

THE PERVERSE INCENTIVE – A GENERAL CONCERN IN MANAGERIAL SYSTEMS

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ABSTRACT

The perverse incentive is a wide spread phenomenon reported in various contexts and organizations. Despite this, there are no theoretical approaches from a management perspective. The study aims to make the necessary theoretical conceptual delimitations for clarifying the perverse incentive concept and to describe, for the first time, the main contexts and causes for occurrence of perverse incentive in organisations. This article presents the first general theoretical framework about the determinant mechanisms of perverse incentives in organisations.

KEYWORDS: *controlling, organizational behaviour, perverse behaviour, perverse incentive*

JEL CLASSIFICATION: *H20, H30, K20, K32, L20, L25, M12, M52*

1. INTRODUCTION

The perverse incentive (PI) is a concept that can be easily found both in the scientific literature and in the mass media publications. References to this concept are available in both scientific and in non-scientific publications. But, as it will be argued further, there was no attempt to analyse the concept of PI and the contexts in which it occurs in order to extract generalized conclusions about the main causes and the typical contexts supporting the occurrence. The main purpose of this article is to make the necessary theoretical conceptual delimitation for clarifying the perverse incentive concept and to describe, for the first time, the main contexts and causes of occurrence of perverse incentive in organisations. This study presents the first general theoretical framework about the determinant mechanisms of perverse incentives in organisations.

In order to better understand this concept, I searched articles about PI in non-scientific publications and in the Thompson WOS scientific database. The Thompson WOS shows as the most cited article about PI an article on adverse effects in medical care (Boyd et al., 2005). Refining the search based on relevance, the WOS database produced a list of 509 results. The first 50 results are from very different fields (table 1). The only reference looking at the PI from a management perspective is a chapter of a book called "Selfish Managers: Can We Eliminate Perverse Incentives?" analysing the reward systems for top managers. (Sanyal, 2016)

Sorting the results by the number of citations produced a list of entries in which management of medical systems is again on top of the list (table 2).

This dispersion of the topics in which PI is discussed reveals the fact that the concept of PI is truly an interdisciplinary concept. The reported presence of PI in such a wide array of organisations and in so many different kinds of human activities reveals the fact that one possible way to understand it is to look at it from a managerial perspective. Perverse incentives are phenomenal which can occur in any type of organizations and can be explained based on behaviours generated by the interaction of the managerial system of the organisation with its members.

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Table 1. Scientific field of the first 50 most relevant articles about PI in WOS database

	Scientific field	Number of articles
1.	Management of medical systems	16
2.	Environment and biodiversity	9
3.	Government and public sector management	7
4.	Taxation	5
5.	Research and scientific publications	5
6.	Banking and finance	5
7.	Mining	1
8.	Management (HRM)	1
9.	Engineering	1

Source: data extracted from WOS database

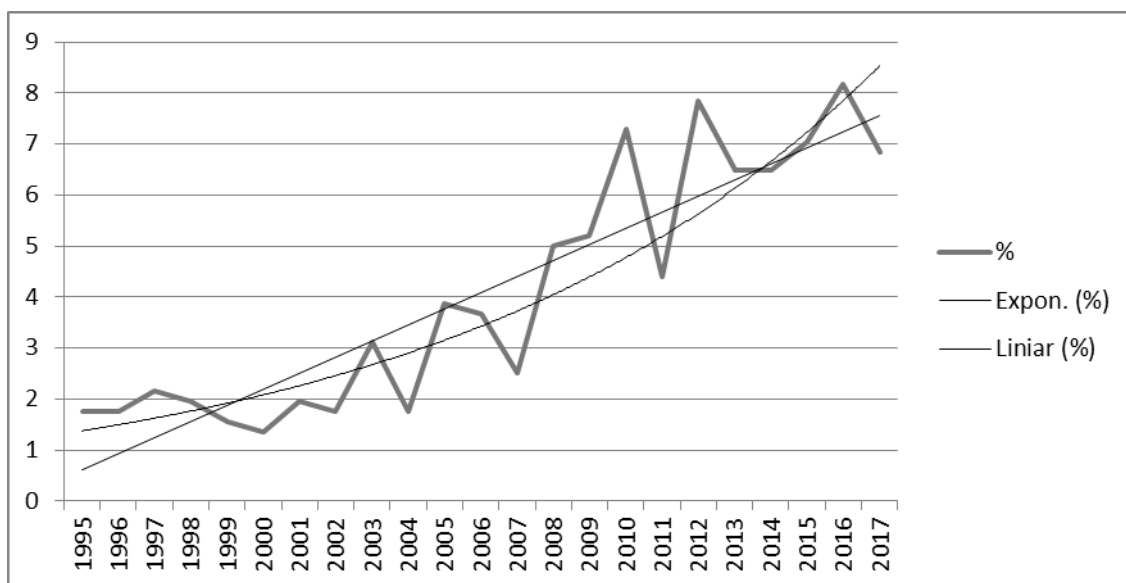
Table 2. Scientific field of the first 50 most cited articles about PI in WOS

