

The Economic Psychology of Gabriel Tarde: Something new for behavioral economics?

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Abstract

In the last years of the 19th Century, Gabriel Tarde developed a theory of economic psychology based on interpersonal transmission of subjective values and beliefs. While his work has several aspects that resonate with behavioral economics as practiced today, its differences are profound. His interest in dynamics of change, and in particular in the role of innovation and invention in driving this process, is hard to fit into a behavioral economics framework. However, new empirical techniques leveraging social media and big data seem well suited to addressing his themes.

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Keywords

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Introduction

Gabriel Tarde (1843-1904) was a French magistrate who also wrote remarkable academic books on subjects ranging from metaphysics (Tarde, 1893) to the formation of social movements (Tarde, 1898). The last of these was a two-volume series on economic psychology (Tarde, 1902) which has been credited for coining that term (Güth, 1992; Hoelzl and Kirchner, 2010). However, while Tarde's work is recognized to be important in fields from philosophy, sociology and psychology (Deleuze, 1969), to criminology (Tonkonoff, 2014) and communication (Katz, 2006), it is not well known in the modern field of economic psychology. For instance, since its inception in 1981, there have been only six references to Tarde in the *Journal of Economic Psychology*, of which three are limited to crediting him with the term, and one is a review of his last book. This is surprising at first sight. The International Association for Research in Economic Psychology says that "Economic psychology is concerned both with the psychological mechanisms through which economic behavior comes about, and with the psychological effects of economic events" (IAREP, 2012). Tarde's social theories mainly amount to psychological mechanisms through which macro-scale chains of events (Tarde, 1898) come about, so they fit the IAREP definition. Should they happen to resonate with current theory, they could therefore potentially open important avenues of research for modern behavioral economists and economic psychologists.

In this article, we will attempt to describe Tarde's economic psychology, and discuss such possible links with modern behavioral economics. We then discuss its implications to other recent areas that are highly Tardean: the knowledge

economy and the expansion of Big Data. We hope our work will interest behavioral researchers who may not know Tarde, and also provide ideas for further research questions.

Tarde's economic psychology Theory of value

Tarde wrote *Psychologie Economique* at the dawn of modern economics, and like the contemporary founders of the neoclassical school (of whom he cites only Menger, and admits not having read for lack of French translation), he rejects classical attempts to derive an objective notion of value, taking value to be an inherently subjective quantity (p. 51¹). To make matters more complex, value also takes three forms: utility, truth and beauty (p. 52) although the third remains largely undiscussed in Tarde's work on economic psychology. Although constituted as subjective, value achieves a quasi-objectivity as a social fact for Tarde. Value, in fact, exists on two different levels, the individual and the social, and Tarde's main interest is in the process by which the transition between levels occurs: how does the social fact emerge from individual subjective notions?

At the individual level, there are strong formal similarities between Tarde's conception of value and the modern vision of rational choice. For instance, utility value, which he terms *desire*, is identified as the motivating force for action. This central facet of his economic psychology—behavior is driven by subjective desire—is quite easily understood as parallel to the way in which subjective preference orderings are considered to drive behavior in modern decision theory. Tarde

¹ Unless otherwise specified, all page references hereafter are from Tarde (1902).

called individual truth value *belief*. This corresponds to a subjective degree of certainty that a particular state of the world obtains, notably in the form of a link between actions and the objects of desire. The idea that belief is a subjective, psychological relationship to the world also became central to our modern models of decision theory as axiomatized by Savage (1954). Tarde's claim (p. 143) that "needs" are created through the combination of mathematizable quantities called beliefs and desires has a clear reflection in the modern idea that observed behavior is determined by a maximization of the expected utility of the outcome of the different alternatives acts available. Belief and desire are the "great dual psychological classification" (p. 52), just as utility and beliefs are the primitive concepts of behavioral prediction under uncertainty in economics (e.g., Shoemaker, 1982).

But while his vision of individual action was not radically dissimilar from expected utility maximization (albeit much less formalized), Tarde was highly critical of economists' tendency to simplify the objects of desire under investigation, and specifically of the "economic man" or *homo economicus*. He saw such simplifications – mutilations (p. 86) – as neither necessary nor desirable for rigorous explanation of economic behavior. Tarde suggests that the "schematic" picture of motivations economists provide in *homo economicus* may be nothing more than a "postulate designed to support to geometric demonstration of their results" (p. 82). More specifically, he complained (p. 85) that

This *Homo economicus*, who follows, methodically and exclusively, his egoistical interests, abstracting from all sentiment, faith or conviction, is not just an incomplete being, he implies a contradiction. Who is the man whose most cherished interest is not precisely to avoid rupture with his beliefs or his pride, his heart or his faith?

