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**Three Questions About the Economics of Relative Position:
A Response to Frank and Sunstein**

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Executive Summary

Cost-benefit analyses typically ignore the importance of relative position. That is, they do not take into account the possibility that people value particular goods, services, or other determinants of well-being through comparisons with others. Robert Frank and Cass Sunstein have recently concluded that taking into account positional issues implies that the benefits of health and safety regulations may be twice as large as the levels commonly found in cost-benefit analyses.

However, the effects of positional externalities on the valuation of safety and health regulations, and hence the correct modifications to cost-benefit analyses, are theoretically ambiguous. Frank and Sunstein assume that people like others to become worse off and that the incomes of others are more important for comparison than their health and safety on the job. Because different assumptions can lead to opposite conclusions about the value of additional regulations, this response addresses whether the evidence supports Frank and Sunstein's assumptions.

The nature of relative position can be described as answers to three questions. First, what is the relevant group to which people compare themselves? Second, which characteristics of the comparison group matter? Third, how strongly do these comparisons affect people? This paper evaluates Frank and Sunstein's evidence on all three questions.

People inclined to favor the model of positional externalities espoused by Frank and Sunstein may find their evidence convincing, but there are appealing alternative explanations. There is also direct evidence that only a minority of people act in the way they assume. They estimate that people should be willing to spend \$6,000 of a \$10,000 raise to prevent their coworkers from getting the same raise. Though some people might pay to reduce the salaries of their coworkers, others would surely pay to raise them. That many people display altruistic behavior in many situations is completely ignored by Frank and Sunstein.

Particularly because of the variation in preferences across individuals, the evidence is at present too limited to permit the precise characterization necessary to evaluate the effects of policy. Under some plausible models, the policies suggested by Frank and Sunstein make people worse off; in others, better off. Though it is premature to incorporate positional externalities in policy analysis, such issues undoubtedly will become a formal part of policy analysis as our understanding improves.

Three Questions About the Economics of Relative Position: A Response to Frank and Sunstein

Gregory Besharov

I. Introduction

Cost-benefit analyses typically assume that the welfare of individuals from their own consumption of particular goods and services does not depend directly on the amounts of those goods and services consumed by others. Yet comparison with others is a constant theme in human history and literature, obvious in even the most casual observation of the world or (to one's embarrassment) oneself. Given their existence, surely interpersonal comparisons have implications for policy-making. In a recent paper, Robert Frank and Cass Sunstein bring issues of interpersonal comparison into the analysis of policies that provide greater health and safety protections for workers.¹ The two are well situated to do so. Frank is as responsible as any scholar for the development of the economics literature on interpersonal comparisons in its modern conception, and Sunstein continues to lead in exploring the implications of richer models of human behavior for public policy and the law.

If they are correct about the way people compare themselves to others, the benefits of health and safety standards in the workplace may be as much as twice as high as has been previously estimated. Current expenditures may be tens or hundreds of billions of dollars too low. Frank and Sunstein ask us to recognize that even if their analysis were not precisely correct, any reasonable model would imply that current estimates of the benefits of such regulations should be adjusted upward. Yet, as this response will argue, the state of knowledge on the subject is inadequate to support such a conclusion. The policies they advocate could actually reduce welfare.

¹ Robert Frank & Cass Sunstein, *Cost Benefit Analysis and Relative Position*, 68 U. CHI. L. REV. 323 (2001). The paper also presents a considerable discussion of the recent and current use of cost-benefit analysis in policy-making that is not addressed in this response.

The effect on a person's well-being from someone else having more of one thing or less of another is labeled a "positional externality." Such effects are completely ignored in cost-benefit analyses. Frank and Sunstein assume that people become better off as the amount they have relative to others increases. They further assume that people compare themselves to others on the basis of income to a greater extent than they do on issues of health and safety. In other words, they assume that relative position matters "less" for health and safety than for income. Such a specification of preferences implies that workers are in a prisoner's dilemma situation when taking jobs. All would like to give up income for higher levels of safety and health protection but do not want their incomes to fall relative to others'. Suppose the government were to intervene by specifying additional protections. Then *relative* incomes would not change much while everyone would enjoy greater levels of health and safety, thus enhancing welfare.²

However, Frank and Sunstein's conclusions depend upon the particular way in which individuals value relative position. Many different models of positional externalities are possible. These models differ in their answers to three questions:

- First, what is the reference group against which an individual compares himself? Does it include only friends and relatives or also strangers, only neighbors or also people in distant lands, only contemporaries or also predecessors (or even successors)?
- Second, which characteristics of the reference group matter? Do people compare themselves on the basis of income or consumption? How much do people compare themselves on health and safety issues?
- Third, what are people willing to give up for position? What is the magnitude of the externalities associated with different individuals and characteristics? Do positional externalities always make people feel worse when others do well?

² Another way of thinking about Frank and Sunstein's argument is that individuals create a negative externality on others when they choose income instead of health and safety benefits as part of their job package. As is often the case (in the absence of other distortions), the presence of a negative externality results in too much of something—in this case income relative to safety and health.

Could improvements in the position of the poor or of loved ones make one better off?