	Scientific field	Number of articles
1.	Management of medical systems	15
2.	Environment and biodiversity	9
3.	Government and public sector management	8
4.	Law and justice	7
5.	Banking and finance	3
6.	Management	3
7.	Taxation	1
8.	Research and Scientific publications	1
9.	Economics	1
10.	Computer security	1
11.	Psychology	1

Source: data extracted from WOS database

The three entries in WOS database look at the phenomenon only from the perspective of management science, present specific cases without any scientific reference for defining the concept of PI. One article analysed the PI for educators to inflate achievement scores of students when these are used to measure the educators' productivity (Koretz, 2002) and two articles analysed PI in executive compensations, in the context of relation between executives and stakeholders (Bebchuk & Fried, 2006; Carson, 2003). Carson recognizes the need for a theoretical framework about PI from an organisational behaviour perspective: "Schemes of payment and reward often create perverse incentives for individuals to engage in unethical conduct. Work in management theory and business ethics needs to do more to address these incentives and consider possible remedies." (Carson, 2003). He presents the short term stock-market speculation for his own company stocks as a typical case of PI for an executive.

For analysing the presence of the concept in the scientific literature, we counted the yearly number of entries in the WOS database. Figure 1 presents the percentage of the yearly evolution of the number of entries about PI in the WOS database showing a growing presence of the concept in the scientific debates after the year 2000, and pointing out the necessity for a theoretical framework. The two tendency lines, one exponential and the other linear, show the fast growing number of publications mentioning PI in their content. The oldest entry in the WOS database goes back to 1978, it is called „Federalism and Perverse Incentives: What is Needed for a Workable Theory or Reorganization for Cities?" (Long, 1978). For the incomplete year 2017, WOS database already presents 36 entries from a total of 509 results, representing 7,07%, compared to 46 entries in 2016 (8,44%).



**Figure 1. Yearly evolution of entries about PI in WOS database
 (in percentages of the total entries about PI in the database)**

Source: data extracted from WOS database

Here are some examples of PI from the articles and publications to which we had access in full text or abstract, from the first 50 entries presented by WOS in order of their relevance:

1. "Counterproductive financial incentives divert time and resources from the scientific enterprise. We should spend the money more wisely" (Stephan, 2012).
2. "Basing standards for quality of care and pay for performance on existing Context Clinical practice guidelines (CPGs) could lead to inappropriate judgment of the care provided to older individuals with complex comorbidities and could create perverse incentives that emphasize the wrong aspects of care for this population and diminish the quality of their care." (Boyd et al., 2005).
3. "While capital-requirement regulation can induce prudent behaviour, the policy yields Pareto-inefficient outcomes. Capital requirements reduce gambling incentives by putting bank equity at risk. However, they also have a perverse effect of harming banks' franchise values, thus encouraging gambling." (Hellmann et al., 2000).
4. "This generic framework for analysing innovation systems is applied to a comparison of China's national innovation system under central planning and since reforms, revealing the evolving structure and dynamics of this system and current inconsistencies and perverse incentives that policymakers must address to realize their development goals." (Liu & White, 2001).
5. "Criminal procedure has potentially large and probably perverse systemic effects. Extensive constitutional regulation of the criminal process pushes prosecutors to substitute poorer defendants for wealthier ones by disproportionately raising the cost of prosecuting the wealthy." (Stuntz, 1997).
6. "The government's Renewable Heat Incentive pays businesses to get their heat from renewable sources. The scheme is not helping to reduce carbon emissions in the UK. The best way to cut them must be to cut energy use, not to get paid more to use more energy." (Eastwood, 2016).
7. "But, in an era where the rewards for publishing appear to outweigh the risk of being caught, more and more complex methods of deception are being developed, and these have spawned an industry—"academic article brokering"." (Barbour, 2015).

