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# Intrinsic Motivation in Economics: A History

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**Abstract:** If one asks about the introduction of intrinsic motivation into economic analysis, a common response is *The Joyless Economy* (Scitovsky 1976) and Frey's articles published in the early 1990s. These works are furthermore seen as the direct sequel to the contributions in psychology which sought to uncover the sources of motivation long before the economists started to think seriously about their economic implications. By adopting a historical perspective, I show that Scitovsky and Frey's works were rather the result of two specific episodes in *economics*: the revived interest in actual needs and desires for the first and the expansionist ambitions of economists for the second. The behaviors they considered and the interpretations they respectively proposed for intrinsic motivation illustrate the influence of these two episodes. As such, this article proposes a new perspective on the relationship between economics and psychology.

**Keywords:** Intrinsic motivation, Self-interest, Public interest, Tibor Scitovsky, Bruno Frey

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## I. Introduction

It is increasingly acknowledged that in borrowing from psychology economics has moved away from unrealistic assumptions (see Rabin 1998, Frey 2001, Frey and Stutzer 2007, Bowles and Polania-Reyes 2012). Doing economics with more realistic assumptions about human behavior is perhaps the guiding theme of the psychologically inspired economic analysis, as it proposes to take into account intrinsic or internal forms of motivation besides the economic one (Fehr and Falk 2002). The introduction of intrinsic motivation in economics is often connected with the publication of *The Joyless Economy* (Scitovsky (1976) and Bruno S. Frey's articles in the early 1990s (notably Frey 1992a). These two contributions are commonly viewed as a direct sequel to the psychological research on internally rewarding behavior (see Ryan 2012) so that little has been accomplished in the way of distinguishing them from that literature (see, e.g., Meier 2007). Yet, Tibor Scitovsky and Frey's interpretations of intrinsic motivation were different. Unlike what is often suggested, it can be argued that their intentions were informed by two distinct issues in economics.

For Scitovsky, I point out to an intriguing and hitherto neglected piece he published in 1943, long before the emergence of cognitive psychology, in which he shows that the view of human behavior as motivated solely by material interests had limits that prevented economists from understanding, for example, why someone would "keep working unabated even after his income has risen" (Scitovsky 1943, p. 59). More specifically, Scitovsky (1943) argued that what he perceived as the dominant view within economic theory - that maximizing profits led to the maximization of the entrepreneur's satisfaction or utility - was valid only under very specific conditions<sup>2</sup>. Scitovsky (1943, p. 57) noted from the outset of his article: "That the entrepreneur aims at maximizing his profits is one of the most fundamental assumptions of economic theory. So much so that it has almost come to be regarded as equivalent to rational behavior, and as an axiom, which is self-evident and needs no proof or justification." And he deplored that "it has never been made clear what exactly profit maximization implies", perhaps, he wrote, because "we have a vested interest in maintaining this assumption—it makes economic analysis so much simpler."

Scitovsky had envisioned some alternative scenarios in which utility or satisfaction maximization hardly coincided with profit or income maximization. It should be made clear that Scitovsky was interested in complicating the economic discourse about human behavior long before the emergence of cognitive psychology so that his 1976 book marked the (belated) return to his early concerns and intuitions. In that book, Scitovsky used psychology as an additional body of knowledge

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<sup>2</sup> Scitovsky (1943, p. 57) noted from the outset of his article: "That the entrepreneur aims at maximizing his profits is one of the most fundamental assumptions of economic theory. So much so that it has almost come to be regarded as equivalent to rational behavior, and as an axiom, which is self-evident and needs no proof or justification." And he deplored that "it has never been made clear what exactly profit maximization implies", perhaps, he wrote, because "we have a vested interest in maintaining this assumption—it makes economic analysis so much simpler." (ibid.).

that could help understand what the Hungarian-born economist considered missing from economic analysis: the possible mismatches between satisfaction and profit- or income-maximization. Going a step further, the book dismissed the utility maximization framework on the basis of psychological insights about what people were actually trying to achieve.

As far as the analysis of human behavior was concerned, the 1970s witnessed another important development—the advent of an “all-encompassing economics” (Fontaine 2007, p. 3). Its participants equally made clear that the economic analysis of human behavior should take into account factors other than income-related ones, such as altruistic preferences. Intrinsic motivation was obviously one such aspect. However, more than an approach to human behavior grounded in social psychology, the expansionist view of economics sought an economic theory that could be applied to a greater variety of behaviors and motivations (Fontaine 2007, 2012). This ambition was evidenced in a survey article on the interactions between economics and psychology, in which the economist Frey and the psychologist Stroebe (1980, p. 126) reproached Scitovsky (1976) for having an “over-restrictive view of economics”. There was no reason for intrinsic motivation not be incorporated as another source of personal satisfaction into a wider economic theory of human behavior. This is where the second figure analyzed in this paper, Frey, enters the picture. Drawing on published materials and oral history, I show how, starting from 1980 and until the early 1990s, Frey perceived the relationship between intrinsic motivation and the economist’s utility maximization framework. Contrary to the general agreement that Frey’s work on human motivations was inspired by research in cognitive psychology (Meier 2007, Bénabou and Tirole 2006), this article shows that the Swiss economist rather intended to expand the economic theory’s toolkit to encompass other than non-income related motives for action in a similar vein as Becker’s analysis of altruism.

In the following section, I argue that Scitovsky used psychology in his oft-cited 1976 book because it offered a new response to the economic question he posed in the early 1940s: what motivated one’s effort in the marketplace other than the expectation of income? In section 3, I spotlight the intellectual context within which *The Joyless Economy* appeared. The end of the 1970s are generally portrayed as the “imperialist” era of economic science (Hirshleifer 1985), which had implications for how Scitovsky’s work was received within the economics profession. Frey has been one of the first to reconcile Scitovsky’s findings with the utility maximization framework. Section 4 describes the contingencies that informed Frey’s efforts in the second half of the 1980s to include intrinsic motivation as an additional argument in the individual’s utility function.

## II. Intrinsic motivation and private choice

The defining feature of postwar welfare economics was admittedly the fleshing out of the “divergences between private and social interests” when one’s actions had consequences on others’ welfare (Meade 1952, p. 54, see also Bator 1958, and Medema 2009 for a historical perspective). Meade’s (1952) classical treatment of externalities supposed self-interested agents completely discount these consequences. He regarded this phenomenon to be a major justification for the implementation of taxes and/or subsidies to cause private interests to harmonize with the social one. Samuelson (1954) likewise suggested that underproduction of public goods was the result of “the selfish interest of each person to give *false* signals, to pretend to have less interest in a given collective consumption activity, than he really has” (p. 389, emphasis original). In another article, Samuelson (1955, p. 356) further argued that one should take self-interest as the basic behavioral principle, which “provide[s] obvious needs for government activity (..) where private pecuniary interest can be expected to deviate from social interests”. As explained by Dixit (2012), to keep economic analysis “simple”, Samuelson took selfishness as a self-evident axiom, and as a corollary set aside any discussion regarding the ultimate truths about what makes humans work (see Lewin 1996). “This perspective came to dominate both the professional literature and the textbook treatments of public goods and externalities in the last half of the twentieth century” (Medema 2009, p. 73).

Scitovsky was another leading figure in postwar welfare economics. However, Scitovsky was overtly critical of the “vastly oversimplified picture” of human preferences as selfish (Scitovsky 1960, p. 13). Scitovsky’s 1960 and 1962 articles on consumer satisfaction and consumer sovereignty, respectively, are considered today a classic rendering of the tension between people’s actual desires and their market choices (Bianchi 2003). Scitovsky argued that the nature of human preferences cannot be inferred from choices because of instances when individuals do not necessarily know what they want—a topical issue throughout the 1950s. A notorious figure in economics and in policy areas at that time, John K. Galbraith (1958), for instance, portrayed consumers as passive decision-makers (see also Fisher et al. 1962). At the 1961 meeting of the American Economic Association, a session was devoted to consumer sovereignty. Contributors asked whether economic theory could be seriously based on the postulate that people know what is best for themselves. Within this context, Scitovsky (1960, 1962) argued that it was important to go beyond market choices and inquire into reasons—that is, people’s actual desires and the particular psychology behind their choices.

