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Popular Perceptions of Actual and Just Earnings: A Questionnaire Experiment

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In social surveys, questions are often asked as to what subjects think people in various occupations actually earn and what they think these people should earn. Responses to these questions figure prominently in sociological studies on legitimacy of inequality and perceptions of justice. In the present study, responses to these questions are employed as well, but the major focus is on investigating the effects, if any, the way these questions are asked affects estimates of actual and just earnings provided by the subjects. More specifically, two hypotheses are proposed, the first of which concerns the association between actual and just earnings, as perceived by subjects, as a measure of legitimacy. It is argued that changing the order in which questions about the earnings are asked affects the strength of this association. A substantive justification for this hypothesis borrows from reward expectation theory and its concept of referential structures. The second hypothesis deals with between-subject agreement in the evaluations of just earnings and it proposes that the agreement may appear weaker or stronger depending on how the occupations to be evaluated by subjects have been selected. This hypothesis builds on expectations states theory, in particular, on status-processing principles in status-inconsistent situations.

Key words: actual and just earnings, do-earn and should-earn questions, reward expectations and referential structures, status inconsistency, methodological experiment, multilevel models

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The present study investigates the effects that explicit variations in the form of a survey instrument used to elicit individual opinions towards income inequality have on these opinions. The instrument in question asks subjects what they think people in various occupations do earn and what they think these people should earn. Following the convention adopted by Osberg and Smeeding (2006), I will refer to the former as do-earn questions and to the latter – as should-earn questions. These questions were employed in a number of survey studies, including cross-national research projects, such as the International Social Survey Research Programme (ISSP; Klugel, Mason, and Wegener 1995) and the International Social Justice Project (ISJP; see Haller, Roger, and Smith 2009) responses to these questions were used in several analyses to study reactions to inequity in the distribution of income, legitimacy of income inequality (Gijsberts, 2002; Kelley and Evans 1993; Kelley and Zagórski 2004), and social norms of just distribution of rewards (Arts, Hermkens, and Wijck 1995; Headey 1991; Osberg and Smeeding 2006; Słomczyński and Wesołowski 2001). A major premise of the present study is that responses to the do-earn and should-earn questions depend in a non-trivial way on how these questions are asked. My focus here is on (a) ordering of the two questions in the questionnaire and (b) set of the occupations whose earnings are evaluated by subjects. These features of a questionnaire were extensively studied in methodological studies on so-called 'context effects' (see Sudman, Bradburn, and Schwartz, 1996 for a review of those studies). However, my interest is not so much in whether or not the ordering of the two questions and the composition of the occupation set matter as in figuring out why they matter, if they do. I propose a substantive justification for these effects later on.

BACKGROUND

The Do-earn and Should-earn Questions

In a typical survey administration of the do-earn and should-earn questions, the interviewer reads out a list of occupational titles and for each title asks the subject what he or she thinks people working in the particular occupation actually earn. The titles are rather generic – such as 'secretary in a private firm' or 'unskilled worker' – and refer to fairly broad social-occupational categories that are differentiated along multiple dimensions, including salary and wages. Therefore, the subjects are asked to imagine a 'typical' or 'average' representative of the

occupation in question when trying to assess actual earnings for that occupation. Once the amounts of actual earnings are recorded for all the listed occupations, the interviewer proceeds to the should-earn question, and the procedure is pretty much the same, except now the subject is asked to indicate what he or she thinks people working in the occupations under study should be paid.

Several features of this design are of interest. First, the occupations whose earnings are evaluated by subjects are selected more or less arbitrarily from a set of all occupations. To be sure, the items in the do-earn and should-earn questions usually comprise well-paid and poorly paid jobs, jobs requiring advanced skills and simple jobs for which no particular jobs are needed, non-manual and manual jobs, jobs held in high and low esteem by the society, etc. In other words, the set of jobs to be assessed is deliberately made diverse in terms of earnings, skills, or prestige, but no criteria have been specified as to how the occupations are to be selected with respect to those characteristics and without explicit criteria the process of selection is more or less arbitrary.

Second, subjects estimate just earnings *only after* they have estimated the actual ones: the do-earn question is always asked first. For reasons given below, this has non-trivial implications for the study of justice of earnings and legitimacy of inequality.

