

BASIC INCOME STUDIES
An International Journal of Basic Income Research

Vol. 5, Issue 2

RESEARCH ARTICLE

December 2010

Winner of the 2009 BIS Essay Prize

Behavioral Economics and The Basic Income
Guarantee

Wesley J. Pech
Wofford College

Abstract – This article provides a critical discussion of the potential contributions behavioral economics makes to the idea of a Basic Income Guarantee (BIG). Behavioral economics suggests that the consequences of a basic income may be significantly different from the ones predicted by the Standard Economic Model. Three topics from this literature are analyzed and linked to the BIG idea: Prospect Theory, Motivation Crowding Theory, and Conspicuous Consumption. The article argues that a basic income may be efficiency enhancing under some conditions, but at the same time incentives related to positional concerns may increase wasteful expenditure following its implementation.

Keywords – basic income, behavioral economics, experimental economics, psychology

1. Introduction

The field of behavioral economics is broadly defined as a combination of economics and psychology that tries to capture human behavior in a more realistic, but at the same time systematic, manner. In recent years, its findings have challenged the empirical validity of many assumptions of the Standard

Economic Model.¹ These findings have provided new grounds to the interpretation of several different policies targeted at improving efficiency in the economy, and they have contributed to the understanding of topics such as decisions under risk and uncertainty (Kahneman and Tversky, 1979), consumer behavior (Thaler, 1999), intertemporal choice (Loewenstein and Prelec, 1992), the psychology of incentives (Frey, 1997; Benabou and Tirole, 2003), and behavior in strategic interactions (Camerer, 2003).

Although several papers have addressed the idea of a Basic Income Guarantee (BIG) through the lens of microeconomic theory (Bowles, 1992; Van der Linden, 1997, 2002; Gamel et al., 2006), none of these studies have introduced insights from behavioral economics. To the author's knowledge, this article is the first attempt to bring together the potential implications of a BIG and its variations and the psychological insights that have been incorporated into economics in recent years. We find that the microeconomic consequences of a basic income may be efficiency enhancing under some conditions, but at the same time incentives about positional concerns could lead to an increase in wasteful spending.

The structure of the article is as follows: Section 2 describes the definition of basic income that will be used throughout the article, as well as briefly describing the three topics of behavioral economics that will be linked to the idea of a basic income; Section 3 discusses how Prospect Theory changes the perception that taxpayers would have of the segregation between the tax and the guarantee; Section 4 analyzes the effects of a BIG on labor markets – particularly, it discusses how workers would move from one type of job to another based on their intrinsic motivation, and how effort and wage levels would change following this movement; Section 5 discusses the role of positional externalities on conspicuous consumption, and how a BIG could affect the level of status consumption; Section 6 concludes the article.

2. Basic Income and Behavioral Economics: Three Contributions

Even though the central idea of providing an unconditional income does not differ from the several studies on the topic, the definitions of a BIG used by different authors may diverge to some extent. In order to avoid confusion, this article will use the definition of a BIG provided by Van Parijs (2003): "A Basic

¹ The traditional models in economics usually use the following assumptions about human behavior: 1. Unbounded cognitive capacity (absence of limits to rationality); 2. Unbounded willpower (absence of self-control problems); and 3. Unbounded selfishness (absence of social preferences) (Frey and Benz, 2002).

Income is an income paid by a political community to all its members on an individual basis, without means test or work requirement” (2003, p. 4).

For the purposes of this article, three additional assumptions will be considered: a) only adults are recipients of the guarantee; b) the guarantee is financed through income taxation; and c) both the tax and the subsidy are transparent enough to be identified by the agent when they are realized.

Due to the broad range that the field of behavioral economics has reached recently, many points of relatively minor importance could have been included in this essay to analyze the full effects of such a guarantee on human behavior. The economic impact of these points, however, would be largely insignificant. The article concentrates on the three most important topics in behavioral economics that can contribute to the BIG debate, and that are likely to have a major impact in the economy. The discussion revolves around the following components: a) Prospect Theory – how reference dependence and loss aversion dictates how a BIG would be perceived by taxpayers; b) Motivation Crowding Theory – how extrinsic incentives correlate with effort and intrinsic motivation in a nonseparable manner, and how the dynamics of labor markets would change these variables under a BIG; and c) Conspicuous Consumption and Positional Externalities – how a BIG would affect the overall level of status-seeking behavior.

3. Prospect Theory and the BIG

In decisions involving risk and uncertainty, the standard economic model usually assumes that decisions are based on final states, regardless of the changes in payoffs caused by a person’s decision. A person with \$100 who had \$150 but lost \$50 due to a bad outcome is assumed to perceive the final result the same way as if she had started with \$50 and had won an extra \$50.

Kahneman and Tversky (1979) advanced, however, through a series of surveys and experiments, an alternative model of judgment and behavior under risk and uncertainty.² Prospect Theory attempts to provide a more realistic model of how people react when dealing with a sequence of payoffs. The Value Function derived from their results is shown below:

² They later extended the analysis to riskless choices (Tversky and Kahneman, 1991).