The *homo economicus* construction can be defended on the grounds that it operates at the level of formal rationality, independent of and equally applicable to any specific tastes, or that it is a simplification apt for some market interactions. Like many modern economic psychologists economists, Tarde appears unconvinced by either argument. Tarde appears to hold that a model explaining actual social behavior requires a content that mirrors the actual content of real decision-makers in the world. Thus, his economic psychology must be based upon desires that accurately reflect those that motivate real people's behavior.

Social transmission

The specific content of desire was important to Tarde, but his project was not simply to describe its objects or, as more common in economic theory, to study the relationship of given desires (preferences) to given means. Rather, he sought to "study the genesis of these desires, the causes which lead them to expand or contract, intensify or diminish, the struggles

and contests between them" (p. 111). This vision is very different from that of an economist studying how the price and quantity of a good are determined in a particular market. "Changes of tastes" is one of the factors explaining shifts in the demand curve in any introductory economics textbook, usually covered in a paragraph. Tarde proposes to make these "changes of tastes" the essence of his economic psychology: "on the stock exchange we see that, when a title is offered by a larger number of sellers, its price falls; when demanded by a larger number of buyers its price rises. [...] But the question is to know why, today rather than yesterday, at 4 p.m. rather than noon, the number of buyers or sellers rose" (1902 Vol. II, p. 40).

The key to his explanation is what he calls "interpsychology" (p. 82ff), and represents the shift from the individual to the social level of value. Tarde sees social processes as a special case of a more general mechanism that governs all systems, whether material (chemical reactions or astronomical forces), biological (animal population dynamics) or social (tastes, ideas, customs, the development of science, generally desires and beliefs). The unifying, underlying mechanism is evolutionary, and Tarde makes frequent reference to Darwin in his arguments. Any evolutionary system requires three components: perturbation, selection and heredity, which he termed *opposition*, *adaptation* and *repetition*, respectively (p. 35). The dynamic is of a field of individuals (molecules, stars, individual animals, desires and beliefs), where periodic oppositions, or innovations, radiate their effects outward in waves of adaptation that are at the same time partial repetitions of their cause. These effects then collide and create new oppositions and adaptations.

Tarde opens the book with the words "Society is a tissue of inter-spiritual actions, mental states acting upon each other in specific ways" (p. 11). Desires and beliefs spread by this social interaction in a process of periodic inventions or innovations that propagate out through society through subsequent imitation of the new idea, interacting with each other the way that ripples in a pond would if two stones were dropped in different places. This is interpsychology. Our beliefs and our needs are influenced by other people nearby through this interpsychological effect.

While this may appear somewhat abstract, the concrete mechanism by which Tarde sees is playing out is very prosaic. For Tarde, utility, beauty and even truth are social facts generated through *conversation* (p. 153):

There is no economic interaction between men that is not first accompanied by an exchange of words, spoken or written, printed, telegraphed, telephoned. Even when a voyager trades with islanders whose language he does not know, the barter occurs only by means of signs and gestures in a mute language. Furthermore, how were these needs for production and consumption, sale and purchase born, that have just been satisfied though the exchange, settled thanks to conversa-

tion? Usually, it is thanks to further conversations, propagating the idea of a new product to buy or produce from one interlocutor to another, and with this idea, the confidence in the product's qualities or chances of sale, and finally, the desire to consume or produce it. (p. 139)

The tissue woven by these conversations is an emergent social fact corresponding to the average or consensus levels of individual values. The social value of desire he calls Utility, and the social value of belief becomes Truth. Both of these

are daughters of Opinion, of the opinion of the masses in struggle against or accord with the reason of the elite that influences them. . . . A greater or lesser degree of truth in an idea signifies three things in some combination: a greater or less number, a greater or lesser social weight (in the sense of consideration, accounting for competence) of people who agree to it, and the greater or lesser intensity of belief they feel. (p. 52)

In view of this statement, truth as a social fact does not necessarily signify objective correspondence with the real world, but only generalized belief. Tarde takes this idea far, applying it even to scientific discovery. When Tarde claims (p. 39) that we cannot conclude that any counterfactual alternative scientific evolution “no matter its paths and methods, the series of links and influences in its scientific questions, would have finally resulted in an astronomy of Newton’s laws, or in a physics of the principle of the conservation of energy”, he clearly cannot mean that the world would operate differently, had we asked different questions. Rather, he must be pointing out that our knowledge is partial. For instance, if human kind were able to perceive quantum phenomena, then we would have developed other parts of physics and astronomy before discovering Newtonian laws.

