



HAL
open science

Do you believe that others are more positional than you? results from an empirical survey on positional concerns in France

Gilles Grolleau, Naoufel Mzoughi, Sandra Said

► To cite this version:

Gilles Grolleau, Naoufel Mzoughi, Sandra Said. Do you believe that others are more positional than you? results from an empirical survey on positional concerns in France. *The Journal of Socio-Economics*, 2012, 41 (1), pp.48-54. 10.1016/j.socec.2011.10.001 . hal-01506059

HAL Id: hal-01506059

<https://hal.science/hal-01506059>

Submitted on 12 Sep 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Do You Believe that Others Are More Positional than You?
Results from an Empirical Survey on Positional Concerns in France

Gilles Grolleau

Supagro, UMR 1135 LAMETA, F-34060 Montpellier

grolleau@supagro.inra.fr

Naoufel Mzoughi

INRA, UR 767 Ecodéveloppement, 84914 Avignon Cedex 9, France

nmzoughi@avignon.inra.fr

Sandra Saïd

IUT Montluçon

sandra.said@moniut.univ-bpclermont.fr

Abstract: We explore empirically the relevance of positional concerns in France. Unlike previous literature, we use two types of surveys, one addressed to a convenience sample, and the other to a random sample of French households living in the metropolitan area of *Montpellier*. Surveys are composed of a set of hypothetical questions related to several domains (income, education, vacation time, etc.). We also investigate whether individuals consider themselves more or less positional than others in society. Moreover, a set of variables that could potentially explain why people give positional answers is considered, such as being positional on a domain in which the individual excels. In addition to more conventional findings, we show that (i) the percentage of positional answers for each domain is about the same in the random and convenience samples, (ii) people consider others as more positional than themselves, and (iii) excelling in a given domain is not necessarily a good predictor of positional preferences in this domain.

Key words: behavioral economics, positional goods, relative concerns, status.

JEL codes: D0, D1.

Do You Believe that Others Are More Positional than You?

Results from an Empirical Survey on Positional Concerns in France

1. Introduction

The traditional (neoclassical) view in economics goes as follows: individuals' utility functions are independent and, as such, individuals only care about what they get, regardless of what others in society get. Behavioral economic literature (*e.g.*, Camerer *et al.*, 2004) challenged this perspective. For instance, several scholars (*e.g.*, Frank, 1985a; Easterlin, 1995) contend that individuals might prefer a situation where they have more of a good than others compared to another situation where their *absolute* endowment of the good is higher, but their *relative* position is worse. In other words, individuals care about their relative position in their reference group. While relative standings have received an increasing attention in the economic literature (*e.g.*, Solnick and Hemenway, 1998, 2005; Alpizar *et al.*, 2005; Solnick *et al.*, 2007; Greene and Nelson, 2007; Carlsson, Johansson-Stenman, and Martinsson, 2007), several issues need to be addressed. For instance, most studies use convenience samples including students and university staff. Thus, the question of whether the results obtained from these samples hold for a representative sample of the population is not resolved. Moreover, all empirical studies investigate positional preferences as expressed by the individual about himself. Nevertheless, it is well-known that individuals can exhibit a social desirability bias. In short, they will give responses that fit what they expect the experimenter is seeking for. This social desirability bias can lead people to overstate/understate positional considerations. Furthermore, most empirical investigations did not succeed in identifying socio-demographic determinants or antecedents that can shape positional preferences.

The aim of this paper is to address these issues and add empirical content to the existing literature. The originality of this paper is at least threefold. First, we investigate whether results obtained from a convenience sample are consistent with those drawn from a randomly selected sample of French individuals living in the metropolitan area of Montpellier.¹ As far as we know, only Carlsson, Johansson-Stenman, and Martinsson (2007) considered a random sample of the population in their study of positional goods in Sweden, but do not discuss whether these results are consistent with those drawn from convenience samples. Indeed, while a convenience sample constitutes a cost-effective way to gather data, it is frequently criticized because individuals are not representative of the whole population and results are likely to be radically skewed, casting doubt on results of generalization. Second, we test whether individuals consider themselves more or less positional than others in society.

¹ Carlsson and Qin (2010) used a randomly selected sample of rural Chinese, but their method is different from what is proposed in this manuscript, since in their work individuals have been surveyed on the basis of face-to-face interviews.

As far as we know, all previous works have asked people about their own preferences, that is, what does an individual like for himself. Nevertheless, beliefs about others' preferences can influence the preferences of the individual. For example, if individuals believe that others are positional and envy them, they can adopt envy-relieving strategies. Moreover, it has been shown that individuals have overly positive views of themselves but accurate impressions of their peers (Epley and Dunning, 2000). Thus, asking individuals about others' preferences is likely to produce relatively more accurate results about the relevance of positional concerns in a given society. Moreover, people are more likely to avoid the so-called social desirability bias. Third, we investigate whether people excelling in a given domain are more likely to exhibit positional concerns in this same domain.