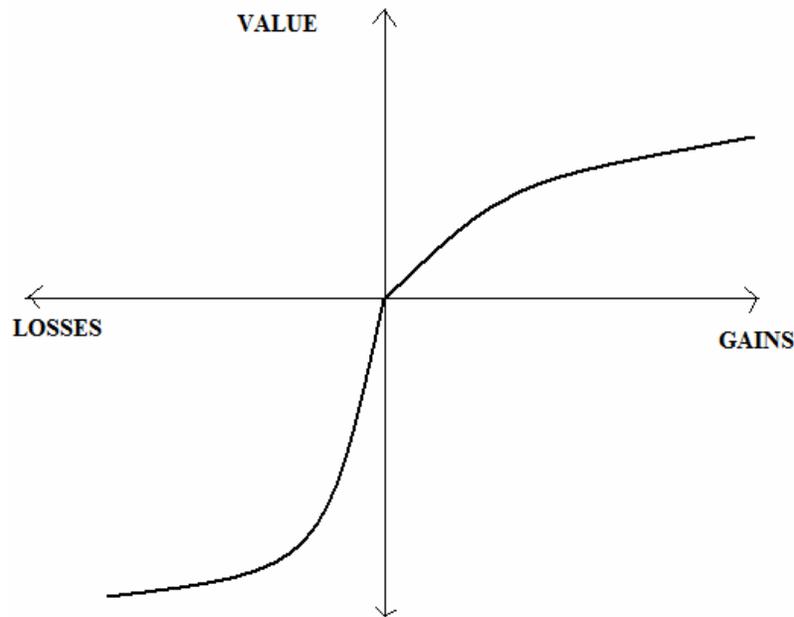


Figure 1. The value function in prospect theory

This Value Function possesses three main properties:

1. People evaluate decisions over gain and losses with respect to some natural reference point, which is usually assumed to be the status quo, rather than assessing only the final state. This means that judgments about a sequence of outcomes are based on changes in wealth rather than absolute wealth. A gain of \$50 followed by a loss of \$30 is perceived as one gain and one loss, instead of just a gain of \$20;
2. The function is concave for gains and convex for losses. It implies that there is diminishing sensitivity as you move away from the reference point for both gains and losses (a movement from a gain of \$100 to a gain of \$200 has more impact than a movement from a gain of \$1,000 to a gain of \$1,100. Likewise, a movement from a loss of \$100 to a loss of \$200 has more impact than a movement from a loss of \$1,000 to a loss of \$1,100), which generates risk averse behavior for gains and risk-seeking behavior for losses;
3. Losses loom larger than gains (loss aversion). “The aggravation that one experiences in losing a sum of money appears to be greater than the pleasure associated with the same amount” (Kahneman and Tversky, 1979, p. 279).

By combining these properties, it is possible then to explain why, in a sequence of payoffs, people would prefer to segregate multiple gains (two gains

of \$50 would be perceived as superior to a gain of \$100), integrate multiple losses (a loss of \$100 would be perceived as superior to two losses of \$50), segregate smaller gains with larger losses (a gain of \$50 combined with a loss of \$100 would be perceived as superior to a loss of \$50), and integrate smaller losses with larger gains (a gain of \$50 would be perceived as superior to a gain of \$100 combined with a loss of \$50).

Prospect Theory contributes to the BIG debate because, depending on how net recipients and net payers receive the grant and pay their taxes, their perception of the final outcome will differ, even if the final net monetary payoffs are identical. Since both net payers and net recipients receive the guarantee and pay the tax, a BIG automatically segregates the gain (the guarantee) and the loss (the tax) for these two groups of people. On the other hand, a similar idea to the BIG, the Negative Income Tax (NIT), does exactly the opposite in one of its main variations; net payers only pay the difference without receiving the subsidy, whereas net beneficiaries receive only the difference between the guarantee and the smaller tax, so the gain and the loss are integrated.³ As mentioned in Section 2, in the case of a BIG, we are assuming that the tax and the subsidy are done in a separate manner; and that the agents are able to identify when the payment is actually being realized (so that the disutility of paying the tax is noticeable) and when they are receiving the benefit (so that the utility of receiving the grant is also noticeable). A similar assumption is made for the NIT, but in this case either the tax (in the case of high-income earners) or the subsidy (in the case of low and middle-income earners) will be noticeable.

Prospect Theory predicts that taxpayers will have a different perception of these two systems, even though the final states are identical. Under a BIG, net payers (high-income earners) face a sequence of outcomes that involves the segregation of a smaller gain and a larger loss, since the person has to pay the required tax in full but she also receives the guarantee in full. Compared to the predictions of the Standard Economic Model and the integration of these payoffs under an NIT scheme, these net payers will perceive this segregation as being superior to the other alternatives. This is easily demonstrated using the Value Function.

