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Towards Behaviorally Informed Public Interventions

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Abstract

Purpose: This article informs readers about the theoretical and practical origins of the behaviorally informed interventions (BIPI), analyzes examples of the BIPI from different policy sectors and strategies they offer for policy and regulatory design, and discusses applications and implications of BIPI for public interventions

Methodology: This paper is based on a review of literature, as well as an inspection of administrative practices in OECD countries. It encompasses a systematic analysis of scientific papers from the SCOPUS database and a query carried out at the library of George Washington University.

Findings: The traditional approach to public policy research is based on rational choice theory. It offers limited support, because by assuming perfect rationality of policy decisions, it overlooks existence of systematic errors and biases of human decision-making. The authors argue that behaviorally informed public interventions (BIPI) might contribute to improving the effectiveness of a number of public measures – regulation, projects, programs, and even entire policies.

Practical implications: The behavioral approach allows decision-makers to better understand the decisions and behaviors of citizens, as well as to design more effective interventions with minimum effort by adapting the existing solutions to real decision mechanisms of citizens.

Originality: By combining the concepts of traditional approach with the growing behavioral approach, the authors aim to propose a new theoretical framework (BIPI) to be used as a tool for policy design, delivery and evaluation.

Keywords: heuristics, biases, behaviorally informed interventions, NUDGE, THINK, STEER, MINDSPACE, public policy design, public policy evaluation

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Introduction

Public interventions are intended to shape the economy and society in desirable ways (Shafir, 2013a, p.1). They are responses of decision-makers to emerging socio-economic problems and challenges. Interventions are designed to trigger certain change mechanisms that, in turn, should lead to expected effects. In a complex world, it is "a trial and error, problem-solving process" (Bardach, 2006, p. 350) that depends on an in-depth understanding of the problem in question and the context of policy and human behavior, since behaviors are usually the drivers of change mechanisms. In policy analysis jargon, this is called "unpacking [the] black box between policy input and its outputs" (Astbury and Leeuw, 2010).

The understanding of effective policy mechanisms can be developed through the use of research findings – empirical studies, evaluations of public interventions, and regulatory impact analyses. This practice has been developing in public administrations across the world as „evidence-based policies" (Davies et al., 2009; Saussois, 2003; Shillabeer et al., 2011; Yanow, 2007). The European Union and the OECD have been strongly promoting it as a good practice (OECD, 2007).

Unfortunately, the traditional approach to public policy research, based on rational choice theory, does not offer a reliable explanation for the real mechanism that determines the effects of public interventions. It assumes that people have an unchanging set of preferences; they are guided by personal utility and make insightful, well-calculated decisions based on prior careful planning (Amadae, 2007). The latest empirical findings of cognitive psychology reveal that these assumptions do not match reality (Kahneman, 2013b). Actual behaviors are the result of heuristics and "rules of thumb" that can lead to systematic errors and biases. Choices can be constructed rather than elicited by social situations (Sunstein, 2000, p. 1–10). Those findings seem to be universal in different socio-economic and institutional contexts. Therefore, a new approach to research on public intervention is needed.

This emerging approach to policy analysis is called „applied behavioral science" (Kahneman, 2013a, p. ix). By combining cognitive psychology with sociology, law and economics, it offers promising insight into the real decision-making of addressees of the interventions.

This new approach has already had an impact on practice. Administrations of the United States, United Kingdom, Denmark, The Netherlands, and France have been

successfully experimenting with **Behaviorally Informed Public Interventions (BIPI)** (Lunn, 2014, p. 25–38).

However, this approach is still in its early stages of development, and it suffers all the shortages typical of early stages of idea development. Although there is an abundance of promising examples of uses of this approach, an overview of the practice is missing. Moreover, some researchers criticize this approach by claiming that there is a lack of robust evidence on the effectiveness of nudging strategies. In this view, contrasting with Kahneman's assertions, the 'slow thinking' (the analytical mode) allows citizens to take more accurate decisions (Osman, 2015). The approach also lacks a consistent body of definitions that could be applied to different types of interventions (project, programs, regulations) and a coherent, interdisciplinary methodology. It is developed only for certain fields, e.g., regulations. Behavioral interventions are often portrayed in a simplified and stereotypical way – as a tool with a magical button for manipulating citizens (Mitchell, 2005). Finally, there is a dearth of systematic discussion on what implications this approach will have for the practice of public interventions.

This article aims to contribute to the emerging discussion on the use of **Behaviorally Informed Public Interventions (BIPI)**. It: (1) informs readers about the theoretical and practical origins of the behaviorally informed interventions, (2) analyzes examples of the BIPI from different policy sectors and strategies offered by them for policy and regulatory design, and (3) discusses applications and implications of BIPI for public interventions.

The authors argue that behaviorally informed public interventions (BIPI) might contribute to improving the effectiveness of a number of public measures – regulation, projects, programs, and even entire policies. Just as with any new approach, however, it is not free from unknowns and challenges, which should be the subject of pilot studies and a serious discussion in the context of national public policy.

This paper is based on a review of literature[3] pertaining to public policies and on applied behavioral research, as well as an inspection of administrative practices in OECD countries. It encompasses a systematic analysis of scientific papers from the SCOPUS database, a query carried out at the library of George Washington University and participation in lectures held at the International Simulation and Gaming Association at the University of Delft.

The structure of the paper is consistent with its three main objectives. The first part outlines the genesis of the behavioral approach and the main findings of the psychology of decision-making that form the cornerstone of this approach. The second part presents examples of the practical applications of behaviorally-informed public interventions, as well as a summary of behavioral strategies suggested for public programs and regulations. In the final section, the authors examine the implications posed by behaviorally--informed public interventions for public policy practice, including evaluation.

Origins of Behaviorally Informed Interventions

Public authorities – central and local governments – implement public policies in order to address important socio-economic problems and take advantage of numerous development opportunities available in the country (Hausner, 2008, p. 46–50; Chrabąszcz and Zawicki, 2014).

Public interventions are the main tool of public policy (Tucker, 2005; Howlett, 2011). They take on various forms – from small local projects to substantial government investment programs, from regulations that shape public space within our communities to laws defining our rights and obligations towards the state. Public interventions relate to various aspects of citizens' lives – from education and health services, to security, labor market, economy, infrastructure, and protection of cultural and natural assets.

Interestingly, the logic of public influence behind this great variety of themes and forms is relatively simple. According to Bemelmans-Videc (2007), it boils down to "carrots, sticks, and sermons", which means that interventions are based on positive incentives and sanctions/prohibitions and on providing information/raising awareness. Schneider and Ingram (1990) formulated a more extensive list of public policy tools, namely: (1) tools based on authority (prohibitions, orders), (2) incentives, (3) capacity--building tools (information, education, training, etc.), (4) persuasion, and (5) learning tools (tools allowing members of the public to experiment with different solutions and, eventually, to find their own optimal solution to a problem).