Third, studies using the do-earn and should-earn questions are based on an implicit assumption according to which each subject has a 'representation' of a typical member of the occupations under study in terms of socially meaningful categories, such as those based on differences in formal education, skills, gender, age, and the like. In *factorial surveys*, which make use of 'vignettes' (Jasso 2006), this information is explicitly 'manipulated' by a researcher who provides the respondents with a series of descriptions of fictitious persons; these descriptions are in terms of gender, age, occupation, years of schooling, and earnings, or other characteristics of interest. Unfortunately, the do-earn and should-earn questions do not follow factorial surveys in this respect and also fail to make an effort to elicit the information on the individual representations of typical members of given occupations by other means. Hence, responses to the do-earn and should-earn questions allow only for limited analyses.

But even if they are only limited, these analyses can still provide important insights into popular beliefs about inequality and justice of earnings. For instance, comparison of average estimates by occupation can tell us which occupations are believed by the participants to be under- and which are believed to be over-rewarded. Further, comparison of the estimates in terms of inequality or dispersion can tell us whether or not the subjects perceive inequality in earnings to depart from an acceptable level and, if so, in which direction. Also, correlation between the estimates of actual and just earnings tells us how much agreement there is, in the subjects' eyes, between

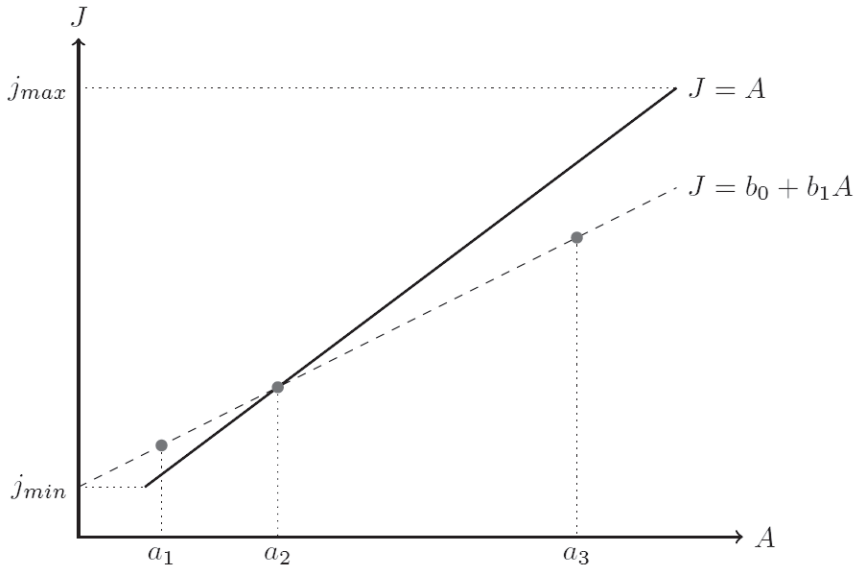
'what is' and 'what ought to be' (Osberg and Smeeding 2006). Finally, comparing the estimates for all pairs of subjects allows us to make inferences concerning the degree to which individual judgments agree with each other (Karpiński 2012).

Actual Earnings, Just Earnings, and Legitimacy of Inequality

A major focus of the present study is on the strength of association between individual perceptions of actual and just earnings, as it reflects how closely the actual distribution of income agrees with the just distribution, or the distribution that would be observed if everyone were paid what they deserved. In this ideal situation, everybody would receive what they ought to receive and, consequently, the actual distribution of income would be identical to the just distribution and the association between actual and just income would be equal to 1. In the 'real world,' however, some people are overpaid (i.e. they receive too much relative to what they deserve) and other people are underpaid (i.e. they earn too little relative to what they should earn), which results in less than perfect association between actual and just earnings. Thus, a less than perfect relationship between actual and just earnings corresponds to a departure of the income distribution from expectations of justice. In other words, if the association between actual and just earnings is less than 1, it is a reflection of injustice the subjects experience with respect to the income distribution (Osberg and Smeeding 2006). The further the strength of the association departs from 1, the more serious is the experience of injustice and the more likely it is to give rise to action aimed at restoring justice (Hegtvedt 1994; Hegtvedt and Markovsky 1995). Because such action is indicative of the lack of legitimacy (Zelditch 2006; Zelditch and Walker 1984), the strength of association between actual and just earnings may be interpreted in terms of legitimacy of income inequality (Osberg and Smeeding 2006).

