HAL
open science

Randomization of What? Moving from Libertarian to "Democratic Paternalism". GREDEG Working Papers Series

Judith Favereau, Nicolas Brisset

To cite this version:

Judith Favereau, Nicolas Brisset. Randomization of What? Moving from Libertarian to "Democratic Paternalism". GREDEG Working Papers Series. 2016. hal-02092638

HAL Id: hal-02092638

https://hal.science/hal-02092638v1

Preprint submitted on 8 Apr 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

RANDOMIZATION OF WHAT? MOVING FROM LIBERTARIAN TO "DEMOCRATIC PATERNALISM"

Documents de travail GREDEG
GREDEG Working Papers Series

Judith Favereau
Nicolas Brisset

GREDEG WP No. 2016-34
http://www.gredeg.cnrs.fr/working-papers.html

Les opinions exprimées dans la série des **Documents de travail GREDEG** sont celles des auteurs et ne reflèlent pas nécessairement celles de l'institution. Les documents n'ont pas été soumis à un rapport formel et sont donc inclus dans cette série pour obtenir des commentaires et encourager la discussion. Les droits sur les documents appartiennent aux auteurs.

*The views expressed in the **GREDEG Working Paper Series** are those of the author(s) and do not necessarily reflect those of the institution. The Working Papers have not undergone formal review and approval. Such papers are included in this series to elicit feedback and to encourage debate. Copyright belongs to the author(s).*

Randomization of What?

Moving from Libertarian to "Democratic Paternalism"

Judith Favereau & Nicolas Brisset

GREDEG Working Paper No. 201634

Esther Duflo and Abhijit Banerjee within the J-PAL, promote the use of randomization as an efficient way of fighting poverty. Mainly, J-PAL's project aims at testing what can be assimilated to nudging devices through randomization. Nevertheless, Duflo recently changed her perspective from a kind of libertarian paternalism toward a stronger paternalistic view. The paper methodologically explains such a shift through the incapacity of J-PAL's use of randomization to give access to the whole process of poverty since it focuses only on the individual decision-making process. Our claim in this paper is that this shift for a stronger paternalism can be explained by a twofold failure of focusing only on the use of randomization: (1) the incapacity to show how individual behaviors are related to poverty, (2) randomization alone does not give access to an important determinant of the decision-making process, namely the social framework that embeds it.

Keywords: Randomization, Behavioral Economics, Experimental Economics, Causality, Poverty, Paternalism.

JEL Classifications: F63, B41, C9, D03.

1 Introduction

> "We might begin looking for principles governing the acceptable use of paternalistic power in cases where it is generally agreed that it is legitimate. (...) What is it that justifies us interfering with children? The fact that they lack some of the emotional and cognitive capacities required *in order to make fully rational decisions*. It is an empirical question to just what extend children have *an adequate conception for their own present and future interest* but there is no much doubt that they are many deficiencies." (Dworkin, 1972, p.152, our emphasis)

Randomization - a methodology imported from medicine - is today one of the most used tools in development economics.[1] This methodology attempts to determine the impact of an intervention through a statistical and experimental framework in order to base the fight against poverty on evidence. Its use in development economics was established in 2003 by a

group of researchers from MIT - Abhijit Banerjee, Esther Duflo and Sendhil Mullainathan - who created a research laboratory dedicated to randomized experiments. This laboratory, the Abdul Latif Jameel Poverty Action Lab (J-PAL), has today more than 70 researchers around the world, and has conducted more than 250 experiments. Esther Duflo and Abhijit Banerjee are the main figures of this movement, as they initiated and promoted the use of randomization in development economics. Randomized field experiments (RFE) conducted by the J-PAL, have had great success within economics, mainly because, through its experimental design, J-PAL's RFEs allow to produce reliable results and, therefore have a strong internal validity. This leads Angrist and Pischke (2010) to speak about an "empirical revolution."

Despite the enthusiasm for randomization in development economics, it is still unclear what randomization really produces and if it achieves its stated objectives, namely, (1) to provide evidence of development policy efficiency and (2) to use these pieces of evidence to guide policy makers' decisions. We show that in addition to being an experimental procedure, the randomization used by J-PAL's researchers supports an idea of poverty inspired by Kahnemanian behavioral economics, and an idea of development policy broadly drawn from the libertarian paternalist draft. In plain terms, J-PAL's researchers are inclined to test some *nudges* which could have great consequences for reducing poverty. The main goal of the J-PAL's approach is twofold: from an academic stance, to isolate the fine mechanisms of poverty, and from a political one, to set a new kind of policy against poverty. These aims are tackled by reducing the inquiry scale by focusing on small changes (nudges) that potentially involve big consequences. This is clearly reminiscent of the so-called libertarian paternalism project, sustained by Sunstein and Thaler. However, Duflo recently changed her perspective towards a "harder" paternalistic view. In a recent lecture (Duflo, 2012), she promoted hard paternalism in recommending mandatory behavior, as imposing immunization for children.

Our claim in this paper is that this shift is the consequence of a twofold methodological failure of randomization when such a methodology constitutes the unique tool to conceive policy recommendations to fight poverty. Indeed, we show that RFEs used alone do not give access to the whole decision-making process of the individuals. Moreover, in considering poverty through the only prism of behaviorism, RFEs do not identify the social causes of poverty. Therefore, the conditions of a nudge to perform are unidentified, and explaining why this kind of device does not often work to fight poverty. We defend this is why Duflo, in order to guarantee the internal validity of randomization, proposed a stronger paternalism - even at the price of being contradictory within her own approach. In order to show that, in the first section we exhibit how RFEs in development economics are based on Kahnemanian behavioral economics and therefore how J-PAL's RFEs are inclined to propose nudges to fight poverty. In the second section,

we precisely define the shift of Duflo for a stronger paternalism. In the last section we demonstrate how the two methodological failures of the unique use of randomization explain this radical shift.

2 Beyond experimentations: Theoretical Frame and Policy Implications

The main concern of J-PAL's RFEs is to assess the impact of a specific development program in order to determine its efficiency and then guide the policy makers of developing countries. These programs are local, since the experimental design of RFEs does not allow assessing institutional changes. Therefore, J-PAL's RFEs focus on the behavior of the poor, which leads to a particular apprehension of poverty. The aim of this section is to define the inherent theoretical frame of J-PAL's approach and exhibit how a nudge follows directly from it. We first present this theoretical frame by showing both how it is related to Kahnemanian behavioral approach and why J-PAL's researchers focus on such a frame in order to guarantee the internal validity of randomization's results (2.1.). Then, we show how *nudging* is promoted in order to fight poverty (2.2.).