The answers that Frank and Sunstein give to these questions paints a picture of human nature even more selfish than usual in economics. In their theory, people become better off when their neighbors' houses burn down and when their friends get pay cuts. Soldiers don't dive on grenades for the good of the platoon, nor do people donate kidneys. William Faulkner once spoke of the "universal truths lacking which any story is ephemeral and doomed—love and honor and pity and pride and compassion and sacrifice."³ None of these, except perhaps pride, has a place in Frank and Sunstein's model. A fuller description of human nature would include these "universal truths" as well as concerns about high relative position.

Even when altruistic concerns are ignored, it is possible to reverse Frank and Sunstein's conclusions. The next section offers two illustrative examples in which their policy recommendations are not only not optimal, but in fact make things worse. The balance of the response addresses the evidence on each of the three questions. Some of the material presented in their paper and reviewed in this response does not directly address the logic for the proposal. Presumably, Frank and Sunstein incorporated the material to help characterize the economics of relative position, and it is evaluated in this response to demonstrate the extent of our ignorance about positional issues.

II. Reversing the Policy Conclusion

Frank and Sunstein's conclusion that safety and health regulations are undervalued follows from the assumption that comparisons of relative incomes matter "more" than relative levels of safety and health. One thing mattering "more" or "less" is generally not well-defined in the economic theory of preferences. Consider two goods: water and diamonds. The way an economist would express their relative value is by the amount of water an individual would exchange for a small amount of diamonds given that the individual has particular levels of water, diamonds, and other goods. Economists

³ The quotation is from the published version of Faulkner's Nobel acceptance, available online at <http://www.nobel.se/literature/laureates/1949/faulkner-acceptance.html>.

often make assumptions implying that an individual with very little water would be willing to give up more diamonds for a quantity of water than an individual with more water. There is no simple sense in which either water or diamonds matters “more.” Similarly, in many models of positional externalities it is not possible to say which matters “more.” Frank and Sunstein never address this issue. In the illustrative example they offer, there is no benefit to having more health and safety than others, so income matters “more,” but they never make clear how they think people actually compare relative position on income versus health and safety.

Naturally, changing the assumptions about the operation of positional externalities changes the results. Without challenging the underlying assumption that people feel better, rather than worse, when others become worse off, it is still possible to reverse the policy conclusion. If people care about positional externalities regarding health and safety “more” than income, then, unsurprisingly, they would receive an inefficiently *low* level of income. Consequently, policies increasing health and safety on the job could *reduce* welfare. A more involved example involves people comparing themselves on health and safety in a self-serving way. Specifically, people may care only about their relative position for criteria on which they do well. If so, there need be no inefficiency in labor markets from the positional externalities. These particular alternative models of positional externalities reveal the dependence of Frank and Sunstein’s conclusions on their assumptions. The examples are only intended to be illustrative because, as described later, the data do not support a specific model.

A. Smith and Jones ala Frank and Sunstein

Economists have found it useful to present their arguments in the form of models in which assumptions about preferences, constraints, and behavior lead to conclusions about outcomes. Frank and Sunstein present an example with these features involving two coworkers Smith and Jones. Both Smith and Jones get satisfaction from income, safety on the job, and position on the income ladder. They each confront a choice between a safe job that pays \$300 per week and a risky job paying \$350 per week. They each value the additional safety at \$100 per week. In addition, having more income than

the other provides a bonus equivalent to \$100 per week in satisfaction. The total satisfaction of each is described in Table 1.

Smith and Jones are in a prisoner's dilemma situation in the sense that each is better off choosing the risky job regardless of the other's choice. The only Nash equilibrium of this game is for both to take the risky job.⁴ Although they would both prefer the outcome in which both have a safe job to the Nash equilibrium, this outcome is unattainable without some means by which each can commit to the more attractive outcome.

Table 1

		Smith	
		Safe Job	Risky Job
Jones	Safe Job	\$400 for each	\$300 for Jones \$450 for Smith
	Risky Job	\$450 for Jones \$300 for Smith	\$350 for each

B. Self-Serving Positional Externalities From Health and Safety

Suppose instead that Smith and Jones were to value their relative position on health and safety as well as income. In the context of the model, an individual might receive the \$100 positional benefit only if he or she were higher on some combined measure of income, health and safety. If health and safety are more important than income, then people will choose too much health and safety on the job by the very same logic that Frank and Sunstein use to establish that too much income will be chosen when the positional externality involves only income. Currently, almost nothing is known about the positional externalities from health and safety, so a characterization of the trade-offs between relative position on income and health and safety cannot be advanced with confidence. One simple way of expressing different relative weights on two positional

⁴ In a Nash equilibrium, no individual wishes to change his or her choice when the choices of other individuals are taken as given.

goods is to assume that an individual cares only about the good on which she has higher relative position.

There is evidence that people tend to distort their beliefs about reality to maintain a positive image of themselves in many domains.⁵ In the case of positional externalities, an individual might care only about positional issues on which he or she is superior.⁶ That is, if an individual has a lower income than a member of the reference group but a safer job, then the individual might get satisfaction from the greater safety, telling himself or herself that “it’s safety that really counts.” The other individual might say something like, “Real men and women don’t need jobs that safe, it’s income that matters in the measure of a person.” Both individuals could feel satisfaction from being better on the criterion “that matters.” If so, policy that reduces the externality could make individuals worse off.