All of the above types of interventions have one thing in common. Their objective is to encourage specific types of behavior. As assumed by the initiators of an intervention, i.e. the legislator, the local government etc., these shall bring the desired outcomes, conducive to prosperity and social order (Datta and Mullainathan, 2012; Shafir, 2013, p. 1). Past experience shows that the effectiveness of interventions is contingent upon

understanding the mechanisms of human behavior and decision-making processes (Shafir, 2013, p. 1). In other words, measures taken by public authorities will bring better results if the initiators of interventions adapt their form and logic to the methods applied by citizens in their decision-making processes.

In the currently predominant public policy paradigm, the behavior of intervention recipients is predicted and interpreted through the prism of neoclassical economics, i.e. the so-called rational choice theory. According to this theory, people are rational, their decisions are based on their own interests, and they seek to maximize their benefits while minimizing costs (Amadae, 2007). When we translate these principles into public intervention, we must assume that citizens and stakeholder groups who are the recipients of interventions are mostly egotistic and will react to incentives or prohibitions in a rational and thoughtful manner, calculating profits and losses and weighing all pros and cons (Low, 2011, p. 1–2).

It is clear from the above description and from our own experience that the model of *homo economicus* is idealistic. In normal circumstances, we have limited time for quiet reflection and cannot afford to thoroughly reflect on each action or choice. Furthermore, when the options we face exceed a certain number and a particular level of complexity, instead of a greater freedom of action, we feel overwhelmed – and, paradoxically, our possibilities become narrower as a result of our cognitive limitations (Schwartz, 2004). In fact, as indicated by Jones et al. (2013, p. 3) and Beggs (2013), our decision-making models resemble more the type of reasoning we would associate with the cartoon character Homer Simpson than with *homo economicus*. The behavioral approach attempts, therefore, to infuse realism into the assumptions of the choice theory and to bring them closer to the actual decision-making process and human behavior.

Theoretical foundations of behaviorally-informed public intervention can be traced back to the 1950s and to Herbert Simon's work dedicated to decision-making processes in organizations (Simon, 1997). Criticizing the assumptions of classical economics, he introduced the concept of "bounded rationality" to describe how decisions are made. He also formulated the model of "satisfactory minimum," arguing that, in fact, we are satisfied with simpler, satisfactory, and adequate solutions instead of looking for the best solution (i.e. the optimum), as *homo economicus* would do (Simon, 1956).

Although the work of Herbert Simon has been internationally acclaimed (Nobel Prize in economics), it has never gained ground in mainstream economics or in public policy dominated by the Chicago School.

A breakthrough came with the results of empirical research conducted by psychologists Amos Tversky and Daniel Kahneman, devoted to the mechanisms of human decision-making in situations of uncertainty (Tversky and Kahneman, 1974). This line of research in cognitive psychology has been developing rapidly since the 1970s. Its most important findings can be summarized in two points.

The first discovery is the "dual system theory", according to which we use interchangeably two modes of thinking when making decisions on a daily basis (see Kahneman, 2013b):

- System 1 (fast, intuitive, level-one thinking) works automatically, with minimal effort and, basically, without our conscious control. This system is based on mental shortcuts – heuristics. They allow us to save time and energy. Nevertheless, they come at a price: they are inaccurate and can result in biases.
- System 2 (slow, reflective, higher-level thinking) allows us to make more informed decisions. It is based on critical reasoning, but requires effort and attention.

These two systems operate interchangeably. Given the number of decisions we make every day, our minds constantly face a choice between saving time and energy on the one hand, and ensuring a greater precision on the other hand.

From the perspective of human actions, including response to public intervention, the problem is not the very existence of the dual system of thinking, but rather our reliance on the first system in situations that require the use of the second (Leong, 2011, p. viii–ix).

Another important finding of cognitive psychology is that human mistakes in decision-making are systematic – we are fairly predictable in our bounded rationality (Ariely, 2010). Research in the past few years on decision-making processes has identified dozens of simplification strategies and heuristics, as well as cognitive biases that result from them. The Table 1 shows the four basic heuristics that cause our limitations in evaluation and decision-making.

Table 1. Examples of heuristics

Name	Mechanism	Examples
Affect heuristic	In economic theory, it is believed that there is a positive correlation between future benefits and the level of risk that market participants are willing to accept:	When a sexual offense is committed by a well-known and widely-respected person (e.g. a famous film director), some people tend to minimize the negative consequences

	"the greater the potential gains, the more risk I am ready to take". Experiences conducted by psychologists indicate, however, that the opposite is true. When making decisions and evaluating a situation, we refer to our emotions, experiences and instinctive beliefs. If a particular action (person or situation) brings up positive memories or emotions, we tend to associate it with lower costs and a lesser burden. Conversely, negative associations with an object or phenomenon lead us to assume that its consequences will be more negative.	of the offense and defend the accused (the respect, admiration or other positive emotions that they have had for the offender influence their assessment of the prohibited act). *A rebours*, if a similar offense is committed by a widely disliked person (e.g. a populist politician known for his roguish ways), members of the public are much more severe in their judgement. Earlier negative feelings towards this person make then judge the person more scathingly.
Availability heuristic	When assessing the probability of certain phenomena, we subconsciously rake our memory for similar events from the past. Our opinion is not based on objective, statistically measured probability, but rather on our capability to recall certain phenomena. Therefore, our assessment of the likelihood of an event is determined to a large extent by very recent, well-remembered events, or those that received extensive media coverage, stirred up intense emotions, were widely publicized and discussed, and thus became imprinted in our memory.	Tourist traffic usually diminishes in areas where there have been recent terrorist attacks (even though — with the exception of a few countries — the threat of terrorism is incidental, we tend to remember discussions and media buzz around an incident, and are willing to change travel plans). A good example is the impact of recent events on tourism in Indonesia: after the bombings at the start of the 21st century, tourist traffic significantly decreased in this part of Asia. The trend was later reversed, following the popularity of the movie entitled „Eat, Pray and Love," whose main character travelled in this region. The same holds true for the subconscious fear of a plane crash. Even though the probability of a car accident is much higher, plane crashes receive a lot of media coverage; they have also been depicted in numerous movies. Therefore, despite the fact that aircraft accidents are rare, many people believe them to be a real threat.
Representativeness heuristic	We tend to believe that particular phenomena, features of character or objects are more likely to occur if they remind us of the population they represent.	This heuristic is the basis of the puzzles that we referred to above: we are more likely to believe that Stefan is a librarian, or that random instead of successive numbers will be drawn, because they are similar to the population that we have had the opportunity to observe in our lives.
Anchor heuristic (anchoring effect)	If we are to assess the value of a feature or determine the size of a group (e.g. indicate how many of our neighbours are unemployed), our assessment will be quite different in two cases, i.e. when we	Anchor heuristic works even in situations, in which we would not expect it. In an American court experiment, it was found that the punishment that the prosecutor requests for the accused has an impact on the assessment