2.1 A Theoretical Framework Based on Time Inconsistency

The experimental and statistical design of RFEs, was developed by Ronald Fisher (1935; 1926) for agriculture and then mainly used in medicine through the RCTs. Randomized experiments are defined through both an experimental design and a statistical robustness. The core of this experimental design is the random dimension: the participants of the experiments are randomly assigned into two groups (a control one and a treatment one), this allows removing selection bias.[2] It is the unique method, which, intrinsically, allows such selection bias to be removed. That is why randomization is often considered as a methodological "gold standard" (Cartwright, 2007; Banerjee and Duflo, 2009). Duflo and all of the researchers from the J-PAL use and promote this methodology as a unique tool to fight poverty (Duflo, Glennerster and Kremer, 2007; Duflo, 2006). From that, the RFEs of the J-PAL share two main objectives, mainly translated through their leitmotiv - "translating research into action": (1) producing evidence and (2) using these pieces of evidence to guide decision makers in developing countries. The production of evidence is allowed through the help of the random dimension of these experiments, which gives the opportunity to obtain reliable results. The use of these results by policy makers seems more problematic. The experiments are implanted on the field, therefore, they are mostly dependent on their context; on the one hand, it can be difficult to use the results from one experiment carried out in a specific region in Kenya for a

policy maker in Mumbai, on the other hand it can be difficult for a policy maker in Kenya to extend the program tested in this specific region in Kenya to the whole of Kenya. In other words, RFEs have a strong internal validity (reliable results) but struggle with external validity (the use and the generalization of these reliable results).[3]

Furthermore, this new way of fighting poverty necessarily implies a redefinition of the policies that are testable, since RFEs are hardly applicable to big institutional changes. As a result, J-PAL's researchers aim to focus on small questions rather than institutional ones in order to be able to offer such answers. Hence, this bottom-up perspective focuses on the behavior of the poor, in order to understand the process of their decision-making and then reduce poverty by acting on this process. As Bannerjee (2005) points out, the goal is to build "new development economics" based on the overlap of three sub-fields: development economics, experimental economics and behavioral economics. In this perspective, the main issue of poverty is intertemporal inconsistency. If today it is well-known that all people could exhibit such inconsistency, the consequences are much more devastating for the poor than for the rich: time inconsistency[4] could explain why the poor remain poor (See, for example: Banerjee and Duflo, 2011; Duflo, 2012).[5] Such a conceptual framework is reminiscent of Kahneman and Tversky's prospect theory (1979), which identifies some gaps between standard expected utility rationality and "real" rationality observed in throw experiments. This theory stresses the role of the environment in the decision-making process. In a broad sense, the environment includes the very close architecture of choice (the way the alternatives of a choice are displayed), as well as the cognitive environment in which people are embedded. As a result, according to Kahneman and Tversky, individuals do not estimate their alternatives objectively. They are victims of cognitive bias, mainly including over-evaluation of the present state which distorts rational decision-making. A way of conceptualizing the inconsistency is to say that individuals are composed of multiple selves, with different utility functions that are activated by different contexts over time (Bénabou and Tirole, 2004). In such a perspective, intertemporal inconsistency could be seen as the result of a bargaining relation between the different selves (Ainslie, 1991). Whatever kind of analytical tools one uses for modeling it, intertemporal inconsistency is used in development economics *á la* Banerjee and Duflo in order to understand why individuals prefer in time t to receive a small reward in $t+1$ instead of a larger reward in $t+2$, and then change their mind in $t+1$. Nevertheless, time inconsistency is not, for Banerjee and Duflo, the only reason of very low use of inexpensive and effective ways of fighting poverty. In particular, they claim that time inconsistency can be reliable in explaining why individuals do not go to a health center to immunize their children one time, but it seems unlikely that people postpone the immunization of their children again and again. Thus, if this were the case, they would have to be

perpetually fooled by themselves. That is why, according to Banerjee and Duflo, another explanation is needed. This other explanation is related to the fact that poor people underestimate the benefits of such actions:

> "We are certainly somewhat naïve and overconfident about our own ability to do the right thing in the future. But if parents actually believe in the benefits of immunization, it seems unlikely that they can keep fooling themselves month after month by pretending that they will do it next month until the entire two-year window runs out and it is too late. (...) The more plausible explanation is that they procrastinate and they underestimate the benefits." (Banerjee and Duflo, 2011, p. 67)

While confirming Duflo and Banerjee's claim that individuals underestimate the benefits of an investment in immunization, it is not sufficient to move away from classical time inconsistency, since this is well defined by the fact that people systematically regret in *t+2* their choices made in *t+1*, even if they were aware of them in *t*. That is to say, people's preferences are dynamically inconsistent: they will depart from their original choice if they can revise them in the future. This feature is known as hyperbolic discounting. That is why people postpone again and again the immunization of their children, even if they know the benefits of doing it. That is exactly the point put forward by Kahneman and Tversky's prospect theory, and in Sunstein and Thaler's libertarian paternalism. In both cases, standard rational choice theory is seen as a normative benchmark (Davis, 2013).

2.2 The Political Framework: the Poor and the Nudge

The behavioral approach of Banerjee and Duflo paves the way to Richard Thaler and Cass Sunstein's so-called "Libertarian Paternalism" (Sunstein and Thaler, 2003A, 2003B). Taking for granted that in many cases, people lack clear, stable and well-ordered preferences which lead to *a posteriori* regrets, Sunstein and Thaler defend the possibility of public intervention consisting in giving some incentives to people in order to make them act rationally. While context dependency constitutes for Banerjee and Duflo, the origin of irrationality, it is also the way to overcome it in redesigning a "good system of choice architecture", that "helps people to improve their ability to map and hence to select options that will make them better off." (Sunstein and Thaler, 2008, 101) Such a system includes two major tools: de-biasing measures and nudges. The former tool consists in letting people know why their decisions are not rational most of the time. The latter tool is subtler: a nudge is a measure that encourages individuals toward a more rational choice. For instance, the fact that the most advantageous savings system is proposed by default can radically increase its participation

rate (Madrian and Shea, 2001; Thaler and Bernatzi, 2004). It is at once paternalistic, since it orients the individual preferences in a specific way and libertarian because it does not mandates behavior and leaves people free to make their own choices. Therefore, it leaves to individual his/her possibilities of action, and at the same time creates incentives try to orient individual actions. In a nutshell, libertarian paternalism helps people to gain self-control by driving their separated selves to act *as if* they were a single self (Davis, 2011, p. 61). As a consequence, they no more exhibit hyperbolic discounting, and do not exhibit *a posteriori* regret. As an experimental approach, Banerjee and Duflo's project consists precisely in testing different ways of de-biasing or nudging people. As we saw above, this fits in with the procedure they designed to test only some *little changes*.

The work of Michael Kremer *et al.* (2011) is paradigmatic of this kind of solution: a lot of developing countries do not have access to clean water. There is however a very inexpensive and effective way to clean the water: putting some chlorine in the water will clean it and make it drinkable. Yet people do not use the chlorine. Kremer *et al.* decided to test specific nudging devices in order to make people use it. They decided to install a chlorine dispenser next to the village where people go to get water. This dispenser provides chlorine in "one turn" of a knob. This makes the chlorination of water really easy, and the experiments results were positive, and showing that people use chlorination more with this dispenser than when there was no dispenser. It is clearly a nudge in the sense that the choices do not alone change the architecture of the choice (there were some places to buy chlorine before). In the previous situation, people under-valued the future gains from use of the chlorine. The "one turn" strategy diminishes the cost of such a use and encourages people to buy chlorine. Therefore, nudging seems to be a good solution to make people use what they did not do so before, in order to improve their lives. Especially, concerning the poor who suffer from the same biases than the rich, but for whom the consequences are more devastating:

> "The poor seem to be trapped by the same kinds of problems that afflict the rest of us - lack of information, weak beliefs, and procrastination among them. It is true that we who are not poor are somewhat better educated and informed, but the difference is small because, in the end, we actually know very little, and almost surely less than we imagine." (Banerjee and Duflo, 2011, p. 68)

According to Duflo and Banerjee, the real difference between rich and poor people is that the former face more invisible incentives than the latter. For instance, since the water is by default cleaned in rich countries, rich people do not have to deal with the cleaning process: they do not have

to think about it. Another example: children's immunization in developed countries is undertaken by the institutions (for instance in schools), and the rich do not have to choose to vaccinate their children. In other words, rich people have fewer responsibilities than poor people. Instead of poor people who have to make so many choices today, lots of decisions are already made for rich people, and they do not have to think and worry about them. Both rich and poor individuals are victims of time inconsistency, except that the poor have more choices to make and the consequences of their choices are bigger than the ones of the rich. That is why Duflo and Banerjee propose to be paternalistic toward the poor, since the consequences are more devastating in their lives than the one of the rich. Furthermore, for Duflo and Banerjee, the rich are already hugely nudged and live in a much more paternalistic world than the poor (Banerjee and Duflo, 2011, pp. 69-70).