In Figure 2, b_1 is the magnitude of the BIG, V_{b1} is the value that the recipient of the guarantee attaches to it, $t_1 (> b_1)$ is the magnitude of the tax, V_{t1} is the perceived negative value of having to pay the tax, n_1 is the magnitude of the

³ Some versions of the NIT do not integrate the payoffs. Then, in this case it is obvious that no significant psychological differences related to the findings of Prospect Theory should be expected between a BIG and the NIT.

net loss of this person ($b1 - t1$), Vnl is the value associated with this net loss if the tax and the guarantee had been integrated in one payoff, and $Vbig$ is the actual value that this person will attach to the BIG when the gain and the loss are segregated ($Vb1 - Vt1$). As the graph shows, $Vbig > Vnl$, so segregation (and therefore a BIG) is preferred to the NIT by high-income earners.

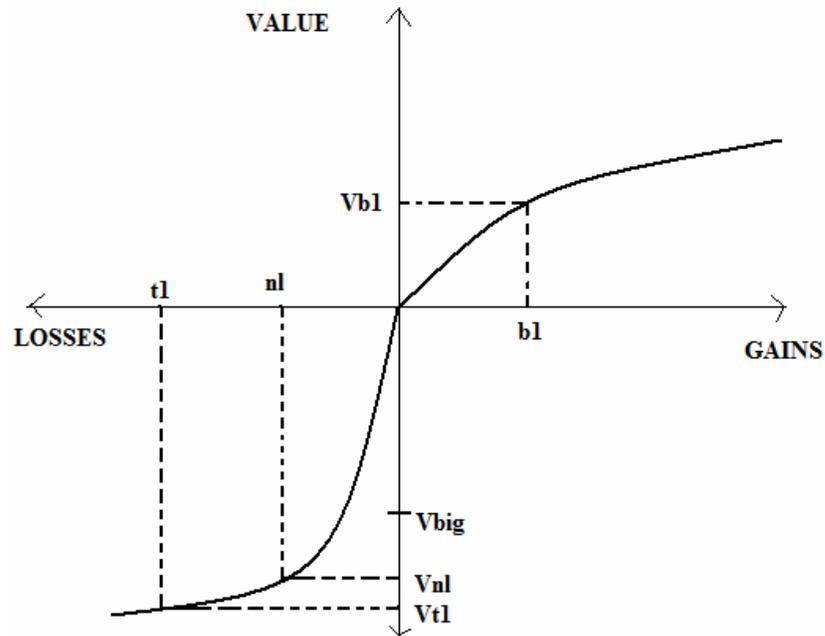


Figure 2. Segregating a smaller gain with a larger loss

Net recipients, on the other hand, pay less in taxes than the amount they receive from the BIG, and these payoffs are also segregated. Prospect Theory suggests that these recipients will be more resistant to such a sequence, and would prefer to have these payoffs integrated into a smaller gain (they would receive only the difference). This prediction is demonstrated using Figure 3. Again, $b1$ is the magnitude of the BIG, $Vb1$ is the value that the recipient of the guarantee attaches to it, $t1$ is the magnitude of the tax (which is smaller than the BIG in this case), $Vt1$ is the perceived negative value of having to pay the tax, ng is the magnitude of the net gain ($b1 - t1$), Vng is the value associated with this net gain if the tax and the guarantee had been integrated, and $Vbig$ is the actual value that this person attaches to the BIG when the gain and the loss are segregated ($Vb1 - Vt1$). As the graph shows, Vng is larger than $Vbig$, so integration is preferred in this situation.