These ideas are presented graphically in Figure 1. In that graph, the horizontal axis, denoted A, represents the amount of actual earnings, while the vertical axis, denoted J, represents the amount of just earnings. The quantities j_{min} and j_{max} correspond to lower and upper bounds, respectively, on what people should be paid: no one ought to earn less than j_{min} or more than j_{max}. The two straight lines in Figure 1 can be thought of as reflecting two views on the actual distribution of earnings. The thick solid line represents the belief that the distribution is just, since actual earnings are (perceived to be) exactly the same as just earnings. In turn, the dashed line represents the view the actual distribution of earnings is not just, as some people (i.e. those who are close to the top of the hierarchy of earnings) earn too much relative to what they deserve, and so their earnings should be reduced, while others (i.e. those who are close to the bottom of the hierarchy) earn too little, and so their earnings should be increased.

Figure 1 Relationship between actual and just earnings



Source: Adapted from Osberg and Smeeding (2006)

To put it in another way, the assumption behind the graph in Figure 1 is that the relationship between A and J is linear and has the functional form $J = b_0 + b_1A$. The belief that actual earnings are equal to the just ones satisfies $b_0 = 0$ and $b_1 = 1$, so that the relationship reduces to $J = A$. In turn, the belief that some earn too much, while others earn too little corresponds to $b_0 > 0$ and $0 < b_1 < 1$. The further b_1 departs from 1 and the closer it gets to 0, the greater is the individual desire for reducing the actual differences in pay.

2.3 Referential Structures

Suppose a subject is asked to propose just amounts of income for two persons: a female physician with 10 years of job experience and a male nurse with 12 years of experience. The two persons differ explicitly in terms of gender, occupation, and job experience. Implicitly, they are also different with respect to education, as it takes more years of schooling to become a physician, and authority, with the physician being superordinate and the nurse – subordinate. If all these differences are salient in the given situation, they become bases of expectations for the subject as to what the two persons ought to be paid. Exactly how these differences translate into *reward expectations* is shaped by a set of *commonly*

held and *socially validated* beliefs linking levels of valued characteristics (such as those along which the hypothetical physician and nurse in the present example differ) with levels of rewards (such as earnings); these beliefs are called *referential structures* and their source is the culture of the collectivity to which the actors belong (Berger et al. 1985). In other words, referential structures can be thought of as 'reference groups' or 'reference levels' for determining just rewards in the immediate situation (Sutphin and Simpson 2009).

Three types of referential structures are distinguished (Berger et al. 1972): (*a*) categorical, (*b*) ability-based, and (*c*) outcome-based. The differences between the types of referential structures pertain to the type of attribute that is linked with reward levels. In the case of *categorical referential structures*, the attribute in question is membership in broad social categories, such as gender categories or ethnic ones. When a categorical referential structure is activated in a given situation, distribution of rewards in that situation invokes criteria of 'who you are' in determining rewards allocated to each actor. Thus, for instance, if men are generally believed to deserve more than women, the subject in the present example will propose a larger amount for the nurse.

In the case of *ability-based referential structures*, the attribute refers to a person's ability to perform well on a task, or his or her ability to contribute to group's goal. That is, an ability-based referential structure relates rewards to criteria of 'what you can do' and 'what your skills are' *regarding the task at hand*. To illustrate, if becoming a physician requires greater skills than becoming a nurse and if greater skills are believed to deserve greater rewards, then the subject in the present example will propose a larger amount for the physician.

Finally, *outcome-based referential structures* link rewards to what one has actually accomplished or achieved.

As mentioned before, it is not possible to infer from responses to the do-earn and should-earn questions alone the criteria used by the subjects in assessing the actual and just amounts of earnings for the occupations under study. In other words, there is no way of knowing which attributes the subjects considered when making their judgments concerning just pay for incumbents of the various occupations. And since information about these attributes is not available, it is not possible for a researcher to establish which types of referential structures underlie subjective assessments of just earnings.