3 From One Form of Paternalism to Another

According to prospect theory, the biases from which the poor are suffering can be related to the context in which choices are made.[6] However, surprisingly and unrelated to the inherent theoretical framework of her approach, Duflo does not appeal to play on this context of choices, but she argues for taking away of the poor some of their choices in order to improve their freedom. It is what she calls a "democratic paternalism." The aim of this section is to define precisely this shift from libertarian paternalism to a democratic one, not yet analyzed in recent literature. We first define this paternalism and its aims (3.1.). Then, we exhibit two main philosophical confusions within the definition of this paternalism (3.2.).

3.1 Towards a Democratic Paternalism Based on "Capabilities"

The democratic paternalism of Duflo seeks to reconcile freedom and paternalism; therefore, she proposed to define this new paternalism:

> "As the practice of providing a set of basic needs for people (this set may vary), typically without consulting them on what their needs actually are." (Duflo, 2012, p. 2)

She aims to base this paternalism on the notion of "capabilities" developed by Amartya Sen (1987, 1992, 1999, 2009). The role of the capabilities is twofold: capabilities are the core of a new definition of paternalism and of a new definition of freedom. The definition of freedom for which Duflo credits Sen is "the ability [to] realize one's potential" (Duflo, 2012, p. 15), but she does not enter in the details of this notion. This definition leads Duflo to conclude that a rich person is free in a society where chlorine is

already in the water, without explicitly asking people if they want this. She claims that the freedom of putting chlorine in water or not is not a real freedom, and it "is just a freedom to stumble." (Duflo, 2012, p. 17) As we have seen, some poor people stumble with their choices - they do not put chlorine in the water. In that sense, Duflo considers that "all of these choices make the poor less free." (*Ibid*). For Duflo, making choices can represent a cost, because it takes time and energy. She refers explicitly to the famous "white bear experiment."[7] Banerjee and Mullainathan (2008) propose a model to express this latter idea. In this model, the attention of people is divided between home and work. The only difference between people is their productivity. It shows that people who are more productive have a higher income and therefore can afford goods that reduce the problems at home. In that sense, it creates a virtuous circle. In contrast, people who are less productive will have more trouble at home. For Duflo, this goes in favor of taking away from the poor some of their choices by imposing them some "basic need" or "set of rights."[8] The core of her paternalism is to set poor people free from some choices in order to give them a mental space which will allow them to focus on the real opportunities they face. Therefore, she aims to construct a form of paternalism built in two steps: the first is to reduce the choices of the poor (reduce their freedom) in order to secondly ensure their freedom (their capacity of achievement). In this sense, she aims to offer a new view of empowerment[9], giving the possibility to the poor to take initiatives.

Nevertheless, a very crucial question remains, namely what kind of choices will be taken away from the poor. More specifically, how can we decide which choices have to be taken away from the poor? And is it "right" to decide for the poor only because they are poor and face too many choices? Does saying that something is already the case for rich people constitute a sufficient justification? This starts to become a moral question, to which Duflo does not give any answers. Nonetheless, she is aware of the fact that the paternalism she proposes faces three main problems.

The first one is "when strong defaults with an exit option are not possible, (*i.e.* things need to be made mandatory with no libertarian paternalism escape' of Thaler and Sunstein) can we still say that paternalism for the poor means more freedom?" (Duflo, 2012, p. 23) Therefore the first issue, for Duflo, is when paternalism is no longer linked to that of Thaler and Sunstein which provides the "relative philosophical comfort of having our cake and eating it too, when we have to choose between doing nothing and imposing mandate." (*Ibid*) Duflo deals with this issue very quickly, by just pointing out that "imposing mandate" can, in fact, ensure freedom. Yet, her position on the libertarian paternalism developed by Sunstein and Thaler becomes more and more cloudy. It seems she defends this kind of paternalism, when it is applicable to poor peoples' situations, but at the same time she seems to be saying that the situations the poor face are clearly different from those

of the rich; that is why harder paternalism is needed and for that we have to lose our "philosophical comfort." Several problems arise. What exactly is the position of Duflo with respect to "libertarian paternalism"? If she is indeed moving to a new paternalism and consequently loses the "philosophical comfort" of Thaler and Sunstein, on which philosophical foundations does she base her paternalism? What is the real argument for harder paternalism towards the poor? Is the difference between poor and rich only correlated to the fact that the rich live in a more paternalist world? In this sense, what is exactly the paternalistic world of the rich? Is it just an institutional paternalism built into the existing infrastructures in the rich countries?

The second issue pointed out by Duflo somehow directly echoes the various questions we have asked. This issue relates to "basic needs" and "sets of rights," which her paternalism should permit to be given to the poor. This issue questions, in fact, the choices that Duflo considers as noise, *i.e.* the choices that have to be taken away from the poor. It is here that her "democratic paternalism" emerges; when she explains that these choices or "basic needs" should be defined by a deliberative process. However, for her this deliberative process is a kind of chicken-and-egg problem:

> "Logically, the basic package should be decided as the outcome of a democratic process. But this requires the meaningful participation of all citizens, and that in itself requires the poor to have peace of mind." (Duflo, 2012, p. 23)

From this perspective, she agrees with Sen by pointing the role of a democratic process. We can note that it is extremely strange for her to base her paternalism on the notion of capability developed by Sen, and the notion of freedom which stems from it, and not to link these basic needs with capabilities. In Sen's theory, capabilities are the drivers of freedom. Many controversies have existed in understanding if Sen's theory is operational, especially as Sen has always refused to list capabilities, and he has never even said if he agrees with those of Martha Nussbaum (2000). Duflo could have referred to this list, and maybe solved her chicken-and-egg problem. Or she could have explicitly taken the position of Sen, arguing for a new philosophical construction which at the same time could have solved her problems with the paternalism of Sunstein and Thaler. In not doing that, the reference to Sen in the definition of her new paternalism seems as cloudy as its link with the paternalism of Sunstein and Thaler. Nonetheless, Duflo rules out this issue. First, she just says that, in fact, this question does not need to be the first one asked. Secondly, she thinks that the determination of the "basics needs", which should be imposed, will meet a consensus and that everybody wants, for example, avoiding infant mortality. It seems very likely that everybody is in favor of avoiding infant mortality, but nothing is less sure than the justification of paternalist action to this end. Here Duflo conflates two different phenomena: fact and action.