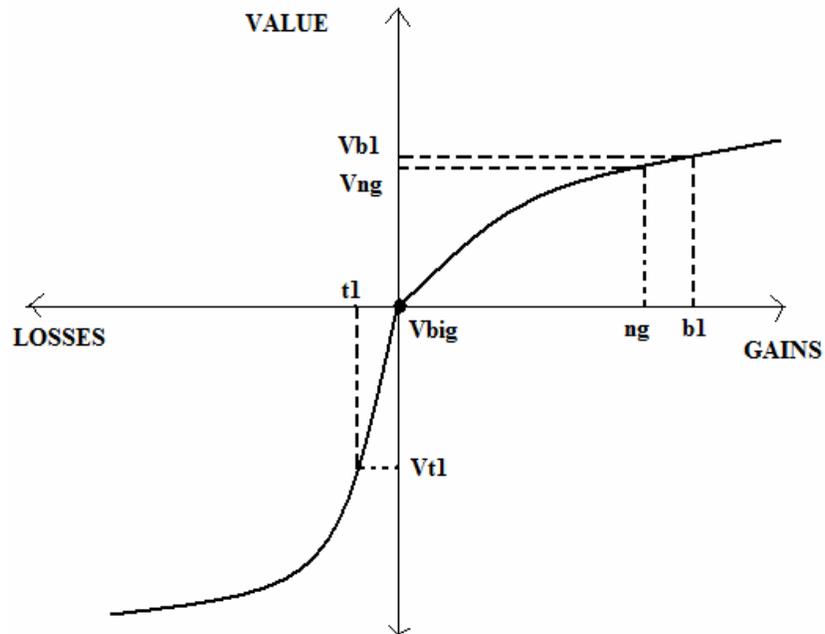


Figure 3. Segregating a smaller loss with a larger gain

Since it is plausible to assume that political support from taxpayers is important in order to finance a BIG and to maintain its political stability, Prospect Theory enlightens the debate by arguing that the type of tax system should be conditional on whether a BIG or a NIT is implemented. If a BIG is to be implemented, a more progressive system of taxation would probably offer less resistance; the burden would fall more on high-income earners, but they would not feel as averse toward such net loss when the payoffs are segregated as they would if the payoffs had been integrated. And net benefiter (middle-income earners), who do feel aversion toward such segregation, would pay a smaller amount in taxes. But if an NIT is to be implemented, then a flatter tax system should be favored, because the tax burden would fall more on middle-income earners, who actually do prefer the integration of the payoffs, whereas high-income earners, who do not like the integration, would pay a smaller amount in taxes.⁴

⁴ Naturally, the ideal situation from this point of view would be to integrate the tax and the guarantee for net recipients and to segregate them for net payers. This change would probably increase implementation costs significantly, however, and could generate a sense of unfairness and discrimination, since the rich and the poor would receive the nominal value of the guarantee in full but middle-income earners would receive just a portion of it.

In summary, Prospect Theory contributes to the analysis by proposing that the tax system is not independent of the way the guarantee is paid to the population. The decision about whether to implement a BIG or a system closer to the NIT should be linked to the tax system that will be implemented to finance it.

4. Motivation Crowding Theory and the BIG

One of the main challenges of economic theory is to find out what are the incentives and institutions that increase productivity of workers without alienating them. Even though many compensation schemes have been investigated, the starting point is usually the same: implement an extrinsic incentive either in the form of monetary compensations for high effort and fines for low effort, or use a nonpecuniary form of reward or punishment. The idea is intuitive, and it is derived from the standard marginal analysis: if the marginal benefit of doing an activity increases or the marginal cost of doing it decreases, one will do more of that activity, and conversely. The corollary of this analysis implies that, if a principal wants an agent to increase her level of effort on a specific task, the principal should consider either paying her for working hard or punishing her for shirking. An implicit assumption here is that people derive disutility from working and, therefore, need some sort of external compensation for doing a specific activity; the more they are paid the harder they will work, since shirking has become more expensive.

But experiments in cognitive and social psychology have challenged the idea that all tasks are similar in the sense of always generating disutility (Deci, 1975).⁵ Specifically, those researchers have argued that the activities that we perform can be divided into two main types: a) those with low or no intrinsic motivation; and b) those with high intrinsic motivation. To have an intrinsic motivation to perform an activity simply means that a person enjoys doing an activity for the sake of doing it; she does not need any type of external compensation to provide a high level of effort. It is important to point out, however, that even though this distinction had not been explicitly made by the Standard Economic Model at the time, there was nothing in this idea that contradicted the model. A typical economist would argue that, if a person has high intrinsic motivation to perform a task, she will exert a high level of effort without any type of external compensation, but she will apply an even higher level of effort if she receives compensation.⁶ And if a person does not have any intrinsic motivation to

⁵ Though they obviously did not frame the idea using the terminology of utility.

⁶ In technical terms, the compensation and a person's intrinsic motivation are separable and additive.

perform a task, she will provide no effort or a low level of effort when there is no compensation, but will work harder if an extrinsic incentive is implemented.

But these psychological studies have also revealed another result, which unambiguously contradicted the predictions of the Standard Economic Model: for those tasks in which a person has high intrinsic motivation, the introduction of an extrinsic incentive (either in the form of a monetary reward or a fine) undermines the person's intrinsic motivation, which may cause her to decrease her level of effort. This *crowding-out effect* occurs because, when the extrinsic incentive is absent, the reference point of the person deciding what level of effort to perform is "how much do I enjoy doing it?" – whereas her reference point shifts to the extrinsic incentive when the compensation is introduced. She stops thinking about how much she likes doing it and, instead, thinks about how much she is being paid to do it (Frey, 1997; Benabou and Tirole, 2003).

If a BIG were to be implemented, motivation crowding theory suggests that labor markets affecting net recipients of the grant would change significantly. As an illustration, consider two types of jobs: Job A ("bad job"), in which workers have no intrinsic motivation; and Job B ("good job"), in which workers have high intrinsic motivation.⁷ Although workers prefer Job B to Job A, many workers may end up accepting Job A because of the lack of income security that they face (e.g., Job A pays a higher wage). Since a BIG would provide some level of income security, a natural consequence of its implementation would be that the supply of labor would decrease for those jobs for which people have no intrinsic motivation to perform, and it would increase for those jobs for which people have high intrinsic motivation to perform. In other words, some workers would move from *bad* jobs to *good* jobs; some workers would shift toward jobs they enjoy more and would move away from jobs that are attractive only for extrinsic reasons. The larger the BIG is, the larger this movement is expected to be.