The same interim indeterminacy seems to hold for social organization and utility-value. Value is subjective for Tarde, relative to individuals, but not necessarily arbitrary. Rather, it progresses towards generally better ideas over time in the same way as voyages of discovery or the progression of science. He devotes a section in *Psychologie Economique* to the “necessary consequence: final unification of the human race” (p. 25 ff), when all ideas will have converged to some global optimum or equilibrium point. It is hard to tell whether he thinks the form of that equilibrium depends on the path we take to get there. It seems more likely that he means that from our current state of knowledge, we cannot predict what that final unification will look like, and in the interim a multitude of different paths may be taken to get there.

This model has several important implications for the development of social systems. First of all, social processes are *irreversible*. The encounter of ideas generates new desires and beliefs that become part of the social landscape in a causal chain that could not happen in the other direction.

Second, and related, the system is *indeterminate* in its historical progression, depending on a chaotic series of accidental encounters. Third, it implies that *value is created by invention*: new ideas create new desires and beliefs, which are the constituent “particles” of Utility and Truth. Thus, innovators, inventors and entrepreneurs take a central role in Tarde’s conception of economic development.

Links and legacy, what can Tarde tell us today

Some of Gabriel Tarde’s ideas may be relevant to current researchers in economic psychology, and behavioral economics more generally, both for their convergence towards ideas now central to the discipline, and for the divergence between the direction he took and the subsequent course of research in the field. On the first count, he recognized early the importance of not over-simplifying the content of the criteria of economic decisions. The homo economicus model includes two main assumptions: its limitation to material concerns, and its unrestricted rationality. Both of these have earned it substantial criticism (Gintis, 2000; Thaler, 2000). As much (but not all) of modern behavioral economics, Tarde seems to have rejected selfishness more strongly than rationality. Regarding the rationality assumption, he makes an explicit distinction between “logical” and “extra-logical” reasons for imitation, the first of which consist in “the nature of the ideas themselves” suggesting rationality, while the latter adhere to “the nature of the people who give the examples, to the places or the times in which the influence occurs” (p. 123). Tarde’s arguments that social change is somehow a process of discovery also suggests that much social influence is fundamentally rational. This partially rational adaptation process is similar to the social psychology theory of social proof (Milgram, Bickman, Berkowitz, 1969; Cialdini, 2006) and the economic models of rational herding through information cascades (Banerjee, 1992; Bikhchandani, Hirshleifer, Welch, 1992).

However, these similarities seem to be closer to independent discovery than influence, to what Tarde himself would call “logical necessity” rather than “imitation”. To consider what a reading of Tarde might bring to the discipline, we must turn to some of the striking, deep differences between his research interests and those common in what we have called modern economic science. These center on the difference between static and dynamic concepts of social behavior.

Economic analysis is, with a few notable exceptions, fundamentally static, focusing on states of the world or outcomes of behavior. This is particularly evident in the discipline’s focus on equilibrium concepts for its predictive power. Dynamic questions concerning the process by which players attain a Nash equilibrium or a market converges to the competitive price and quantity are mostly ignored in the theory; hence behavioral economists have no particular predictions concerning these processes (Binmore, 1999). Tarde’s primary interest, by contrast, is the process of social change, which is a funda-

mentally non-equilibrium concept. It illustrates Tarde's closer intellectual link to evolutionary economics as developed by Schumpeter² or to certain questions in Hayek than to "mainstream" behavioral economics³. The very idea of equilibrium is antithetical to the dialectical change that forms the basis for Tarde's theory.

In this respect, Tarde seems to open new ideas for behavioral economics research, challenging behavioral economists to address adjustment processes instead of behavioral predictions as their objects of study. Such a move could have important, useful consequences for the field. We provide two examples of cases where dynamic behavior is not perfectly explained by standard analysis: conditional cooperation and backwards induction.