A simple extension of the previous model shows the possible effects of a self-serving positional externality. Suppose that Smith and Jones each continue to receive \$100 in direct benefits from having a safer job but get \$50 less in pay for so choosing. In addition, an individual gets the equivalent of \$100 for having a higher income than the other and \$100 for having a safer job than the other but loses nothing from being lower in one of them so long as he or she is higher in the other. This is the self-serving part. The only criterion that counts is the one on which an individual is superior.

This new situation is summarized in Table 2. The payoffs are unchanged when they are both in the safe job or both in the risky job because there are still no positional externalities that come into play. However, when one chooses the risky job and the other the safe job, the analysis differs. Suppose Jones takes the risky job and Smith the safe one. Jones receives \$350 in salary, gains \$100 from having a higher income than Smith,

⁵ The psychology literature reports that when a member of the reference group outperforms an individual, he or she may devalue that individual or the criterion. See Shelley E. Taylor, Heidi A. Wayment & Mary Carrillo, *Social Comparison, Self-Regulation, and Motivation*, in HANDBOOK OF MOTIVATION AND COGNITION (VOLUME 3) 3 (Richard M. Sorrentino & E. Tory Higgins eds., 1996) (summarizing the literature). The issue is also addressed in Linda Babcock & George Loewenstein, *Explaining Bargaining Impasse: The Role of Self-Serving Biases*, 11 J. ECON. PERSP. 109 (1997).

⁶ The beginning of Leo Tolstoy’s “How Much Land Does a Man Need?” describes a meeting of two adult sisters. After the elder had spoken of her high living style, the younger responds, “I would not change my way of life for yours.” She continues, “We may live roughly, but at least we are free from anxiety. You live in better style than we do, but though you often earn more than you need, you are very likely to lose all you have.... Our way is safer. Though a peasant’s life is not a fat one, it is a long one. We shall never grow rich, but we shall always have enough to eat.” Such a statement may be genuine, but smacks of the self-serving. See LEO TOLSTOY, *THE RAID AND OTHER STORIES* (Louise and Aylmer Maude trans., 1999).

and loses nothing from having lower safety than Smith for total satisfaction of \$450. Smith now has \$300 in salary, \$100 from the extra safety, loses nothing from a lower income, and receives \$100 from higher safety for a total of \$500. Such behavior would be an equilibrium in that neither one of them would shift jobs given the other's choice. In fact, the outcome is efficient. No other choice can make both of them better off.⁷

Table 2

		Smith	
		Safe Job	Risky Job
Jones	Safe Job	\$400 for each	\$500 for Jones \$450 for Smith
	Risky Job	\$450 for Jones \$500 for Smith	\$350 for each

The foregoing analysis demonstrates that the optimal outcome depends on the model the analyst considers correct. Only a few elements of the situation are directly observable—for example, that the safe job pays \$50 less than the risky job and that the workers choose the risky job. In a model with no positional externalities, the conclusion is simply that the value of the additional health benefits was less than \$50. In the model of Frank and Sunstein, the conclusion is that both should have the safe job and mandated benefits seem like a good idea. But if the self-serving positional externality model best describes the situation, then the individuals would be better off having *different* combinations of wages and benefits because such variation increases the dimensions of difference and allows each to think that he or she is better off “on the scale that matters” even though both of them have the same underlying preferences. In that case, the mandates proposed by Frank and Sunstein would make both Smith and Jones worse off.

Not only do the effects of policy depend on the model, but also different models may be necessary to describe different people or different situations. Just as attitudes

⁷ Readers familiar with game theory may notice that this is an example of what is often referred to as a “Battle of the Sexes” game. In addition to the efficient equilibria in which one person chooses the safe job and the other the risky job, there is an inefficient equilibrium in which the two make their choices randomly.

towards risk vary—with some people avid skydivers and others unwilling to fly—attitudes towards relative position may as well. As Gary Becker and Kevin Murphy point out, some people actively seek gossip about the rich and famous and watch television shows about them.⁸ These are behaviors that would make them worse off under Frank and Sunstein’s conception of positional externalities. Perhaps the correct specification of positional externalities, at least for these people, means that such activities make them better off. Only if the answers to the following three questions are known, can even the direction of bias in cost-benefit analyses be derived.

III. Question 1: What is the Reference Group?

The reference group for an individual might comprise any of a number of people. Friends and family would likely loom large, as would coworkers. But one might also be attentive to those one does not know. A stranger driving by in a fine car might spark a flash of envy. A news report about poverty could make one feel fortunate. It is even possible that people could compare themselves to predecessors or successors. We may feel happy to be richer than those who came before us or despondent if we think about the tremendous luxury that will likely be available to many in the future. Frank and Sunstein’s argument for greater health and safety workplace regulations requires that people compare themselves to coworkers. Although casual observation may suggest they (i.e., we) do, the paper provides no direct evidence for this conclusion. This section reviews the evidence on the composition of the reference group from experimental games and market behavior.

A. The Ultimatum Game

One source of evidence cited by Frank and Sunstein involves the ultimatum game, in which one player proposes an allocation of a fixed sum of money. The other player may accept the offer, in which case both players get the proposed division, or may reject the offer, in which case both players receive nothing. Play is anonymous and occurs only once. If the person receiving—the “responder”—were to care only about the amount of

⁸ GARY BECKER & KEVIN MURPHY, SOCIAL ECONOMICS 124 (2000).

money, then offers should always be accepted.⁹ However, offers are often rejected. There are many possible motivations for such behavior, and there is no particular evidence that it is positional externalities that are the cause.