Table 1 (Continued)

Name	Mechanism	Examples
	are to suggest a value by ourselves (without an anchor) and when an anchor is provided (e.g. "Are there more than 20 unemployed or fewer?"). In the latter case, our response will be determined by the anchor value provided.	of guilt and on the sentence (which means that the more severe the punishment requested by the prosecutor, the greater the probability that the jury will be convinced of the defendant's guilt). Another experiment showed how this heuristic impacts boxing judges. A group of judges were shown three rounds of a boxing match and were asked to guess which contestant won. In the first version, the judges were shown the match in a sequence in which player A was in top form during the first round, landing more punches than his opponent. In the second version, the sequence was arranged so that the fight began with player B landing more punches. The final verdict was determined by a version that was shown to the judges. When counting the blows in subsequent rounds, the judges probably referred to the anchor, i.e. the situation in the first round, and were more likely to attribute more points to the boxer whose initial performance was better.

Source: own study based on Baumeister and Vohs (2007) and Tyszka (2010).

Therefore, heuristics are subconscious cognitive strategies, insights, and mental short-cuts founded on our previous experience or observations. Heuristics induce us into cognitive biases, which have a direct impact on our actions. These are the elements that creators of behaviorally-informed public interventions strive to influence. The Table 2 presents several examples of biases from everyday life.

Table 2. Examples of cognitive/decision errors

Name of cognitive bias	Bias mechanism
Hyperbolic discounting	Most of us prefer instant profits that do not require waiting. We are therefore more inclined to make decisions that will bring immediate benefits, even if putting certain operations on hold or taking a different course of action would yield higher profits in the future (e.g. the majority of US lottery winners opt for the immediate payment of winnings, even if the amount is usually up to 50% lower compared to payment in installments over the course of several years). This can be defined as "a-bird-in-the-hand-is-worth-two-in-the-bush" approach.

Status quo bias	We do not like change. We accept the status quo, even if changes could bring us greater profits or result in other benefits. We prefer to stick to what we know until faced with a strong incentive to act. Many of us believe that "the better is the enemy of the good". Therefore, we usually stick with our default settings (e.g. every adult Pole is a potential organ donor unless he/she expressly objects to it).
Sunk costs effect	When we buy a public transport pass valid for a long period of time, we are more willing to use this means of transport — we feel that we have incurred costs and wish to rationalize the expense, i.e. get the best return on investment (e.g. taking buses more often than would normally be necessary). In traditional economic theory, incurred costs do not affect decisions and only future expenses count.
Procrastination (inertia)	We often postpone taking action, making decisions, expending efforts. Many of us take the initiative only when faced with external pressure. An example are thousands of declaration of Poles who wished to remain in the OFE system, which were sent to the Social Insurance Company after the deadline.
Loss aversion bias	We are afraid to risk losing what we have, even if it could bring sizeable benefits. Studies show that discomfort due to a loss is twice as powerful as the pleasure we feel after we have gained something.
Myopia	When making decisions about the future, we usually subconsciously reduce future costs associated with these decisions (e.g. the burden of the interest that we would need pay when taking out a long-term loan). We are so eager to get the desired effect that we fail to take into account all possible future consequences.
Overoptimism	When thinking about our future actions, we tend to retain an overly optimistic prognosis, e.g., we think that we will never overdraw our credit card or will always pay the overdraft off on time. Another example is the tendency to buy clothes that are a size smaller assuming that we will exercise regularly and keep a strict diet, and will therefore become fitter.
Conformist biases: "herd behavior" the effects of social norms	In many situations, we behave differently depending on whether we are alone or in a group. In the latter case, we generally adapt to the group's behavior and we tend to conform to others. When we make a decision, the awareness of what the majority of our neighbors or family members would do is likely to convince us to act in a similar manner. The most glaring examples are experiments in which participants are asked to evaluate a situation (e.g., to compare the length of two pencils). While some of them provide their answers spontaneously, several members of the group follow the instructions of the researchers (e.g. instead of expressing their personal assessment, they deliberately mislead others). Research have proven that we tend to adapt our own opinions to those expressed by others, even if it means formulating judgments that are against our actual observations. These mechanisms have been used in political propaganda and in totalitarian systems.
Reciprocity	We are more willing to take action if we have been or can be beneficiaries of a similar situation (e.g. lend money to a friend who has done a similar favor for us). This rule can also apply in future situations: we will be more inclined to do something (e.g., help an elderly person cross the street or carry their shopping upstairs), expecting that we might need this kind of help in the future (for this reason, middle-aged people are more likely than teenagers to give their seat to an elderly person on the bus, as for teenagers the prospect of being in a situation where they will need a similar favor is much further and less real).

Table 2 (Continued)

Name of cognitive bias	Bias mechanism
Confirmation bias	When making choices or assessments on the basis of a great wealth of information, data and evidence, we tend to rely on our intuition, convictions or prior knowledge. This mechanism works clearly in the process of shaping and maintaining stereotypes and prejudices, for instance with respect to other ethnic groups or nationalities. The fact that prejudices are not merely the result of a lack of information or knowledge, but result from innate thinking mechanisms makes them difficult to eradicate.
Framing effects	Our decisions and assessments tend to vary depending on the manner in which alternatives are presented to us, or on the kind of information that we are provided with. Research carried out in different countries and various cultural contexts regularly confirm the existence of this effect in situations where patients must decide on a therapy. Their decision tends to be influenced by the manner in which the consequences of a therapy are presented to them. For instance, if a patient is told that a drug or a medical procedure has proven effective in 80% of cases, he/she is more likely to choose this option than when — in the same situation — they are told about that the treatment proved ineffective in 20% of cases.

Source: own study based on Baumeister and Vohs (2007), Frederick, Loewenstein and O'donoghue (2002), Groome (1999), Ly, Mazar, Zhao and Soman (2013), Peng, Li, Miao, Feng and Xiao (2013) and Tyszka (2010).

This long list of decision-making mechanisms that distinguish a real person from the idealized model of *homo economicus* can be categorized in three main groups (Jolls et al., 2000, p. 14–16):

1) bounded rationality – simplifying heuristics and biases in assessing probability and value;
2) bounded willpower – tendency to take actions that, in the long term, are likely to prove disadvantageous;
3) bounded self-interest – making decisions founded on a sense of justice or on cultural norms instead of striving to maximize one's optimum outcome.