The focus on market choice is important here. Scitovsky (1960, 1962) questioned the simplified view of behavior as solely driven by the satisfaction of material interests in the context of private goods; for example, when a person had to choose her labor supply schedule, whereas the welfare economics literature considered what Samuelson (1954) called public consumption choices, *i.e.* when a person had to choose her contribution to a public good. Thus, in adopting this perspective, Scitovsky was an outlier rather than representative—his perspective, perhaps, derived from an earlier

conclusion he had formulated in 1954 that external economies were “unimportant” and thus what really mattered were choices with no additional effects on third parties (Scitovsky 1954).

Bianchi (2003) and Di Giovino (2010) have already noted Scitovsky’s focus on private consumption, but little has been written on the fact that Scitovsky’s interest in the motivations of private consumption choices dates back to the 1940s, long before his work on consumer sovereignty. Indeed, in an article published in 1943, entitled “A note on profit maximization and its implications,” Scitovsky distinguished between two types of justifications for the intensity with which people are willing to put effort in the workplace: the concern for one’s material interests and the personal satisfaction from performing an activity. To him, the assumption that a person’s willingness to work was solely a function of her income could not apply to all activities. There were cases in which the material consequences of certain actions could not justify the intensity with which they were expressed. To illustrate this point, he turned to the case of the entrepreneur “who derives satisfaction from his work—other than that yielded by the income he receives for it” (p. 60). In the case of the entrepreneur, Scitovsky contended, the leisure-income trade-off did not explain why the latter “is likely to keep working unabated even after his income has risen” (p. 59). Thus, at least for this category of agents, the external interpretation of human motivation proved insufficient. This is why it needed to be amended with non-material interests—for the entrepreneur, Scitovsky identified status and, most importantly, personal enjoyment as two sources of motivation that added to the entrepreneur’s quest for profits.

The sources of human motivation were, however, not among economists’ main interests at the time; the war has stirred economic research towards what Morgan and Rutherford (1998, p. 13) termed “technical expertise”, which implied more restrictive assumptions about human behavior (see Blaug 2003). As Scitovsky himself later recognized, his colleagues perceived his early interest in the various sources of motivation “as a sign of incipient sensibility” (Scitovsky 1991a, p. 265). This was no complement to an economist. With no academic position and “the words publish or perish constantly ringing in [his] ears”, it was clear to him that he had to pursue a different research avenue (Scitovsky 1991a, p. 234).<sup>3</sup>

Scitovsky (1973) came back to that issue 20 years later in “Notes on the Producer Society”. There Scitovsky considered again the motivational drives of entrepreneurs, or rather a specific subset of them. He justified his choice by emphasizing the relative importance of production in our modern societies, in particular in the United States. He wrote:

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<sup>3</sup> When Scitovsky wrote “A note on profit maximization and its implications”, published in 1943, he had, indeed no academic position (see Scitovsky’s 1991a autobiographical notes). He moved to Stanford in 1944 and before that held a short position as research assistant to Paul Samuelson. With respect to the nature of his work, Scitovsky (1991b) is another autobiographical note in which he explains the evolution of his writings from the early 1940s to the end of the 1980s. Interestingly, for Scitovsky, his work “forms a coherent whole that deserves being called a style of life” (Scitovsky 1991b, p. 248). Di Giovino (2014) explains how Scitovsky’s style of life, from boyhood to adulthood, influenced his academic writings.

“In today’s America, the consumer lacks the strength and assurance it takes to be king. He is a shy and oppressed figure, the ignorant layman lectured by experts on what is and what is not good for him, the small man squeezed between big business and big government, the defenseless target of incessant assaults by loud advertisers and aggressive salesmen, and heir to a moral tradition that considered suspect the very act of consumption, the satisfaction of man’s desires.”(Scitovsky, 1973, p. 225)

With this portrait of consumers as passive decision-makers and of big corporations as suppliers of spurious needs, Scitovsky turned to a specific subset of producers such as “artists, writers, professional people, and members of a few remaining craft occupations [who] still get satisfaction out of their work, feel responsible for what they produce and proud of it” (Scitovsky 1973, p. 227). Personal satisfaction, in Scitovsky’s opinion, played a significant role for this category of producers. In fact, he viewed the exercise of what he called “entrepreneurial virtues” as a goal in itself for this population. Accordingly, material interests did not play a major part in their decisions to work hard. But this was the case for a small and declining population in the economy. As Scitovsky added (1973, p. 227), the personal satisfaction and “pride of achievement” that came with the exercise of personal skills were greatly altered by the “capitalist development [that] has rendered meaningless some of these virtues and eroded most of the satisfactions”. The reason he identified for this erosion was the “extreme specialization” which tended to substitute the market value of the product for the “virtues of hard work” (Scitovsky 1973, p. 227). The two sources of motivation, profit-maximization and personal satisfaction from work, were thus conflicting with each other. Scitovsky deplored that the material aspect took over the personal satisfaction one (Scitovsky 1991a, 1991b; see also Di Giovinazzo 2014).

However, depicting the decay in the virtue of hard work was only the starting point for a more ambitious project. As Scitovsky (1973, p. 225) explained: “these notes [“Notes on the Producer Society”] constitute an early version of what has since become a much more ambitious work with a more analytical approach, trying to use behavioral psychology to fill in gaps in the economist’s understanding of consumer behavior, and to be published as a book.” With the examples provided in his two (1943, 1973) articles, the puzzling question to Scitovsky was now to sort out what made an activity pleasant so that it could be sustained for its own sake, and conversely why other activities produced discomfort which could only be reduced by increasing their economic consequences. Failing to find satisfactory answers in economics, where only the latter case was admitted (Lewin 1996), Scitovsky turned to psychological accounts of human motivation, in particular to the then emerging field of cognitive psychology which, in a nutshell, contended that behavior cannot be predicted and controlled by observing and manipulating the physical environment of the decision-maker (see Chomsky’s 1959 review of Skinner’s verbal behavior). The final result was the well-known *The Joyless Economy* (1976).

In the first part of the book, Scitovsky, for the very first time, deployed results from cognitive psychology, then in its early stages of development (Levine 1975), to show that people engaged in



stimulus-seeking behaviors for their own sake. Human beings, asserted Scitovsky, sought an optimal level of stimulation. And a person was motivated to reach this level no matter what the apparent reward. In this sense, activities such as artistic or craft occupations could be sustained without increasing their economic benefits because they were stimulating. The stimulation dimension was more specifically connected to the human nervous system and thus was internal to the organism. Indeed, drawing on the works by cognitive psychologists such as Hebb (1955) and Berlyne (1960), Scitovsky ascribed stimulating behavior to an internal dynamic, which he described as “intrinsic exploration” (Scitovsky 1976, p. 33). Scitovsky’s inspiration for this term was the psychologist Hunt (1965); Hunt used the term “intrinsic motivation” to define human’s search for optimal stimulation, but cognitivists also commonly referred to it as “intrinsic exploration” (Levine 1975). Scitovsky (1976) never used the term “intrinsic motivation”. However, he did refer to “intrinsic exploration”, and the exploratory nature of human behavior played an important role in his theory of human motivation, which explains why *The Joyless Economy* is generally viewed as the first work to have incorporated the notion of intrinsic motivation into economic analysis (Frey 2001).