Consider what would have to be true if it were in fact positional externalities that caused the rejection. At the time of the experiment, the reference group would have to be strongly weighted towards the proposing player. After all, acceptance of the division would increase the wealth of the decider relative to everyone other than the allocator who could be in his or her reference group. If the ultimatum game does in fact bear on positional externalities, then it supports the notion that an individual's reference group may be weighted heavily toward strangers and may vary significantly in response to small changes in situation.¹⁰ That is not the lesson that Frank and Sunstein take from it.

Generally, the literature on experimental games is more ambiguous than described by Frank and Sunstein. A recent paper by Gary Charness and Matthew Rabin reviews the literature on the ultimatum game and other experimental games and conducts additional experiments to try to differentiate among theoretical models of behavior.¹¹ In their experiments, people often took lower payoffs so that others would have higher payoffs. In one experiment every single person (out of 36) chose for the other player to receive 800 compared to their own payoff of 200 rather than both of them receive zero. In another, 16 out of 22 people chose to receive only 600 instead of 700 so that the other player would receive 600 instead of 200.¹² They never observed more than one-third of their subjects behaving in a manner consistent with Frank and Sunstein's assumptions and "tentatively conclude" that no more than a third of people behave in such a fashion.

⁹ Statements of this sort assume that equilibrium analysis is an appropriate description of behavior. For a review of alternate views, see George J. Mailath, *Do People Play Nash Equilibrium? Lessons from Evolutionary Game Theory*, 35 J. ECON. LIT. 1347 (1998).

¹⁰ The tendency for individuals to consider the situation at hand on its own and not as part of a larger context is common. Matthew Rabin refers to the preferences implied as "piecemeal." Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LIT. 11, 20 (1998).

¹¹ Gary Charness & Matthew Rabin, *Social Preferences: Some Simple Tests and a New Model*, working paper available at <http://emlab.berkeley.edu/users/rabin/simple.pdf>.

¹² *Id.* at 26

B. The Sisters Study

The evidence that bears most directly on the nature of the reference group focuses on family members rather than coworkers. Neumark and Postlewaite studied women's labor market behavior and found evidence that behavior depends on the wages of their sisters' families.¹³ Two results from the study are supportive of the existence of positional externalities. First, women work more if their sister's husband earns more than their own husband. The additional work helps to narrow the difference between the woman and her sister's family, thereby reducing positional externalities. Second, a woman with a working sister is less likely to be employed if her husband earns less than her sister's husband. If a woman's husband earns less than her sister's husband, then her own labor market earnings would be less likely to result in her family having more income than her sister's family if her sister is working. Both findings are consistent with the idea that the reference group includes other family members. Nonetheless, the study provides no further insights about other possible reference groups, nor does it differentiate among issues of income and health and safety, nor does it say much about the value of positional externalities relative to income. Thus, the strong results of the paper are of limited usefulness for considering positional externalities in cost-benefit analysis.

IV. Question 2: Which characteristics matter?

The criteria on which individuals compare themselves to others may vary across the different members of an individual's reference group. One may compare oneself on income to co-workers and on athletic ability to sporting companions or vice versa. Relative income certainly matters to people, but other things do as well, and the way they matter may vary across people.

¹³ David Neumark & Andrew Postlewaite, *Relative Income Concerns and the Rise in Married Women's Employment*, 70 J. PUB. ECON. 157 (1998).

A. Happiness Surveys and Subjective Well-Being

As Frank and Sunstein put it, happiness surveys provide the “most striking evidence of the importance of relative position.”¹⁴ Happiness surveys provide a simple measure of an individual’s subjective well-being by asking whether an individual is very happy, fairly happy or not happy. Two relevant stylized facts establish Frank and Sunstein’s argument that relative position is of great importance. First, within a country at a given point in time, happiness is correlated with income. The higher an individual’s income, the happier he or she tends to be. Second, there are only weak trends over time in reported happiness even in countries experiencing substantial economic growth. Frank and Sunstein claim that “these findings demonstrate that relative income is more important than absolute income as a determinant of self-reported happiness levels,”¹⁵ but there are many other explanations for the phenomena.

One alternative explanation for the same results is that that an individual might compare her current well-being to her previous well-being without regard to other individuals at all. Simple comparisons of an individual’s consumption to an “aspiration level” can have effects that are similar to positional externalities. Cross-sectional analyses may simply be capturing the fact that people with higher-than-average income are likely to have experienced recent income growth. The opposite is true for those with lower-than-average incomes.¹⁶ It is not clear how one would differentiate the effects of an aspiration level from a positional externality with current evidence.

Another explanation for the survey results is that the scale on which people rate their happiness may change with economic growth. Any particular level of reported happiness could correspond with any level of well-being in the absence of a well-defined objective scale against which individuals measure their happiness.¹⁷ (Hence the term *subjective* well-being.) Evidence offered by Frank and Sunstein to support the use of

¹⁴ Frank & Sunstein, *supra* note 1, at 336.

¹⁵ *Id.* at 338.

¹⁶ RICHARD EASTERLIN, GROWTH TRIUMPHANT: THE TWENTY-FIRST CENTURY IN HISTORICAL PERSPECTIVE 140 (1996).

