devices and cognitive prostheses. With this, they are able to influence motivations and reasons. This allows us to say that the most successful theory or approach in this process will also be the most influential one, and, therefore, the most dominant one. However, it also opens up the possibility that economic agents can influence economic theories, once they are all embedded into the same social reality which economics is part of.

Thus, we propose that performativity has an interactive character. In the moment t agents use the existing devices of economics, inherited from $t - 1$, to act in the economy. As a result, there is a potential for economic ideas to perform the economy. This modified economy, by the action of economics devices, will now be able to transform or reproduce economics in $t + 1$. In the remaining pages of this section we will show how this interaction process happen, emphasizing the components from Figure 1.

4.1 Ideas

Considering the scientific field as an arena for power and prestige (Bourdieu, 1976), we must admit that mainstream economics has more conditions to influence reality than alternative economic theories. We make two assumptions about this theory: a) it is required to be stated in formal models; b) it has the power to shape the perceptions and actions of economic actors by means of their explicit and implicit discourses and interpretations.

Mainstream economists expose, systematize and discuss their ideas through models. Doganova (2015) argues, after Morgan (2012, chap. 4), that the different types of economic man “allow different modes of research”. Knight's slot machine individual, for example, was designed to

live in the world of neoclassical economics without being used to investigate “the world of the economy out there”. On the other hand, the rational economic man, the standard framework of contemporary mainstream macroeconomics, is able to make “right” choices from publicly available information, and has become a reference for how individuals should behave. In management literature (Cabantous *et al.*, 2010), managers were transformed into “rational men” through adapting economic theory (*e.g.* decision analysis) into a series of coordination devices (*e.g.* decision trees, influence diagrams) that were used and sold by consulting firms and organizations whose members have been educated and trained in mainstream economics. And, of course, the Black-Scholes spreadsheets mentioned before. Thus, economic models are cognitive prostheses that economists work with, as well as tools that help to shape the economy.

In general, mainstream economists rarely discuss other approaches in the philosophy of science. They adopt a modeling epistemology that is generally associated with their ontological conception of economics: atomistic agents in perfectly predictable relationships with each other, and processes of economic life conceived as fundamentally mechanical, leading to equilibrium. How has this framework become dominant and even contemptuous towards its alternatives?

Firstly, for mainstream economists, making models with recognized false assumptions is not seen as a failure. Milton Friedman (1953) had already written that economists should not worry if their assumptions were unrealistic, if the predictions of the model were correct – and Friedman numbered several *caveats* to the term “correct”. Secondly, formalization is considered an element that makes economics a “more scientific” discipline compared to other social sciences. In the words of Robert Lucas (2001, p. 279), “mathematical analysis is not one of many ways of doing economics: it is the only way. Economics is mathematical analysis. Everything else is just images and conversation”. Thirdly, economists seem to believe that their models are useful for a wide variety of purposes, that is, the serviceability of economics supposedly occurs in all aspects of social life (*e.g.* crime, family affairs, suicide).

It is in this sense that Dow (2013, 2015) states that economics has performative power whenever the agent of her reality is assimilated into the mainstream approach. Understanding reality is a socially mediated cognitive act, done by the media and business organizations that adopt

the mainstream approach as a supposedly appropriate way of building knowledge and interpreting economic phenomena. This framing process, according to Dow, decides what is included or excluded from the public conversation, determining the way in which something is presented and therefore perceived. Mainstream theorists frame reality into formal models. The axioms of rational choice theory and the mathematical equations contained in the models can be formulated into reduced forms for *ex post* testing. Moreover, the mainstream methodology enables formalization, making it more serviceable than its alternatives.

Thus, economists build models of representation and interpretation of reality and expect them to be serviceable to analyze the economy. The assumptions about agents' behavior are fundamental: it is in financial markets that an economic model came the closest to the perfectly competitive market described in its theories. In other words, it is here that its performative effect, through formal models, is most clearly perceived. But, as Dow points out, performativity is also present in monetary policy, where inflation projections are conditional on market agents' expectations on inflation and interest rates. The central bank is continually aligned with these agents through reports, pronouncements, and briefings in order to maintain a particular view on the future state of the economy in line with its economic models. How institutions translate these models to the general public will be discussed below.