Behavior without an explanation

Conditional cooperation in linear public goods games is probably among the more robust of the behavioral phenomena that has been revealed in experimental economics research (Fischbacher, Gächter, Fehr, 2001; Kocher, Cherry, Kroll, Netzer, and Sutter, 2008). While empirically unassailable, this phenomenon has admitted to many different, and conflicting theoretical accounts (Chaudhuri, 2011). Note, moreover, that not only is it a fundamentally dynamic concept, it is also an example of imitation. According to Tarde, the imitation it entails might be the general behavioral mechanism. What appear to an economist to be disparate causes of the phenomenon in different behavioral contexts may be reinterpreted as different effects of a single underlying cause—the law of imitation—and therefore replications of the phenomenon rather than different phenomena requiring different explanations. A Tardean analysis might focus rather on how the patterns of conditioning interact as individuals move among a larger group, for instance with designs along the lines of Andreoni (1988).

Explanation without a behavior

Such a shift may well improve some areas of economic prediction. Behavioral and experimental economists are no strangers to the weakness of many equilibrium concepts as predictive tools. The fault of the predictions is often put on the level of reasoning required by players to attain them (Binmore, 1999). This suggests again that an important question to address for economists is dynamic; how do people arrive at the outcome in question? A particularly telling example can be seen in backwards induction (Von Neumann, Morgenstern, 1953). This solution concept (a) gives very strong predictions, (b) based on dynamics of play (c) that are among the most unequivocally falsified by economic behavior (e.g. Binmore,

McCarthy, Ponti, Shaked, 2002). The problems with the predictions, in other words, seem potentially linked to the model of the process by which they come about. A reconsideration of Tarde's dynamic laws of imitation may therefore lead economists to more empirically reliable accounts not just of choice processes, but also of the predicted outcomes in which they traditionally claim an interest.

However, it should not be ignored that this is a deep challenge to economic theory. Tarde's systems are historical in nature: a chain of unique, irreversible and irreproducible causality that at any moment that may lead to completely new beliefs and desires. Economics, by contrast, treats a pre-established set of beliefs and desires as the absolute primitives of behavior. If "marginal cost equals marginal benefit" is the material from which economics is made, then "fixed and stable preferences" are the foundation on which it is built. There are models, such as the so-called indirect evolutionary approach pioneered by Güth and Kliemt (1998) and Huck and Oechssler (1999), in which preferences themselves are the result of a "process" of evolution based on the relative payoff outcomes they earn. However, even in these models, the interest is in the outcome set of preferences that emerge as stable, not in the historical-time dynamic by which they occur. More importantly, the space of possible strategies is entirely pre-defined, and evolution takes place as a path drawn through it. The number of feasible strategies in a 10-period linear public goods game is very large, but it still does not include the introduction of a substitute good, a new technology to protect the good in question, or even a tax on free-riding. Such innovations are the key source of new value in Tarde's economics. Studying their diffusion alone does not go to the core of his vision.

Tarde's Economic Psychology: current implications

A Tardean analysis of social processes as unpredictable, path dependent and imitative has several policy-relevant implications. First, it puts the focus on evolutionary transformation rather than outcomes. Every step of the implementation of a policy is a potentially vital point in shaping its overall effect. This is potentially related to the problem of policy sequencing, raised in development economics by economists at least since the turn of the Century (Stiglitz, 2002), and still active in macroeconomic research (e.g. Asturias et al., 2016). However, it takes the argument down to a "micro" level, in the sense that Tarde argues that not just the sequence of policy implication itself, but the sequence of individuals who hear about it, may have an impact on its effectiveness. Second, this evolutionary effect occurs through the interaction of ideas, which generates novelty. Harnessing novelty militates for an incremental approach to implementation, with the maximum possible feedback from and between the parties affected by the policy, rather than engineering pre-defined results (c.f. Lindbolm, 1979). However, Tarde also highlights the key role that innovators play in social development, often seeming to

² See (Taymans, 1950; Michaelides and Theologou, 2010; Djellal and Gallouj, 2014) for information on the direct link between Tarde and Schumpeter.

³ We thank the editor for pointing out the link to Hayek's pioneering work in domains similar to behavioral economics.

understand a somewhat classist distinction between leaders and followers in the process. Thus an application of his theory to policy implementation also leaves room for the strategic use of social influence by the policy maker, and a (perhaps noisy) multiplier effect that can be expected as an initially seeded idea spreads its roots of influence throughout the society.