¹⁷ There have been several attempts to deal with the problem. Some surveys specifically ask people to determine their own definition of happiness. *See Id.* at 132. Other surveys ask for comparison against a scale that ranges from “the best possible life in this country” and the “the worst possible life in this country.” *See* James M. Olson & Carolyn Hafer, *Affect, Motivation, and Cognition in Relative Deprivation Research*, in 3 HANDBOOK OF MOTIVATION AND COGNITION 85 (Richard M. Sorrentino & E. Tory Higgins eds., 1996).

happiness surveys is that there are objective conditions that affect responses. For example, if someone has a headache, reported happiness will decline. But this simply means that the scale can change for such factors as headaches, not that the scale does not change with persistent economic growth. Tversky and Griffin questioned whether the results of happiness surveys reflect a positional treadmill or a change in the response scale, concluding that no simple answer is possible.¹⁸ It is still not clear how one would distinguish between the two explanations.

A further problem with the use of measures of subjective well-being to learn about positional externalities is that they are relatively constant for an individual over long periods of time, yet can change significantly in response to minor events. As Frank has written before, happiness seems to be related to personality. “Some of us are born with sunny dispositions and seem to take great pleasure in our lives almost without reference to the nature of our objective circumstances. Yet others seem burdened by discontent even when, by all external measures, things are going exceptionally well.”¹⁹ The evidence on the determinants of subjective well-being is reviewed by Schwarz and Strack.²⁰ Seemingly minor events increase reported happiness with life as a whole. Finding a dime on a copy machine, spending time in a pleasant rather than an unpleasant room, or watching the German soccer team win rather than lose a championship game all resulted in increased reports of happiness and satisfaction with one’s life as a whole.²¹ The reported well-being also depends on the manner in which question is asked. Higher well-being has been reported in face-to-face interviews than mail surveys. Well-being is higher still when the interviewer was of the opposite sex but not when the interviewer was severely handicapped.²² Schwarz and Strack conclude, “Although these reports do reflect subjectively meaningful assessments, what is being assessed, and how, seems too context-dependent to provide reliable information about a population’s well-being, let

¹⁸ Amos Tversky & Dale Griffin, *Endowment and Contrast in Judgments of Well-Being*, in STRATEGY AND CHOICE 316 (Richard H. Zeckhauser ed., 1991).

¹⁹ ROBERT FRANK, LUXURY FEVER 113 (1999).

²⁰ Norbert Schwarz & Fritz Strack, *Reports of Subjective Well-Being: Judgmental Processes and Their Methodological Implications*, in WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY (Daniel Kahneman, Ed Diener & Norbert Schwarz eds., 1999).

²¹ *Id.* at 74.

²² Schwarz and Strack attribute this to not wanting to tell someone less fortunate that they were well off. Consistent with their explanation, a handicapped individual present in the room as another research participant filling out a questionnaire has been found to increase reported well-being. *Id.* at 77.

alone information that can guide public policy.”²³ The results of the surveys, cited by Frank and Sunstein as supportive of their model of positional externalities, emphasize how little is known about subjective measures of well-being and the effects of relative position on them.

Perhaps an individual’s well-being is not best described by “happiness.” In economic terms, the utility function of an individual may have as its arguments something other than happiness (and the things that lead to happiness). There is evidence from a survey on positional externalities consistent with this. Tversky and Griffin describe the question and results as follows.

Imagine that you have just completed a graduate degree in communications and you are considering one-year jobs at two different magazines.

(A) At Magazine A, you are offered a job paying \$35,000. However, the other workers who have the same training and experience as you do are making \$38,000.

(B) At Magazine B, you are offered a job paying \$33,000. However the other workers who have the same training and experience as you do are making \$30,000.

Approximately half the subjects were asked, “Which job would you choose to take?” while the other half were asked “At which job would you be happier?” ... Eight-four percent of the subjects (27 out of 32) preferred the job with the higher absolute salary and lower relative position, while 62 percent (21 out of 34) of the subjects anticipated higher satisfaction in the job with the lower absolute salary and higher relative position ($\chi^2(1)=14.70, p<.01$).²⁴

²³ *Id.* at 80.

²⁴ Tversky & Griffin, *supra* note 18, at 313. Notice that the result could be interpreted as saying that a large majority would not be willing to pay \$3,000 to reduce their coworkers’ pay by \$8,000, in contrast to the \$6,000 that Frank and Sunstein’s estimate implies people would be willing to pay to reduce their coworkers’ pay by \$10,000.

The usual economic conception of preferences is that they are revealed by the choices people make.²⁵ If individuals do not choose the option that would make them happier, then a typical economist would conclude that happiness must not be what is most important to them.²⁶ Frank and Sunstein ignore this possibility. They write that, “If any income loss from a regulatory intervention does not itself decrease subjective happiness, and if the intervention confers substantial benefits, it would seem likely that people are gaining rather than losing; and this is sufficient for our claims here.”²⁷ Only if reported happiness measures well-being can it be used as suggested. If well-being is better described by something else, then it is the effect on that other thing that is relevant for judging policy.²⁸

B. Relative Position on Other Characteristics

Frank and Sunstein do not seriously investigate criteria other than income on which people may compare themselves. As discussed in the first section “Reversing the Policy Conclusion,” positional externalities on measures other than income may have major implications for policy. The paper’s justification for focusing on income is the following.