8. "Setting of physicians' incomes according to the number of patients treated." (Wallich & Holloway, 1993).
9. "New funding systems are needed to overcome the perverse financial incentives that reward the treatment of sick patients even when the ill health is caused by the system itself." (Pownall, 2009).
10. "I always have and continue to argue against the use of case volume as a surrogate measure of quality. The relationship between case volume and risk-adjusted outcomes has always been weak at best for most procedures. The use of case volume alone additionally creates a perverse incentive that encourages overuse or misuse of a procedure." (Kresowik, 2013).
11. After the sub-prime mortgage crisis and the spate of bank collapses in 2007-2008, senior executives pay was identified as a major reason for the crisis. (Sanyal, 2016).

The search of PI in the non-scientific publications provided a couple of defining examples of PI, widely recognized in the public opinion. Some of most relevant and easy to understand are the following:

- a) *Criminal deportation to Australia*: „During the deportation of criminals from Great Britain to Australia, the transport companies were compensated based on the number of prisoners shipped, not the number delivered. There was therefore no economic reason to keep them alive on the boats and a large percentage of the prisoners consequently perished on-board. Eventually, the government changed the metric from prisoners shipped to the number who arrived alive.” (Meacham, 2017)
- b) *Hanoi rats*: „In 1902, Hanoi served as the capital of French Indochina. Rats overran Hanoi, creating health concerns. The French colonial government came up with the brilliant plan of putting a bounty on rats to reduce the population. They paid people by the piece for every rat-tail they delivered. This led to some industrious folks raising rats on rat farms to collect the bounty or simply chopping off the rats' tails and releasing them so they could reproduce. The more the government paid to reduce the rat population, the more the rats thrived.” (Perverse Incentives: Definition & Examples, Retrieved August 24, 2017)
- c) *The Endangered Species Act*: „The Endangered Species Act in the US imposes development restrictions on landowners who find endangered species on their property. While this policy is well-intentioned and has some positive effects for wildlife, it also encourages pre-emptive habitat destruction (draining swamps or cutting down trees that might host valuable species) by landowners who fear losing the use of their land because of the presence of an endangered species. In some cases, endangered species may even be deliberately killed to avoid discovery.” (Perverse incentive, Wikipedia, 2017)
- d) *Fossil fragments*: „Take, for instance, the 19th century palaeontologist who paid local Chinese peasants for every fossil fragment that they brought in. This led the locals to smash the fossils that they found into multiple fragments before bringing them in. Doing so maximized their payments.” (Flynn, 2009)
- e) *IBM programmers*: „In another well-known incident, IBM implemented a pay structure that paid their computer programmers by the line for the code they wrote. Their goal was to increase the quality of the code. As a result, the programmers found ways to unnecessarily maximize the line count, increasing their pay and reducing the quality of the code.” (Perverse Incentives: Definition & Examples, Retrieved August 24, 2017). "IBM had a similar problem when it decided to pay its programmers by the line. They responded by maximizing the number of lines they wrote.” (Flynn, 2009)
- f) *2008 Financial crisis*: „Perverse incentives induced financial institutions to make mortgage loans to those who could not afford them, and to package mortgages into non-transparent, risky securities that infected the global financial system. They helped create an unsustainable bubble in housing prices. Perverse incentives led financial institutions to encourage households to borrow excessively on the bubble-induced rise in home equity.” (Crotty, 2009)

- g) *NBA reverse-order draft*: „A league cannot survive with teams actively trying to lose. A reverse-order draft gives the biggest prizes – that is, the best players coming into the league – to the teams with the worst records. This creates an incentive to lose. In an eight-team league in which the futures of players are known, a reverse-order draft will destroy the league. In any season, only two or three teams will have a real chance to win. The other teams are best served by losing as many games as possible.” (James, 2016).