Furthermore, we ask questions about the same domains and in the format as in Solnick and Hemenway (1998) and Solnick *et al.* (2007) which allows us to explore cross cultural differences in positionality by comparing results from France with those obtained in United States and China. The United States are frequently considered as a country more tolerant than France about inequality while the communist China, for example, is perceived as dominated by equalitarian culture. The French society is well-known for strong egalitarian values inherited from the French Revolution. Grolleau *et al.* (2008) and Grolleau and Saïd (2008) have investigated positional concerns in France, but their study mainly replicated Solnick and Hemenway (1998, 2005) using a convenience sample of students and staff from several schools and universities in France. Finally, compared to previous empirical literature, a larger set of variables that could potentially explain why people give positional answers is considered.

The remainder of the paper is organized as follows. Section 2 provides an overview of related literature and presents hypotheses. Section 3 exposes the empirical strategy. The results are presented and discussed in section 4. Section 5 provides some policy implications and concludes.

2. Overview of related literature and hypotheses

The idea that an individual's utility depends on both his consumption and consumption of others in his reference group is not new. Carlsson, Johansson-Stenman, and Martinsson (2007) note that "many prominent economists in the past, including Adam Smith, John Stuart Mill, Karl Marx, Alfred Marshall, Thorstein Veblen, Arthur Pigou, John Maynard Keynes, John Kenneth Galbraith and Tibor Scitovsky, have seriously discussed the observation that people seem to be concerned with their own income and consumption relative to that of others". For instance, Veblen (1899) developed the concept of conspicuous consumption to describe the willingness of individuals to engage in expenditures in order to gain social esteem. In Veblen words, "in order to gain and to hold the esteem of men it is not sufficient merely to possess wealth or power. The wealth or power must be put in evidence, for esteem is awarded only on evidence" (Veblen, 1899). Several other scholars have devoted attention to the consumption of goods for purpose of status (*e.g.*, Duesenberry, 1949; Hirsch, 1976). Duesenberry

(1949) states that the purchase of some goods and services by an individual is influenced by (similar) consumption in his neighborhood, notably if neighbors belong to an upper class. Hirsch (1976) introduced the concept of ‘positional goods’ to describe those goods that are in fixed supply or subject to congestion when their consumption increases. According to this author, the value of a positional good depends not only on the consumed quantity of this good in absolute terms, but also in relative terms.

Based upon the above-mentioned theoretical advances, an increasing number of empirical studies has started to explore the relevance of relative standings (*e.g.*, Easterlin, 1973; Frank, 1985a, 1985b; Neumark and Postlewaite, 1993; Easterlin, 1995; Solnick and Hemenway, 1998; Chao and Schor, 1998; Johannsson-Stenman *et al.*, 2002 ; Alpizar *et al.*, 2005; Solnick and Hemenway, 2005; Solnick *et al.*, 2007; Greene and Nelson, 2007; Carlsson, Johannsson-Stenman, and Martinsson, 2007; Carlsson *et al.*, 2007; Grolleau *et al.*, 2008; Carlsson and Qin, 2010). Noteworthy, the works of Robert Frank are of paramount importance as in impulse of the majority of recent research on positional goods. Without purporting to be exhaustive, the main results of these studies are threefold. First, position matters. In all previous studies, relative concerns have been found to be important. For instance, Frank (1985a) argues that “someone whose close associates all earn \$50,000 a year is likely to feel actively dissatisfied with his material standard of living if his own salary is only \$40,000 ... Yet that same person would likely be content if his closest associates earned not \$50,000 but \$30,000 a year”. Solnick and Hemenway (1998) found that “half of the respondents said they would prefer a world in which they have 50 percent less real income, so long as they have high relative income”. Noteworthy, preceding economic literature has mainly studied positional concerns with regards to individuals’ income, even if some scholars have considered other domains such as leisure, cars (Carlsson, Johannsson-Stenman, and Martinsson, 2007), cosmetics (Chao and Schor, 1998), employment decisions (Neumark and Postlewaite, 1993) and environmentally-friendly goods (Carlsson *et al.*, 2006). Sarah Solnick and her colleagues are to our knowledge those who considered the most important number of domains, that is, vacation time, physical attractiveness, intelligence, etc.

Second, position matters differently according to the domain considered. For instance, income is frequently found to be more positional than leisure (Frank, 1985a; Frank and Sunstein, 2001). In particular, the degree of positionality varies according to the characteristics of goods, notably their visibility. For example, luxurious clothes are more positional than less visible goods, such as luxurious under-wears (Chao and Schor, 1998). Even within the same domain, the degree of positionality varies among studies. Greene and Nelson (2007) show for instance that the importance of relative income effect as presented in Solnick and Hemenway (1998) is exaggerated. Moreover, people seem to be more positional on domains for which they enjoy higher absolute levels. For example, people can be more positional on vacations if they already have longer absolute vacations (Solnick and Hemenway,

1998; Van Kempen, 2003). Furthermore, position matters much more for goods than for bads (Solnick and Hemenway, 1998), that is, compared to goods, people care more about absolute levels of bads rather than the relative amount. In addition, several authors (*e.g.*, Frank, 1985a; Solnick and Hemenway, 1998; Grolleau *et al.*, 2008) report that people are more positional when choosing for their children than for themselves.