We agree with Dow on the causality and the agents of performativity. However, Dow seems to argue that only the mainstream approach of economics is able to perform reality. This is an *ex post* analysis. On the other hand, we propose that an approach becomes mainstream *because* of its capacity of being accepted as the agents' cognitive prostheses and devices that, in turn, allows them to instrumentalize and mediate reality. Besides, Dow argues that it is economics that perform the economy, while we argue that it is the agents that provide tools and persuade the stakeholders to use them to interpret reality, and in turn influence it again through "reverse performativity".

4.2 Institutions

Let us turn to the question of how economists can perform the economy through institutions. Broadly speaking, this can be declarative: metaphors,

analogies and language have the power to shape behaviors and structures of reality. Building on Barry Barnes and Masahiro Aoki, Herrmann-Pillath (2013) builds a model of institutional analysis and social reality.

According to him, Barnes (1995) claimed that the social structure emerges from symbolically mediated interactions between individuals, so that neither structure nor individuals can be seen as independent causes of social actions, but are symbolically constituted through a process of recurring communication¹¹. This communication by institutions can happen through “statements” that are responsible for bringing social facts into existence (Searle, 1995). Institutions share important properties with language, especially as they create meanings for intentional action that cannot be established by mere individual action. Language, like institutions, is developed and enhanced by use over time. The example given by Herrmann-Pillath (2013, p. 144) is money. What we understand as “money” does not exist as a physical fact, but comes into existence through statements. It is impossible to make this statement on an individual level by unilateral action, as it requires collective recognition and acceptance to be effective. Here is another example of how economic performativity needs “felicity conditions” to be realized.

Meaning changes through linguistic operations, Herrmann-Pillath argues, mediated by metaphors and analogies. That is, the activation of an agent’s behavior occurs – initially discussed within the scope of economics – and undergoes a linguistic transformation reproduced by organizations using economic models and/or hiring economists. For example, in the Inflation Targeting Regime, we have the periodic reports (language) produced by the Central Banks (institutions), which disclose the results of economic aggregates. By means of a model, they shape agents’ expectations about the future of the economy. The existence of a target to be pursued by the Central Bank impacts the behavior of economic agents, either disturbing or calming them down.

Using Aoki’s perspective on material institutions, Herrmann-Pillath (2013) argues that institutions are seen as dynamic states in which individuals’ strategic actions interact and result in repeated patterns of action, including the use of certain public representations, *i.e.* words, symbols, rituals, etc. Such representations include linguistic entities (words and propositions) whose meaning is shared by a community. Thus, individual

11 Archer (1995, pp. 65-92) made an argument in the same line, as we have seen earlier in this paper.

behavior can be shaped by representations, what Herrmann-Pillath (2013, pp. 144-145) calls “distributed cognition” in social interactions. In this sense, performativity refers to linguistic patterns that may interpret reality.

This relational and interactive character can be observed in economic policy devices (Muniesa *et al.*, 2007). Hirschman and Berman (2014, p. 18-22) show that such devices include a wide variety of tools that help authorities in economic decision-making. They are divided into “devices for seeing” and “devices for choosing”. The first are those that produce numbers and categories that allow people to perceive the world in a new or clearer way. By acting this way, these devices are mechanisms that make possible to focus the vision of policy makers, as they deal with both incomplete and excessive information. Choice devices, in turn, establish formal and rational decision-making procedures. They are like platforms that indicate how agents should act on reality, originated in economic theory and translated through signs and symbols by institutions and organizations. In this sense they can also be categorized as “cognitive prostheses”. But if such devices and agents’ behavior in the economy do not match, economic models will be unable to perform the economy. We then discuss the behavior of individuals.

4.3 Behaviors

The idea that behavior can be shaped by economics stems from the agents’ inherent decision-making processes (and consequent actions) in the economy. We assume that these processes happen in an environment of uncertainty. In order to reduce uncertainty, agents look at what other agents are doing to seek a safer ground in the material and physical signals that the environment transmits. It is in this aspect that economics can shape behaviors through signals emitted to the public, from specialists and guardians of esoteric knowledge, that is, not easily available to laymen.