A bias against workplace safety would nonetheless result if concerns about relative income were greater, on average, than concerns about relative safety. Such a difference would be expected on grounds that interpersonal safety comparisons are difficult to observe. Such a difference might also be justified if, as seems plausible, safety, far more than income, is by its nature a good whose value depends largely, though of course not only, on absolute value. What we will be suggesting here is that many regulatory goods are less positional than income,

²⁵ For a criticism of equating choice with preferences, see DANIEL M. HAUSMAN & MICHAEL S. MCPHERSON, *ECONOMIC ANALYSIS AND MORAL PHILOSOPHY* (1996).

²⁶ It should be noted that Tversky and Griffin appeal to self-control problems to explain the result.

²⁷ Frank & Sunstein, *supra* note 1, at 339.

²⁸ An example of how happiness and welfare are not identical is suggested by the reaction to a major fast food chain’s use of beef products in their French fries. When unaware of the fact, Hindus and vegetarians enjoyed eating fries. After learning that they had been eating beef, they were extremely upset. In other words, they were happier not knowing. But, with their strong preferences, it is hard to think that they were better off violating their dietary restrictions.

both because they are less easily observed and because people care about them more or less independently of what others have or do.²⁹

There are two parts to this argument. The first is that observability affects the relative importance of a criterion. Just because goods subject to regulation are less observable, does not mean that they are not important for interpersonal comparison. It may be that, because of the unobservability, even the smallest scrap of information takes on great importance. This is an empirical issue, and Frank and Sunstein offer no evidence on the subject.

The second part of the argument is that there are not “large” positional externalities on safety and other non-income characteristics. There is at least one study of positional externalities on criteria other than income. Solnick and Hemenway conducted a survey in which questions offered a choice between two states of the world.

In the “positional” case, the respondent had more than others in society. In the other, “absolute” case, amounts for both respondent and others were greater than in the positional case, but respondents had less than others in society.³⁰

For about half of the issues, including attractiveness, intelligence, and praise from a supervisor, the percentage of people choosing the “positional” answer was higher than the percentage choosing the “positional” answer on income.³¹ Of course, results of this sort do not imply that positional issues are “more important” than income because the responses in their survey depend on the particular amounts of a good that is needed to be given up to achieve a particular amount of relative position. To conclude that positional concerns about one good, or criterion, are greater than positional concerns about another good requires that the issue be posed in a way that can be evaluated. The literature on

²⁹ *Id.* at 349.

³⁰ Sara Solnick & David Hemenway, *Is More Always Better?: A Survey on Positional Concerns*, 37 J. ECON. BEHAV. & ORG. 373 (1998).

³¹ Another result in the survey is that the answer to the question depended on the order in which the question was asked. For 9 of their 12 questions, the percentage giving the “positional” answer was significantly higher when asked first. Again, this suggests that responses to questions on subjective well-being are erratic and that any particular result must be interpreted with caution.

positional externalities has not yet specified a way to evaluate which criteria are “more” or “less” positional.

V. Question 3: The Size of Positional Externalities

Even if we knew without a doubt the composition of the reference group and the relevant criteria for each, the need for a policy response would depend on the size of the positional externalities. The sisters study provides some indication of the magnitude, but Neumark and Postlewaite do not suggest that their results can be used to determine the magnitude of positional externalities for income. From the ultimatum game we learn that a loss relative to one’s opponent, who may be anonymous, may outweigh the positional gain relative to everyone else. None of their sources of evidence aids in the determination of the size of positional externalities for health and safety, and Frank and Sunstein do not provide estimates of its size. They do provide estimates of the size of positional externalities for income, and those are reported in this section.

A. The Elasticity of Position

Frank and Sunstein estimate the value of relative position through studies of the elasticity of position. They define the elasticity of position on a particular criterion as the percentage by which an individual’s position on that criterion would have to rise to compensate for the effects of a one percent change in the position of others. There is an income elasticity of position and a health and safety elasticity of position, but they only address income. One method they use to estimate the income elasticity of position is with results from minimum expenditure surveys. Such surveys ask, “What is the smallest amount of money a family of four needs to get along in this community?” The answer to such questions, report Frank and Sunstein, is typically in the range of one-third to one-half of the disposable income of the responding family.³² The actual share is not as important as the fact that there are no discernible time trends in the responses. Frank and Sunstein interpret the constancy to imply that individual income needs to increase at pace with others’ incomes for well-being to be the same, i.e., that the elasticity of position is 1.0. They eventually choose a lower estimate constructed with a different methodology.

³² Frank & Sunstein, *supra* note 1, at 351.

But if they think that the minimum expenditure surveys are not accurate, it would be useful to know what they think the confounding factors are so that we could better interpret the results of other methods for calculating the elasticity of position.

B. Marginal Product and Employee Pay

The second estimate for the value of relative position is derived from the portion of the marginal product of their labor that workers capture. Frank and Sunstein write that “standard labor market theories, which assume that workers do not care about relative position, assert that wage rates will track productivity differences on a one-to-one basis.”³³ Their statement ignores decades of research on the organization of the firm and optimal incentives inside the firm.