What should be remembered is that internal drives were already at the core of Scitovsky's work long before the emergence of cognitive psychology, which sheds light on the reasons why intrinsic motivation appeared to him as a natural concept that could provide empirical support to his early theory of entrepreneurial motivation. Thus, putting Scitovsky's work into historical perspective allows us to understand the motives for which he dwelled on people's internal drives: it was his dissatisfaction with how economists equated profit maximization with utility or satisfaction rather than his exposure to cognitive psychology which led him to analyze non-income related motivations. As a related point, it should be remembered that Scitovsky presented intrinsic motivation in *The Joyless Economy* as a solution to the difficulty of explaining a range of *private consumption choices*. The question which Scitovsky sought to answer had to do with explaining people’s effort in the marketplace other than the expectation of income. He considered stimulus-seeking as one such explanation. Hirschman (1996) faulted Scitovsky for his “utter neglect” of the public sphere—the pursuit of the public interest as a source of intrinsic satisfaction. In fact, at the time when *The Joyless Economy* appeared, one of the central questions that bothered economists was whether economic analysis should take into account the role played by other than own-income determinants in the individual calculus to contribute to the production of public goods (Fontaine 2007). It was soon to be clarified whether this discussion could gain new insights from considering the body of knowledge coming from psychology, in particular from the thriving field of cognitive psychology and its emphasis on the internal sources of motivation.

### **III. Intrinsic motivation and the public interest: act I**

While in the period shortly after the Second World War, economists were poorly equipped to deal with non-income related determinants of behavior (Ellickson 1989, Fontaine 2007), by the time Scitovsky started working on his book the meaning of other than material interests began to take shape within the economics community<sup>4</sup> (Fontaine 2012). A couple of years before the publication of *The Joyless Economy*, Gary S. Becker's 1974 "A Theory of Social Interactions" appeared in the *Journal of Political Economy*. Becker (1974) started from the observation that already the early marginalists, such as Jevons, Walras and Menger, identified a long variety of determinants of wants. Some of these wants, Becker asserted, were the result of social interactions. This was also commonly emphasized by sociologists, some of whom Becker cited in passing; yet completely at odds with the standard consumer theory, which assumed an individual utility as depending solely on the goods and services consumed by that individual. Becker proposed instead that the individual's utility function depends partly on his or her own consumption and partly on some characteristics of others. For example, the family "head"—defined by Becker as the one who distributes resources—could maximize her own and the other family members' consumption. The final equilibrium depends directly on the extent to which the decision-maker has non-materialistic "tastes", such as the consumption of others. These tastes could easily fit in the standard utility function as an additional argument, claimed Becker. For this reason, it did not make sense, to him, to reduce the individual utility function to a set of materialistic wants. The Chicago economist developed this position even more perceptively in his 1976 book, *The Economic Approach to Human Behavior*. There, he vigorously opposed the hitherto dominant view, in his opinion, that economists needed to study solely "the allocation of material goods to satisfy material wants" (Becker 1976, p. 3). The "economic approach" he proposed could encompass a greater variety of behaviors and motivations.

Retrospectively, it is intriguing to observe how the same year—1976—two major figures in economics, Becker and Scitovsky, whose approaches are usually opposed (Di Giovinazzo 2010), agreed on the basic principle that economics treated human behavior in too narrow terms. Their conclusions, however, differed. Becker was primarily interested in showing that the economist's standard utility-maximization framework had a greater explanatory power than previously assumed. Within Becker's economic approach, other than materialistic considerations could be taken into account without changing the economist's view of man as self-interested since people were deriving personal satisfaction from their non-materialistic tastes. Scitovsky, by contrast, proposed a psychological approach to economic behavior, even long before his 1976 book. His analysis, seemed to imply that the nature of human preferences could not be reduced to the "simple" view that people maximized a well-defined function composed of different wants. The economic model, to him, needed to be hooked up to a complementary body of knowledge, in the particular case of *The Joyless Economy* that complementary body of knowledge came from psychology.

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<sup>4</sup> Recall that already in the 1973 article Scitovsky mentioned his book project.

The contributions that followed the publication of Scitovsky (1976) and Becker's (1976) works leaned, however, in Becker's direction. During the period between the mid-1970s and the beginning of the 1980s, as Hirshleifer (1985, p. 54) explained, economists applied the standard utility-maximization framework to "domains of study such as law, marriage and the family, and war and conflict". Even one of the first studies on the interactions between economics and psychology came out with the evocative title "In Defense of Economic Man: Towards and Integration of Economics and Psychology". The article was published by the psychologist Wolfgang Stroebe and the economist Frey. The authors maintained that "Like economic man, psychological man is assumed to respond systematically to positive and negative incentives. The major difference, however, is that his behavior is not assumed to be directly determined by his physical and social environment but by his perception of the environment" (Stroebe and Frey 1980, p. 120). Thus, by substituting into the objective function the market value with the subjective one, the psychological man could easily become a relative of the economic man. Economics and psychology were therefore closer than one might have thought. Indeed, Stroebe and Frey suggested that many questions about human behavior in psychology were answered in a similar way to the economist's theorizing. And, they continued, although economics could profit from psychological research on the subjective perception of utilities, the economic theory had to offer a "clearer" view of human behavior to psychologists, meaning that economic theory rests on a set of clearly defined hypotheses about how humans behave.

Their stance seems to be at odds with Scitovsky's and it was. For instance, when Stroebe and Frey commented on Scitovsky's work, they faulted him for having an "over-restrictive view of economics" (p. 126). Of course, stimulus-seeking behavior or what Scitovsky (1976) also called "novelty" was an important and hitherto neglected determinant of human conduct; but to Stroebe and Frey (1980, p. 126) there was however "no reason why novelty could not be incorporated as one of the sources of satisfaction into a wider economic theory of human behavior." From their point of view, there was no need to significantly revise the standard utility-maximization framework since the internal sources of motivation could easily fit in the standard paradigm.

The apparent ease with which psychological theorizing about human motivation could be integrated into the maximization framework of own utilities motivated Stroebe and Frey to illustrate their point with a specific problem in economics: the allocation of resources to the production of public goods. The result was published in 1982 in a psychology outlet with the title "Self-interest and collective action: The economics and psychology of public goods".<sup>5</sup> As Stroebe and Frey (1982, p. 121) observed, "Social psychology has become increasingly interested in problems posed by social

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<sup>5</sup> Stroebe and Frey (1982) was published in a special issue of the *British Journal of Social Psychology* along with other articles that examined the relationship between economics, human psychology and the influence of social forces on economic outcomes. Among the most notable contributors, one could cite Ehrlich's (1982) piece on the economic determinants of illegal behaviors and Buchanan's (1982) contribution on the interplay between morals, economic science and the organization of society. The two scholars had close connections to the Chicago School of Economics (Medema 2010).

dilemma situations such as ‘The Tragedy of the Commons’, where individuals acting in their own self-interest end up being worse off than if they had considered the interest of the ‘community as a whole’”.<sup>6</sup> Thus, their paper attempted “to integrate social psychological thinking in this area with the economic theory of public goods” (p. 121), with a particular aim to support their earlier (1980) view that psychological man was a close relative of economic man.

Following the works of Samuelson (1954) and Olson (1965), Stroebe and Frey regarded self-interested behavior as one of the central tenets of economic theory and as a major threat to social cohesion, which rides on the production of public goods. In the decade preceding Stroebe and Frey’s work, as Fontaine (2014, p. 359) put it, “free riding became to be regarded as the standard behavior of people placed in certain circumstances rather than the exception confirming the rule that people pay for what they get.” This selfish view of individual participation in the collective effort was widespread in economics, political science and sociology (see Tuck 2008).

Following a similar line of reasoning to the one presented in their 1980 piece, Stroebe and Frey (1982, p. 121) suggested that while “[i]t may seem to many non-psychologists that psychology subscribes to a completely different model of human motivation”, “[t]his is not in fact the case”. It is worth quoting them at length here:

“One of the few notions the two mainstreams of 20<sup>th</sup>-century psychological thought, psychoanalytic theory and behaviorism, have in common is the belief that behavior is directed at drive reduction, which after all is a personal goal. What may be called ‘psychoanalytic man’ is as self-interested as ‘behaviorist man’, the major difference being that the drives of the former are not always satisfied in the most direct way.” (p. 121)

Indeed, behaviorism, dominant in psychology during the mid of the twentieth century (Graham 2010), rested on a view of human motivation qualified as “mechanistic” by Levine (1975) and as indistinguishable from the economic model of man by Scitovsky (1976). This is evident from behaviorists’ (e.g. Hull 1943 and Skinner 1965) exclusive focus on the link between externally observable stimuli and individual responses. However, their shortcomings gradually became apparent to a critical mass of psychologists and the 1960s saw them gradually moving to a cognitive interpretation of motivation—the idea, on which Scitovsky’s (1976) theory rode on that stimulus was internal to the organism<sup>7</sup>. The rise of internal interpretations of human motivation reached a new level

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<sup>6</sup> As pointed out by Abelson et al. (2004) in their edited volume *Experiments with People*, psychological research on the determinants of helping behavior—that is, acting in someone else’s interest—had grown rapidly after the murder of Kitty Genovese in 1964. The lack of reaction from numerous neighbors led Darley and Latané (1968) to coin the phrase the *bystander effect*, referring to the observation that individuals tend to refrain from offering help when other people are present.