It is worth noting in this regard that the data required for such Tardean policy implementation is increasingly observable through social media such as Facebook, Twitter, etc. Catellani, Crucifix, Hambursin and Libaert (2015) note the Tardean nature of these tools, and that he already understood the importance of the imitative networks they engender. The analysis of such communication systems falls into the domain that has come to be called Big Data. Ten years ago, Barry and Thrift (2007) concluded that effective use of this data was on the verge of becoming reality (see Loheac et al., 2017). Although not always accessible to researchers, the ever-increasing production of data from interactive and social media presents a huge potential resource for business and policy guidance. Ten years after Barry and Thrift, we have come ever closer, as machine learning algorithms have brought the analysis of “big data” within reach. Economics and management are no exception; a plethora of studies now show the contribution of big data to economics, (Einav, Levin, 2014; Taylor, Schroeder, Meyer, 2014), econometrics (Varian, 2014), and finance (Johnson, 2012), among others. The need and usefulness of information harnessed from social media and connected items is greater than ever and can affect a wide range of topics beyond economics. One of the most famous example is probably the use of big data in advertising and retail processes, for instance Walmart is reported to collect 2,5 petabytes of data every hour (McAfee, Brynjolfsson, Davenport, 2012), which are analyzed for a better understanding of customer profiles and decisions. On the public policy aspects, public health with telemedicine and telehealth solutions could be an interesting application, even if current efforts are mainly developed in pursuit more of cost effectiveness than improved health outcomes (Kvedar, Coye, Everett, 2014). On the same topic, Murdoch and Detsky (2013) suggest that big data will faster advances in medical research, improve knowledge dissemination, translate personal medicine into clinical practice and finally empower patients through increased use of their own information. On the political side, big data techniques have been used to move from demographic-targeted campaign messages to individualized targeting. Working with Cambridge Analytica, Donald Trump’s team is reported to have sent up to 175 000 different messages, focused on different personality aspects, to potential voters during the same evening (Grassegger, Krogerus, 2017).

The development of information technologies over the past 40 years (from mobile phones to Internet 2.0) have plausibly increased the social connectedness through which these social processes operate. It has been argued that they have led to the transformation of society from post-industrial to a form sometimes termed an information society (Beniger, 2009),

or even a network society (Castells, 2011). These changes, furthermore, transform not just communication, but also to some extent the very nature of production and consumption. By facilitating association among like-minded individuals, information technology has enabled collaborative efforts to create and consume both immaterial (wiki, music, tutorial, open-source software, etc.), and material content (fab labs, repair cafes, farming or DIY communities, etc., Arvindson, 2013).

Most of these production processes aren’t remunerated, and fall into common resources without expectations of monetary gains for the creators (Lerner, Tirole, 2002). Far from the considerations of the Homo Economicus, these communities are led by imitative processes (Arvidsson, Caliendo, Airoldi, Barina, 2016) and motivated more by identity (Carey 1989; Durkheim [1915] 1965; Muniz, O’Guinn, 2001) and altruism (Benkler, 2011; Adler, 2001) than by rational and financial considerations.

In the same vein, even communities created and managed by brands (brand-based communities) can often use social networks to coordinate and discuss the future and possible changes in brands and areas of activity (Arvidsson, 2013). If these communities are important for visibility, marketing and, by extension, the creation of brand value (Laroche, Habibi, Richard, Sankaranarayanan, 2012), they can also exert pressure or even confront a brand in order to contest unwanted strategy or direction (Algesheimer, Dholakia, Herrmann, 2005).

Tarde suggested that human beings could not be reduced to an egoistic and rational man even as an analytical technique. The rise of these communities, and their growing importance in branding strategy, tends to confirm that identity-based considerations built through imitative networks are fundamental to understand human behavior. This is especially true in a society where instant, all-to-all communication is not only possible but increasingly easy and common.

Conclusion

Although considered today to be a mostly forgotten founder of social science (Carof, 2007), Tarde’s intuitions on many subjects were startlingly prescient. His experience as a magistrate led him to question the genetic source of the criminal profile, which had dominated up until then, in favor of a social causality. As mentioned by Latour (2002), Tarde’s insights have been recognized as being as penetrating as they were “totally undisciplined”, and for this reason, Tarde seems to be periodically rediscovered every few decades. This paper is no exception. Contributions of Gabriel Tarde are manifold. A reconsideration of his interpsychological theory of value and dynamic laws of imitation may lead behavioral economists to deep insights in line with the IAREP definition of economic psychology (2012).

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