Third, the economic literature offers scarce and mixed results as to the differences of positional concerns across countries. For example, Carlsson and Qin (2010) declare that, compared to results in developed countries, “the concern for relative standing seems to be equally strong among rural households in China”, whereas Grolleau *et al* (2008) suggest that French people are less positional than their American counterparts. Noteworthy, the economic literature has mainly used data from developed countries, notably, United States and Sweden, and to a less extent, from developing countries such as Vietnam and China.

Based on the previous discussion, we use quasi-experimental surveys data to test the following hypotheses:

- ✓ H1: Position matters² and it matters much more for some attributes than it does for others. Position matters much more for goods than for bads.
- ✓ H2: People are more positional when choosing for their children than for themselves.
- ✓ H3: Results obtained from a convenience sample are consistent with those drawn from a random sample in the same country.
- ✓ H4: People surveyed in France are less (more) positional than people surveyed in U.S (China) (Solnick and Hemenway, 2007).
- ✓ H5: People consider that others are more positional than themselves. Affirming position preferences can be a signal of an oft condemned feeling, being envious. Studies have

² Positional concerns push individuals to seek having more than others, whereas in inequity aversion models people are motivated by reducing inequalities or egalitarian preferences (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000). A recent contribution (Celse, 2010) argues that people can choose positional preferences in questionnaires *à la* Solnick and Hemenway, not because they have positional preferences but because they care about inequalities within a society. He suggests adding an egalitarian option in questionnaires *à la* Solnick and Hemenway to distinguish whether choices that were previously considered as positional are not motivated by reducing inequalities. Such an extension deserves more attention but is beyond the scope of our contribution.

showed that people believe they are more likely to engage in positive behaviors than their peers (Epley and Dunning, 2000). In spite of the fact that this result is both logically and statistically suspect, we hypothesize that people will attribute a higher level of positional concerns to others, compared to them.

- ✓ H6: Individuals are more likely to exhibit positional concerns in a domain in which they excel.

3. Empirical strategy

In January 2008, two survey instruments have been administered. The first was addressed to a randomly selected sample of 216 individuals living in the city of *Montpellier* and around. Thanks to reminder calls, we received 70 responses (32%). The second survey was administered to a convenience sample of 370 faculty, students and staff from different schools in the University of *Montpellier*. We received 118 responses (32%) for the second survey.

In line with the contributions of Solnick and Hemenway (1998, 2005) and Solnick *et al* (2007), the surveys consisted of 12 hypothetical questions in the same format about education, intelligence and physical attractiveness for one's child and oneself, income, vacation time, approval and disapproval from a supervisor, and tedious work (see Appendix 1). Each question presented two states of the world. In each state, respondents were told how much they (or their children) have of the previous items and how much others in society have. In one case (called the *positional* answer) the respondent has more than others. In the other case (called the *absolute* answer), both the respondent and others have more than in the positional answer but the respondent is in an unfavorable position, that is, he/she has less than others. For example, the question about intelligence was structured as follow:

Assume that the higher the IQ is, the cleverer the individual is. What do you prefer?

A- Your IQ is 110; others average 90.

B- Your IQ is 130; others average 150.

Here, option A is the positional and B is the absolute answer. Respondents were asked to choose the state they prefer. If they are undecided or have no opinion, they can pick the two answers. Noteworthy, when the question deals with a bad (*i.e.*, disapproval from a supervisor, tedious work), the respondent has less than others in the positional state, whereas in the absolute state everyone has less than in the positional state but the respondent has more than others.

We indicated to respondents that 'others' correspond to the average other persons in society. As pointed out by the referee, defining who the "others" are is not neutral. For certain types of domains, if

the group of others is large enough (*e.g.*, everyone else in the country) then changes in the absolute amount possessed by others could have not only a relative but also a real effect on an individual's ability within a domain. For example, an individual may prefer earning \$40,000 when others earn \$30,000 rather than earning \$45,000 when others earn \$55,000 for two distinct reasons. First, the individual may have positional preferences and may not wish to earn less than others, but second, the individual may feel that he/she will have greater purchasing power in the first scenario, when others earn \$30,000, because the income effect could drive demand and therefore prices up if everyone else is earning \$55,000. On the other hand, if "others" is defined as only one's closest neighbors or colleagues, then one could reasonably assume overall prices would remain constant.³ To investigate the effect of 'others' definition on positional preferences, we could administrate the same version of the questionnaire by varying the definition of others. This strategy can allow to investigate whether the others' size or others' proximity affect positional preferences.

Moreover, in addition to the above-mentioned questions, the second survey includes an additional part where individuals were asked to give answers to the same questions but about others' preferences, that is, pick the answers that a hypothetical average individual would prefer. The two parts have been provided together and respondents had the possibility to fill them in the order they prefer. When asking people about others' preferences the question about intelligence was structured as follow:

Assume that the higher the IQ is, the cleverer the individual is. What does the average individual in society prefer?