The last issue she points out concerns the role of the government in this paternalism and more specifically the trust that people will have in government. As we have seen above, she largely explains the problem of trust in developing countries, but surprisingly she explicitly does not give any answers to this question:

> "This lecture was about whether paternalism was *desirable* to enhance freedom, more than whether it was *achievable*, so in a sense this question is beyond its scope. Nevertheless, it is important because it may render our conclusion moot if empowering governments to do more to end up reinforcing bad institutions." (Duflo, 2012, p. 24, our emphasis).

3.2 Beyond the Shift: Two Main Philosophical Confusions Concerning Sen's Frame

Even though, Duflo herself points out some of the limitations of her paternalism, this later seems to be in contradiction with the initial capability approach of Sen, at least concerning two points. First, Duflo considers paternalism as an instrument for further freedom, when freedom has to be both instrumental and substantial for Sen. Second, Duflo urges for the creation of basic needs, when this later is a determined set of elements, the definition itself of capability is a process of the individuals.

Let us have a more closer look at the first philosophical problem, by considering paternalism as a tool for freedom; Duflo considers freedom only as an end. But the process to freedom is as essential as freedom itself: When Sen asked Duflo[10], "choices of what?" he underlines the *value* of choices. One may always make the wrong decision but value more the fact of having the choice of his own decision. The poor could accept to be removed from certain choices, but one can easily imagine that they would want to be the ones who decide which choices are taken away from them. In other words, to be consistent with Sen's capability approach, Duflo should consider that the definition of these basics needs should be the one of the poor. This strongly declines the idea of paternalism as an instrument. Furthermore, when Duflo evokes the fact that some decisions can be consensual - as the infant mortality -, she blurs the lines more between means and end. Perhaps, most people would morally agree that the death of children is unacceptable, but here people would agree on a moral fact: the death of children. However, that is not to say that they would agree on the way to avoid these deaths. In other words, agreeing on a moral fact does not mean one agrees on the instrument used to get to change this fact. Here, there is a consensus on the end, but there is no consensus on the means. To take another example, when Duflo says that rich countries are much more paternalistic than poor ones, with the existence of social security nets or infrastructures, she also

confuses the process and the results (the means and the ends). The rich countries might be paternalistic today as a result, but the fact that they are is commonly the fruit of a democratic process: rich people choose to be taken away from some decisions.

This idea is clearly reinforced by the second contradiction: the confusion between basic needs and capabilities. Duflo herself questions the definition of this need and offers a pretty vague and open definition of this later. However, she gives some examples of what these basics needs can be such as immunization, chlorine water, and default options. All of these examples do not refer to the notion of capabilities but rather to the one of functioning defined by Sen. The functioning is for Sen the dotation of an individual, and the capability is the possibility to use this dotation. In other words, functioning translates a fixed element when capability is about a process. Here, Duflo does not contemplate a process of possibilities or freedom, but she contemplates a dotation, a fixed element. Hence the question is: can the imposition of a fixed element, a dotation (a functioning) increase the possibilities of the individuals? Let us take a rude example to answer this question: imagine a man who does not have legs. If one gives him a bike this man would have one more functioning (the bike), but this functioning would not work on his capacity. This man cannot use the bike and even if he gets another bike nothing would change for him. In other words, it does not make sense to increase the functionings if no one has the possibility to use these functionnings. Therefore, to improve the fate of individuals, in a Sennian perspective, one must act on the possibility, that is to say, on the process. Hence, Duflo's paternalism is far from the capability approach of Sen's, and leaves aside the notion of process by focusing on the end.

More importantly, it seems impossible to define a new paternalism without primarily defining some fundamental elements as basic needs, which Duflo evoked. Therefore, in promoting a new paternalism, Duflo increases the task needed in order to propose some clear and achievable policy recommendations. The first task is to orient the experiments towards the building of a general theoretical framework. This will allow understanding why some measures are efficient and some are not. In addition to this theoretical framework, a strong moral examination of paternalism is needed, in order to give it specific bounds and to define basic needs.

4 Looking for Causality, Individuals and Context: Explaining the Shift

The proposition of Duflo for strong paternalism seems to be a radical turning-point. Surprisingly for an evidence-based approach, there is no evidence to justify this new paternalism. It seems we face a very paradoxical position. The aim of this last section is to provide a twofold epistemological expla-

nation to this shift as well as the two philosophical confusions of Duflo's paternalism. We first show that, used alone, RFEs do not identify individual's causal capacities since their results only show the average treatment effect (4.1.), therefore the capacity on which the nudge has to perform is not identified. Then we show that the second capacity that needs to be identified to understand why a nudge performs, the social causal capacity, is also hidden by only using RFEs. Indeed their results are like a "black-box" and do not give access to the whole decision-making process of the poor, explaining why without losing in internal validity Duflo appeals for a stronger paternalism. In the same way, the invisibility of both individual and social causal capacities explains why Duflo confuses means and ends within Sen's approach; since used alone RFEs cannot make visible any inherent processes it explains why Duflo is not aware to this distinction within Sen's frame (4.2.).

4.1 Heterogeneity of Treatment Effect: the Weakness of the Individualistic Approach

In accordance with the behavioral paradigm, J-Pal's approach identifies the source of poverty in the individual decision-making process by emphasizing some bias towards the standard rational choice theory. In this frame, one of the first causes of poverty is in human behavior. Following Nancy Cartwright's vocabulary (1989), such a theory identifies the causal capacities in human behavior. The notion of capacity relies on the singular power of things to bring about other events. When a causal law is the expression of a statistical link in a particular context - X causes Y in a context V - the capacity is "something they can be expected to carry with them from situation to situation. So if the probability goes up in one test situation, thus witnessing to the capacity, it will do the same in all the others " (Cartwright, 1989, p. 106). Nevertheless, J-PAL's approach to poverty cannot be seen as a discovery process. The main question is not "what cause poverty?", but "on what is it possible to intervene to eradicate poverty"? Indeed, J-PAL's approach seems close to Woodward's (2005) manipulability theory of causation. For Woodward, X is a direct cause of Y with respects to a set V of variables if manipulation of X has an impact on Y when other relevant variables are fixed.[11] In line with the behaviorist roots we identified, the main idea stands as follows: poverty is caused by individual rationality bias since we can intervene on these biases (nudging) to avoid irrational behaviors in a certain context. To identify these psychological biases and to counteract them, J-PAL's approach has to follow three steps: (1) identifying the individual causal capacity carrying the irrational behaviors explaining poverty, (2) building a nudge that can counteract this individual causal capacity, (3) testing the effects of this measure *in situ* through randomized experiments.

While J-PAL's experiments clearly follows the last step of this process

by assessing the impact of nudging devices on the poor behaviors, the first two steps seem to be missing . RFEs used as a unique tool - as promoted by the J-PAL in order to obtain results with a strong internal validity - cannot give access to individual causal capacities, since RFEs give only the average treatment effects. We meet here an old critic concerning randomization, the one of the heterogeneity treatment effects (HTE).[12] First developed by Heckman *et al.* (1997) in economics, the HTE relates to the fact that a treatment can have different effects on individuals. However, RFEs only allow to have access to the average treatment effect; therefore, having only access to the average of these effects hides the heterogeneity on individuals:

> "More formally, suppose that a person can be in either a treated state, denoted state "1," or an untreated state, denoted state "0," and that there are outcomes, denoted Y_1 and Y_0, associated with each state. These outcomes might consist of earnings or employment in the two states. The gain (or loss) from treatment, call it $\triangle$, equals the difference in outcomes between the two states, or Y_1 - Y_0. Because we cannot determine the impact of treatment on particular individuals, evaluators focus their attention on the distribution of impacts across persons, or F ($\triangle$), or on certain features of this distribution. In particular, the expected gain to a randomly selected person in the population, denoted $E(\triangle) = E(Y_1 - Y_0)$ where E(.) refers to the expected value of the population average of the quantity inside the parentheses, often constitutes the parameter of interest." (Heckman and Smith, 1995, p. 87)

Consequently, many interpretations can be credible in understanding this average. For example, as Harrison (2011) shows, for the same average, several individual distributions are plausible: one where the distribution is pretty much the same for all the participants and another where the distribution is very unequal across the participants (see Figure 1).