In the Romanian higher education (HE), the most commonly debated case of perverse incentive is the case of “per-student funding”. The government is funding higher education on a *per-student* logic, paying the universities for each enrolled student. When the number of baccalaureate students in a specific field of study is significantly higher than the number of places offered by universities, this type of public funding is an incentive for the universities to become more competitive in order to attract more students. But, when the number of baccalaureate students in a field is less than the number of places offered by universities, this type of funding becomes a PI, leading to perverse behaviour in the admission process, in grading the students and in awarding the Bachelor’s degrees. Public funding becomes a perverse incentive to keep an unsuitable student in the system, despite its real lack of aptitudes in the field or its unsatisfactory level of education. The general level of severity in education and in grading declines, hence, the general level of education is getting lower and lower creating major social problems in their inclusion into the labour market and society. The HE admission system based on the baccalaureate grades is specially designed to stimulate the system on the wrong direction, with the same PI: avoiding the vocational evaluation of the student, thus providing a wider pool of candidates, even though they are not suitable to follow a specific area of study.

2. DEFINING THE PERVERSE INCENTIVE FROM A MANAGERIAL PERSPECTIVE

In order to define the concept, the search for definitions in the scientific articles proved to be unfruitful. All articles analysed were starting from the general meaning of the term, without any attempt at defining the concept they were using.

The on-line dictionaries provided the most relevant definitions:

- A perverse incentive is an incentive that has an unintended and undesirable result which is contrary to the interests of the incentive makers. Perverse incentives are a type of unintended consequence. (perverse incentive, <http://encyclopedia.thefreedictionary.com>)
- An incentive that produces an adverse consequence due to the actions undertaken to receive the incentive. (perverse incentive, BusinessDictionary.com.)
- Anything that incites, or determines somebody to take action in order to receive that incentive, usually resulting in damaging circumstances afterwards. (What is PERVERSE INCENTIVE? Black's Law Dictionary).
- Perverse incentive - Any incentive—e.g., an “item of service” payment—for a clinician to perform ineffective or potentially harmful procedure. (perverse incentive, Segeen's Medical Dictionary).

Other definitions found in public non-scientific sources were equally relevant:

- The perverse incentive is something that the creators of a plan did not anticipate, and commonly, it is something that works against their intentions. (Leverkuhn & Jones, <http://www.wisegeek.com/what-is-a-perverse-incentive.htm>)
- Perverse incentives are incentives that result in unintended negative consequences due to actions people take to receive the incentive. Perverse incentives are a common occurrence because decision-makers do not always think things through before acting, often with disastrous results (Perverse Incentives: Definition & Examples, Retrieved August 24, 2017)

Starting from these definitions, we found no limitation for the possibilities to encounter this kind of incentives in organisations. But, some clarifications are necessary. First, the differences between the concepts of incentive, reward and punishment, must be addressed. The incentive is considered to be

something that motivates or encourages someone to do something. It is an external motivator, generating a specific behaviour of the individual. A reward can be considered similarly, but, the positive correlation with the behaviour is implicit. The punishment also generates specific behaviours, but through a negative correlation called avoidance. Since the negative dimension is not specified, the concept of incentive seems to be the one with the larger semantic sphere. The reward and penalty may be viewed as two different types of incentives as they differ in the effect they display on the human behaviour, as described by B.F. Skinner in his "Instrumental Conditioning" theory. The cases in the studied articles and all definitions disregard the positive or negative behavioural dimension of the external stimulus, generically naming it "incentive". Even though some other opinions might also be accepted in the scientific literature and in the daily use of these terms, we will keep the larger sphere perspective on this concept, asserting that *a perverse incentive can be considered a reward (for a positive effect on a behaviour, bringing supplementary satisfaction to the individual) or a punishment (for a restraining effect on a behaviour by dissatisfying the individual)*.

The PI should be viewed as a separate case amongst the incentives generating negative consequences. If new behaviours are emerging due to an incentive that we ascertain as producing negative effects on other defining elements of organizational performance, not considered at the time when the incentive was established, then, we are not in the presence of a perverse incentive. We are in a situation of conflicting priorities because of the negative correlation between the two variables: improving the system on one performance variable produces a worsening of the situation on one or multiple other variables. In complex systems, it is not rare to see that modifying an element (in this case a behaviour) to focus it on a target can lead to its defocus from another performance target, with negative consequences. This is a decisional dilemma regarding the prioritisation on two different targets, it is not a perverse incentive.

The PI produces an opposite organizational effect right on the variable on which it is supposed to bring an improvement. The performance indicator whose level was expected to improve will record a lower result. That is why the PI must be separated from the incentives disrupting other parts of the system by producing positive effects on the expected variable, but, simultaneously producing negative effects on other defining variables of the system.