A- His/her IQ is 110; others average 90.

B- His/her IQ is 130; others average 150.

Furthermore, in order to analyze the effect of socio-demographic factors on positional concerns, all respondents were asked to indicate their gender, age, education level and monthly earning. Respondents were also asked to indicate their belief about their own intelligence and physical attractiveness on a scale going from 1 (not clever/attractive) to 5 (very clever/attractive). As mentioned above, one of the objectives of this paper is to test whether people are more positional in domains where they excel. If the respondent checks 4 or 5, we consider that he/she believes to be clever/attractive. In addition, we have asked people to give answers about their religious practice and political orientation. These two factors have been introduced to test their possible effect on the income dimension. Indeed, it can be argued that religious people can be more tolerant to income-related considerations either because of fate beliefs or by assuming that today's positional disadvantages will be compensated in the other world. With regards to politics, people voting for republicans (or

³ We are very grateful to the referee for pointing out this crucial issue.

conservatists, so-called '*Droite*' in France) are also often considered to give relatively higher importance to material considerations, compared to those who are socially or democrats oriented (so-called '*Gauche*' in France). The impact of socio-demographic variables and individuals' characteristics on positional concerns is studied using a logistic regression model (Greene, 2003).

4. Results and discussion

The variables used and some descriptive statistics of the two samples are reported in Table 1. In general, both samples are significantly different, except with regards to respondents' gender and belief about own intelligence. In the two surveys, women are more represented than men. However, respondents in the random sample are significantly older, less educated and earn more than those who responded to the convenience one.

[Insert Table 1 around here]

The percentage of positional answers by type of good is provided in Table 2. Our results show that position matters and matters much more for some domains than others (H1). The highest percentage of positional answers among the whole population (69%) relates to approval from a supervisor whereas the lowest percentage of positional answers relates to tedious work (22%). Regarding income, 44% of respondents prefer the positional state over the absolute one. The two questions on vacations show that people become more positional on attributes for which they enjoy higher absolute levels (Van Kempen, 2003). People might be more positional when basic needs are satisfied, which is consistent with Hirsch's (1976) predictions arguing that as wealth increases, the portion of position related consumption increases. Our results also support that goods are more positional than bads in the same domain (Solnick and Hemenway, 1998) since the percentage of positional answers regarding *disapproval* from a supervisor is about 45% and up to 69% when considering *approval*. However, unlike previous works (*e.g.*, Solnick and Hemenway, 1998; Grolleau and Saïd, 2008) hypothesis 2 is not supported, since people are as much positional when choosing for their children and for themselves for the three items surveyed. Regarding H3, the results obtained from the convenience sample are consistent with those drawn from the random sample. Interestingly, the results and rankings obtained with the convenience sample are very similar to those obtained with the random sample. The Wilcoxon test comparing answers to both surveys shows that the percentage of positional answers is not significantly different among the two groups, except for income. This finding supports the idea that using convenience samples constitutes a good and low-cost strategy to approximate what a random sample can deliver. Using a two-sample test of proportions (not reported), we have also investigated whether positional concerns vary across countries (H4) by comparing our results to those obtained in the United States and China (Solnick, Hong and Hemenway, 2007). For several items, positional concerns vary in magnitude and across domains according to the country considered. For

instance, the proportions of respondents choosing the positional state regarding the income question are significantly different among the three countries with the highest proportion of positional respondents in China and the lowest in France. As argued by Brown *et al.* (2010), it is possible that recent rapid changes in income and its distribution in China exacerbate status races regarding income compared to France which is well-known for its inequity aversion. Moreover, these tendencies are also consistent with the ‘compensatory hypothesis’ (Caplovitz, 1967) where poor people exhibit relatively more positional concerns than their richer counterparts. When considering intelligence and physical attractiveness, the difference is significant between the three countries with the highest percentage of positional responses in USA and the lowest in China. As stressed by Bekir *et al.* (2011), status markers evolve over time. Some dimensions that were previously status vectors (*e.g.*, being fat to show wealth) can become obsolete and can be substituted by others (*e.g.*, being slim). The previous authors also argue that this evolution varies according to the development levels of countries. Some countries were described as leaders in terms of introducing status markers while others were mainly considered as followers.

[Insert Table 2 around here]

The main hypothesis of the paper, that is, people think that others are more positional than themselves (H5) is confirmed.⁴ The Wilcoxon test (the right column) shows that for all the items considered, the percentage of positional answers is significantly higher when people are asked about others’ preferences, except approval from a supervisor and child’s intelligence. For example, while only 38% of individuals in the convenience sample prefer a world in which they have less absolute income but more than others, this percentage increases to 50% when the same individuals are asked to indicate others’ preferences. We also report (between brackets in the column called ‘Others’) the percentage of people in the convenience sample who choose the absolute option for themselves and the positional one when responding for others in society. This percentage is relatively huge and varies from 18 to 28%. These results are important for at least two reasons. Positionality attributed to others can be a better proxy for an individual’s preferences compared to his/her self-declared preferences. In addition, some decisions are better explained by position attributed to others than by the individual’s preference for positionality. For example, behavioral consequences of upward comparisons can push people to adopt either envy-arousing strategies or envy-appeasing strategies.