There is one exception, however, to this general statement. Recall from the earlier discussion that in a typical administration of the do-earn and should-earn questions, subjects are asked first to estimate the former. But this means that one basis of expectations of just rewards (earnings) is salient for the subjects, namely, actual earnings in the occupations under study, as perceived by the subjects. Actual earnings can be said to indicate levels of achievements and the subjects are likely

to base their estimates of just earnings for the occupations on the criteria of 'what have you actually accomplished' that are inherent in outcome-based referential structures, as explained above. In other words, asking the participants in the survey the do-earn question first introduces actual earnings as a salient referential structure for the task of evaluating just earnings in the occupations of interest. Because levels of rewards (just earnings) are 'matched' with accomplishments in this case, the relationship between individual assessments of actual and just earnings will be stronger under such circumstances than if the referential structure were not activated. This leads us to our first hypothesis:

Hypothesis 1 *If the do-earn question is asked first, subjects' responses to this question activate an outcome-based referential structure. If the should-earn question is asked first, this particular referential structure is not activated and subjects cannot use it to 'match' levels of rewards to levels of achievements. Thus, the relationship between actual and just earnings will be stronger if the do-earn question is asked first than if the should-earn question is asked first.*

Status Consistency and Consensus in the Evaluation of Earnings

Suppose a subject is asked to propose just amounts of income for two persons: a male physician with 12 years of job experience and a female nurse with 10 years of experience. As in the previous example, the two persons differ along gender, occupation, and job experience, as well as (if implicitly) along education and authority. Unlike in the previous example, however, the former person is superior to the latter along *all the salient dimensions of differentiation*. In other words, as long as all the dimensions are status characteristics, relevant to the interaction between the two persons, status is allocated *consistently* in the present example, with the former person enjoying higher status than the latter with respect to all the characteristics (Balkwell et al. 1992; Berger et al. 1992). Because the former person has a higher status with respect to all the status characteristics, he comes to occupy a higher position in a resulting status hierarchy in the group, and if rewards (including income) are to be commensurate with status (Berger et al. 1985), the subject in the present example will likely believe that the former person *deserves* to earn more than the latter and, consequently, propose a higher amount of just income for the latter. If all participants in a survey were given the same task of evaluating just earnings for the two persons in the present example, there would likely be differences between the participants as to the exact amounts proposed for the two persons, but given the consistent status allocation, we can predict the subject to agree on who should earn more. Thus, status consistency is predicted to lead to *consensus* in the subjective evaluations of just earnings, at least in regard to who should be paid more.

However, the answer to the question concerning relative positions of the persons in the status hierarchy of the group is not as straightforward when status is allocated *inconsistently*, so that one person has higher status than the other person along some status characteristics and lower status along others characteristics. According to the *principle of organized subsets* (Berger et al. 1972, 1985; see also Balkwell et al. 1992; Berger et al. 1992), (*a*) actors use information on *all status characteristics that are salient in the given situation* and (*b*) one additional piece of information that is consistent with the previous information has smaller impact on actors' behaviors than one piece of inconsistent information[2]. The principle of organized subsets proposes that reward expectations tend to be consensual under status inconsistency, too, provided that all actors are exposed to the same status-relevant information.

The difficulty in applying the principle to the data from surveys employing the do-earn and should-earn questions is that, as discussed above, it is unlikely that participants in such surveys base their evaluations of actual and just earnings on the same set of status distinctions. As a matter of fact, because participants in such surveys are only given names of the occupations whose earnings they are to evaluate, the researcher has literally no way of knowing which criteria these evaluations are based on. This may still be of little concern when the occupations in question differ consistently in terms of various characteristics, such as skills, job responsibility, or complexity.

In order to see this, let us consider the following example. Suppose subjects in a survey are asked to propose just amounts of earnings for two occupations: physician and nurse. As mentioned above, we cannot know which characteristics of the two occupations the subjects consider when making their evaluations of just earnings. However, because a typical physician is superior to a typical nurse on most, if not all, status distinctions, the subjects are likely to agree with each other as to which of the occupations should be paid more. To illustrate, suppose subject A compares the occupations in terms of skills, while subject B compares them in terms of responsibility. Since becoming a physician requires more skills and entails greater responsibility, both subjects are likely to propose higher amounts of earnings for physician than for nurse. Thus, even though the subjects use different criteria – for that matter, even though the researcher does not know those criteria – when comparing the occupations, they will come to the same conclusion as to which occupation should earn more.

However, the differences between, say, physician and university professor are not so clearly pronounced. The latter occupation may require more skills than the former, but the former may entail more responsibility. If these beliefs are widespread in the population from which the subjects are recruited, and if subjects take into account different criteria when making their evaluations of just earnings for the occupations, then the resulting evaluations may not be in agreement as to which occupation should

be paid more. To illustrate, if, as in the previous example, subject A compares the occupations in terms of skills, while subject B – in terms of responsibility, A will rate university professor as having higher status, and therefore deserving greater pay, than physician, while B will attribute higher status to physician and consequently conclude that physician ought to earn more than professor. Thus, the two subjects will disagree as to which occupation should be paid more.