Using a simple supply and demand analysis of the labor market, these changes in the labor supply would cause the expected result regarding wages and employment: since there is less supply for jobs with no intrinsic motivation, the equilibrium wage for these jobs would increase and total employment would decrease. And since there is more supply for jobs with high intrinsic motivation, wage levels in this group would decrease and total employment would increase. Therefore, the first consequence of a BIG in the labor market would be to cause

⁷ It is possible, of course, that one worker may have a high intrinsic motivation to perform one type of job and another worker may have no intrinsic motivation to perform the same job. While this is true for specific tasks, it is much less controversial to group all jobs in two more general groups: a) those that provide freedom of choice to workers, independent and creative thinking, etc. (high intrinsic motivation); and b) those that require intensive repetition of tasks, are very hierarchical, etc. (no intrinsic motivation).

an increase in the average wage of *bad* jobs, and a decrease in the average wage of *good* jobs.⁸

Given these changes, and using the findings from motivation crowding theory, what would happen to the aggregate level of effort being provided by workers under a BIG? Figure 4 shows the relationship between the wage and the level of effort in Job A. For those workers who are in bad jobs, effort increases monotonically with increasing compensation. For bad jobs, a higher wage increases effort *at any wage level*.⁹ And since a BIG raises the average wage in these jobs, workers who stay in this group would be expected to perform a higher level of effort.¹⁰

The relationship between wages and effort in good jobs is a little different. Workers at Job B have high intrinsic motivation, so they are willing to provide a positive level of effort even when there is no monetary compensation (the intercept of the curve in Figure 5 is positive). When the wage increases, the reference point of these workers changes as well; their intrinsic motivation is undermined, and since the wage is still at a low level, they choose to decrease their performance. But as the wage continues to rise, it reaches a point at which the worker has no intrinsic motivation to perform the task, but the opportunity cost of leisure has increased so much that the worker chooses to work harder. Therefore, for good jobs, the relationship between the wage and effort levels is nonmonotonic. As a BIG reduces the wage level of these jobs due to the increased supply, the effect that this change would have on the level of effort of workers is ambiguous. It depends on the actual wage level and the magnitude of the change in supply after the implementation of the BIG. Figure 5 shows a situation in which effort increases, but it is easy to see that it could also remain constant or decrease (if W_0 had started at a higher level, for example). The main point is, however, to describe the theoretical possibility that workers may continue to become as productive as they were before the BIG was implemented. Whether this is in fact the case or not is an empirical question that can only be answered either by actually implementing the grant or by conducting experimental studies.

⁸ In many countries, however, the existence of minimum wage laws could put a limit to this process. In this case wages in *good* jobs would decrease up to a certain point if the implementation of a BIG did not eliminate other types of benefits to workers. If the minimum wage law is not abolished, then a more formal analysis is required to fully describe the labor market outcomes. In the presence of such a law, an equilibrium wage in *good* jobs below the minimum wage could cause even more workers to move to these types of jobs, which could force firms to reduce employment.

⁹ This is the standard result of any type of efficiency-wage model.

¹⁰ In a more detailed and formal analysis, the labor demand curve also shifts when there is a change in the level of effort. But this additional change would only intensify the magnitude of the wage and effort for Job A without changing the qualitative validity of the argument.

It is important to point out that, from a normative standpoint, a BIG potentially generates other desirable outcomes in the labor market. The process described above causes a higher fraction of the population to choose jobs that they enjoy the most, and for those who would still be stuck at the *bad* jobs, they would receive higher compensation to do that, since the wage level would go up.¹¹ The frequently made argument that a BIG causes most people to stop working loses some of its power then, because the critics do not take into account the possibility that different jobs may be perceived differently by workers. The incentives associated with no income security lead workers to give priority to monetary compensation and other extrinsic factors, which naturally places a significant fraction of them in jobs they do not want to be at. Instead of stop supplying labor altogether, this analysis suggests that a more plausible assumption is that workers would move from jobs in which they have no intrinsic motivation to jobs in which they have high intrinsic motivation.