<sup>7</sup>For a historical account of human motivation in psychology, see Deci (1975, pp. 3-20), and the volumes edited by Levine (1975), Vroom (1995), and Ryan (2012).

with the publication in 1975 of Deci's *Intrinsic Motivation*.<sup>8</sup> Deci (1975, p. 59) famously defined "intrinsically motivated behaviors [as] behaviors aimed at bringing about certain internal rewarding consequences that are independent of non-nervous-system tissue needs". People engaged in these behaviors for their own sake and not because they led to an extrinsic reward, claimed Deci. Despite behaviorists' criticism that one should work with observable data and intrinsic motivation was not something one could derive from the agent's environment, the concept had gained popularity among psychologists in the early 1980s.<sup>9</sup> An attempt to approach the economist's assumption of self-interest from a psychological view point, such as proposed by Stroebe and Frey (1982), would have been incomplete without considering the cognitivist theory. This is how Stroebe and Frey (1982, p. 121) viewed the relationship between the two:

"Even the concept of 'intrinsic motivation' which has received much attention from humanistic psychologists (e.g. Deci, 1975) and disgruntled economists (e.g. Scitovsky, 1976) does not really contradict the notion that man is basically self-interested. Activities are believed to be intrinsically motivated if there is no reward except the activity itself. However, if one asks further, why performing such activities should be rewarding, it is argued that performance satisfies some kind of personal need, e.g. a need for 'optimal arousal' or 'uncertainty reduction'."

As this quote suggests, Stroebe and Frey saw no reason why intrinsic motivation would challenge the idea that people are self-interested. As a corollary, they did not see why the cognitivist's observation of inner processes could not be integrated into the economist's paradigm. After all, as suggested in Stroebe and Frey's earlier (1980) article, the only difference between the psychology and the economics of human motivation was that, unlike psychologists, economists were more explicit about behavioral assumptions. Accordingly, psychologists could gain in clarity by adopting the economic model of man.

There was therefore no reason to deviate from the self-interest model. Furthermore, Stroebe and Frey contended, the hypothesis of self-interest alone yielded satisfactory results. To convince the reader, the authors (1982, p. 123) went on to "draw evidence for the free-rider hypothesis from the following four areas: (1) research on experimental games, (2) simulations of market transactions, (3) studies of group productivity, and (4) research on helping behavior in emergency situations." In the four areas, they pointed out to experimental studies, then an increasingly popular method (see Roth

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<sup>8</sup>Deci's (1975) book was the result of his PhD work from the late 1960s on organizational psychology and the interactions between internal and external sources of motivation (Deci to Romaniuc, 23 April 2014).

<sup>9</sup> The relative importance of the literature dealing with the internal determinants of behavior within the psychology scholarship benefited from the success of social psychology. This field experienced an exponential growth from the early 1960s to the beginning of the 1980s, evidenced by a number of institutional evolutions, such as the creation of the *Journal of Personality and Social Psychology* in 1965 which devoted a section to "attitudes and social cognition" and the launch of the *Social Cognition* journal in 1982. In 1981, another major outlet appeared, the *British Journal of Social Psychology*, as the result of the separation into two parts of the *British Journal of Social Psychology and Clinical Research*.

1993), on the determinants of free-riding. The experiments showed that there was a sense in which the observed behavior did not perfectly mirror the self-interest hypothesis; yet, the level of cooperation observed was quite low. As Stroebe and Frey put it: “The typical subject made cooperative responses **only** 32 per cent of the time” (Stroebe and Frey 1982, p. 124; emphasis added). Overall, they concluded, the experimental studies showed a form of free-riding; however, they did not corroborate the strong free-riding hypothesis.<sup>10</sup> Since self-interest still explained the greater part of human interactions, there was no apparent need to go beyond this basic postulate by adding an additional source of motivation.

#### **IV. Intrinsic motivation and the public interest: act II**

Despite increased interest in the interactions between psychology and economics, and in particular in the experimental method, during the 1980s there were few interactions between economists and psychologists (see Lewin 1996). The most notable ones were admittedly the collaboration of Howard Kunreuther, an economist, and Paul Slovic, a major figure in cognitive psychology, and the joint work of Daniel Kahneman and Richard Thaler (see Sent 2004, Petit 2011).<sup>11</sup> Human motivation in groups did not loom large, however, in their work (see Serra 2012). In fact, questions such as behavioral anomalies in bargaining behavior—that is one to one interactions—and the optimal design of markets had seized these authors’ attention (Hogarth and Reder 1986). More generally, the decade preceding the 1980s is depicted by those working at the intersection of economics and psychology (Smith 1992, Roth 1993, Friedman and Sunder 1994, Holt 2006) and historians of economics (Mirowski 2002, p. 546) as a period of “fascination” for research on markets from a mechanism design perspective.

In Europe, the interest in interdisciplinary work was also on the rise (Guala 2008, Serra 2012). Interestingly, in Austria, in the early 1980s, a group of psychologists and economists started to meet regularly—twice a year—to discuss areas of common interest. Frey, then at the University of Zurich, was one of the regular attendees (Frey to Romaniuc, 27 October 2014). Frey’s interest laid in the organization of society, as evidenced by his 1982 work with Stroebe. Their conclusion that the body of knowledge from psychology—behaviorist and cognitivist—did not seem to challenge the basic premise that humans act out of self-interest and thus under-invest in public goods, left room for economic incentives to motivate Pareto efficient outcomes. However, during one of the meetings in Austria, psychologists drew Frey’s attention to possibly negative effects of economic incentives on the

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<sup>10</sup> Nearly one third of cooperative responses would today be highlighted as a proof of significant deviation from the self-interest hypothesis (see e.g. Gaechter 2014). However, it is unclear from Stroebe and Frey (1982) whether by “cooperative responses” they meant a specific magnitude or a response in a binary situation such as “cooperate” or “not cooperate”.

<sup>11</sup> Among the earlier collaborations one should also note the joint work of Fouraker, an economist, and Siegel, a psychologist. Siegel and Fouraker (1960) and Fouraker and Siegel (1963) studied negotiation problems in bilateral monopoly, duopoly and oligopoly situations (see Serra 2012, Svorencik 2016).

achievement of desired conduct (Frey to Romaniuc, 27 October 2014). These unintended consequences derived from a well-known distinction operated by cognitive psychologists between extrinsic (monetary) and intrinsic motivation. Under specific conditions, the former has been found to attenuate the role played by the latter, leading to adverse outcomes. More specifically, Deci (1971, 1972), Calder and Staw (1975), Deci (1975) and later Deci and Ryan (1985) showed that monetary rewards shifted the determinant of behavior from internal satisfaction to external pressure. Subjects from their laboratory-run experiments were less likely to engage in an activity when they had been previously paid to do so than when no reward had been offered.

