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【要旨】

私たちは自分の将来を割り引くべきであろうか、あるいは人生の全ての部分を同様に大切にすべきだろうか？多くの倫理哲学者たちは時間割引をしないことを美德と考える。本稿は両方の議論を説明する。批判的に本件に関する両方の意見を比較した結果、本稿は2つの結論を得る。最初に、ゼロ時間割引率はある種の経済条件のもとでは望ましくない含意を持つことがありえるし、実際に観察される個人の行動とは整合的でないことが多い。これらは重要であるが、時間割引をすることに倫理的基盤を与えるのには不足している。2番目に、規範的観点からは、ゼロ時間割引率を倫理的に正しいとする強力な倫理的基盤が存在する。

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1. Introduction

An important element of decision making be it at the individual level or at the aggregate policy level is the temporal dimension of many choices. Should we exercise today to ensure better personal health in the future? Should there be an increase in taxes on carbon emissions for a cleaner environment in the future. Given a scarcity of resources, such choices always involve a trade-off between the present and future. This gives rise to the concept of “discounting” where future wants are deemed to be less valuable than present ones.

The standard method used in economics to formalize intertemporal decision making is the discounted utility model, where the economic agent is assumed to optimize by maximizing a discounted sum of period utilities resulting from the chosen alternative in each period. Formally,

$$U = \sum_{t=0}^T \phi(t)u(x_t)$$

where $\phi(t)$ is the discount function that captures the time preference of the economic agent, i.e., his valuation of present well-being relative to future well-being. The exact functional form for the discount function can vary depending on the type of discounting behavior assumed on the part of the individual. For example, we can assume exponential discounting so that $\phi(t) = \beta^t$ where $0 < \beta < 1$. Such a scheme assigns an exponential declining weight to future utilities and hence captures the idea of discounting future benefits outlined above. An alternative that is more consistent with empirical evidence is hyperbolic discounting, where the immediate future is discounted much more heavily than the remote future. For example, following Phelps and Pollak (1968), we can have the following (quasi) hyperbolic discounting function.

$$\phi(t) = \begin{cases} 1 & \text{for } t = 0 \\ \beta\delta^t & \text{for } t > 0 \text{ where } 0 < \beta < 1; 0 < \delta < 1 \end{cases}$$

The choice of the functional form for the discount function essentially falls under the purview of positive analysis and is concerned with describing how an individual actually evaluates future utilities. In this paper, we are not interested in describing the discounting behavior of individuals. Instead, we want to explore the normative rationale for discounting the future. Hence, even though the choice of discounting function is crucial in explaining observed

behavior, it is not relevant for the present discussion. In this paper, for simplicity, we assume exponential discounting and ask the following question. Can discounting one's own future be morally defensible? In most economic analyses, the issue of discounting is taken for granted, with little discussion on the morality of regarding the future less favorably than the present. In this paper, we attempt to fill this vacuum and explicitly focus on the moral dimension of the discounting debate.

The rest of the paper is organized as follows. Section 2 presents the moral arguments for no discounting. Section 3 discusses common criticisms of no discounting, and Section 4 concludes.

2. Morality of No Discounting

Many moral philosophers have questioned the morality of discounting the future and consider no discounting as a moral virtue. Prudence and impartiality are often considered to be important elements of virtuous behavior (e.g. see Smith (1790)). Aristotle considered "phronesis" or practical wisdom as an important intellectual virtue. Prudence is concerned with the overall well-being of an individual. Brink (2010) emphasizes that prudence requires an individual to have equal concern for present and future well-being. If we consider an individual over his lifetime as a single entity to which all harms/benefits can be attributed, no normative significance can be afforded to the temporal location of harms/benefits over his lifetime. In this sense, temporal indifference or no discounting by the individual constitutes a virtuous behavior.

In the field of economics, many have supported this indifference between present and future well-being as a moral virtue. For instance, Ramsey (1928) regards discounting as morally indefensible. Similarly, Harrod (1948) considers a positive discount factor to be a "conquest of passion over reason." Often the support for no discounting comes in the form of equating it with individual rationality. Brink (2010) provides an excellent discussion for the philosophical foundation of this view of temporal neutrality. He presents an economic rationality argument that regards an attempt to discount one's utility based on its temporal location as irrational. Frederick (1999) also highlights the fact that many economists support the view that discounting future utility is irrational (page 21). He cites the following quote from Rawls (1971):

“Rationality requires an impartial concern for all parts of our life. The mere difference of location in time, of something being earlier or later, is not a rational ground for having more or less ground for it.”

Such a view that regards discounting as irrational has also been espoused by Smith (1790), Pigou (1920), Sidgwick (1874), Solow (1974), and Broome (1994) among others.