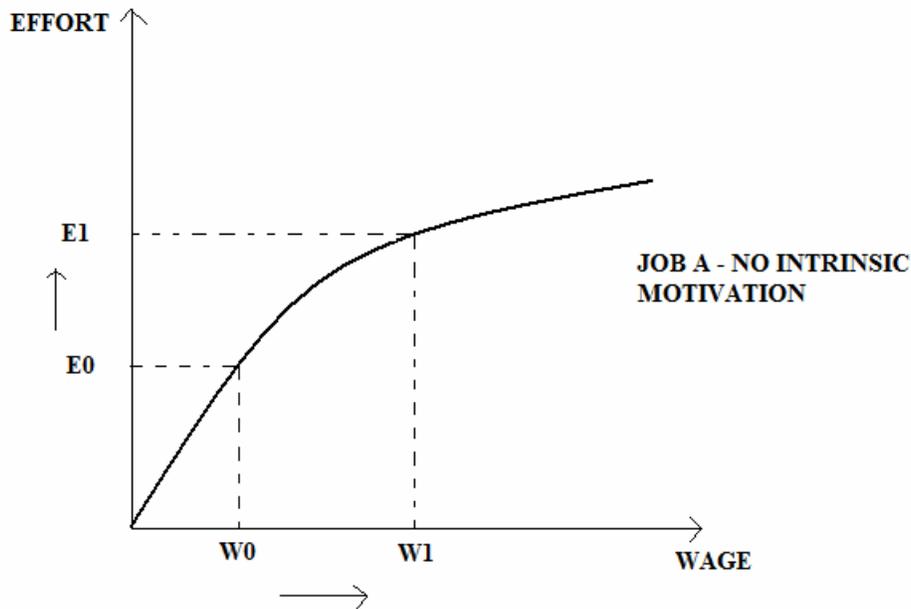


Figure 4. Effort function for job A – no intrinsic motivation

¹¹ Another beneficial consequence of this change is that the rate of mismatch between employers and employees would decrease. The BIG could provide the necessary security to workers so they can search for the jobs that best match their skills and preferences.

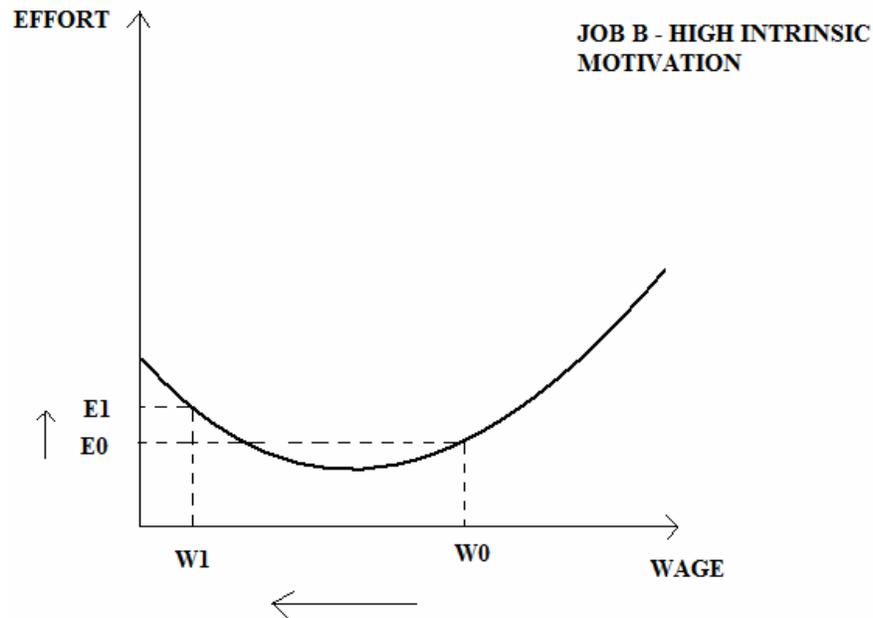


Figure 5. Effort function for job B – high intrinsic motivation

5. Conspicuous Consumption, Positional Externalities and the BIG

Virtually everybody seeks status in their professional, personal or social lives. Particularly in the social sphere, an effective way to signal one's status or wealth has been through the purchasing of *visual* goods that are considered exclusive to those in this position (Frank, 2005).

But status is a good with a fixed supply. It is impossible for everybody to have high status, since it is determined according to one's relative position instead of one's absolute condition. As an example, imagine that you have the best automobile in your neighborhood. When one of your neighbors buys a more expensive car than yours, she imposes a negative externality on you (you are worse off because now you have only the second-best car in the neighborhood), even though, in absolute terms, you still have the same car as before. In economics, these external costs have been called "positional externalities."

Conspicuous consumption, or the purchase of positional goods, is one of the most frequently analyzed types of positional externalities.¹² By emulating a group that ranks above your income group, you impose negative externalities on

¹² Houses, automobiles, accessories, clothes, and most visible goods that can be sold at high prices fit the description of a positional good.

those that have been outspent by you in terms of relative consumption. This leads to an expenditure cascade. Although I may not pay direct attention to what billionaires are buying, billionaires put pressure on millionaires, who will spend more on positional goods to look like billionaires. But when millionaires do that, the income group right below them becomes worse off, and they will have an incentive to spend more on positional goods, which then will put pressure on the middle class, and so on until the cascade reaches the very poor.¹³

This result is obviously inefficient at the aggregate level. The inefficiency is generated because, in the end, when the positional goods have already been purchased, it is still not possible to tell who has high status and who has low status, since their relative positions have not changed significantly. The only difference is that these consumers spent a portion of their income on something that they thought would increase their statuses, but which did not. They would all have been better off if they had spent this money on nonpositional goods, like education, healthcare, etc.¹⁴

Given this degree of inefficiency, what would be the effect of a BIG on the total amount of wasteful expenditure related to conspicuous consumption? The question is valid, because it would be unfortunate to observe recipients of the guarantee spending it on positional goods instead of spending it on goods that have more intrinsic value to them, which is the purpose of providing this type of safety net to begin with.