Therefore, at least two stories can explain one average treatment effect[13], and without benefiting from the whole distribution it seems impossible to discriminate from the two. Randomized experiments face an inherent methodological problem, hiding the individuals' causal capacities, which is of great concern for our topic. First, generally, when trying to evaluate development programs, the question of the distribution effect is particularly important. A policy-maker wishing to fight poverty will seek to answer questions related to political economy or social justice, and will indeed target a specific sub-population (the most vulnerable) as children, women, etc.[14] Second, and most importantly, by focusing on the use of randomization, the J-PAL's approach makes invisible the individual causal capacities carrying the behavioral bias on which the nudge aims to act. However, some econometric methods exist to determine if there is heterogeneity of treatment

within treatment group, by creating two non-parametric tests (Crump *et al.*, 2008). An additional solution is to embed randomization within structural estimations (Acemoglu, 2010, Heckman, 2010). These two solutions would imply making further assumptions, which would diminish the internal validity of randomization. That is why, even if the J-PAL is aware of HTE, none of these solutions have been applied. Therefore, *randomization leaves aside some pertinent elements in understanding causal capacities.*

This methodological failure of randomization gives the first element of explanation of why Duflo shifted from libertarian paternalism to a democratic one. With the unique use of randomization, the J-PAL does not have access to the individual causal capacities, therefore the tested nudge does not target a specific causal capacity. This can explain why some nudges do not perform - that is to say do not counteract the behavioral bias of the poor, since this one is not targeted because it is unidentified. It leaves aside some contextual elements that could interfere in the causal channel from the nudges to the behaviors. By missing (in order to guarantee the internal validity of randomization) the two first steps of the process in which they are theoretically inclined, J-PAL's researchers struggle to produce an effective policy recommendation as a specific nudge.[15] In consequence, in order to guarantee both a policy recommendation and the internal validity of randomization, Duflo is pushed to invoke a stronger paternalism.

4.2 RFEs' Results as a "Black-Box": How to Hide Causality

According to Deaton (2010), the problem of HTE leads to a more substantial problem, what he calls "undifferentiated heterogeneity" (Deaton, 2010, p. 432). RFEs' results are like a "black-box." They only tell us *whether* a program is working instead or informing us about *why* a program is working.[16] This takes roots on the debate on heterogeneity of treatment effects.[17] HTE is one illustration of this "black-box," since one cannot distinguish from at least two stories explaining the average outcome from the RFE. Furthermore, the RFEs are confined to one specific context in which the experiment is implemented. Therefore, the RFEs are context dependent. This context dependency, as the HTE, cannot clearly be identified by only using randomized experiments. This is the heart of Nancy Cartwright criticism of randomization: according to Cartwright (2009), randomization produces evidence of efficacy[18], but struggles to produce some evidence of effectiveness. The notion of efficacy relates to the validity of the RFE's results within the experiment, while the one of effectiveness concerns the validity of the RFE's results outside the experiments. In other words, RFEs have a strong internal validity but a weak external one. The fragile external validity of randomization is one of the most widespread criticisms of randomized experiments, both in medicine and development economics.[19] As a consequence, RFEs cannot clearly identify the context dependency of

the experiment's results and is not able to understand *why* a specific nudge could work in a certain place, and not in another one. Nevertheless, we think that the deepest problem of RFEs is not, as Cartwright defends, the incapacity to evacuate the context of the experiment in order to generalize some causal channels between intervention (nudging) and behaviors, but to evacuate the social context *as a part of individuals' behaviors*. Concerning HTE, by wishing to guarantee the internal validity of RFEs, J-PAL's researchers do not explain *why* a program is working, therefore they do not exhibit the social context in which the experimental results are embedded leading them as a "black-box" and restricted to their efficacy instead of their effectiveness. Indeed, following the theoretical background of the prospect theory, in J-PAL's approach the individual behavior should be defined as the result of the maximization of the expected value of a utility function:

> "Just as behavioral biases limit investment in attractive financial investments in pension plans by workers in the United States (...), they may limit profitable investments in fertilizer by farmers in developing countries." (Duflo, Kremer and Robinson, 2011, p. 2352)

As a consequence, the J-PAL's approach seeks to spell out behavior as an inherent characteristic of individuals without accounting for the decision-making environment as a constitutive element of the preferences. Regarding agents' utility function (with maximization as the central causal capacities in their models), behavioral economists are blind to the constitutive link between environmental and individual choices. The difficulties in generalizing tested solutions to poverty within the framework of randomization reveals that the capacities are not found only within the agents, the context always matters in the process of choice. As a consequence, the basic unit which exhibits capacities cannot be the agent as a single decision-maker, but an agent embedded in a social framework that defines his/her prospects and preferences. Arguing that RFE fails because it does not identify the individual causal capacities is to presuppose a direct link between the nudge and the result to be achieved, independent from the context of the use of the nudge. As a measure, a nudge has to be used in a certain way if one wants it to perform a specific kind of behavior that would overcome irrational bias. Yet, the use of a technical measure can be defined as a set of dispositions inherited from a specific social context.

In the same line as the first methodological failure, the inability of randomization alone to give access to the social framework in which individuals are embedded explains why Duflo shifted from one paternalism to another. The access to this social framework presupposes to make explicit hypotheses or *a priori* theories that would compromise the internal validity of randomization. This is why J-PAL's researchers refuse to make such hypotheses

or *a priori* theory.[20] Therefore, the social framework in which individuals are embedded is invisible, and one cannot understand why a nudge is performing or not. By not having access to the whole process of individuals' decision-making, Duflo is pushed to invoke a strong paternalism; the soft one is too soft.

More generally, randomization alone cannot give access to the inherent process of its results. Since both the distribution and the explanations of such results are invisible, creating a "black-box." These invisible processes also explain Duflo's philosophical confusion about Sen's frame. Sen focuses on capabilities instead of functionings, because what he is interested in is the process in which a functioning can be transformed. This process defines the capabilities. However, Duflo's approach does not give access to this process explaining why she focuses on functionning instead of capabilities, leading her position contradictory to the one of Sen. Furthermore, by apprehending the freedom as an instrument, here again Sen puts the accent on the process of acquiring freedom by freedom; which is also invisible through randomization and explains why Duflo confounds the means and the ends, because with her method only she cannot touch the process. Therefore, what is needed in order to obtain a clear political recommendation is to enter the "black-box" of both individuals' causal capacities and the social causal capacities that embrace the individuals ones. Therefore, in promoting a new paternalism, Duflo increases the task needed in order to propose some clear and achievable policy recommendations. Especially, it seems impossible to define a new paternalism without primarily defining some fundamental elements as basic needs, which Duflo evoked. The first task is to orient the experiments towards the building of a more general theoretical framework than the J-PAL's ones. This will allow understanding of why some measures are efficient and some are not. In addition to this theoretical framework, a strong moral examination of paternalism is needed, in order to give it specific bounds and to define basics needs. If J-PAL's researchers want to propose a sustainable approach, they need to reply to Sen's question: "choice of what?" This calls for the building of an *ex-ante* theory, before implementing the experiment or the explicitation of numerous hypotheses. Other disciplines other than economics should help in this building as philosophy, psychology, anthropology or sociology in order to fully understand the decision-making process of the poor.