One piece of evidence cited by Frank and Sunstein is that wages are sometimes determined by formulas that depend on experience and education rather than productivity. They argue that the wage can be the same for individuals of different productivity because high productivity workers receive additional positional benefits from having high status within the firm. An alternative explanation is the “influence cost” theory that stresses that individuals pursue their interests within organizations just as they do within markets.³⁴ If individuals are willing to expend resources to affect the decisions of their superiors regarding pay, position, or perquisites, then one organizational response is to remove the discretionary abilities of the managers to select contracts for workers. Such can be done through the use of fixed rules regarding compensation and the employment of workers under identical contracts. In contrast, the theory of positional externalities does not explain why contracts should be exactly the same for people of different productivities.

Frank and Sunstein also claim that the relationship between interaction among workers on the job and the portion of marginal product they are paid supports the existence of positional externalities. They consider wage data from three professions in 1985: real estate, auto sales, and research chemistry. Of the marginal dollar generated for their employers, real estate agents received 70 cents, auto sales agents 24 cents, and

³³ *Id.* at 353.

research chemists 9 cents. They assume that factors other than relative position are responsible for the 30 cent reduction from obtaining full marginal product and combine it with the 9 cents to conclude that a chemist's salary would rise by roughly 40 cents for each additional dollar if factors unrelated to local rank were taken into account. (Without knowing what the non-positional factors are that determine the relation between productivity and pay, it is hard to know whether those factors are the same across industries as is assumed.) This exercise leads them to conclude that a research chemist would be indifferent between receiving a \$10,000 increase in salary if all of her colleagues received the same and a \$4,000 increase if only she received it. In other words, their result implies that someone would be willing to spend \$6,000 of a \$10,000 raise to make sure that their co-workers get no raise instead of \$10,000 each. Generally, their specification of preferences implies that people should be jockeying to lower the salaries of their friends and co-workers. It is not clear that we observe this behavior. Indeed, some people would undoubtedly accept a reduction in salary for (some of) their coworkers to get a raise.

The economic theory of contracts often has implications for the relationship between an employee's productivity and pay. Three findings from contract theory are of particular relevance. The first involves risk-sharing. Contract theory emphasizes that firms, as relatively neutral toward risk, should bear more risk than individuals.³⁵ If the variation in output were not under the control of the employees, then efficient risk sharing would imply that individuals receive a base salary and little of their marginal product even in the absence of positional externalities. The second observation is that the output in teams cannot be divided so that all workers receive the full marginal product. This is particularly problematic because positional externalities should be observed when individuals interact closely as in teams. The third issue is that when incentives cannot be provided for some activities, employers may reduce incentives for other activities.³⁶ The

³⁴ See, e.g., HENRY HANSMANN, *THE OWNERSHIP OF ENTERPRISE* (1996); Paul Milgrom, *Employment Contracts, Influence Activities, and Efficient Organization Design*, 96 J. POL. ECON. 42 (1988).

³⁵ Bengt Holmstrom, *Moral Hazard and Observability*, 10 BELL J. ECON. 74 (1979).

³⁶ An example of the relevance of this phenomenon is merit pay for teachers. Providing incentives for teachers to "teach the test" may lead them to neglect other skills such as creativity. If so, it may be optimal to provide only weak incentives for teaching the test even though it would be possible to do so. Bengt Holmstrom and Paul Milgrom, *Multi-Task Principal-Agent Analyses: Incentive Contracts, Asset Ownership, and Job Design*, 7 J. LAW, ECON., & ORG. 24 (1991).

observed low portion of marginal product captured by workers would be expected if their productivity on other aspects of their job could not be measured. In sum, the observed wage patterns can be entirely explained by alternate theories.³⁷ That is not to say that some of the results are not attributable to relative position, but simply that this evidence cannot be used to distinguish among the theories.

VI. Conclusions

Not one of the three questions on positional externalities can be answered definitively. Much of the evidence is consistent with positional externalities for income, but equally consistent with and sometimes more supportive of other theories. The evidence on positional externalities from health and safety is virtually non-existent. Nor is much known about how relative preferences for positional externalities may differ across people.³⁸ The results of Charness and Rabin that only one-third of people display this sort of behavior is particularly challenging, as is the failure to observe individuals spending large sums to reduce the pay of their coworkers. Altruistic concerns of various kinds are likely to further complicate the analysis. One cannot escape the conclusion that our current understanding of positional externalities is limited.³⁹ In their paper, Frank and Sunstein also suggest that positional externalities that are based on envy are not a valid basis for policy. Given that our understanding of positional concerns is limited, attributing particular components of those concerns to different motivations is far beyond present capabilities.⁴⁰

³⁷ There are other theories that also allow wages to not depend on individual productivity. *See, e.g.*, George Akerlof, *Labor Contracts as Partial Gift Exchange*, 97 Q. J. ECON. 543 (1982).

³⁸ Frank and Sunstein consider the possibility of variation in their discussion of relative rank. *Id.* at 354.

³⁹ There are a few sources of evidence that have not been discussed but they are among the least informative for cost-benefit analysis. For example, it is not clear how Frank and Sunstein's discussion of biological effects of status changes could be used to answer the three questions. The reference to adult vervet monkeys in a policy proposal is a telling indicator of how poorly the issues are understood in humans. *Id.* at 343.

⁴⁰ If it were the case that direct evidence either confirming or rejecting Frank and Sunstein's assumptions could never be developed, then changes in policy analyses would have to be based on indirect evidence and intuition. Agreement among scholars with extensive experience in the discipline might be a sufficient justification for changes in methods of analysis. However, Frank and Sunstein do not suggest that the necessary evidence cannot be developed.