Although some of the previously mentioned definitions suggest that PI is unintentional, there are arguments that it can be both intentional and unintentional. When perverse effects on the organization could not be expected, PI is to be considered unintentional. *It is intentional when the negative effects on the organization are known and desired by a manager who, knowingly, decides on the type and form of granting that incentive and when the negative effects are revealed during the use of the reward, but the manager decides to maintain the incentive because of the benefits it brings to him and / or others.*

Another conceptual differentiation must be done at the level of behaviours. If an individual behaviour has unexpected negative effects on the organization, it is considered to be a mistake, an error, not a perverse behaviour. We can define an *individual's behaviour as perverse for an organization when it is voluntarily and consciously accomplished in order to produce negative consequences on the achievement of the organization's goals.* Starting from this definition, we can say that not all perverse behaviours will be determined by perverse incentives. For example, an inspector, demanding a bribe in order not to record in the official documents the identified deviations performs a perverse behaviour against the socio-economic system in which it operates. Yet, its behaviour is not determined by a reward offered by the organization employing him, but by a benefit that he alone manages to generate by interacting with a member of the system we relate to. This benefit is an "externally sought reward", and it is not granted through organizational mechanisms. Often the search for illicit gains in the system through perverse behaviours is associated with the lack or insufficiency of incentives available in the system, which is not assimilated with the case of perverse incentive. *PI is an internal incentive, officially offered by the organization, triggering a perverse behaviour.* As any external incentive, available to an individual

in order to behave against the interests of the organization in which he acts, it is not to be considered a PI.

3. PERVERSE INCENTIVE: USUAL CONTEXTS AND CAUSES

The analysis of cases in the public space and in scientific literature has led us to a structure of three contexts in which we consider the PI:

- **Realising corrective actions in a socio-economic system** (at organization level, between organizations, in national systems of any type, in ecosystems in which humans are present).
- **Performing intermediate-stage incentivising actions in a process**, with negative effects at the end of the process.
- **Voluntary actions of managers, damaging the organization's interests**, through which some of the managers gain extra benefits in addition to those that the organization formally provides.

The three contexts can be combined, for example, when incentives are given for intermediary corrective actions in some processes.

Realising corrective actions in a socio-economic system is a context in which individuals have jobs requiring corrective actions in a certain organization. Amongst the previously mentioned examples we can quote reducing the number of rats in Hanoi, reducing the illness of people benefiting from medical care, reducing pollution, reducing risky financial decisions, etc.

Performing intermediate-stage incentivising actions in a process is a context in which, along a process, individuals involved in the process require incentives before there is an actual possibility to assess the final results of the process. The Renewable Heat Incentive is an incentive granted before the final result of the process. The cases of criminal deportation to Australia, Hanoi rats, IBM programmers all are examples for this kind of context.

Voluntary actions of managers damaging the organization's interests are another context in which we discover cases of PI. Such examples are the lower-ranking teams losing in the context the NBA reverse-order draft, the risky financial products sold before the financial crisis from 2008, the case of prosecutors pushing to substitute poorer defendants for wealthier ones, thus increasing the costs of prosecution, and, obviously, the case of senior executives pay in time of crisis.

The three identified contexts conceal causes that lead to behavioural cycles specific to perverse incentive situations. We have identified the following three main causes:

1. Perpetual corrective actions;
2. Speculation on the errors in setting the intermediary performance metrics;
3. Granting intentional perverse incentives.

3.1. Perpetual corrective actions

The concrete examples in which we have identified PI are often related to corrective actions aimed to eliminate a negative aspect of a system: removing the stray dogs, treating diseases, eliminating poverty, reducing deforestation, reducing crime, and so on. What is the connection with the occurrence of the PI?

Removing a negative aspect from the system can be abstracted and generalized in the following form. If in a system we have a variable (V) whose value is at a level deemed unsatisfactory ($V_1 < V_0$, V_1 = the actual level, V_0 = the desired level), a corrective action must be initiated to bring the variable at the desired level. In order for this to happen, activities that are limited in time are created. These activities that will cease when the variable reaches the satisfactory level (V_0) are control / evaluation actions and corrective actions. Reward associated with the positive behaviours is realised by giving benefits to those who perform these actions, for success in bringing the variable to the desired level. The problems that arise are related to the desire of those involved in controlling, to the reuse of the accumulated experience and to the benefit once again from the same type of reward, regardless of real possibilities of re-emergence of the negative aspect on which they

acted. For example, an institutional structure dedicated to a type of control will want to become perennial justifying its existence by preventing and correcting the errors targeted by that type of control.