5 Conclusion

The original goal of the new approach provided by the J-PAL is twofold: from a political perspective, organizing a new policy against poverty, and from an academic perspective, providing evidence on the efficiency of development aid programs. They seem to be tackled by reducing the inquiry scale

by focusing on small changes that potentially involve big consequences. The question at stake becomes the one of identifying these small things to change, mainly within individual behaviors. We first presented the theoretical background of J-PAL's approach related to Kanhemanian behavioral approach and from which follows the proposition of nudge. The idea is to nudge poor people in order to help them escape from poverty. Then, we pointed to a recent turn in Duflo's rhetoric from light paternalism to "hard" paternalism. By defining this paternalism we have shown that it reveals two philosophical confusions within Sen's frame on which Duflo aims at basing her new paternalism. Finally, we explained both the two philosophical confusions of this paternalism and the shift of Duflo from libertarian paternalism to democratic paternalism through a twofold methodological failure of using randomization alone. The wish of producing evidence pushes the J-PAL at focusing on their internal validity, and then only using randomization, which is a reliable tool. However, RFEs used alone do not give access to the process or the mechanism underlying the results such a method produces. Therefore, individual causal capacities and social causal capacities are invisible. This tends to urge the J-PAL to lose some internal validity in favor of a more interdisciplinary approach of poverty allowing to explain both the behavior of the poor and their social environment embedded as well as the moral foundations of any paternalism; in order to produce efficient ways of fighting poverty.

Notes

[1]Throughout this text, we understand randomization, randomized controlled trials (RCT), randomized field experiments (RFE) and randomized evaluations as synonymous.

[2]However, James Heckman and Jeffrey Smith hide the fact that instead of removing all of the selection bias, randomization balances it between the two groups: "Randomized social experiments solve the problem of selection bias (...) Finally note that random assignment does not remove selection bias, but instead balances the bias between the participant and nonparticipant samples" (Heckman and Smith, 1995, pp. 88-89). See also (Heckman *et al.*, 1998).

[3]About the definition and the distinction between these two concepts see (Campbell, 1957), for a precise distinction of the two concepts and its stakes in medicine, see (Rothwell, 2005), and for a precise distinction and the stakes of the two notions within experimental economics see (Guala, 2005, 2003, 1999; Guala and Mittone, 2005).

[4]Time inconsistency was first introduced by Robert Strotz (1956) in relation with a plan of consumption. The common definition, today, is related to the fact that individuals value the present more than the future therefore pursuing happiness today even if it can create unhappiness for tomorrow. Consequently these individuals do not make decisions that maximize lifetime satisfaction.

[5]Duflo and Banerjee define time inconsistency as follows: "In the present, we are impulsive, governed in large part by emotions and immediate desire: small losses of time (standing in line to get child immunized) or petty discomforts (glutes that need to be woken up) that have to be endured right now feel much more unpleasant in the moment than when we think about them without a sense of immediacy (say, after a Christmas meal that was heavy enough to rule out all thoughts of immediate exercise). The reverse, of

course, goes for small rewards (candy, a cigarette) that we really crave in the present; when we plan for the future, the pleasure from these treats seems less important." (Banerjee and Duflo, 2011, pp. 64-65)

[6] "Our choices are powerfully influenced by the environment, whether or not we are conscious of it: private and public institutions, infrastructures, as well what other people do in our communities have a powerful influence on what we "choose" to do." (Duflo, 2012, p. 8)

[7] The white bear experiment (Wegner *et al.*, 1987) highlights the idea that when people are pushed to self-regularize themselves on a specific task (thinking or not thinking to the white bear), they are more likely to be unsuccessful in thinking about problems or making decisions.

[8] "This model makes the point very clearly: the lack of a publicly provided set of "right" options, those that ensure the home life comforts that most of us aspire to, traps people in poverty. In turn, providing these simple comforts can, literally, set them free." (Duflo, 2012, p. 19)

[9] Banerjee and Duflo (2008) develop also a new type of empowerment, what they call "Mandated Empowerment."

[10] Sen was one of the discussants of Duflo's Tanner Lecture, with Angus Deaton and Kaushik Basu.

[11] This clearly meets Rubin's (1974) conception of causality based on manipulation ("there is no causality without manipulation"), on which J-PAL's randomization is based through Rubin's model to create a counterfactual.

[12] This criticism is developed much more earlier concerning randomized controlled trials in medicine, for a review see, for example (Baslow, Duran and Kravitz, 2004).

[13] From the social randomized experiment, the "Job Training Partnership Act" (JTPA) (the JTPA was designed by the American government to improve the access to job market to people who do not have a lot of skills) (Heckman *et al.*, 1997) shows that the estimation of the mean impact of this program confers at least two different stories: "From the evidence presented in Table 4, we cannot distinguish two different stories. The first story is that the JTPA program benefits many people by facilitating their employment but also harms many people who would have worked if they had not participated in the program. The second story is that the program benefits and harms few people." (Heckman *et al.*, 1997, pp. 503-504)

[14] J-PAL's researchers are conscious of this problem: "Most evaluations of social programs focus exclusively on the mean impact. In fact, one of the advantages of experimental results is their simplicity: They are easy to interpret because all you need to do is compare means, a fact that may encourage policymakers to take the results more seriously (see, e.g., Duflo 2004b, Duflo and Kremer 2004). However, as Heckman *et al.* (1997b) point out, the mean treatment effect may not be what the policymaker wants to know: Exclusive focus on the mean is valid only under specific assumptions about the form of the social welfare function. Moreover, from the point of view of the overall intellectual project, restricting the analysis to the nave comparison of means does not make sense. Unfortunately, the mean treatment effect (or the treatment effect conditional on covariates) is also the only conventional statistic of the distribution treatment effects that is straightforward to estimate from a randomized experiment without the need for additional assumptions." (Banerjee and Duflo, 2009, p. 169)

[15] That is not to say that all nudging devices tested by the J-PAL do not work; it is only an explanation of why some of them do not work, and an explanation of Duflo's shift.

[16] This problem has been first emphasized by Pawson and Tiley (1997), and Heckman (1995). It is nowadays a common critique of RFEs, see for example (Deaton, 2010), (Rodrik, 2009), (Ravallion, 2009), (Carter and Barett, 2010), (Harrison, 2011).

[17] See, for example, (Heckman *et al.*, 1997), (Deaton, 2010), Rodrik (2009), (Ravallion, 2009) and (Cartwright, 2007, 2009).

[18]However, the distinction between efficacy and effectiveness is used to study RCTs in medicine since long time, see for example (Rothwell, 2005).

[19]Concerning medicine see, for example, (Rothwell, 2005); concerning development economics see (Deaton, 2010), (Rodrik, 2009), (Ravallion, 2009), (Carter and Barett, 2010), (Harrison, 2011). Duflo (2004) discusses this issue and promote to replicate the experiments.