The above three constraints have practical implications for lawmaking processes and designing public intervention. The first constraint will prove consequential when decisions are made in situations of uncertainty (assessment of probability) or when the expected results are defined. The second will have an impact on decisions with future consequences. The third will come into play in situations where the actions of one of the parties are clearly inconsistent with conventionally acceptable behavior in a given situation. In the latter case, other participants of the social interaction are willing to bear the cost of punishing unfair behavior.

Behaviorally Informed Public Interventions in practice

Cognitive psychology concepts have dynamically spread onto other fields and they have also – albeit with a certain delay – impacted public policies. Interestingly, in 2005, a group of researchers from prestigious American universities (Harvard, MIT, Princeton, Yale) expressed their frustration with public policymakers reluctant to apply valid findings of behavioral psychology as evidence and a source of inspiration in their domain; instead, policymakers base their decisions on classic economic theories (Amir et al., 2005).

Four years later, the first major changes in this area began to unfold. The main proponents of this approach were legal scholar Cass Sunstein and economist Richard Thaler. Together, they authored "Nudge" (Thaler and Sunstein, 2009) – a popular science publication in which they outlined the application of behavioral psychology principles in public policy. The book quickly became a bestseller and has received extensive media coverage, mainly in the United States and the United Kingdom. American President Barack Obama and British Prime Minister David Cameron have referred to it during their public appearances. Both politicians hired the authors of the book to work in their respective administrations, which gave impetus to the development of practical applications of behavioral approaches in public management and public policy. The nudging strategy is discussed in more details in the next part of this article.

In the U.S., behavioral analysis was applied in the U.S. Office of Information and Regulatory Affairs (OIRA), which has operated for nearly 30 years. Instruments provided by the behavioral analysis were used for the purposes of review and evaluation of new regulations. It aimed to simplify their structure and improve the efficiency of operations (Sunstein, 2013). In the UK, a new office was established: the Behavioral Insight Unit, reporting directly to the Cabinet of the Prime Minister. This team is primarily in charge of experiments and pilot projects, which aim to help in assessing the future effects of the proposed policies (Behavioral Insights Team, 2012). At present, the Nudge Unit operates as a joint venture of the British government and the NESTA foundation.

Know-how is sold to entities around the world (e.g., governments in Australia, Singapore and the World Bank) and the team continuously embarks upon new projects, including a spectacular social experiment (one of the most extensive in British history): a randomized controlled trial (RCT) performed on eight groups with a total number of more than a million participants (Rutter, 2014).

The so-called "nudging" has been developing also in other countries. At the time of writing this paper (autumn 2014), a European network of behavioral policies (the

European Nudge Network) was under construction. It is to include researchers, scientists, public policymakers and experts from European countries interested in using solutions provided by this innovative approach to public management. The European network is based on the experience of the Danish Nudging Network, initiated by the University of Roskilde, and the University of Southern Denmark. At present, the network encompasses over 70 academic institutions, government offices, local government units and NGOs. Their goal is to share experiences and practical knowledge in order to help improve the use of behavioral analysis in public policy. Local authorities in Paris (Cappelli, 2014) and Berlin (Plickert, 2014) have shown interest in the use of knowledge about the mechanisms of human decisions and choices for effective public management.

The concept is relatively new and is based on a variety of intellectual inspirations (Jones et al., 2013, p. 43), which results in a multitude of practices, but also in a lack of methodical, or even terminological, consistency. "The Behavioral Foundations of Public Policy", edited by Shafir (2013b), is an attempt at creating a structure upon which to develop this new field.

In "The Behavioral Foundations of Public Policy", authors representing different disciplines strive to combine the existing research results and translate them into a set of guidelines for the design and implementation of public interventions (with emphasis on legal regulations). They suggest that the new field be called "applied behavioral research". In this article, we adopt an interdisciplinary perspective formulated by the authors of the publication. In the conclusion, we endeavor to associate it with progress in the field of program evaluation, sociology, and user-centered design.

Examples of BIPI

In the previous sections, we described in a synthetic manner the basic assumptions and findings of behavioral psychology and touched upon their potential use in public policies. In this section, we shall outline selected applications of these research findings for influencing citizens, i.e. affecting their behavior and decisions in a manner that would ensure their positive impact on individuals, families as well as on entire communities and society.

The term "Behaviorally Informed Public Interventions" (BIPI) shall be used to describe projects, regulations, and programs that are based on the behavioral approach, i.e.:

1. Clearly define the recipient-intervention user, and adopt his/her perspective;

2. Recognize that the user, as well as intervention creators themselves, have cognitive limitations;
3. Limited rationality, willpower, and self-interest;
4. Apply corrective solutions or use cognitive biases and limitations of recipients in their design of change mechanism;
5. Use pilot schemes, experiments and simulations to test these solutions prior to applying them on a large scale.

The practices outlined below were carried out in different countries and political regimes, and in various social, economic, and cultural contexts.

They have been selected so that the measures presented correspond, to a certain extent, to the challenges facing our country and its institutions.

Each of these practices indicates a problem (to be solved through an intervention), behavioral mechanisms applied, and the manner of influencing them (theory of change).

Table 3. Examples of BIPI

Name of BIPI	Element	BIPI construction
Personalized and simplified letters to taxpayers who have yet to pay their taxes	Behavioral model	Although the British have almost nine months to pay their taxes (submitting a tax declaration, payment), many put this chore off and end up failing to meet the deadline. This results in a double loss for the state budget (the value of unpaid taxes plus the costs incurred in order to send reminders and recover receivables).
	Cognitive bias	Procrastination (inertia)
	Choice architect	HM Revenue and Customs (HMRC) and the Behaviour Intervention Team (BIT)
	Theory of change	IF we send procrastinating taxpayers a letter indicating that the majority of their district's population have already paid their taxes (instead of the traditional, impersonal reminder), we will activate the social norm mechanism and, CONSEQUENTLY, taxpayers will pay what they owe to the Inland Revenue Office, which will generate savings for everyone.
	Effects	The test was conducted on two groups of approximately 700 payers. The first group received a traditional, impersonal reminder, while each member of the other group received a personalized letter indicating the number of taxpayers in his/her district who have already paid their taxes. Where reference was made to social norms, 15% more people fulfilled their duty. If HMRC had carried out this

Table 3 (Continued)