Hirschman and Berman (2014, pp. 16-18), analyzing the influence of economists on the “cognitive infrastructure”, wrote that this is related to the style of reasoning adopted by agents. Agents can adopt ways of thinking and behaving from concepts, causal assumptions, and methodological approaches to economics, in order to instrumentalize their statements and formulate explanations of several issues. Given this, there is room for

economists to act by shaping individual behaviors and actions through economic theories and institutions.

The power of statements is analyzed by Beckert (2013), who uses the term “fictional expectations” to label statements based on stories that are not necessarily true or adequately grounded, but are told for personal or collective gain. Central banks, for example, manage expectations, by “speaking to the markets” through public statements and carefully written reports. Perhaps Beckert is himself opposing this kind of action done by central banks by identifying a deliberate attempt of lying, omitting, or deceiving agents for less noble purposes than to improve economic life. We assume, however, that this fiction can be transmitted through not necessarily deliberate and intentional actions of agents, but also by locking them into a given theoretical approach, that might be the mainstream one. Moreover, the avoidance of uncertainty in decision-making turns the mainstream discourse alluring for the agents. Uncertainty about price paths can indeed be reduced by discursive practices (models) adopted by learning and emulation (Nelson and Katzenstein, 2014, p. 379). Thus, mainstream models have an additional feature as an instrument of stability that is not present in its alternatives, simply because they do not possess a critical mass of acquaintance with them.

5 Concluding remarks

One may identify two common misunderstandings after a first contact with the performativity thesis. The first is that it is just another way to say that economics “influences” the economy. Understood in this way, it has nothing new to say. After all, it is a cliché to say “ideas have consequences”. In a second interpretation, critics denounce it as an intentional project perpetrated by the profession of economizing the social life. In this latter case, we would say that it is maybe characterized by naivety and epistemological weakness.

The interpretation we adopt here is that one of the virtues of performativity is to point out that theories not only influence, but also interact with reality. Through the behavior of the agents, theories create devices that are incorporated into institutions and are transmitted to the public in a discursive manner. The path from ideas to the public is a nonlinear

and, above all, recursive one. In economics, models developed within the discipline are used in actions at the individual level. Economics students learn through pedagogical resources that reinforce the dominance of mainstream economics. This mainstream domination in turn reinforces its rooting in social reality.

We also conclude that performativity helps to explain the mainstream's resilience. Rather than just waiting for the observed anomalies to cause cracks in the dominant theory, bringing out readjustments in research, and, thus, the emergence of a new paradigm, performativity points out that theories have a greater resistance to change when rooted in social reality. And the foundation of their roots may not be a criterion of "truth" as correspondence with reality, but because they are part of the power and serviceability structures of economics. On the other hand, cases of counter-performativity also occur, and when the mechanisms in social reality that explain the performative effectiveness cease to operate or are interrupted, their obsolescence is realized.

Therefore, we argue that the performativity thesis is useful for examining the interaction between theories developed in the economics discipline and what Marshall called "the ordinary business of life". Rather than analyzing these areas separately, the performativity thesis seeks to recursively evaluate the influence of economic actions, practices and propositions on ideas, institutions and behaviors of individuals. If the subject of economics is a complex and ever-changing social reality, the mainstream seems to solve this by assuming regularities in behaviors (substantive rationality) and their systemic effects (equilibrium), and spreading (intentionally or spontaneously) these assumptions into economic activity and its institutions, either by models or by other discursive ways.

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About the authors

Celso Neris Pereira Junior – cnerisjr@gmail.com

Departamento de Economia, Universidade Estadual Paulista, Araraquara, SP, Brazil.

ORCID: <https://orcid.org/0000-0001-8041-9845>.

José Ricardo Fucidji – fucidji@unicamp.br

Instituto de Economia, Universidade Estadual de Campinas, Campinas, SP, Brazil.

ORCID: <https://orcid.org/0000-0002-8262-7899>.

Rafael Galvão de Almeida – rga1605@gmail.com

Centro de Desenvolvimento e Planejamento Regional, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil.

ORCID: <https://orcid.org/0000-0002-3582-9906>.

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