While within the psychology scholarship the perverse effects of monetary incentives were fashionable, yet contested (Festré and Garrouste 2014), in economics, the principle that increasing the relative price-attractiveness of an activity will increase its supply had reached the status of the “universal grammar of social science” (Hirshleifer 1985, p. 53).<sup>12</sup> This principle was successfully applied to a wide variety of behaviors outside the “traditional domain of explicit market transactions”, as pointed out by the Chicago law and economics scholar, Posner (1987, p. 1). In his Richard T. Ely lecture to the American Economic Association in December 1986, Posner (1987, p. 5) suggested that the basic premise behind the application of economics to so called non-market activities was that “People act as rational maximizers of their own satisfactions”. To Posner, this involved that people engaged more in an activity which saw its expected monetary consequence moving upwards, all other things held constant, no matter the nature of that activity. This principle was particularly familiar to economists and other economics-minded scholars at the University of Chicago (Ellickson 1986, Medema 2009, 2010).

In the mid-1980s, Frey received an invitation from the freshly Nobel-prize winning economist, George Stigler, to visit Chicago’s Graduate School of Business. Except for the joint work with Stroebe, Frey’s work at that time focused on international political economy, the economics of science and the economics of arts.<sup>13</sup> He had been invited to Chicago to work on these subjects (Frey to Romaniuc, 27 October 2014). However, once at Chicago, Frey decided to slightly modify his research agenda and he set on gathering feedbacks on the economic implications of psychologists’ distinction between extrinsic and intrinsic motivation. However, Frey’s enthusiasm has been rapidly “put off by the negative reaction of the fellow economists” (Frey to Romaniuc, 27 October 2014). The assistant professors suggested to Frey that he should “read a textbook in economics”, while Stigler judged “ridiculous” the idea that monetary rewards or sanctions could lead to the opposite behavioral response than the one predicted by economic theory because of the existence of an additional—

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<sup>12</sup> More precisely, Hirshleifer (1985, p. 53) talked about the “structured organization of these concepts [scarcity, cost, preferences, opportunities] into the distinct yet intertwined processes of optimization on the individual decision level” as “truly universal in applicability”.

<sup>13</sup> See Bruno Frey’s personal webpage, which lists all of his publications. One can clearly see that he started to actively research on the economic psychology and the economics of motivation (two research areas listed separately on Frey’s webpage) after the mid-1980s: <http://www.bsfrey.ch/articles.html>.

internal—source of motivation (Frey to Romaniuc, 27 October 2014). The only faculty member who was supportive of Frey’s idea was Becker. This may seem surprising given the similarities between Becker’s and Stigler’s positions vis-à-vis the nature of human behavior (see Medema 2009, 2010). The endorsement of a similar approach is considered, furthermore, to have been reinforced by Becker’s collaborative work with Stigler (Stigler and Becker 1977). In their 1977 paper, they maintained that searching for changes in prices and incomes was all economic analysis had to do when explaining differences among men and periods. This way of doing economics imposed minimal requirements. The economist needed solely an operational theory of how agents behaved in response to changes in their economic environment. Thus, Stigler and Becker’s (1977) account of human behavior was at odds with the “why” question of behavior posed by psychologists within the field of motivation—a literature which Frey wanted to bring to economists’ attention.

However, when we add to this background Becker’s earlier work on altruism (noted in section 3), the reason for Becker’s supportive view of Frey’s idea becomes understandable. Although Becker clearly maintained that the nature of human motivation was to remain terra incognita for the economist, he did not consider this a problem nor did he see it as a justification for economic analysis to leave the study of non-materialistic determinants of behavior to other social sciences. For the economist to illuminate widespread and/or persistent human behavior, Becker claimed, the economist “simply” had to *posit* the existence of certain motives—on a continuum from selfishness to benevolence—which, subsequently, proved their explanatory power in a comparative statics exercise (Becker 1974; see also Backhouse and Medema 2009, Fontaine 2007, Fleury 2012). This sort of axiomatic approach exempted the theorist from digging into the empirical content of the motives for action, allowing consequently a wider applicability of the theory (Becker 1976; see also Berg and Gigerenzer 2010, Berg 2014).

This detour through the Beckerian method is important to our narrative for Frey’s stay at the University of Chicago and, most importantly, his exchanges with Becker materialized in a series of theoretical and applied works on the interaction of extrinsic and intrinsic motivation. Shortly after his return to Zurich, there appeared in the French outlet *Journal des économistes et des études humaines* “The effect of motivation transfer” (the article was published in French as “L’effet de transfert de motivation”). From the outset of the article, published in 1990, Frey noted that “economic imperialism” rode on the idea that, for instance in a principal-agent relationship, the principal could change the agent’s behavior by simply making more economically attractive the desired conduct. However, Frey continued, non-economists often prefer other forms of motivation to economic incentives, such as the use of authority or tradition. To Frey, this difference was due to the economist’s ignorance of the existence of an intrinsic motivation besides the extrinsic one. By contrast to the economic theory, which presented an individual’s behavior as a function of solely economic arguments, Frey proposed to add “psychological effects” as an additional argument in the agent’s behavioral response function. He proposed the following representation of an individual’s behavioral



function:  $B = F(P, I)$ , where  $B$  is the individual conduct as a function of the economic incentive ( $P$ ) and his or her intrinsic motivation to perform that activity ( $I$ ). Frey recalled the central role of intrinsic motivation for Scitovsky (1976), Deci (1975), and a few other psychologists. However, while psychologists, and Scitovsky in their footsteps, sought to understand the empirical content of human motivation, Frey looked at the properties of this concept and had “no interest in defining it” (Frey to Romaniuc, 27 October 2014). Following this strategy, he made intrinsic motivation compatible with utility maximization. Within his approach, agents gain utility from both being paid to perform an activity and from the activity itself. This last argument in the individual utility function simply meant to him that a task could be performed because the individual derives *personal* satisfaction out of it independently of any external payment (or threat of punishment).<sup>14</sup> Intrinsic motivation was therefore viewed by Frey as perfectly compatible with the economist’s standard assumption of self-interested behavior.<sup>15</sup> The major novelty, Frey claimed, was that the two sources of personal satisfaction, intrinsic ( $I$ ) and extrinsic ( $P$ ), often, but not always, conflicted with each other. Under specific conditions, the use of  $P$  reduced the extent to which people relied on  $I$ .<sup>16</sup>

Towards the end of the article, Frey introduced some applications. He briefly pointed to people’s willingness to engage in environmentally friendly activities even in the absence of monetary incentives, probably because they had an intrinsic motivation to preserve the environment.<sup>17</sup> In the context of the private provision of blood, Frey reached the conclusion that Titmuss’ (1970) result may be explained by people’s intrinsic reasons to donate.<sup>18</sup>

Some two years after Frey’s “The transfer of motivation” came out in print, there appeared in the Swiss journal *Kyklos* Frey’s “Tertium Datur: Pricing, Regulating, and Intrinsic Motivation” (hereinafter “Tertium Datur”). The major novelty here was the extension of Frey’s (1990) results to a greater variety of behaviors. Frey (1992a) first started with the same problem area he studied earlier, the domain of environmental policies, perhaps because this was the area where the conflict of interest between the private and the social one was the most obvious. Environmental policies had gained

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<sup>14</sup> “Cela signifie aussi qu’une tâche est accomplie pour la satisfaction de la personne principalement intéressée par cette réalisation sans autre intervention sur son propre rôle” (Frey 1990, p. 228).

<sup>15</sup> “Plus précisément, le système des prix a un effet de report sur le secteur N où le comportement est déterminé par d’autres facteurs, et particulièrement par la motivation intrinsèque (**chacun recherchant son propre intérêt**)” (Frey 1990, p. 227, emphasis added).

<sup>16</sup> As one referee of this journal rightly pointed out, it seems that in Frey’s model it is not possible for an increased monetary payoff, in isolation, to decrease the supply of that behavior.  $dB(P,I)/dP < 0$  is only possible if one views  $I$  as a function of  $P$  and adds an element of crowding-out where  $I(P)$  is a decreasing function. In his later work, discussed above in the main text, Frey introduced the crowding out element with  $I(P)$  is a decreasing function. One possible reason for Frey’s model in his 1990 article may be that in this first work on the distinction between intrinsic and extrinsic motivation, the baseline scenario implied no interactions between  $I$  and  $P$ . In his later work, Frey clearly moves away from this baseline by claiming that in most situations  $I$  is a function of  $P$ .