Name of BIPI	Element	BIPI construction
		campaign across the country, approx. GBP 160 million would have been recovered faster and HMRC would have saved resources allowing it to generate additional GBP 30 million per year.
	Source	(Hanks, Just, Smith and Wansink, 2012)
Convenient ordering of healthy meals in a school canteen	Behavioral model	We eat unhealthy, calorie-rich foods not because we are not aware of their adverse effects for our health. In many cases, we tend to reach for unhealthy foods because they are more easily available, and therefore their consumption is more convenient (the status quo mechanism) and we derive immediate benefits from them (sweets or other snacks with artificial flavors are a source of pleasure — immediate benefit). This makes us chose them instead of healthy snacks (postponed benefit — better health in the longer term).
	Cognitive bias	The status quo bias, time preference, delay discounting
	Choice architect	Management of one of the high schools in New York, researchers from Cornell University
	Theory of change	IF we provide students with a convenient distribution mechanism of healthy meals in the school cafeteria, the status quo mechanism will be activated and, CONSEQUENTLY, students will choose healthy foods that are more readily available instead of those with a higher calorie content (less accessible).
	Effects	A "convenient" distribution line of healthy dishes was installed in a school canteen for eight weeks (it was one of the two operating lines). At that time, researchers measured the share of healthy products among food purchased by students, as well as their consumption (i.e. how many of the selected products were consumed, and how many were left over). In another eight-week period, researchers explored the selection and consumption structure of healthy dishes when two traditional lines operated in the cafeteria, making it easier to order less healthy foods. Following the introduction of the "convenient" distribution line for healthy meals, students consumed approximately 28% less unhealthy food (in grams) as compared to the traditional system of distribution.
	Source	(Hanks, Just, Smith and Wansink, 2012)
„Pure love for Copenhagen"	Behavioral model	Residents of Copenhagen and tourists visiting the city have been throwing more and more trash onto the streets instead of putting it into rubbish bins. The city is drowning in street garbage (paper, cans, bottles).
	Cognitive bias	Self-control problems (consciously behaving in a manner that is harmful and undesirable)

	Choice architect	City authorities in Copenhagen and private companies operating in the city
	Theory of change	IF we show people the way to the trash bin in a simple, visible, engaging and funny manner, for example by sticking bright green footprints leading to a trash bin on the sidewalk, it will have an impact on their emotional commitment, enhancing their desire to act and, CONSEQUENTLY, they will be more likely to dispose of their rubbish in the bin, and contribute to keeping the city cleaner, thus generating savings in the local budget of funds allocated to street cleaning.
	Effects	The experiment was carried out by a member of the Danish Nudge Network, Pelle Guldborg Hansen, on a group of a thousand pedestrians on the streets of Copenhagen. Among pedestrians who came across colorful footprints leading to brightly marked garbage bins, approx. 46% more threw paper in the bin instead of disposing of it on the pavement.
	Source	(Webster, 2012)
Piano stairs *(Fun Theory)*	**Behavioral model**	Although people know that climbing stairs is healthier than using a lift or an escalator, they are more likely to choose the latter option, as the reward for walking up the stairs (improved physical condition, health), is deferred with respect to the advantages of using the lift (faster, easier, more convenient way of getting upstairs).
	Cognitive bias	Time preference, delay discounting
	Choice architect	Volkswagen Foundation
	Theory of change	IF users are provided with an extra incentive, i.e. an immediate reward for the use of stairs (fun, the joy of generating sounds by climbing the stairs), the effect of preferences associated with immediate benefits (using the lift) will be minimized and, CONSEQUENTLY, the likelihood of using the stairs will be increased, resulting in more physical activity for subway users, as well as reduced electricity costs for the operator.
	Effects	The experiment conducted by the Volkswagen Foundation at the Odenplan metro station in Stockholm consisted of installing a stereo system on the stairs and painting steps to make them look like piano keys. When walking up the stairs, passers-by would "play" music. During the experiment, 66% more people took the stairs.
	Source	http://www.rolighetsteorin.se/
Siła koloru! Colors power	**Behavioral model**	Physical activity is getting more and more popular. Most of the people train to gain long-lasting positive effects for themselves — lose weight, gain better health or shape their bodies. As a result they choose individual training in fitness centers or individual running schemes. Some of the NGOs started to think about how to change those egoist motivations into altruists one.

Table 3 (Continued)

Name of BIPI	Element	BIPI construction
	Cognitive bias	Time preference, delay discounting
	Choice architect	AkzoNobel, Rak'n'Roll Fundation
	Theory of change	IF we offer people an instant award for their physical activity (each minute of individual workout in the open air fitness facilities results in 0.77 liter of color paint donated for Oncology Centre in Warsaw) and include the competition/fun factor (who can donate the most), it will have an impact on their emotional commitment, enhancing their desire to act and, CONSEQUENTLY they will be more eager to change their training attitude and have one workout for altruist reasons helping to collect paint for refurbishment of Oncology Centre in Warsaw.
	Effects	Organizers planned to collect 200 liters of color paint; instead, they have collected more than 800 liters. The most active participant of the game performed 2,5 hours of training.
	Source	Siadkowski (2014)
Managing Traffic Congestion in Singapore	**Behavioral model**	When people are charged once for using public roads regardless of the number of times they use roads (fixed price) the sunk costs effects pushes them to use roads as often as possible without thinking on the rationality of their actions (e.g. they use cars in rush hours when they could actually wait till off-peak time).
	Cognitive bias	Sunk costs effect
	Choice architect	Ministry of Transport Singapore
	Theory of change	IF we change the fixed charge for roads with the pay-when-you-use scheme, THEN we will overcome the sunk cost effect and strengthen the hyperbolic discounting effect, people will try to avoid the places and hours in which it will generate less immediate costs of using public roads, and CONSEQUENTLY we will be able to minimize the congestion in the Singapore.
	Effects	The implementation of the ERP has generally reduced the traffic volumes in the Central Area during the peak hours and off peak hours by about 7–8% as compared to the previous system.
	Source	(Yap 2005; Wai Yan Leong and Yii Der Lew, 2011)

Source: own study.

Strategies for policy and regulatory design

The growing popularity of the behavioral approach in public policies has resulted in a number of comprehensive strategies targeting the most common cognitive biases. Some authors refer to them as behavioral change principles (Thaler et al., 2013). They are sets of tips for "choice architects" – designers of public interventions. These rules usually have the form of catchy mnemonic shorthand messages, organizing the main methods of influencing citizens' decisions.

Undoubtedly, the most widely used and commented-on set of rules is NUDGE, developed by Sunstein and Thaler. The term perfectly captures the philosophy of this behavioral strategy – to influence and to lead the citizen towards the desired patterns of behavior and choices (considered optimal by the regulator), while granting the citizen the freedom to decide. Sunstein himself explains this rule with a simple example: „Putting fruit at eye level [to attract attention and hence increase likelihood of getting chosen] counts as a nudge. Banning junk food does not."