⁴ All respondents did not fill the whole questionnaire. 118 filled the questionnaire about themselves while only 92 of them filled the second part about others’ preferences. Even if this difference can introduce a selection bias, we believe it is better to consider them separately to not reduce drastically our sample.

Finally, we investigate the effect of some socio-demographic variables, namely, gender, age, education and earnings, on positional concerns (Table 3). For the question about income, we test whether religious practice and political orientation have an impact on positional concerns. We also investigate whether people are more positional in domains where they excel.

[Insert Table 3 around here]

The logistic estimation results show that, in general, socio-demographic variables are not good candidates to predict positional concerns, except some characteristics. For example, when considering positionality on income, the variable *POLITICS* is significant, that is, people voting for ‘*Droite*’ (republicans) are more likely to choose the positional option over the absolute one, as expected. However, the effect of religious practice is not significant. Moreover, people are not necessarily more likely to be positional in domains where they excel (H6). The only result where this prediction is supported is for intelligence, where respondents thinking they are clever are more likely to choose the positional option over the absolute one. For all other questions, *i.e.*, income, education and attractiveness, positional concerns are not influenced by the respondent’s endowment in these domains. Noteworthy, when considering respondents’ answers about others in society, the variable *GENDER* turns to be significant for five items. In other words, men are less likely to attribute positional preferences to others. For instance, being a man decreases the probability of attributing to others positional preferences about income by 0.76 points. This finding shares some similarity with the contribution of Hong and Bohnet (2007, p. 206) who suggest ‘that concerns about disadvantageous payoff differences outweigh regard for others or considerations about efficiency in low status groups (*e.g.*, women) while the reverse is true for high status groups (*e.g.*, men)’.

5. Policy implications and conclusion

We have shown that position matters in French society and varies across domains. The so-called positional economy coexists and interacts with the more traditional material economy, resulting in ambiguous effects on individual and overall happiness (Hirsch, 1976). Estimating the importance of positional concerns in some domains can inform policymakers in order to design appropriate policies. Policymakers can use positional concerns to guide people in socially desirable directions (Griskevicius, 2010). In the same vein, people can reject Pareto-improving policies, even at a cost for themselves because they perceive these policies as lowering their relative standing on this dimension. Consequently, in some domains characterized by strong positional concerns, win-win solutions can fail because they change relative positions of agents. A promising extension regarding the relevance of

positional considerations will be to examine whether stated positional preferences are robust to the introduction of an incentive compatibility mechanism.⁵

Unlike previous studies, we have surveyed a random and convenience samples, and asked people to indicate both their preferences and those of others in society. Analysis of individual responses showed that random and convenience samples yield very similar results. Of course, this unique result (with a relatively low response rate of 32% and possible self-selection bias) is not enough to prove that convenience sample is a good predictor of general population opinions. Moreover, positional concerns are higher when people indicate others' preferences. This result suggests that the percentages of positional answers reported in previous works may be under-estimated. If we assume that being positional may be negatively perceived, responses about others' preferences can constitute a better predictor of the individual's preferences compared to what the individual is likely to state about himself. Moreover, attributing to others strong(er) positional preferences in some domains can lead individuals to adopt coping strategies in various directions. For instance, instead of arousing destructive envy, individuals can avoid success, hide their real success or attribute it to other causes which can ultimately be detrimental to economic growth⁶. Competition for relative position can also explain why people sometimes engage in socially undesirable behaviors such as longer working hours, spending and debt that can ultimately result in unhappiness (Frank, 2005).

References

- Alpizar, F., Carlsson, F., Johansson-Stenman, O., 2005, How Much Do We Care about Absolute versus Relative Income and Consumption?, *Journal of Economic Behavior and Organization*, 56, 405-421.
- Bekir, I., El Harbi, S., Grolleau, G., 2011, (Deceptive) Status Seeking Strategies in France and Tunisia, *Journal of Economic Issues*, 45(3), 717-732.
- Bolton, G., Ockenfels, A., 2000, ERC: A Theory of Equity, Reciprocity, and Competition, *American Economic Review*, 90(1), 166-193.
- Brown, P.H., Bulte, E., Xiaobo, Z., 2011, Positional Spending and Status Seeking in Rural China, *Journal of Development Economics*, 96, 139-149.
- Camerer, C., Loewenstein, G., Rabin, M., 2004, *Advances in Behavioral Economics*, New York: Russel Sage Foundation.

⁵ We are very grateful to the referee for this insightful suggestion.