Still, if our best guess is that positional externalities do in fact exist, why shouldn't they be taken into account? When conventional cost-benefit analyses ignore positional externalities, they implicitly assume that the best way to model positional externalities is as if they do not exist. In Frank and Sunstein's words, "even a back-of-the-envelope calculation is likely to be a closer estimate than we would get by simply ignoring concerns about relative position."⁴¹ However, as the example of self-serving criteria illustrated, in the absence of a clear understanding of the manner in which positional externalities operate, even the direction of the adjustment to cost-benefit analysis is not known. This is true even before the economist's *ceterum censeo* that the effects of any particular distortion depend on existing distortions.⁴²

Some people may approve of Frank and Sunstein's argument because of the particular policies they support: namely, that there should be greater regulation of health and safety in the workplace. Such people should recognize that positional externalities do not universally, or even predominantly, support the policy goals of one side of the traditionally-defined political spectrum. Any policy that explicitly promotes mixing of individuals with different incomes appears less attractive with Frank and Sunstein's model of positional externalities. Consider "social equalizers" such as the draft and public schools that have been advocated by Mickey Kaus.⁴³ The benefit from the greater interaction among groups would have to be balanced against the negative positional externalities borne by the worse-off as a result of greater contact with the better-off. Likewise, there are continuing proposals for racial integration that would also result in greater mixing of people with different levels of income. These too may appear less desirable when positional externalities of the sort considered by Frank and Sunstein are considered.

⁴¹ *Id.* at 361.

⁴² The idea is commonly referred to as the general theory of the second best. The most important confound in the case of health and safety regulations involves the differential tax treatment of health and safety benefits versus income. Income is of course taxed, but health benefits are not, so labor contracts would be expected to be distorted towards health benefits and away from income. On the other hand, without a clear understanding of the political economy of health and safety regulation, it may be that there is too little health and safety on the job. Then, even if the proposed adjustment to cost-benefit analysis were not justified by positional externalities, it could still be welfare-enhancing.

⁴³ MICKEY KAUS, *THE END OF EQUALITY* (1992).

Finally, if people really do wish for others to become worse off, then we would expect for them to try to use the political process to do so. Though this not an issue that has been explored in the political economy literature, one would expect that certain limitations on government action could be welfare-enhancing as a result.

Without a better understanding of the nature of positional externalities and with the concern that an incorrect model could be damaging, it is constructive to think about policies that would be beneficial if positional externalities exist and neutral if standard models are correct.⁴⁴ For example, with a thorough understanding of reference groups, it may be possible to create welfare gains simply via policies that manipulate individuals' reference groups without changing the goods and services available to them. There would be little cost to such policies in a cost-benefit analysis. Some may find this troubling. Paul Milgrom, for example, has opined that theories of manipulation of reference groups lead to "unacceptable conclusions." He writes, "If the value of an unspoiled wilderness depends on human knowledge or belief about its existence, then the secret destruction of an environmental resource does no damage. By the same logic, real damage is wrought by the journalist who first publicizes the destruction."⁴⁵ Nevertheless, the theory of positional externalities argues that such policies must be taken seriously.⁴⁶

In their review of the evidence on the psychology of well-being, Daniel Kahneman, Ed Diener, and Norbert Schwarz conclude that the "scientific understanding in this field is currently woefully inadequate to provide a strong underpinning for national policies."⁴⁷ It would be premature to incorporate positional externalities in cost-benefit analysis. Yet even if positional externalities are not taken into account in cost-benefit analysis, the political process can incorporate them. If the choice of wages in place of

⁴⁴ Ted O'Donoghue and Matthew Rabin introduce the term "cautious paternalism" to describe policies that "can be extremely valuable if people are making errors, but they have relatively small costs if people are fully rational." Although there need be no departures from rationality as defined by economists for there to be positional externalities, the concept is the same. See Ted O'Donoghue & Matthew Rabin, *Procrastination in Preparing for Retirement*, in BEHAVIORAL DIMENSIONS OF RETIREMENT ECONOMICS 125 (Henry J. Aaron ed., 1999).

⁴⁵ Milgrom addressed the treatment of altruism in cost-benefit analysis. Paul Milgrom, *Is Sympathy an Economic Value? Philosophy, Economics, and the Contingent Valuation Method*, in CONTINGENT VALUATION: A CRITICAL ASSESSMENT 417 (J.A. Hausman ed., 1993).

⁴⁶ There are of course many arguments against their use, but such arguments should also be applied to other policies justified by positional externality considerations.

⁴⁷ Daniel Kahneman, Ed Diener & Norbert Schwarz, *Preface*, in WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY 61 (Daniel Kahneman, Ed Diener & Norbert Schwarz eds., 1999).

greater health and safety is in fact a prisoner's dilemma and individuals pay for the benefits they receive, as Frank and Sunstein claim, then there should be no objections to their proposals to expend the additional monies. Although the current evidence does not necessarily support a particular model of positional externalities, they surely exist—albeit perhaps in different forms for different people. Because of differences across people, there may be no single way of taking positional issues into account that is most compelling. Still, it is hard to believe that the time will not come when they will be taken into account more formally in cost-benefit studies and other forms of policy analysis.