The word "nudge" is an acronym for the main rules governing behavioral measures in public regulations (Thaler et al., 2013). It is a simple set of rules (Thaler, Sunstein and Balz, 2010):

- iNcentives – create a system of incentives;
- Understand choice mapping – understand the choice process;
- Defaults matter – bear in mind the importance of indolence and negligence (we tend to minimize efforts, choose the path of the least resistance, and apply solutions that are most readily available and "pre-installed", and therefore "default settings" are of key importance;
- Give feedback – help people understand by providing them with feedback – inform, warn against potential failures, praise for successes;
- Expect error – remember that people make mistakes – an efficient system takes it into account and minimizes the negative consequences of such errors;
- Structure complex choices – remember that if more options are available, the choice becomes more problematic. Try to simplify the possibilities instead of multiplying options.

Another set of rules is MINDSPACE (Dolan, 2013, p. 197), based on the following assumptions:

- Messenger – people are heavily influenced by who communicates information;

- Incentives – our responses to incentives are shaped by predictable mental shortcuts, such as strongly avoiding losses;
- Norms – we are strongly influenced by what others do;
- Defaults – we "go with the flow" of pre-set options, have recourse to the readily available and easiest solutions;
- Salience – our attention is drawn to what is novel and seems relevant to us and our lives, or essential for our future;
- Priming – our acts are often influenced by subconscious cues, impulses that we are not always aware of;
- Defaults (default) – the most common-use "factory settings", we use the most readily available and simple solutions;
- Affect (emotions) – our feelings and emotional associations can powerfully shape our actions;
- Commitments (declarations) – we seek to be consistent with our public promises, and reciprocate acts;
- EGO – we are focused on ourselves, trying to act in ways that make us feel better about ourselves and boost our well-being and self-esteem.

MINDSPACE is a more descriptive strategy: by showing the mechanisms and principles of our actions, it provides ample ground for choices in designing public measures. NUDGE is rather a set of simple recommendations on what to do and how to do it in order to succeed.

Both NUDGE and MINDSPACE focus on quick thinking and designing interventions that will take into account the heuristics and will lead us – the citizens – towards optimal choices.

Two other approaches, STEER and THINK, are founded on a completely different impact and change pattern. They attempt to activate each citizen's System 2: free thinking, which means turning our attention towards deeper reflection. The names of these approaches are not acronyms, as free thinking cannot be reduced to simple, automated rules.

STEER is based on workshops during which participants learn how their brains operate, which raises their awareness of mental shortcuts used in everyday decisions. STEER raises citizens' awareness of their own limitations in decision-making processes and teaches them how to make important decisions in a more conscious way. In short, it guides them towards making choices based on reflection (Jones et al., 2013, p. 177–182).

THINK follows a similar path, but focuses on the process of shaping public opinion and informed citizenship (John et al., 2011). In this approach, deliberation forms the basis for overcoming cognitive errors and activating reflective thinking. THINK postulates are enumerated as follows:

- Let people understand the problem and acquire knowledge;
- Create a platform for discussion, expression of thoughts and beliefs – when discussing certain issues, we learn and change our views and attitudes;
- Give people the opportunity to participate in the process they will co-create and for which they will feel jointly responsible.

Thus, as opposed to NUDGE, THINK strategy involves intellectual engagement of recipients in the discussion and, above all, refers to their beliefs, values and attitudes. This strategy leaves no place for "libertarian paternalism", but requires conscious and partnership-based involvement of citizens in the process of deliberation on the direction of social change. First experiences (though not as extensive as in the case of NUDGE) indicate that THINK is a better strategy for influencing the complex process of social change with the participation of informed citizens (e.g., building social acceptance and support for a low-carbon economy) (DEA, 2010). It is worth noting a significant difference between NUDGE and MINDSPACE on the one hand, and STEER and THINK on the other hand. The first two strategies impact the environment of citizens and create conditions affecting choices, and thus "nudge" us towards choices that are socially desirable and positive both for the individual and society (Thaler and Sunstein, 2009). Meanwhile, the two latter strategies focus on establishing an appropriate institutional framework (in the broad, sociological sense of the term), which allows a conscious, critical and active participation of citizens in decision-making (John et al., 2011, p. 18–20).

Implications for policy and regulatory practice

The growing popularity of the behavioral approach in several OECD countries carries serious implications for the planning and evaluation of public interventions. Six key issues deserve attention:

1. The need to rescale public policy objectives from abstract social processes to specific users' perspectives.
2. The need to introduce new notions and terms to the language of public intervention.

3. Modifying the tools for designing and evaluating interventions.
4. Pilot projects and public measure testing.
5. Examining the ethical aspects of the "psychological state".
6. Testing the effectiveness of BIPI in the Polish context.

Rescaling public policy objectives

Schneider and Ingram (1990, p. 513–514) note that effective public policy tools must depart from the theory of individual decisions, and focus on those aspects of actions and their psychological determinants that can be influenced and modified. This means that our approach to thinking about public interventions needs to be rescaled from abstract social processes to the decision-making mechanisms of individual citizens. To some extent, this approach is similar to the famous opinion expressed by Margaret Thatcher: "There is no such thing as society: there are individual men and women, and there are families. And no government can do anything except through people (...)". In the case of BIPI, it is not about denying the existence of the social dimension of an individual (certain solutions explicitly refer to mechanisms related to living within a social group). This is a utilitarian shift, related to policies rather than a philosophical change of vision of society and the citizen's place within the state.

For the designers of public interventions – decision-makers establishing the legal frame-work and officials designing programs, projects, or regulations – this means the need for more in-depth understanding of intervention recipients and adopting a user-centered design. In practice, it is the question of searching for and designing citizen-friendly solutions, referring to decision mechanisms and also to contexts that influence these decisions (e.g. understanding why fathers are willing to take a short parental leave, yet are reluctant to look after their children over longer periods of time). This process is more difficult and more complex than "adjusting the service to the customer".

Failure to take into account the motivations of recipients may result in social protests, as evidenced by the attempts to adopt the Anti-Counterfeiting Trade Agreement (ACTA) in Europe, or the decision to lower the compulsory school age to 6 years in Poland. Another consequence is a high risk of ineffectiveness of specific solutions (e.g., fathers being less inclined to take parental leave than expected).