[20]Banerjee (2005) defines a two step process concerning the theory within the J-PAL's approach. The first one, is an absence of theory before the experiment, in order to gather reliable results and then build on these results a "new theory of development economics." Duflo also underlines that experiments should be the first step toward theory, since they allow breaking with theoretical *a priori*: "Sometimes experiments throw up results that are even more troubling to the existing body of theory [see Duflo (2007) for a longer discussion]. Bertrand *et al.* (2009) provide one striking example that fits no existing theory: They found that seemingly minor manipulations (such as the photograph on a mailer) have effects on take-up of loans as large as meaningful changes interest rates." (Banerjee and Duflo, 2009, p. 173) For an examination of the role of this two step process see (Favereau, 2014). Furthermore, the absence of theory within the J-PAL's approach as the critique of its external validity, is one of the most acknowledged critique, see (Rodrik, 2009), (Ravallion, 2009), (Deaton, 2010), (Carter and Barett, 2010).

References

Acemoglu D. 2010. Theory, General Equilibrium, and Political Economy in Development Economics, *Journal of Economic Perspectives*, vol.24, no.3, 17-32.

Ainslie G. 1991. Derivation of 'Rational' Economic Behavior from Hyperbolic Discount Curves, *The American Economic Review*, vol.81, no.2, 334-40.

Angrist J. and J-S. Pischke. 2010. The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking Con out of Econometrics, *Journal of Economics Perspectives*, vol.24, no.2, 3-30.

Banerjee A. 2005. 'New Development Economics' and the Challenge to Theory, *Economic and Political Weekly*, vol.40, no.40, 4340-4344.

Banerjee A. and E. Duflo. 2011. *Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty.* Boston, Public Affairs.

Banerjee A. and E. Duflo. 2009. The Experimental Approach to Development Economics, *Annual Review of Economics*, vol.1, 151-178.

Banerjee A. and E. Duflo. 2008. Mandated Empowerment. Handing Antipoverty Policy Back to The Poor?. *Annals of New York Academic Sciences.* In:"Reducing the Impact of poverty on Health and Human Development", 1136: 333-341.

Banerjee A. and S. Mullainathan. 2008. Limited Attention and Icome Distribution, *American Economic Review*, vol.98, no.2, 489-493.

Barett C. and M. Carter. 2010. The Power and the Pitfalls of Experiments in Development Economics: Some Non-random Reflections, *Applied Economic Perspective and Policy*, vol.32, no.4, 515-548.

Baslow J., N. Duran and R. Kravitz. 2004. Evidence-Based Medicine, Heterogeneity of Treatment Effects, and The Trouble With Average, *The Milbank Quaterly*, vol.82, no.4, 661-687.

Bénabou R. and J. Tirol. 2004. Willpower and Personal Rules, *Journal of Political Economy*, vol.112, no.4, 848-86.

Campbell D. 1957. Factors Relevant to the Validity of Experiments in Social Settings, *Psychological Bulletin*, vol.54, no.4, 297-312.

Cartwright N. 2009. What Is this Thing Called 'Efficacy' ?. In: C. Mantzavinos (ed.), *Philosophy of the Social Sciences. Philosophical Theory and Scientific Practice*. Cambridge, Cambridge University Press: pp. 185-206.

Cartwright N. 2007. Are RCTs the Gold Standard?, *BioSocieties*, vol.2, no.2, 11-20.

Cartwright N. 1989. *Nature's Capacities and Their Measurement*. New York, Clarendon Press.

Crump R. *et al.* 2008. Nonparametric Tests for Treatment Effect Heterogeneity, *Review of Economics and Statistics*, vol.90, no.3, 389-405.

Davis J. B. 2013. Economics Imperialism under the Impact of Psychology: The Case of Behavioral Development Economics, *OEconomia*, vol.4, no.2, 119-38.

Davis J. B. 2011. *Individuals and Identity in Economics*. Cambridge, Cambridge University Press.

Deaton A. 2010. Instruments, Randomization, and Learning about Development, *Journal of Economic Literature*, vol.48, 424-455.

Duflo E. 2012. Human Values and the Design of the Fight Against Poverty. *The Tanner Lectures on Human Values*. Harvard University.

Duflo E., M. Kremer and J. Robinson. 2011. Nudging Farmers to Use Fertilizer: Evidence from Kenya, *American Economic Review*, vol.101, no.6, 2350-2390.

Duflo E., R. Glennester and M. Kremer. 2007. Using Randomization in Development Economics Research: A Toolkit. In: T. Paul Schults, and John Strauss (ed.), *Handbook of Development Economics*. North Holland, Elsevier Science: pp. 3895-62.

Duflo E. 2006. Field Experiments in Development Economics. In: R. Blundell, W. Newey and T. Person (ed.), *Advances in Economics and Econometrics: Theory and Applications*. Cambridge, Cambridge University Press: pp. 322-348.

Duflo E. 2004. Scaling Up and Evaluation. In: F. Bourguignon and B. Pleskovic (ed.), *Accelerating Development*. Washington DC, World Bank and Oxford University Press: pp. 342-367.

Dworkin G. 1972. Paternalism, *The Monist*, vol.56, 64-84.

Favereau J. 2014. *L'approche expérimentale du J-PAL en économie du développement: Un tournant épistemologique?*. PhD Thesis, Economics, Université Paris 1 Panthéon-Sorbonne.

Fisher R. A. 1935[1960]. *The Design of Experiments*. New York, Hafner Publishing Company Inc.

Fisher R. A. 1926. The Arrangement of Field Experiments, *Journal of the Ministry of Agriculture of Great Britain*, vol.33, 503-513.

Guala F. 2005. *The Methodology of Experimental Economics*. Cambridge, Cambridge University Press.

Guala F. 2003. Experimental Localism and External Validity, *Philosophy of Science*, vol.70, 1195-1205.

Guala F. 1999. The Problem of External Validity (or 'Parallelism') in Experimental Economics, *Social Science Information*, vol.38, 555-573.

Guala F. and L. Mittone. 2005. Experiments in Economics: External Validity and the Robustness of Phenomena, *Journal of Economic Methodology*, vol.12, no.4, 495-515.

Harrison W.H. 2011. Randomization and Its Discontents, *Journal of African Economics*, vol.20, no.4, 626-652.

Heckman J. 2010. Building Bridges Between Structural and Program Evaluations Approaches to Evaluating Policy, *Journal of Economic Literature*, vol.48, no.2, 356-398.

Heckman J. *et al.* 1998. Characterizing Selection Bias Using Experimental Data, *Econometrica*, vol.66, no.5, 1017-1098.

Heckman J. *et al.* 1997. Making the Most Out of Programme Evaluation and Social Experiments: Accounting for Heterogeneity in Programme Impact, *The Review of Economic Studies*, vol.64, no.4, 487-535.

Heckman J. and J. Smith. 1995. Assessing the Case for Social Experiments, *The Journal of Economic Perspectives*, vol.9, no.2, 85-110.

Kahneman D. and A. Tversky. 1979. An Analysis of Decision under Risk, *Econometrica*, vol.47, no.2, 263-92.

Kremer M. *et al.* 2011. Spring Cleaning: Rural Water Impacts, Valuation, and Property Rights Institutions, *Quarterly Journal of Economics*, vol.126, 145-205.

Madrian B. C. and D.F. Shea. 2001. The Power of Suggestion: Inertia In 401(k) Participation and savings Bahavior, *The Quarterly Journal of Economics*, vol.116, no.4, 1179-87.