⁶ Implementing an experimental test of some of these claims could be insightful. For instance, future contributions can use and adapt the experiment implemented by Zizzo and Oswald (2001) to check whether positional preferences lead individuals to burn others' money even at a cost for themselves. We can also modify the protocol to see whether people who attribute positional preferences to others are more likely to purchase an insurance against the risk of seeing others burning their money.

- Caplovitz, D., 1967, *The Poor Pay More: Consumer Practices of Low-Income Families*, Macmillan, London, UK.
- Carlsson, F., Garcia, J., Löfgren, Å., 2010, Conformity and the Demand for Environmental Goods, *Environmental and Resource Economics*, 47, 407-421.
- Carlsson, F., Johansson-Stenman, O., Martinsson, P., 2007, Do You Enjoy Having More Than Others? Survey Evidence of Positional Goods, *Economica*, 74(296), 586-598.
- Carlsson, F., Nam, P.K., Linde-Rahr, M., Martinsson, P., 2007, Are Vietnamese Farmers Concerned with Their Relative Position in Society?, *Journal of Development Studies*, 43(7), 1177-1188.
- Carlsson F., Qin P., 2010, It is Better to Be the Head of a Chicken than the Tail of a Phoenix: A Study of Concern for Relative Standing in Rural China, *Journal of Socio-Economics*, 39, 180-186.
- Celse, J., 2010, Is Positional Bias an Artefact? Distinguishing Positional Concerns from Egalitarian Concerns, Mimeo.
- Chao, A. Schor, J.B., 1998, Empirical Tests of Status Consumption: Evidence from Women's Cosmetics, *Journal of Economic Psychology*, 19, 107-131.
- Duesenberry, J.S., 1949, *Income, Saving, and the Theory of Consumer Behaviour*, Cambridge: Cambridge University Press.
- Easterlin, R., 1973, Does Economic Growth Improve the Human Lot? Some Empirical Evidence, In David, P, Reder, M., (eds), *Nations and Households in Economic Growth: Essays in Honor of Moses Abramovitz*, Palo Alto, CA: Stanford University Press.
- Easterlin, R., 1995, Will Raising the Incomes of All Increase the Happiness of All?, *Journal of Economic Behavior and Organization*, 27, 35-47.
- Epley, N., Dunning, D., 2000, Feeling "Holier Than Thou": Are Self-Serving Assessments Produced by Errors in Self- or Social Prediction?, *Journal of Personality and Social Psychology*, 79(6), 861-875.
- Fehr E., Schmidt K.M., 1999, A Theory of Fairness, Competition and Cooperation, *Quarterly Journal of Economics*, August, 817-868.
- Frank, R., 1985a, The Demand for Unobservable and other Nonpositional Goods, *American Economic Review*, 75(1), 101-116.
- Frank, R., 1985b, *Choosing the Right Pond. Human Behavior and the Quest for Status*, Oxford: Oxford University Press.
- Frank, R., 2005, Positional Externalities Cause Large and Preventable Welfare Losses, *American Economic Review*, 95(2), 137-141.
- Frank, R., Sunstein, C., 2001, Cost-Benefit Analysis and Relative Position, *University of Chicago Law Review*, 68(2), 323-374.
- Greene, W., 2003, *Econometric Analysis*, Upper Saddle River, NJ: Prentice-Hall.
- Greene, K., Nelson, P., 2007, Is Relative Income of Overriding Importance for Individuals?, *International Journal of Social Economics*, 34(11), 883-898.

- Griskevicius, V. Tybur, J., Van Den Bergh, B., 2010, Going Green to Be Seen: Status, Reputation and Conspicuous Conservation, *Journal of Personality and Social Psychology*, 98(3), 392-404.
- Grolleau, G., Lakhal, T., Mzoughi, N., 2008, Consommer plus ou consommer plus que les autres ? Une analyse empirique des biens de position, *Revue Economique*, 59(4), 701-718.
- Grolleau, G., Saïd, S., 2008, Do You Prefer Having More or More than Others? Survey Evidence on Positional Concerns in France, *Journal of Economic Issues*, 42(4), 1145-1158.
- Hirsch, F., 1976, *Social Limits to Growth*, Cambridge: Harvard University Press.
- Hong, K., Bohnet, I., 2007, Status and Distrust: The Relevance of Inequality and Betrayal Aversion, *Journal of Economic Psychology*, 28, 197-213.
- Johansson-Stenman, O., Carlsson, F., Daruvala, D., 2002, Measuring Future Grandparents' Preferences for Equality and Relative Standing, *Economic Journal*, 112, 362-383.
- Neumark, D., Postlewaite, A., 1993, Relative Income Concerns and the Rise in Married Women's Employment, *Journal of Public Economics*, 70, 157-183.
- Solnick, S., Hemenway, D., 1998, Is More Always Better? A Survey about Positional Concerns, *Journal of Economic Behavior and Organization*, 37(3), 373-383.
- Solnick, S., Hemenway, D., 2005, Are Positional Concerns Stronger in Some Domains Than in Others?, *American Economic Review*, 95(2), 147-151.
- Solnick, S., Hong, L., Hemenway, D., 2007, Positional Goods in the United States and China, *Journal of Socio-Economics*, 36, 537-545.
- Van Kempen, L., 2003, Fooling the Eye of the Beholder: Deceptive Status Signalling Among the Poor in Developing Countries, *Journal of International Development*, 15(2), 157-177.
- Zizzo, D.J., Oswald, A., 2001, Are People Willing to Pay to Reduce Others' Incomes? *Annales d'Economie et de Statistiques*, 63-64, 39-66.