In the field of public programs and projects undergoing evaluation, the perspective of the "user" – that is, the recipient of interventions – have been taken into consideration for a long time, although without particular focus on the "friendliness" of projects from the point of view of applicants. However, from the perspective of legal regulations,

this approach is very innovative. As noted by Sześciło (2012), Polish legal studies need to build a bridge with contemporary management trends. These connections could significantly enrich and improve the quality of the instrumental function of the law, i.e. provide legal instruments necessary for effective public management.

The need to introduce new concepts to the language of public intervention

The behavioral approach requires expanding our public policy vocabulary with new terms. We believe that the following are worth taking into account:

- "Heuristics and cognitive biases" are the shortcomings of our decision system and the effects of these shortcomings, which are predictable to a large extent. Heuristics are simplifying decision rules used by our minds to save time and energy. More often then not, they mislead us; as a result of cognitive biases, we make decisions that are far from optimal, rational, and beneficial. Intervention creators must be aware of them – both with respect to themselves and to intervention recipients;
- "Models of behavior" explain human behavior in a particular situation, indicating the key factors, usually a combination of several cognitive biases and contextual factors that determine our actions. They provide intervention creators with information on factors that determine the behavior that is to be changed through the implementation of public measures;
- "Choice architects" is a new role for decision-makers creating the legal framework, officials designing programs, projects or regulations. It means deliberately influencing choices made by intervention recipients, based mainly on persuasion stemming from knowledge about heuristics and models of behavior. Choice architects construct the space around the recipient (both physical or legal) and orient the latter towards the desired solution. At the same time, the recipient is free to choose;
- "Theory of change" also known as "the theory of change mechanism" is a specific, tailored method of changing the behavior of a given group of recipients. It is a plan designed by a choice architect. It describes how, through which methods and with reference to which cognitive limitations, we can influence the recipient of interventions in order to trigger the desired response and achieve the objective of a regulation or a program, i.e. a change of behavior.

These terms are logically and practically interrelated. The easiest way to understand them is to refer to the earlier BIPI example of personalized and simplified letters to taxpayers (see Table 3).

Modification of intervention design and evaluation tools

Logical models are commonly used in the current practice of public intervention design and evaluation (usually programs and projects, much less often regulations). They are the graphical illustration of the so-called "intervention theory". The traditional logical model is based on the following cause and effect sequence:

INPUTS allow ACTIONS that bring OUTPUTS, which generate RESULTS and EFFECTS

Using this model to design and evaluate interventions, we assume an automatic transition from products to effects. For example, training provided to 20 people (OUTPUT of a project) leads to their improved knowledge (expected RESULT) and, in turn, to their employment (EFFECT).

In the behavioral approach to public intervention, this model needs significant modifications. The user's perspective is adopted. We need to ask ourselves if the planned outcomes will trigger the desired processes and behavior of recipients, which in turn will bring the expected effects. This means that the traditional logical sequence needs to be extended:

INPUTS allow ACTIONS that bring OUTPUTS, which trigger the CHANGE MECHANISM that generates the EFFECT – a permanent change.

There needs to be an entire reaction chain between OUTPUT (providing training to 20 people) and the EFFECT (finding employment). Training participants should listen to and understand trainers, internalize knowledge, put it into action, have the opportunity to prove their knowledge to the employer. The entire chain of events must be included in the logical model, as the success of the project depends on the probability of this sequence. Several proposals for the practical application of logic models in behavioral approach have already been formulated by scholars (Olejniczak, 2014; Olejniczak and Newcomer, 2014, p. 85–90; Pawson, 2013, p. 127–131).

Pilot projects and testing public measures

We have noted that the behavioral approach promotes user-oriented design. This term has been borrowed from the field of product development, based on a specific process technology. It usually follows this pattern: "Understand – Design – Test – Modify" (Wendel, 2013). The cycle can be repeated several times, until the designer

has managed to create a product that will prove intuitive and user-friendly in the subsequent test.

When applied to public policy, this approach brings two outcomes. First, there is a clear shift of accents in the public policy cycle: from implementation, which used to absorb most of our attention and energy, to planning and testing, i.e. designing intervention. In the field of evaluation, this means focusing on ex-ante evaluation, although understood differently – not as a discursive process of modifying program provisions, but as a critical, empirical verification of a specific behavioral change theory applied in a given intervention. It seems that this may be an important field in which to improve Polish public programs. They tend to focus on a thorough diagnosis of the current situation (usually in the form of descriptive statistics and main trends) to indicate the direction of desired changes, but also all but disregard the mechanisms that need to be triggered and factors that must be influenced for these changes to occur. Thus, programs often turn into a catalogue of demands rather than a clear description of the logical sequence of actions to be taken in order to achieve a positive change in society and the economy.

Second, this approach requires us to conduct tests, which allow the adaptation of the original design (e.g., act, intervention, program) to actual behavior, motivation, and decision mechanisms of intervention recipients. This approach enables us to determine the following at a relatively low cost: which behavioral strategies are effective; what should be changed or improved; and what are the shortcomings of the applied solution. An example of such a test is the social initiative carried out in the UK to encourage members of the public to register as organ donors. During the test, eight different forms of incentives were applied in relation to eight groups of recipients; their effectiveness was then compared in order to determine which mechanisms best appealed to citizens and encouraged them to register as organ donors.

At the technical level (i.e. the level of organization and research planning), experimental research plans (randomized control trials) were applied in the majority of cases, followed by quasi-experiments (comparison groups). These approaches provide very strong evidence and are considered the gold standard of outcome evaluation methodology. In some cases, very innovative solutions were applied (although already recognized in social research methodology), namely simulations and games (Vermaas and Nieuwland, 2007). Their advantages are that they are much cheaper than experiments and do not require extensive involvement of participants, they are not invasive, and they allow for modifications of the solutions tested during the study – and, at the same time, provide results that are nearly as reliable as the results of experiments (de Vaus, 2006).

Examining the ethical aspects of the "psychological state"

An important implication of BIPI is the change of relationship between the state and the citizen. In today's complex and dynamic world, where knowledge about humans and their limitations has been explored at the biological level, the issues of freedom of the individual and respect for human rights are often emphasized in the context of risks associated with the increasingly sophisticated methods of information control, collection and processing.

In this context, the use of BIPI raises an important question – does it mean manipulating citizens? This issue has already been dealt with by showing the differences between NUDGE and THINK. At the first glance, the tool is very effective, but the instruments resemble props from a film adaptation of George Orwell's "1984".

Consequently, the enthusiasm sparked by the first positive results brought by the application of this approach was followed by a number of less approving opinions of those who referred to our freedom to be humans: fallible, weak, prone to mistakes. And so, the debate revolves around the following questions: Are we witnessing the birth of a psychological state? What are the consequences for the already highly asymmetrical relations between the state and its administration, and the citizen? Are we moving towards the model of a state that manipulates its citizens? At present, it is difficult to answer this question. However, arguments put forward by both advocates and critics are worth analyzing. The topic should not be brushed aside – especially if we take into account that, for quite some time now, private corporations have not hesitated to explore it and use the possibilities offered *inter alia* by neuromarketing, without any general regulations in place.