<sup>17</sup> “[D]ans les autres domaines de l’environnement où les instruments faisant appel aux prix ne sont pas applicables (...) où l’on doit se référer à la motivation intrinsèque afin de préserver l’environnement” (Frey 1990, p. 238).

<sup>18</sup> “Les gens donnent leur sang (principalement) pour des raisons intrinsèques” (Frey 1990, p. 242).

recognition as a major problem area due to the existence of externalities already during the 1970s (Medema 2014). The publication of Baumol and Oates's second edition of *The Theory of Environmental Policy* in 1988 brought this issue clearly into the mainstream. They were, to our knowledge, among the first to explicitly argue that voluntary actions based on individual "morals" were one possible solution to the preservation of the environment. This latter element suggests that Frey sought to present his work as a contribution to this literature<sup>19</sup>, and possibly as an addition to the studies on the private provision of public goods, then rapidly growing with Bergstrom et al. (1986), Isaac and Walker (1988) and Andreoni (1988, 1989, 1990) as the main investigators. However, Frey (1990, 1992) did not cite these studies. Interestingly, it may seem today that Andreoni and Frey's intentions when introducing warm-glow effects and intrinsic motivation, respectively, were quite similar. Andreoni says his intention was "to capture, in a reduced form way, anything that would give utility to the \*act\* of giving" (Andreoni to Romaniuc, 28 October 2014), and Frey's was to show that the individual derived utility from acting pro-socially. Frey and Andreoni view, however, their contributions as independent and unconnected to each other (Frey to Romaniuc, 27 October 2014; Andreoni to Romaniuc, 28 October 2014).<sup>20</sup>

Applying his theory to the context of environmental policy, Frey (1992a, p. 171) equated intrinsic motivation to an "environmental ethics"—curiously, "ethics" is perhaps the closest term to "morals" used by Baumol and Oates (1988). In the section on crime prevention he referred to intrinsic motivation as a set of "internal values with respect to crime" (p. 172), which could be undermined by the application of a high penalty rate. Finally, in still another area of interest to those working on opportunistic behaviors, fiscal policy, Frey (1992a, p. 176) coined the term "tax morale (a particular kind of intrinsic motivation)" to explain why some people voluntarily and without regard to the economic consequences may choose tax obedience.

Following the publication of "Tertium Datur," Frey pursued the analysis of specific policy questions in a series of papers which appeared in prominent field outlets. In "Pricing and Regulating Affect Environmental Ethics", published in *Environmental and Resource Economics*, Frey (1992b) contested the hitherto dominant idea within the economics community that economic incentives needed to be designed whenever the private benefit from producing or protecting environmental goods diverged from the social one. Frey argued, more specifically, that positing the existence of an intrinsic motivation to act pro-environmentally without regard to future compensations or sanctions as an

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<sup>19</sup> Frey (1990 and 1992) mentioned Baumol and Oates (1988) and their suggestion that people may rely on morality to internalize the external effects on the environment.

<sup>20</sup> The warm-glow effect is generally referred to as impure-altruism. The word "altruism" is part of a larger lexicon of human goodness. Its meaning and its link to related terms (e.g., impure-altruism) is not always clear. For example, Mattis et al. (2009, p. 72) define altruistic behaviors as actions that are (1) voluntary, (2) *undertaken without an a priori interest in receiving internal or external rewards*, and (3) intended to enhance the welfare of others. (emphasis added) The impure-altruism model developed by Andreoni (1989) incorporates internal rewards, or what Andreoni calls a "warm glow" from giving. In this sense, it is not clear how impure-altruism differs from the concept of intrinsic motivation.

additional argument in the utility function not only reduced the need for external incentives but could also alter their effectiveness. Assuming continuity between the environment and other areas in which opportunistic tendencies were supposed to exist, Frey applied the same rationale to the vote motive (Frey 1993a) and to team-work (Frey 1993b, c). The overarching idea was to show that because individuals had intrinsic motivations to act in the public (or in some group's) interest, economic incentives were not always needed and, under some conditions, it was desirable to rely on intrinsic motivation alone.<sup>21</sup>

To many, Frey's answer to the problems posed by the conflict of interest seemed ad hoc. For example, at the December 1996 meeting of the American Economic Association, Kreps (1997, p. 359) recalled the "four answers" given by economists to why would people obey the norm of cooperation. A possible response, Kreps suggested, was that "Adherence to the norm is costless relative to violation and so, why not?" Or, "it might be immediately personally beneficial because it permits coordination". A similar answer consisted in maintaining that while immediately costly, it may lead "to better treatment by others than will violation." Finally, the last possibility identified by Kreps was that "Adherence is desirable per se." This last answer, Kreps explained, citing in passing Deci (1971)<sup>22</sup>, corresponds to the case when intrinsic motivation is at work. Such answers based on the intrinsic motivation concept, continued Kreps, involved "making adherence ... an argument in the individual's utility function" (p. 359)<sup>23</sup>. Although he regarded this transformation of the utility function as possibly leading to counterintuitive results about the effectiveness of economic incentives, Kreps wrote that "if adherence directly enters the individual's utility function ... any behavior can be norm-induced" (p. 360). This then naturally prompts the question: which actions are intrinsically motivated and which are not? "Answers involve looking at the utility functions of individuals", Kreps (1997, p. 361) concluded, which is "terra incognita for standard microeconomics".

Thus, Kreps' article is a notable reference suggesting that intrinsically motivated behavior was incorporated in the economist's standard utility-maximization framework. As we have shown, Frey accounted for intrinsic motivation in the manner Becker made gift-giving with no expectation of reciprocity compatible with utility maximization. Kreps viewed this sophistication of the utility function as a dubious exercise, which did not add empirical content to our knowledge of the sources of human motivation. Accordingly, Kreps advised economists to refrain from using such "fuzzy" concepts, and he personally preferred the threat of shadow sanctions, "such as fear of discharge,

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<sup>21</sup>To be more precise, Frey argued that relying on intrinsic motivation alone was often more desirable than adding to it a set of economic incentives. However, he pointed out to non-economic interventions, such as collective and individual feedbacks or non-monetary awards, which complemented intrinsic motivation and promoted cooperation.

<sup>23</sup> Curiously enough, Kreps (1997) did not cite Frey's work, although Frey was at that time the only economist working on the subject of intrinsic motivation. There are however no reasons to believe that Kreps was unaware about Frey's contributions.

censure by fellow employees or even the desire for co-workers' esteem" (Kreps 1997, p. 361), as the proper explanation for cooperation.

Most importantly, the reference to Kreps' analysis helps shift the heavy emphasis away from the psychological origins of Frey's conceptualization of intrinsic motivation to the influence of Becker's "economic approach". In his considerations of the relationship between the economic theory of human behavior and the concept of intrinsic motivation, Frey constantly brought to the reader's attention the plasticity of the utility function, a well-known property introduced by Becker (1974). The adoption of Becker's approach exempted Frey and the economists that followed (see, among others, Bénabou and Tirole 2003, 2006) from digging into the empirical content of intrinsic motivation, allowing consequently a wider applicability of the theory, from the environment to the fiscal policy and the private provision of public goods in general.

## **V. Conclusion**

When addressing the question of prosocial behavior when no reciprocity is expected, economists often refer to the notion of intrinsic motivation, whose introduction in economic analysis they date back to Scitovsky's *The Joyless Economy* and Frey's articles published in the early 1990s. These works are usually presented as the continuation of psychological research on the sources of motivation. I have shown however that this conclusion is inaccurate in terms of how these two authors approached the issue of human motivation. Scitovsky was interested in human motivation as early as in 1943, at a time when behaviorism, which viewed human choices as solely driven by external factors, was the dominant approach in psychology (see Kruglanski and Stroebe 2012). As for Frey, the Swiss economist approached human motivation from an economic standpoint, i.e. using the utility-maximization framework, to show that psychological concepts can be explained with economic theory rather than to show that economic theory can be amended with the complementary body of knowledge coming from psychology. This is not to minimize the impact of the psychological theories, particularly the ones that followed behaviorism, on both Scitovsky's and Frey's works. My view is rather that the historical perspective presented in this article helps us understand why the concept of intrinsic motivation appealed to Scitovsky and Frey for different reasons and what their distinct uses of the concept of "intrinsic motivation" were.