Note that it is important to distinguish the time preference of an individual that compares the same individual’s preferences over time and the intergenerational discounting that concerns the future generations of “others”. In this paper, we are concerned with the individual’s own discount factor and seek to investigate whether such discounting is ethically founded. A related issue is the appropriate value for the intergenerational discount factor that is used to discount the utility of the future generation. Such a concept and its assumed magnitude often play an important role in public policy. Although there has been some debate, many economists have argued that an intergenerational discount factor less than one is not morally defensible.² Such a view finds support in classical utilitarianism (Cowen and Parfit (1992), Dasgupta (2007), Brink (2010)). Broome (1994) provides one of the first and most comprehensive discussions of the issues involved in discounting across generations. He argues that a crucial distinction is between discounting of goods versus discounting of wellbeing, with a relatively less compelling ethical case for the latter. Most economists are comfortable with discounting commodities but do not support discounting future wellbeing (Broome, 1994). Cowen (2001) argues for no intergenerational discounting from a normative perspective and concludes that there is no *prima facie* case for a positive intergenerational discount rate.

3. Common Criticisms of the No Discounting Argument

In this section, we present the key arguments against no discounting being a moral virtue. There are three main arguments that one can identify from the literature, and in what follows next, we highlight the main features of each of these arguments followed by a brief summary of the counterarguments for each case.

² A recent example highlighting both sides of the debate is the Stern Review (2006) and the response by economists Weitzman (2007) and Nordhaus (2007) to this report.

The first argument is related to the issue of personal identity. The view that discounting the future is irrational is based on the idea that there exists an enduring entity to which all benefits/harms can be attributed over an individual's life time. Parfit (1984) rejects this simple view of identity and espouses a more complex view of personal identity that changes over the lifetime of an individual via his experiences. He argues that a person's future can be imagined to consist of multiple future selves. Then how much one cares about one's future selves depends on their degree of connection with the present self. He suggests that it is plausible that such a connection with future selves decreases over time: a 20-year-old individual may feel more connected to his 30-year-old self than to his 65-year-old self. In such a case, it is rational to discount future well-being. Brink (2010) challenges this view and argues that the issue of discounting the future by an individual can be restated in terms of how a whole should view its parts. A prudent individual concerned with maximizing his overall well-being has no reason to have unequal regard for different parts of his life based on differences in connectedness among these parts. Frederick (1999) provides a detailed survey of other criticisms to Parfit's view on discounting.

The second argument is based on the empirics of intertemporal choice. Many economists and psychologists have found evidence of individuals' exhibiting a wide range of discounting behavior when faced with intertemporal choices. Hence, the normative stance that there should be no discounting is simply at odds with observed individual-level behavior. In our view, this argument conflates normative with positive aspects of the debate on discounting. The ethical view that supports no discounting is a normative construct: it is concerned with how an individual should regard his future well-being. On the other hand, the empirical evidence on positive discounting is a positive construct: it is concerned with how an individual actually does regard his future well-being. As Hume (1739) famously notes, we cannot deduce an ethical conclusion based solely on facts. The argument for no discounting is prescriptive and is not meant to describe observed individual behavior.

The last argument comes primarily from the field of economics and is concerned with an implication of no discounting in economic environments where capital is productive and interest rates are indefinitely positive. Koopmans (1967) and Olson and Bailey (1981) show that in such a setting, no discounting would imply that an individual will reduce his current consumption to

subsistence level to provide greater future consumption. Hence, they conclude that we must discount the future. In the context of intergenerational discounting, an important issue raised by Diamond (1965) is that a positive discount rate is necessary for obtaining a well-defined representation of preferences over an infinite horizon. However, Sakai (2012) identifies orderings that are consistent with no discounting in a setting with infinite generations. He argues that in such an environment the limit properties of the utility streams play an important role in welfare judgment. Kocherlakota (1990) shows that in a growing economy a well-defined competitive equilibrium with positive interest can exist even with a negative discount rate (implying a discount factor of greater than one), and this may also help resolve the equity premium puzzle. Hence, in contrast to the popular perception, infinite horizon economic models of consumption and saving do not necessarily warrant a positive discount rate.

A related argument in favor of positive discounting comes from the possibility of very low level of optimal consumption for the current generation under no discounting (Mirrless, 1967). Again, we believe that debate belongs to the category of positive economics and does not serve as a normative basis for discounting. Frederick (1999) argues that this argument simply suggests that utility maximization may lead to an unreasonable optimal consumption path in certain cases. If one were to abandon the dictate of maximization, then there would be no need to discount future utility. He concludes that “Once the dictates of maximization are abandoned, there is no longer any need to discount future utility...”

4. Conclusion

In this paper, we presented arguments for the ethical foundation for no discounting in intertemporal choice. The normative basis for such an argument is derived from treating the individual's life as a unique enduring entity to which all future utilities must be attributed. According to this view, discounting the future has no moral basis and is regarded as irrational. We also discussed some common objections against this traditional view of discounting and found that the normative foundation of no discounting as a virtue is fairly robust to these critiques.

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