Table 1: Sample descriptive statistics

Variables	Description	Whole population (N=188)		Random sample (N=70)		Convenience sample (N=118)		Wilcoxon test
		Mean	SD	Mean	SD	Mean	SD	
GENDER	Respondent's gender Dummy variable (=1 if male)	0.414	0.494	0.428	0.498	0.406	0.493	ns
AGE	Respondent's age Dummy variable (=1 if under 30 years)	0.430	0.496	0.1	0.302	0.627	0.485	***
HIGHER_EDUC	Respondent's level of education Dummy variable (=1 if higher education)	0.776	0.417	0.528	0.502	0.923	0.266	***
EARNING	Respondent's monthly earnings Dummy variable (=1 if more than 2000€)	0.239	0.427	0.314	0.467	0.194	0.397	*
RELIGION	Respondent's religious practice Dummy variable (=1 if he/she believes in God)	0.446	0.498	0.542	0.501	0.389	0.489	**
POLITICS	Respondent's political orientation Dummy variable (=1 if belongs to French 'Droite')	0.276	0.448	0.357	0.482	0.228	0.421	*
CLEVER	Respondent's belief about his/her own intelligence Dummy variable (=1 if clever)	0.303	0.460	0.257	0.440	0.330	0.472	ns
ATTRACTIVE	Respondent's belief about his/her own attractiveness Dummy variable (=1 if attractive)	0.207	0.406	0.285	0.455	0.161	0.369	**

The Wilcoxon test compares the random and convenience samples. ***, ** and * stand for significant at 1%, 5% and 10% levels, respectively. ns stands for not significant (a χ^2 test yielded the same results).

Table 2: Percentage of positional responses by type of good

	Whole population (N=188)	Random sample (N=70)	Convenience sample		Wilcoxon test	
			Individuals (N=118)	Others (N=92)	(Random vs. Convenience)	(Convenience Ind. vs. Others)
<i>Goods</i>						
Income	44	53	38	50 (26)	**	***
Education	58	54	60	71 (25)	ns	*
Intelligence	58	54	60	68 (19)	ns	*
Attractiveness	53	53	53	70 (28)	ns	**
Approval	69	73	66	70 (18)	ns	ns
Vacation 1	32	31	32	41 (28)	ns	**
Vacation 2	24	20	26	40 (26)	ns	***
<i>Bads</i>						
Disapproval	45	38	48	67 (28)	ns	**
Tedious work	22	23	21	39 (24)	ns	***
<i>Child's items</i>						
Education	54	48	58	66 (26)	ns	*
Intelligence	58	56	60	67 (18)	ns	ns
Attractiveness	54	48	58	75 (27)	ns	***

The Wilcoxon test compares the random and convenience samples, on one hand, and, within the convenience sample, answers when people are asked about their own preferences and their answers when they are asked about others' preferences, on the other hand. ***, ** and * stand for significant at 1%, 5% and 10% levels, respectively. ns stands for not significant.

Table 3: Effect of some socio-demographic variables and other individual's characteristics on positional concerns (N=188)

(For each item, we also report (in Italics) the logit estimation results when people are asked about others' preferences (N=92))