These two psychological aspects can lead to a spectrum of perverse behaviours that has two extremes and different gradual combinations:

- searching for new situations where control and corrective intervention are needed;
- stimulating the occurrence of situations that would require control and corrective intervention.

The first extreme - the search for new situations where intervention is needed - produces negative effects at the systemic level through the tendency to increase the intensity and severity of control, which leads to control actions in areas of inefficiency, i.e. in areas where control generates losses by itself, without taking into account the cost of rewards granted to controllers.

The behaviour of the individual on the first extreme – Searching for new situations where intervention is required – is as follows: (1) Behaviour 1 (*Identification of errors and application of sanctions*) -> (2) Good apparent state of the system (but reversible) -> (3) Incentive -> (4) Recurrence of the cause and reappearance of effects -> (5) Behaviour 2 (*Intensifying and increasing the severity of control by identifying previously untreated effects*) -> (6) Identical or increasing incentive -> (7) Recurrence of the cause and reappearance of effects -> ... -> (1) periodic return to Behaviour 1.

We will call this first extreme the "*Inspector's Paradox*". It consists in the fact that the interest of the controller is not the achievement of a perfect state of the system, in which the appearance of unwanted effects is impossible. In order to maintain its strength and position in the system, the controller will always have to prove its usefulness by regularly identifying errors and proposing corrective interventions. The controller has the interest to always find errors, so he can tend to act superficially, at the level of visible effects, not profound, at the level of causes. Its highest interest may be to identify errors, not to treat them. Besides, the typical behaviour for a controller - granting a penalty (fine, warning, financial penalty, etc.) for a discovered error - does not guarantee in any way preventing the recurrence of that error.

The second extreme can be exemplified by the story of the repairer who does not make a perfect intervention, but leaves some "seeds" for future defects to be called in to solve. "Zero defects now" does not necessarily mean "zero causes" of defects in the future. At system level, this will be visible by recurrent situations where the variable will be found at a level deemed unsatisfactory, or even by lowering the value at which the variable will be constantly recorded (worsening the state of the system).

We will call this extreme the "*Dog Catcher Paradox*". It consists in the fact that the dog catcher job is the destruction of its own object of activity. If there are no stray dogs on the streets, dog catchers will no longer be necessary. If we remove all the stray dogs from the streets and control all sources of reappearance, dog catchers will no longer be necessary. So, the dog catchers, for their well-being, will have to ensure the perpetual existence of stray dogs. A larger number of stray dogs will require more resources for a dog pound organization and lead to more jobs. The growth strategy of a dog pound organization is not to bring the number of stray dogs to zero, but to increase their number!

The "Dog Catcher paradox" shows that another factor that generates the appearance of PI is the will to survive, to become perennial and to grow of any organic system. If an organized structure has been created to eliminate a type of problem that periodically reoccurs, it will want to live and grow. It will want to accumulate more and more "energy" to ensure its permanence. The definitive and irrevocable elimination of the respective type of problem, which the created structure has to solve, leads implicitly to the disappearance of the structure. That organization destroys its own object of activity. This perspective is not acceptable to the individuals involved, so the whole structure, or parts of it, will act to generate the recurrence of the problem, multiplying it or even aggravating it. For example, an anti-criminal institution could keep unused evidence of minor criminal activities,

expecting to use their development to show great success and to demand additional funding just for the purpose of its development.

The behavioural scheme for the second extreme – Stimulating the occurrence of situations requiring intervention – is as follows: (1) Behaviour 1 (*Identification and superficial or partial treatment of effects, to allow reversibility to an inappropriate state*) -> (2) Good apparent state of the system (but reversible)-> (3) Incentive -> (4) Behaviour 2 (*Stimulation of the return of the system to an inappropriate state*) -> (5) Increasing the amplitude of effects and the negative impact of the causes -> (6) Behaviour 3 (*Attracting additional resources for the organizational development and for his incentives*) -> (7) Periodic return to Behaviour 1 -> (8) Good apparent state of the system (but reversible) -> (9) Identical or growing incentive -> (10) Recurrence of the cause and reappearance of effects -> ...