It is plausible to assume that the BIG would be spent by the population instead of being saved. The evidence for the “mailbox effect,” which states that people’s marginal propensity to consume windfall income is much higher than income coming from other sources, is robust (Thaler, 1999). If the population will then consume the guarantee almost in full, should we expect them to spend it on positional goods? The answer to this question depends on the dynamics of the income distribution after the implementation of the BIG and the incentives associated with this new distribution. Since the implementation of a BIG would reduce income inequality, what would be the effect on conspicuous consumption

¹³ One interesting question raised by a referee is whether or not the expenditure cascade would be generated (or lose some of its influence) if people’s reference groups were more narrowly defined (by including only friends, relatives, co-workers, etc.). It would probably still exist, because as long as there is some overlapping between people’s reference groups, a person outside of my reference group but inside the reference group of one of my friends could influence me indirectly. If I have a friend who is a friend of a third person whom I do not know, my friend will use the third person’s behavior as a reference point; and since I am using my friend as a reference point, the third person could affect my consumption pattern.

¹⁴ Even if one takes into account the intrinsic value of the positional good, the inefficiency is still present, as long as status is part of the reason why somebody buys a positional good and there is at least one nonpositional good that generates more intrinsic value.

of a more egalitarian income distribution? A more egalitarian income distribution could reduce conspicuous consumption because there would be less pressure coming from the rich in the expenditure cascade process, since the number of extremely rich people would decrease. But at the same time, a reduction in income inequality provides greater incentives to differentiate oneself, since the marginal improvement of your social status of a dollar you spend on conspicuous consumption increases. When income is highly unequal, if I spend a significant amount of money on positional goods, my rank does not increase as much, because it becomes more difficult to reach the level of consumption of others above me. In a more egalitarian society, however, I have the opportunity to improve my relative position significantly by spending resources on positional goods, as a larger fraction of the population is closer to me in the income ladder.¹⁵ This is an important point, and it is usually overlooked in the discussion of the advantages and disadvantages of a BIG. It is still unclear whether wasteful expenditure will decrease or increase with a BIG; and to this date, the authors know of no study that investigates this question empirically.

6. Conclusion

This article has shown that behavioral economics can contribute to the BIG debate. The main points of the article are as follows. Prospect Theory states that people are loss averse and that they assess a sequence of outcomes based on changes in wealth rather than absolute wealth. A BIG would segregate the gain being received from the guarantee with the loss associated with the tax that middle- and high-income earners would have to pay. An NIT integrates them. High-income earners would be more tolerant of a BIG because, for them, it is better to segregate a smaller gain with a larger loss. Middle-income earners, on the other hand, would be more tolerant of an NIT scheme, because, for them, integration is superior to segregation. This suggests that the guarantee system should be matched with the tax system perceived in a more favorable manner by the population. A BIG should be followed by a more progressive tax system and an NIT by a flatter tax distribution.

Motivation Crowding Theory argues that the relationship between the magnitude of an extrinsic incentive and the level of effort being performed in a

¹⁵ Hopkins and Kornienko (2006) argue in a theoretical model that, if this incentive is large enough, a movement toward greater equality may actually decrease economic growth, because wasteful expenditure on positional goods would increase.

task is nonmonotonic for activities in which people have high intrinsic motivation. When a BIG is implemented, workers move away from “bad” jobs (no intrinsic motivation) to “good” jobs (high intrinsic motivation), which increases the wage level in the “bad” jobs and decreases the wage level in the “good” jobs. A higher wage in “bad” jobs means that workers will increase effort, and a lower wage in “good” jobs leads to an ambiguous result. Effort levels may increase, decrease, or stay approximately the same. A BIG has the potential to increase efficiency in the labor market if effort levels increase in the “good” jobs, but more empirical evidence is necessary to correctly assess the probability that overall efficiency in “good” jobs will actually increase.

The reduction in income inequality caused by a BIG reduces the level of the expenditure cascade, and therefore decreases the pressure to spend more money on positional goods. But at the same time, a lower level of inequality raises the marginal benefit of trying to differentiate oneself from others by spending a dollar on a positional good. Which effect would dominate with the implementation of a BIG is still unclear due to the lack of empirical and experimental evidence. Frank (2005) suggests that a progressive consumption tax would mitigate this type of wasteful expenditure. If this argument is observed empirically, then the successful implementation of a BIG will depend on whether other types of policies are also implemented at the same time or not.

As mentioned in Section 2, the topics related to behavioral economics that have been discussed in this article are not the only ones that have the potential to contribute to the BIG debate. The list is definitely not exhaustive. But we chose to focus on those elements of behavioral research that have had robust empirical results and are likely to cause a significant economic impact. There have been recent experimental studies, however, that have suggested potential future links between behavioral economics and income guarantees, even though they have not been directly conducted to investigate the subject. Pech (2010), for example, conducted a laboratory experiment to analyze changes in reciprocal behavior depending on whether the person choosing a specific course of action had income security or not. The results showed that, in a standard cooperation problem with a principal-agent relationship, given an ungenerous offer, agents retaliated less when the person making the ungenerous offer did not have income security; and given a generous offer, subjects positively reciprocated (by cooperating more) when the person making the generous offer had income security. The combination of these results implies that the implementation of income security may cause people to become more sensitive to changes in intentions, which may generate different patterns of cooperation in social

interactions. The new literature on social preferences, which tries to capture the different types of non-selfish behavior that humans possess, has made several contributions to the understanding of social institutions. The experiment described above is just one example of how this new area within behavioral economics can add insights to the BIG debate, but the possibilities are endless once one recognizes that social interactions will be affected when everybody in the population has the right to receive a minimum income.