Nussbaum M.. 2000. *Women and Human Development: the Capabilities Approach.* Cambridge, Cambridge University Press.

Pawson R. and N. Tilley. 1997. *Realistic Evaluation.* Trowbridge, Cromwell Press.

Ravallion M. 2009. Should the Randomistas Rule ?, *The Economist Voice. Berkeley Electronic Press*, vol.6, no.2, 1-6.

Rodrik D. 2009. The New Development Economics: We Shall Experiment, But How Shall We Learn. In: Jessica COHEN et William EASTERLY (ed.), *What Works in Development, Thinking Big and Thinking Small.* Washington DC, Brookings Institution Press: pp. 24-48.

Rothwell P. 2005. External Validity of Randomised Controlled Trials: To Whom Do the Result of This Trial Apply?, *The Lancet*, vol.365, 82-93.

Rubin D. 1974. Estimating Causal Effects of Treatments in Randomized and Nonrandomized Studies, *Journal of Educational Psychology*, vol.66, no.5, 688-701.

Sen A.K. 2009. *The Idea of Justice.* Londres, Allen Lane.

Sen A.K. 1999. *Development as Freedom.* New York, Oxford University Press.

Sen A.K. 1992. *Inequality Reexamined.* Cambridge, Harvard University Press.

Sen A.K. 1987. *Commodities and Capabilities.* Dehli, Rashtriya.

Strotz R. 1956. Myopia and Inconsistency in Dynamic Utility Maximization, *The review of Economic Studies*, vol.23, no.3, 165-180.

Sunstein C. and R. Thaler. 2008. *Nudge: Improving Decisions about Health, Wealth and Happiness.* New Heaven, Yale University Press.

Sunstein C. and R. Thaler. 2003A. Libertarian Paternalism Is Not an Oxymoron, *The University of Chicago Law Review*, vol.70, no.4, 1159-1202.

Sunstein C. and R. Thaler. 2003B. Libertarian Paternalism, *The American Economic Review*, vol.93, no.2, 175-179.

Thaler R. and S. Benartzi. 2004. Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving, *Journal of Political Economy*, vol.112, no.S1, 164-87.

Wegner D. M. *et al.* 1987. Paradoxical Effects of Thought Suppression, *Journal of Personality and Social Psychology*, vol.53, no.1, 5-13.

Woodward J. 2005. *Making Things Happen. A Theory of Causal Explanation.* New York, Oxford University Press.

DOCUMENTS DE TRAVAIL GREDEG PARUS EN 2016
GREDEG Working Papers Released in 2016

2016-01 Christian Longhi, Marcello M. Mariani & Sylvie Rochhia
Sharing and Tourism: The Rise of New Markets in Transport

2016-02 Nobuyuki Hanaki, Eizo Akiyama & Ryuichiro Ishikawa
A Methodological Note on Eliciting Price Forecasts in Asset Market Experiments

2016-03 Frédéric Marty
Les droits et libertés fondamentaux à l'épreuve de l'efficacité économique : une application à la politique de la concurrence

2016-04 Alessandra Colombelli, Jackie Krafft & Marco Vivarelli
Entrepreneurship and Innovation: New Entries, Survival, Growth

2016-05 Nobuyuki Hanaki, Angela Sutan & Marc Willinger
The Strategic Environment Effect in Beauty Contest Games

2016-06 Michael Assous, Muriel Dal Pont Legrand & Harald Hagemann
Business Cycles and Growth

2016-07 Nobuyuki Hanaki, Emily Tanimura & Nicolaas Vriend
The Principle of Minimum Differentiation Revisited: Return of the Median Voter

2016-08 Charles Ayoubi, Michele Pezzoni & Fabiana Visentin
At the Origins of Learning: Absorbing Knowledge Flows from Within or Outside the Team?

2016-09 Dino Borie
Error in Measurement Theory

2016-10 Dino Borie
Expected Multi-Utility Representations by "Simplex" with Applications

2016-11 Dino Borie
Additively Separable Preferences Without the Completeness Axiom: An Algebraic Approach

2016-12 Frédéric Marty
Professions réglementées du droit et aiguillon concurrentiel: réflexions sur la loi du 6 août 2015 pour la croissance, l'activité et l'égalité des chances économiques

2016-13 Agnès Festré & Pierre Garrouste
Hayek on Expectations: The Interplay between two Complex Systems

2016-14 Dino Borie & Dorian Jullien
Weakening Description Invariance to Deal with Framing Effects: An Axiomatic Approach

2016-15 Pascal Seppecher, Isabelle Salle & Dany Lang
Is the Market Really a Good Teacher? Market Selection, Collective Adaptation and Financial Instability

2016-16 Muriel Dal Pont Legrand & Harald Hagemann
Business Cycles, Growth and Economic Policy: Schumpeter and the Great Depression

2016-17 Dorian Jullien
All Frames Created Equal are Not Identical: On the Structure of Kahneman and Tversky's Framing Effects

2016-18 Dorian Jullien
À la recherche de la signification perdue du paradoxe d'Allais

2016-19 Tom Juille & Dorian Jullien
Narrativity from the Perspectives of Economics and Philosophy: Davis, Ross, Multipleselves Models... and Behavioral Economics

2016-20 Dorian Jullien
Under Uncertainty, Over Time and Regarding Other People: Rationality in 3D

2016-21 Cyril Hédoin & Lauren Larrouy
Game Theory, Institutions and the Schelling-Bacharach Principle: Toward an Empirical Social Ontology

2016-22 Stéphane Gonzalez & Aymeric Lardon
Optimal Deterrence of Cooperation

2016-23 Ismaël Rafaï, Sébastien Duchêne, Eric Guerci, Ariane Lambert-Mogiliansky & Fabien Mathy
Ethnic and Racial Disparities in Children's Education: Comparative Evidence from Ethiopia, India, Peru and Vietnam

2016-24 Nobuyuki Hanaki, Alan Kirman & Paul Pezanis-Christou
Counter Intuitive Learning: An Exploratory Study

2016-25 Mohamed Arouri, Adel Ben Youssef & Cuong Nguyen
Ethnic and Racial Disparities in Children's Education: Comparative Evidence from Ethiopia, India, Peru and Vietnam

2016-26 Amel Ben Abdesslem & Raphaël Chiappini
Cluster Policy and Firm Performance: A Case Study of the French Optic/Photonic Industry

2016-27 Patrice Bougette, Hugues Bouthinon-Dumas & Frédéric Marty
Vers une prévisibilité des sanctions concurrentielles ? La procédure de transaction à la Macron

2016-28 Aymeric Lardon
Jeux de coalitions et oligopoles

2016-29 Gérard Mondello & Evens Saliès
Tort Law under Oligopolistic Competition

2016-30 Nicolas Brisset
Institutions as Emergent Phenomena: Redefining Downward Causation

2016-31 Nicolas Brisset
On Performativity: Option Theory and the Resistance of Financial Phenomena

2016-32 Gérard Mondello
The Negligence Rule Specificity under Radical Uncertainty

2016-33 Dominique Dufour, Eric Nasica & Dominique Torre
Clusters et efficacité du capital-risque: une analyse des stratégies différenciées des fonds indépendants et des fonds industriels

2016-34 Judith Favereau & Nicolas Brisset
Randomization of What? Moving from Libertarian to "Democratic Paternalism"