The key difference between *Inspector's Paradox* and the *Dog Catcher Paradox* is in proactivity. In the *Dog Catcher Paradox* we have a voluntary action for the deterioration of the state of the system (actions stimulating the causes of the errors), while in the *Inspector's Paradox* we have actions limited only on the effects, thus allowing the recurrence of the causes.

So far we have explored the two extreme situations mentioned above. But why are they about removing some negative aspects from the system? What happens to rewards in other cases? In cases that are different from eliminating negative aspects of a system, namely, rewarding performance on metrics using scales without superior limits, allowing unlimited performance growth, all reactions associated with the cessation of action, when the desired level of performance is achieved, do not appear. In this case, we have a variable V1 whose future value can be improved. Performing behaviours for improving it will determine granting the incentive. The problems of the reversibility of the system state and the limited duration of the action, specific to controlling and corrective actions, are no longer reflected in the behavioural decisions of the individuals.

3.2. Speculation on the errors in setting the intermediary performance metrics

Other frequent cases of PI are those that have in common the setting of a performance indicator on a variable measurable along the process, not on the final variable, associated with the actual objective for which the system is created. Focusing on maximizing performance up to an intermediary stage of the process can have negative effects in the following stages. A classical form of optimization conflict occurs: partial optimization has negative effects on complete optimization. Those who perform the interventions, at the stage of the process that is considered for awarding the incentive, speculate the trust they have been given and perform behaviours that maximize their incentives, disregarding the wave of negative effects they generate in the next stages.

The behavioural scheme for speculation of errors in setting the intermediary performance metrics is as follows: (1) Behaviour 1 (*Optimal treatment of effects and / or causes to maximize incentive*) -> Correct system status (at stage level) -> Incentive -> Continuing processes (*with new steps performed by others*) -> The occurrence of perverse effects until the end of the process (worsening the state of the system).

Morally disregarding the negative effects produced on the following stages is an aggravating factor in these cases, leading to behaviours that are precisely aimed at speculating the reward-punishment system only for the individual benefit, despite the recognition of the negative effects produced on the next stages. Here are some examples: (a) the reward for the number of rats / dogs brought in, and not for their absence on the targeted territory; (b) State funding universities for the number of enrolled students, and not for the quality of graduates measured by their employability; (3) incentive for the number of prisoners embarked, and not for the number of prisoners arrived alive at destination.

The managerial error consists in erroneous setting of an incentive to reach a certain level on a performance indicator measurable at an intermediate stage, on the premise that the good state of the system at that stage is correlated with a good state of the system after all stages of the process. The possible reverse correlation, or the lack of correlation, between maximizing the indicator at that

stage and the level of the indicator at the last stage, is ignored or unknown. The situation is often associated with those cases in which the system does not allow the target value to be highlighted along the way, which forces for the choice of different indicators, actually measuring other variables that are not sufficiently known to relate to the system's final state variables.

A simple example is granting unemployment benefits. They have a supportive role in avoiding the social exclusion of the unemployed, but their role should be seen as a form of intervention at a stage in their professional reintegration process. If we maximize the aid, then aid is becoming the incentive and the desire to return to the labour market of the unemployed could disappear. The perverse effect is, in this case, a raise of unemployment, and perverse behaviours are labour inactivity or unregistered working. The indicator showing the correct status of the system is neither the total expenditure on unemployment benefits, nor the average unemployment benefit, but the unemployment rate. However, this rate cannot be measured during the re-integration process, which is why rewarding those involved, based on their performance on other indicators, is considered the best choice.

3.3. Granting intentional perverse incentives

An extremely dangerous situation for an organization is when, at a certain hierarchical level, an individual or a group of individuals perform perverse behaviours determined by external or internal rewards. To maximize their earnings, some senior executives can conceive, for their inferior levels, perverse reward-punishment systems that cause some perverse behaviour with at least one of the following effects:

- ***Generating direct personal benefits from inside or outside the organization*** - For example, a manager in a public institution with controlling authority on other organizations can impose on its subordinates excessive targets for the amount of fines they should give. The subordinates will realize exaggerated controls on the controlled organisations that can lead the controlled ones at the conclusion that, no matter what they do, they will never escape without paying anything. The next step of the controlled ones, in the case of a repeated control, might be a try to bribe the inspector, in order to get the minimum fine helping the inspector to meet its quota, in exchange for a pseudo-control that will disregard the actual errors. If accepted, this bribe might be divided with the boss, in order to ensure that the next controls will happen in the same way, with the same inspector doing the same pseudo-control, for the same bribe. Carson explains the details of a similar example: "Terms of employment and compensation schemes can create incentives for unethical conduct. Some stock option plans for executives reward executives who resort to deception to temporarily drive up the price of their company's stock. The value of a stock option increases when the price of the stock rises. If I know that the price of a stock will rise only temporarily, I know that it will be in my interests to sell the option. I also know that anyone who purchases the option will lose money." (Carson, 2003)
- ***Employees making errors that the managers can directly or indirectly take profit from*** - Carson describes a situation like this: "The rise in stock prices brought about by creative accounting, for a time, seems to promote the interests of many stakeholders, including employees who owned the stock." (Carson, 2003). Creative accounting means that some financial officers of the company were pushed-around in order to use less trustworthy methods for reporting wrong figures.
- ***Keeping hidden the perverse behaviours of managers and the earnings generated by them*** - For example, a purchasing manager of a supermarket can reward its purchasers to achieve a very high average value of purchases on the "local vegetable products". Because of that, most local producers will not be able deliver there anymore. By using the information provided by the purchasing manager, about the producers who have tried so sell the products to the supermarket, other firm contacts the local producers in private. It is a firm which offers licit or illicit benefits to the purchasing manager. That firm makes

multiple acquisitions from the local producers, achieving a volume that is sufficient to qualify as a supplier of the supermarket. The employers from the purchasing department will be in a position to negotiate with a single larger supplier, obtaining higher prices than those negotiable with multiple small local suppliers, losing the money indirectly earned by the purchasing manager. The purchasing manager will approve the high purchasing prices proposed by his subordinates, while the subordinates will have no idea about the hidden benefits for their supervisor. The perverse incentive is, in this case, the one granted for increasing the average value of purchases, received by the purchasers, since this leads to an increase of the average price of the purchased items.

In another example, we see all three previously mentioned effects: "Executives who expect to unload shares have incentives to report misleading results, suppress bad news, and choose projects and strategies that are less transparent to the market." (Bebchuk & Fried, 2006).

This third cause of PI is in fact a case of misuse of managerial authority used to obtain personal benefits when the subordinate organizational component or even the entire organization is experiencing a deterioration of its performance. The situation in which the manager obtains an illicit gain from the organization's external relations, which he shares with the subordinates, cannot be considered a PI, since no one is gaining incentives from the organization. Perverse incentives should be considered only the ones in which the benefits provided by the organizational mechanisms lead to perverse behaviour of subordinates and supervising managers.

4. CONCLUSIONS

Perverse incentive is a topic discussed in many scientific articles to explain inadequate situations in organizations, so far without being clearly defined and investigated to identify the general mechanisms for their occurrence. The approach of the subject from a managerial perspective has allowed the identification of some systemic and behavioural aspects that, through synthesis, have revealed three typical contexts for the occurrence of PI: (1) Realising corrective actions in a socio-economic system; (2) Performing intermediate-stage incentivising actions in a process, with negative effects at the end of the process; (3) Voluntary actions of managers damaging the organization's interests.

The in-depth analysis of these three contexts led to the identification of a set of causes that are frequently associated with the appearance of PI: (1) Perpetual corrective actions; (2) Speculation on the errors in setting the intermediary performance metrics; (3) Granting intentional perverse incentives.

The most important conclusion is that the perverse incentive is not a rare phenomenon in organizations. All three contexts related to their occurrence are in fact continuously found in organizations. Also, the three causes found to be determinants of PI are generally and continuously present in all types of organizations. They are fundamentally embedded into the managerial system of any organization. Hence, the managers should pay a particular attention at the persons with corrective responsibilities and at the performance metrics used in the intermediate stages of processes.

PI is the effect of wrong managerial decisions, intentional or unintentional. Perverse incentive may occur accidentally as a result of poorly substantiated managerial decisions about the connections between rewards, generated behaviours and present or future status of the system. But, PI may also appear willingly, as a desired result of managerial decisions taken with the intention to create problems in the organization, thus allowing unethical individual benefits to be obtained even by decision makers. When PI is an intended result, some of the managers are purposely creating a system generating PI for their subordinates, leading to one of the most dangerous situations for the organization and its members.

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