Testing the effectiveness of BIPI in the Polish context

Use of behaviorally-informed public interventions in the Polish context could make a significant contribution to the development of management and public policy analysis in Poland. We should note that attempts to explain the empirical effectiveness of interventions through the prism of their recipients' behavior (especially in the field of legal regulations) have been seldom explored by Polish researchers. Furthermore, as evidenced by the above examples from other countries (e.g., solutions adopted in Stockholm and Copenhagen), the introduction of the set of tools used in behavioral analysis can encourage the public to explore complex issues of public management. To put it colloquially, interesting pilot schemes and experiments are likely to sell better than complex legal acts or intricate strategies.

Conducting tests before shifting the systemic paradigm appears justified for two reasons. Firstly, behavioral interventions have been carried out mainly in English-speaking countries. It is true that heuristics and cognitive biases are universal and we can all fall into their trap, but their associations in specific decision and behavior models are context-sensitive. Examples from literature suggest that certain self-interest limitations have different incidence in different cultures. The question we need to answer is whether all models of behavior and change mechanisms tested in the Anglo-Saxon culture could work in a similar manner in the post-socialist context (we must not forget that our heaviest baggage is an extremely low level of public trust).

Second, behavioral interventions are far from linear automatism. Human behavior is the product of various factors that come together. A durable and effective behavioral change usually requires constructing a "theory of change" (a mechanism) addressing a number of cognitive biases (van der Linden, 2013, p. 210, 213). Scholars exploring the subject have proven that a minor modification of a single element may bring about a great change. This is evidenced by the British experiment in which eight different forms of incentives were used to encourage people to register as organ donors. It turns out that it is not enough to appeal to one behavioral mechanism; instead, we need to test which of the many mechanisms is the most effective in a given context.

Taking into account the above issues, we believe that the behavioral approach can be tested in Poland in a relatively wide range of public interventions at different management levels.

Importantly, it can be used for both designing public interventions and explaining their mechanism. The first field consists of projects and programs under the cohesion policy. It seems that the "user's perspective" and the "theory of change based on the behavioral approach" are relatively easy to incorporate into the rich and advanced evaluation research methodology, especially in the case of studies aimed at describing the mechanisms that bring about certain effects of the intervention. It would be interesting to verify whether evaluations performed using the new approach provide a better understanding of the usefulness of projects co-financed by the EU, particularly those that would have a direct impact on people (e.g., those associated with the activation of the unemployed, preventing social exclusion or acquiring new competencies at different stages of life).

Regulations and laws are another promising testing field. They are currently subject to regulatory testing and impact assessments. In this respect, quantitative tools of economic analysis, including the cost-benefit analysis, play an important role. Good

examples from other countries (e.g., Singapore) have proven that expanding the traditional cost-benefit analysis with the behavioral approach is very valuable for those public interventions in which citizens' reactions and decision process are pivotal (Low, 2011). In the case of Poland, yet another argument seems to be of great consequence. The strategic objective of the next edition of the Operational Programme, dedicated to good governance, is to improve the quality of regulations (e.g., increasing the transparency and accessibility of law to citizens). The behavioral approach, with its philosophy of "user-friendly design" and choice architecture seems most propitious.

Regulations, projects, and initiatives aimed at space management – particularly urban space management – are the third test area. The plethora of local initiatives and the resilience of local governments open up many opportunities for testing innovative solutions and replicating them elsewhere. It can be done with respect to local interventions, directly affecting residents. We know that Polish cities face numerous new challenges: segregation, and disposal of waste, land development, use of public spaces by local communities and the enforcement of local taxes. All of them can be influenced through Behaviorally Informed Public Interventions.

Conclusion

In the currently predominant public policy paradigm, the behavior of those targeted by public interventions is predicted and interpreted through the prism of neoclassical economics, i.e. the so-called rational choice theory. The design and evaluation of public interventions is influenced by the assumptions that people are rational, their decisions are based on their own interest, and they seek to maximize their benefits while minimizing costs. However, findings from recent breakthroughs in cognitive psychology indicate that human decisions are impacted by heuristics and cognitive biases. These findings are of key importance for public policy, as they help explain and predict actual human responses to regulations and public programs.

Psychological research findings are increasingly applied in practice. The new approach is referred to as "applied behavioral science". Specific projects, regulations and programs based on this approach are called "behaviorally informed public interventions" (BIPI). They can be characterized as follows:

1. They clearly define the recipient-intervention user, and adopt his/her perspective.
2. They recognize that the user, as well as intervention creators themselves, have cognitive limitations.

3. They refer to limited rationality, bounded-willpower and self-interest.
4. They apply corrective solutions or use cognitive biases and limitations of recipients in their design of change mechanism.
5. They use pilot schemes, experiments and simulations to test interventions (including regulatory solutions) prior to applying them on a large scale.

Examples of such measures discussed in this article prove their high value for those in charge of designing public policies. The behavioral approach allows decision-makers (Leong, 2011, ix; Low, 2011, p. 5–6) to:

■ Better understand the decisions and behavior of citizens, e.g., their actual everyday reactions to legal regulations and solutions implemented by public administration.
■ Become aware of their own limitations, because public policymakers and those who design regulations are also subject to the rules of inference and to cognitive errors.
■ Design more effective interventions with minimum effort by adapting the existing solutions to real decision mechanisms of citizens.

As noted above, the BIPI cannot be regard as a 'magic wand' that will allow policymakers to change people's behaviors and exert limitless influence on their decisions. Rather, this is a potentially effective tool to enrich the public policy process (from formulation through implementation to analysis) with the broader perspective of 'real people' instead of excessive reliability on the Weberian 'ideal type' (Idealtypus). It should be, then, seen as another source of fruitful knowledge to be integrated with those utilized previously. There is still much to be done in the course of building a coherent and systematic approach, but the growing body of international experiences allows us to look at those challenges with optimism while avoiding common biases of over-optimism or myopia).

BIPI has no intention to eradicate the transparency of public or political actions, civil education, dialogue, public deliberation or common responsibility that constitute the basis of modern democracy. Remaining sensitive to any attempts to use this approach in a manipulative manner, we should bear in mind that vivid public and academic debate on the work of Kahneman, Sustein and Thaler provoked one of the most valuable discussions on human decision-making processes in recent times. It allowed us to critically reconsider some of the fundamental questions about human actions in individual and social contexts.

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