Many questions could also be raised about the consequences of a BIG that have not been investigated by behavioral economists yet, but that are behavioral or psychological in nature. Little is known, for example, about the dynamics of social norms, rules, and conventions, what happens to overall levels of life satisfaction, or how the stigma of unemployment is affected by the implementation of the grant. Given the importance of these and many other questions, we hope that researchers from all behavioral sciences realize the importance of understanding them. The sooner we recognize the advantages and disadvantages of a basic income, the better we will be able to tackle many of the problems face by the poor today, both in developing and industrialized countries. These questions, however, can only be rigorously investigated if a larger set of methodologies is implemented. Following Noguera and De Wispelaere (2006), the authors recognize the importance of using laboratory experiments to simulate the effects of a BIG. Laboratory experiments have become one of the main tools used by behavioral economists, and these experiments have the advantage of providing a controlled environment that is not possible to create using other empirical methodologies. They offer insights that cannot be captured in the field, and the results can be easily complemented with the findings of other types of social experiments and pilot projects that have been conducted to analyze the effects of income guarantees. Given that there is still a lot that we do not know about the behavioral consequences of a BIG, the use of alternative methodologies will be fundamental to our understanding of this topic and to the development of the interaction between behavioral economics and income guarantees.

References

- Benabou, Roland and Jean Tirole (2003) "Intrinsic and Extrinsic Motivation," *Review of Economic Studies* 70, pp. 489–520.
- Bowles, Samuel (1992) "Is Income Security Possible in a Capitalist Economy?" *European Journal of Political Economy* 8, pp. 557–578.
- Camerer, Colin (2003) *Behavioral Game Theory*. Princeton, NJ: Princeton University Press.

- Deci, Edward L. (1975) *Intrinsic Motivation*. New York: Plenum.
- Frank, Robert H. (2005) "Positional Externalities Cause Large and Preventable Welfare Losses," *American Economic Review* 95 (2), pp. 137–141.
- Frey, Bruno S. (1997) *Not Just for the Money*. Northampton, MA: Edward Elgar Publishing.
- Frey, Bruno S. and R. Jegen (2001) "Motivation Crowding Theory," *Journal of Economic Surveys* 15 (5), pp. 589–611.
- Frey, Bruno S. and Matthias Benz (2002) "From Imperialism to Inspiration: A Survey of Economics and Psychology," Zurich IEER Working Paper No. 118.
- Gamel, Claude et al. (2006) "The Impact of Basic Income on the Propensity to Work: Theoretical Issues and Micro-econometric Results," *Journal of Socio-Economics* 35 (3), pp. 476–497.
- Hopkins, Ed and Tatiana Kornienko (2006) "Inequality and Growth in the Presence of Competition for Status," *Economics Letters* 93 (2), pp. 291–296.
- Kahneman, Daniel and Amos Tversky (1979) "Prospect Theory: An Analysis of Decisions under Risk," *Econometrica* 47 (2), pp. 263–292.
- Loewenstein, George and Drazen Prelec (1992) "Anomalies in Intertemporal Choice: Evidence and Interpretation," *Quarterly Journal of Economics* 107 (2), pp. 573–597.
- Noguera, José A. and Jurgen De Wispelaere (2006) "A Plea for the Use of Laboratory Experiments in Basic Income Research," *Basic Income Studies* 1 (2), pp. 1–8.
- Pech, Wesley (2010) "The Role of A Principal and Different Contract Types in Promoting Efficiency in Team Production: An Experimental Investigation," Wofford College Working Paper.
- Thaler, Richard H. (1999) "Mental Accounting Matters," *Journal of Behavioral Decision Making* 12 (3), pp. 183–206.
- Tversky, Amos and Daniel Kahneman (1991) "Loss Aversion in Riskless Choices: A Reference-dependent Model," *Quarterly Journal of Economics* 106 (4), pp. 1039–1061.
- Van der Linden, Bruno (1997) "Basic Income and Unemployment in a Unionized Economy," IRES (Institut de recherches économiques et sociales).
- Van der Linden, Bruno (2002) "Is Basic Income a Cure for Unemployment in Unionized Economies? A General Equilibrium Analysis," *Annales d'Économie et de Statistique*.
- Van Parijs, Philippe (2003) "Basic Income: A Simple and Powerful Idea for the Twenty-first Century," *Politics and Society* 32 (1), pp. 7–39.

Wesley J. Pech
 Department of Economics
 Wofford College
 Wofford College, Main Building 301
 429 North Church St, Spartanburg, SC 29303
 United States
 Email: pechwj@wofford.edu