<i>Goods</i>	Logit estimation results									Pseudo R2
	Intercept	GENDER	AGE	HIGHER_EDUC	EARNING	RELIGION	POLITICS	CLEVER	ATTRACTIVE	
Income	0.244	0.032	-0.267	-0.681	-0.178	-0.183	0.886**	-	-	0.0425
	<i>-0.290</i>	<i>-0.760*</i>	<i>0.388</i>	<i>0.160</i>	<i>0.488</i>	<i>0.030</i>	<i>0.093</i>	-	-	<i>0.0298</i>
Education	0.958**	-0.407	0.136	-0.560	-0.346	-	-	-	-	0.0206
	<i>1.109</i>	<i>-0.712</i>	<i>0.170</i>	<i>-0.069</i>	<i>0.032</i>	-	-	-	-	<i>0.0224</i>
Intelligence	0.168	-0.204	0.563	-0.092	-0.221	-	-	0.441	-	0.0264
	<i>-0.110</i>	<i>0.174</i>	<i>1.095</i>	<i>0.299</i>	<i>0.730</i>	-	-	<i>-0.927*</i>	-	<i>0.0664</i>
Attractiveness	-0.310	0.299	-0.260	0.639	-0.589	-	-	-	0.355	0.0187
	<i>-0.316</i>	<i>-0.234</i>	<i>0.313</i>	<i>1.074</i>	<i>-0.073</i>	-	-	-	<i>0.488</i>	<i>0.0312</i>
Approval	0.346	-0.028	0.085	0.449	0.301	-	-	-	-	0.0107
	<i>1.430</i>	<i>0.203</i>	<i>0.814</i>	<i>-1.575</i>	<i>0.901</i>	-	-	-	-	<i>0.0251</i>
Vacation 1	-0.247	-0.240	-0.501	-0.283	0.021	-	-	-	-	0.0187
	<i>-0.980</i>	<i>-0.430</i>	<i>0.643</i>	<i>0.310</i>	<i>0.263</i>	-	-	-	-	<i>0.0211</i>
Vacation 2	-1.204***	-0.193	-0.238	0.268	0.062	-	-	-	-	0.0049
	<i>-0.287</i>	<i>-0.932**</i>	<i>0.838</i>	<i>-0.477</i>	<i>0.436</i>	-	-	-	-	<i>0.0489</i>
<i>Bads</i>										
Disapproval	-1.448***	0.086	0.532	1.070**	0.425	-	-	-	-	0.0567
	<i>-0.206</i>	<i>0.170</i>	<i>1.340*</i>	<i>-0.209</i>	<i>0.986</i>	-	-	-	-	<i>0.0365</i>
Tedious work	-1.213***	0.113	-0.775	0.194	0.122	-	-	-	-	0.0236
	<i>0.150</i>	<i>-1.023**</i>	<i>0.022</i>	<i>-0.161</i>	<i>-0.669</i>	-	-	-	-	<i>0.0536</i>
<i>Child's items</i>										
Education	0.204	-0.134	0.438	-0.276	0.207	-	-	-	-	0.0057
	<i>-0.850</i>	<i>-1.023**</i>	<i>2.065**</i>	<i>0.236</i>	<i>1.788*</i>	-	-	-	-	<i>0.1196</i>
Intelligence	-0.247	-0.059	0.634	0.185	-0.186	-	-	0.9149**	-	0.0571
	<i>-0.914</i>	<i>-0.467</i>	<i>0.946</i>	<i>1.616</i>	<i>-0.152</i>	-	-	<i>-0.637</i>	-	<i>0.1036</i>
Attractiveness	0.202	0.183	-0.268	0.179	-0.569	-	-	-	0.024	0.0084
	<i>1.108</i>	<i>-1.122**</i>	<i>1.035</i>	<i>-0.233</i>	<i>0.347</i>	-	-	-	<i>-0.165</i>	<i>0.0763</i>

Controlling for sample type, *i.e.*, random versus convenience, yielded to very similar results. ***, ** and * stand for significant at 1%, 5% and 10% levels, respectively.

Appendix 1: Survey instrument (adapted from Solnick and Hemenway, 1998)

In the questions below, there are two hypothetical situations A and B. You are asked to pick which of the two you would prefer. The questions are independent. For each question, circle either A or B, or if undecided, both A and B. 'Others' is the average other person in society. Notice that when people were asked about their others' preferences, they had to pick the option a hypothetical average individual in society would prefer.

1. Note that prices are what they are currently and the purchasing power of money is the same in situations A and B.
 - A. Your current yearly income is €50,000; others earn €25,000.
 - B. Your current yearly income is €100,000; others earn €200,000.
2.
 - A. Your education level is $BAC+2$ [15 years]; others' education level is BAC [13 years].
 - B. Your education level is $BAC+5$ [18 years]; others' education level is $BAC+8$ [21 years].
3.
 - A. You have 6 weeks of vacation; others have 4 weeks.
 - B. You have 8 weeks of vacation; others have 10 weeks.
4.
 - A. You are berated by the supervisor 4 times this year; others are berated 8 times.
 - B. You are berated by the supervisor twice this year; others are berated once.
5. IQ is the most used estimator of intelligence.
 - A. Your IQ is 110; others average 90.
 - B. Your IQ is 130; others average 150.
6. Assume physical attractiveness can be measured on a scale from 1 to 10 (10 is the highest).
 - A. Your physical attractiveness is 6; others average 4.
 - B. Your physical attractiveness is 8; others average 10.
7.
 - A. You are praised by the supervisor twice this year; others are not praised.
 - B. You are praised by the supervisor 5 times this year; others are praised 12 times.
8.
 - A. Your child's education level is $BAC+2$; others people's children education level is BAC .
 - B. Your child's education level is $BAC+5$; others people's children education level is $BAC+8$.
9.
 - A. Your child's IQ is 110; other people's children average 90.
 - B. Your child's IQ is 130; other people's children average 150.
10.
 - A. Your child's attractiveness is 6; others average 4.
 - B. Your child's attractiveness is 8; others average 10.
11.
 - A. You have 3 weeks of vacation; others have 2 weeks.
 - B. You have 4 weeks of vacation; others have 5 weeks.
12.
 - A. You have to write 3 tedious reports; others have to write 4 reports.
 - B. You have to write 2 tedious reports; others have to write 1 report.