## **References**

Abelson, Robert P., Kurt P. Frey and Aiden P. Gregg. 2004. *Experiments with People: Revelations from Social Psychology*. London: Lawrence Erlbaum Associates, Inc., Publishers.

- Andreoni, James. 1988. Privately provided public goods in a large economy: The limits of altruism. *Journal of Public Economics* 35: 57-73.
- Andreoni, James. 1989. Giving with impure altruism: Applications to charity and Ricardian equivalence. *Journal of Political Economy* 97(6): 1447-1458.
- Andreoni, James. 1990. Impure altruism and donations to public goods: A theory of warm-glow giving. *Economic Journal* 100(401): 464-477.
- Backhouse, Roger E. 2006. *Economics since the Second World War*. Mimeo.
- Backhouse, Roger E. and Steven G. Medema. 2009. Retrospectives: On the Definitions of Economics. *Journal of Economic Perspectives* 23(1): 221-233.
- Bator, Francis M. 1958. The Anatomy of Market Failure. *Quarterly Journal of Economics* 72(August): 351-379.
- Baumol, William J. and Wallace E. Oates. 1988. *The Theory of Environmental Policy* (2<sup>nd</sup> ed.). Cambridge University Press.
- Becker, Gary S. 1974. A Theory of Social Interactions. *Journal of Political Economy* 82(6): 1063-1093.
- Becker, Gary S. 1976. *The Economic Approach to Human Behavior*. Chicago: University of Chicago Press.
- Bénabou, Roland and Jean Tirole. 2003. Intrinsic and Extrinsic Motivation. *Review of Economic Studies* 70(3): 489-520.
- Bénabou, Roland and Jean Tirole. 2006. Incentives and Prosocial Behavior. *American Economic Review* 96(5): 1652-1678.
- Berg, Nathan. 2014. The consistency and ecological rationality schools of normative economics: Singular versus plural metrics for assessing bounded rationality. *Journal of Economic Methodology* 21(4): 375-395.
- Berg, Nathan and Gerd Gigerenzer. 2010. As-if behavioral economics: neoclassical economics in disguise? *History of Economic Ideas* 18(1): 133-165.
- Bergstrom, Theodore, Lawrence Blume and Hal Varian. 1986. On the private provision of public goods. *Journal of Public Economics* 29: 25-49.
- Berlyne, Daniel. 1960. *Conflict, Arousal, and Curiosity*. McGraw-Hill, Inc.
- Bianchi, Marina. 2003. A questioning economist: Tibor Scitovsky's attempt to bring joy into economics. *Journal of Economic Psychology* 24(3): 391-407.
- Blaug, Mark. 2003. The formalist revolution of the 1950s. *Journal of the History of Economic Thought* 25(2): 145-156.
- Bowles, Samuel and Sandra Polania-Reyes. 2012. Economic incentives and social preferences: Substitutes or complements? *Journal of Economic Literature* 50(2): 368-425.
- Buchanan, James M. 1982. The related but distinct 'sciences' of economics and political economy. *British Journal of Social Psychology* 21(2): 175-183.

- Calder, B. J. and B. M. Staw. 1975. Self-perception of intrinsic and extrinsic motivation: a meta-analysis. *Review of Educational Research* 64: 363-423.
- Chomsky, Noam A. 1959. A review of B. S. Skinner's Verbal Behavior. *Language* 35(1): 26-58.
- Darley, John M. and Bibb Latané. 1968. Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology* 8, 377-383.
- Deci, Edward L. 1971. Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology* 18(1): 105-115.
- Deci, Edward L. 1972. The effect of contingent and noncontingent rewards and controls on intrinsic motivation. *Organizational Behavior and Human Performance* 8: 217-229.
- Deci, Edward L. 1975. *Intrinsic Motivation*. New York: Plenum Press.
- Deci, Edward L. and Richard M. Ryan. 1985. *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Plenum Press.
- Di Giovinazzo, Viviana. 2010. Towards an alternative paradigm of consumer behavior. Working Paper, Department of Economics, University of Milan-Bicocca.
- Di Giovinazzo, Viviana. 2014. A matter of character. The relevance of Erich Fromm's work to Scitovsky's critique of the consumer society. Presented at *History of Economics Society*, June 20-22, 2014, Montréal, Canada.
- Dixit, Avinash. 2012. Paul Samuelson's Legacy. *Annual Review of Economics* 4: 1-31.
- Ehrlich, Isaac. 1982. The market for offences and the public enforcement of laws: An equilibrium analysis. *British Journal of Social Psychology* 21(2): 107-120.
- Ellickson, Robert. 1989. Bringing culture and human frailty to rational actors. *Chicago-Kent Law Review* 65: 23-55.
- Fehr, Ernst and Armin Falk. 2002. Psychological foundations of incentives. *European Economic Review* 46: 687-724.
- Festré, Agnès and Pierre Garrouste. 2014. Theory and Evidence in Psychology and Economics about Motivation Crowding Out: A Possible Convergence? *Journal of Economic Surveys* 29(2): 339-356.
- Fisher, Franklin M., Zvi Griliches and Carl Kaysen. 1962. The Costs of Automobile Model Changes Since 1949. *American Economic Review* 52(2) Paper and Proceedings: 259-261.
- Fleury, Jean-Baptiste. 2012. Wandering through the Borderlands of the Social Sciences: Gary Becker's *Economics of Discrimination*. *History of Political Economy* 44(1): 1-40.
- Fontaine, Philippe. 2007. From Philanthropy to Altruism: Incorporating Unselfish Behavior into Economics, 1961-1975. *History of Political Economy* 39(1): 1-46.
- Fontaine, Philippe. 2012. Beyond Altruism? Economics and the Minimization of Unselfish Behavior, 1975-93. *History of Political Economy* 44(2): 195-233.
- Fontaine, Philippe. 2014. Free Riding. *Journal of the History of Economic Thought* 36(3): 359-376.
- Fouraker, Lawrence E. and Sidney Siegel. 1963. *Bargaining Behavior*. New York: McGraw-Hill.

- Frey, Bruno S. 1990. L'effet de transfert de motivation. *Journal des Economistes et des Etudes Humaines* 1(3): 225-252.
- Frey, Bruno S. 1992a. Tertium Datur : Pricing, Regulating and Intrinsic Motivation. *Kyklos* 45(2): 161-184.
- Frey, Bruno S. 1992b. Pricing and Regulating Affect Environmental Ethics. *Environmental and Resource Economics* 2: 399-414.
- Frey, Bruno S. 1993a. From Economic Imperialism to Social Science Inspiration. *Public Choice* 77: 95-105.
- Frey, Bruno S. 1993b. Does monitoring increase work effort? The rivalry with trust and loyalty. *Economic Inquiry* 31(October): 663-670.
- Frey, Bruno S. 1993c. Shirking or work morale? The impact of regulating. *European Economic Review* 37: 1523-1532.
- Frey, Bruno S. 2001. *Inspiring Economics: Human Motivation in Political Economy*. Cheltenham, UK: Edward Elgar.
- Frey, Bruno and Alois Stutzer (eds.). 2007. *Economics and Psychology: A Promising New Cross-Disciplinary Field*. CESifo Seminar Series, Cambridge and London: MIT Press.
- Friedman, Daniel and Shyam Sunder. 1994. *Experimental methods: a primer for economists*. Cambridge, New York: Cambridge University Press.
- Gächter, Simon. 2014. Human Pro-Social Motivation and the Maintenance of Social Order. In: Eyal Zamir and Doron Teichman (eds.), *Handbook on Behavioral Economics and the Law*. Oxford University Press.
- Galbraith, John K. 1958. *The Affluent Society*. Boston, Mass.: Houghton-Mifflin Co.
- Graham, George. 2010. Behaviorism. *The Stanford Encyclopedia of Philosophy*, Edward N. Zalta (ed.), URL: <http://plato.stanford.edu/archives/fall2010/entries/behaviorism/>.
- Guala, Francesco. 2008. Experimental Economics, History of. In: Steven Durlauf and Lawrence Blume (eds.), *The New Palgrave Dictionary of Economics*, V. 3. London: Palgrave-MacMillan.
- Hebb, Donald. 1955. Drives and the C.N.S. *Psychological Review* 62(4): 243-253.
- Hirshleifer, Jack. 1985. The Expanding Domain of Economics. *American Economic Review* 75: 53-68.
- Hirschman, Albert O. 1996. Between the Public and the Private. *Critical Review* 10(4): 533-550.
- Hogarth, Robin M. and Melvin W. Reder. 1986. Editors' Comments: Perspectives from Economics and Psychology. *Journal of Business* 59(4): 185-207.
- Holt, Charles A. 2006. *Markets, games, and strategic behavior*. Boston: Pearson Addison Wesley.
- Hull, Clark L. 1943. *Principles of Behavior*. Prentice-Hall, Inc.
- Hunt, Joseph McV. 1963. Motivation Inherent in Information Processing and Action. In: O. J. Harvey (ed.), *Motivation and Social Interaction: Cognitive Determinants*. Ronald Press Co.
- Isaac, Mark R. and James M. Walker. 1988. Group size effects in the public goods provision: The voluntary contributions mechanism. *Quarterly Journal of Economics* 53: 179-200.

- Kreps, David M. 1997. Intrinsic Motivation and Extrinsic Incentives. *American Economic Review, Papers and Proceedings*, 87(2): 359-364.
- Kruglanski, Arie W. and Wolfgang Stroebe. 2012. *Handbook of the History of Social Psychology*. New York: Taylor Francis Group.
- Levine, Frederic M. 1975. *Theoretical Readings in Motivation: Perspectives on Human Behavior*. Rand McNally Publishing Company.
- Lewin, Shira B. 1996. Economics and Psychology: Lessons for Our Own Day from the Early Twentieth Century. *Journal of Economic Literature* 34(3): 1293-1323.
- Mattis, Jacqueline S., Wizdom Powell Hammond, Nyasha Grayman, Meredith Bonacci, William Brennan, Sheri-Ann Cowie, Lina Ladyzhenskaya, and Sara So. 2009. The Social Production of Altruism: Motivations for Caring Action in a Low-Income Urban Community. *American Journal of Community Psychology* 43(1-2): 71-84.
- Meade, James E. 1952. External Economies and Diseconomies in a Competitive Situation. *Economic Journal* 62(March): 54-67.
- Medema, Steven G. 2009. *The Hesitant Hand: Taming Self-Interest in the History of Economic Ideas*. Princeton University Press.
- Medema, Steven G. 2010. The Chicago School of Law and Economics. In: Ross Emmett (ed.), *The Elgar Companion to the Chicago School of Economics*. Cheltenham: Edward Elgar Publishing.
- Medema, Steven G. 2014. The curious treatment of the Coase theorem in the environmental economics literature, 1960-1979. *Review of Environmental Economics and Policy* 8(1): 39-57.
- Meier, Stephan. 2007. A survey of economic theories and field evidence on prosocial behavior. In: Bruno S. Frey and Alois Stutzer (eds.), *Economics and Psychology: A Promising New Cross-Disciplinary Field*. CESifo Seminar Series, Cambridge and London: MIT Press.
- Mirowski, Philip. 2002. *Machine dreams: economics becomes a cyborg science*. Cambridge University Press.
- Morgan, Mary S. and Malcolm Rutherford. 1998. American Economics: The Character of the Transformation. *History of Political Economy* 30(Supplement): 1-26 .
- Olson, Mancur. 1965. *The Logic of Collective Action*. Cambridge, MA: Harvard University Press.
- Petit, Emmanuel. 2011. L'apport de la psychologie sociale à l'analyse économique. *Revue d'économie politique* 121(6): 797-837.
- Posner, Richard A. 1987. The Law and Economics Movement. *American Economic Review, Papers and Proceedings*, 77(2): 1-13.
- Samuelson, Paul A. 1954. The Pure Theory of Public Expenditure. *Review of Economics and Statistics* 36(4): 387-389.
- Samuelson, Paul A. 1955. Diagrammatic Exposition of a Theory of Public Expenditure. *Review of Economics and Statistics* 37(4): 350-356.



- Scitovsky, Tibor. 1943. A note on profit maximization and its implications. *Review of Economic Studies* XI: 57-80.
- Scitovsky, Tibor. 1954. Two Concepts of External Economies. *Journal of Political Economy* 62(2): 143-151.
- Scitovsky, Tibor. 1960. A critique of present and proposed standards. *American Economic Review* 50(1): 13-20.
- Scitovsky, Tibor. 1962. On the principle of consumer sovereignty. *American Economic Review, Papers and Proceedings*, 52(2): 262-268.
- Scitovsky, Tibor. 1973. The producer society. *De Economist* CXXI: 225-250.
- Scitovsky, Tibor. 1974. Are men rational or economists wrong? In: P. A. David and M. W. Reder (eds.), *Nations and Households in Economic Growth*. New York: Academic Press.
- Scitovsky, Tibor. 1976. *The Joyless Economy: An Inquiry into Human Satisfaction and Dissatisfaction*. Oxford: Oxford University Press.
- Scitovsky, Tibor. 1991a. Hindsight economics. *Quarterly Review of Banca Nazionale del Lavoro* 178(September): 251-270.
- Scitovsky, Tibor. 1991b. My search for welfare. In: M. Szenberg (ed.), *Eminent Economists: Their Life Philosophies*. Cambridge: Cambridge University Press.
- Sent, Esther-Mirjam. 2004. Behavioral Economics: How Psychology Made Its (Limited) Way Back Into Economics. *History of Political Economy* 36(4): 735-760.
- Serra, Daniel. 2012. Un aperçu historique de l'économie expérimentale : des origines aux évolutions récentes. *Revue d'économie politique* 122(5) : 749-786.
- Siegel, Sidney and Lawrence E. Fouraker. 1960. *Bargaining and group decision making: experiments in bilateral monopoly*. New York: McGraw-Hill.
- Skinner, Burrhus F. 1965. *Science and Human Behavior*. Free Press.
- Smith, Vernon L. 1992. Game theory and experimental economics: beginnings and early influences. In: E. Roy Weintraub (ed.), *Toward a history of game theory, History of Political Economy*, 24(Supplement): 241-282.
- Stigler, George J. and Gary S. Becker. 1977. De Gustibus Non Est Disputandum. *American Economic Review* 67(2): 76-90.
- Stroebe, Wolfgang and Bruno S. Frey. 1980. In Defense of Economic Man: Towards an Integration of Economics and Psychology. *Revue Suisse d'Economie Politique et de Statistique* 116(2): 119-148.
- Stroebe, Wolfgang and Bruno S. Frey. 1982. Self-interest and collective action: The economics and psychology of public goods. *British Journal of Social Psychology* 21: 121-137.
- Svorenčik, Andrej. 2016. The Sidney Siegel tradition: The divergence of behavioral and experimental economics at the end of the 1980s. *Center for History of Political Economy Working Paper 2016-20*.

- Rabin, Matthew. 1998. Psychology and Economics. *Journal of Economic Literature* 36(1): 11-46.
- Roth, Alvin E. 1993. On the Early History of Experimental Economics. *Journal of the History of Economic Thought* 15(Fall): 184-209.
- Ryan, Richard M. 2012. *Oxford Handbook on Motivation*. Oxford: Oxford University Press.
- Titmuss, Richard M. 1970. *The Gift Relationship*. London: Allen and Unwin.
- Tuck, Richard. 2008. *Free Riding*. Cambridge, MA: Harvard University Press.
- Vroom, Victor H. 1995. *Work and Motivation*. Jossey-Bass.