These considerations lead us to the prediction that there will be more agreement, or consensus, in individual orderings of the occupations in terms of just pay if the status differences between the occupations are consistent than if they are inconsistent. However, for reasons given above, the degree of consistency in status differences between occupations cannot be varied explicitly. Therefore, a proxy measure of status consistency is used in the present study, namely, whether or not the occupations to be evaluated by subjects were 'sampled' from extremes of occupational hierarchy[3]. If status differences between two occupations are consistent, inequalities along each constituent status dimension add up resulting in a large difference between the two occupations in the resulting status hierarchy. In other words, if one occupation is ranked high along all constituent dimensions, while another occupation is ranked low, they are likely to end up at opposite ends of occupational status hierarchy. In turn, if status differences between occupations are not consistent, inequality in one status dimension may be reduced or balanced by reversed inequality in another dimension, leading to a relatively small distance between the occupations in the overall status hierarchy. Thus, we have arrived at our second hypothesis.

Hypothesis 2 *If status differences between occupations are large, more agreement is predicted between individual orderings of the occupations with respect to just pay than if the differences are not large.*

Anchoring and Justice Evaluations

When a subject is asked to propose just amounts of earnings for a set of occupations of interest, he or she is likely to face a degree of uncertainty in performing this task, as people do not necessarily have firm beliefs concerning just pay for various occupations, especially when the occupations are outside the scope of their daily experience or regular social interaction (Markovsky and Eriksson 2012). Judgments under uncertainty are susceptible to *anchoring effects*, an important class of cognitive heuristics, which consist in biasing the judgments towards or away from an *anchor*. An anchor provides background against which a decision is evaluated. Depending on the anchor, judgments made under otherwise identical conditions can be very different. Markovsky (1988) reported very potent anchoring effects in a series of experiments concerning just rewards and justice evaluations.

Two types of anchoring effects are distinguished: *assimilation* and *contrast*. To illustrate, when the assimilation effect occurs, the estimates of just earnings tend to be *higher* in the presence of a *high anchor* than in the presence of a *low anchor*. In turn, when the contrast effect occurs, the estimates of just earnings tend to be *lower* in the presence of high anchor than in the presence of low anchor. Markovsky (1988) and Markovsky and Eriksson (2012) describe in considerable detail conditions for the occurrence of assimilation and contrast effects.

We offer a conjecture that participants in social surveys face uncertainty when they are asked both the do-earn and should-earn questions. Consequently, both types of judgment are hypothesized to be affected by the anchoring effects. In other words, it is hypothesized that respondents' estimates of earnings in the various occupations are subject to 'order effects' (Sudman, Bradburn, and Schwartz 1996), because the occupation whose earnings are estimated first provides a *reference point* to which earnings in the occupations rated subsequently are compared. If the first occupation to be rated is the same for all respondents, then the reference point will be similar as well. For instance, if the first occupation on the list is attorney and if subjects are aware that attorneys are paid well for their job, then the anchor is set rather high for most respondents and the beliefs about earnings in the remaining occupations are predicted to assimilate towards that anchor.

If this conjecture is correct, one can expect responses to both the do-earn and should-earn question to be shifted towards the first response in the set and, overall, this shift will result in a positive correlation between the first response and the mean (or median) of the remaining responses. Further, if the degree of uncertainty faced by the subjects when answering the do-earn questions is the same as when answering the should-earn ones, the correlation is likely to be the same in both cases. This is our first hypothesis:

Hypothesis 3 *The first response in the set and the mean (or median) of the remaining responses will be positively correlated. The magnitude of this correlation will be the same for the responses to the do-earn and should-earn questions.*

EXPERIMENT

The empirical basis of the findings reported in this paper comes from a study in which certain features of a questionnaire were explicitly manipulated in order to allow for a direct test of the hypotheses presented above. Subjects in the study were students of public and private schools in Warsaw who volunteered to participate in the experiment in exchange for money. The participants were divided into six-person groups and there was one group per session.

Upon arrival to the laboratory, each participant was seated at a table and received his or her own copy of the questionnaire. The participants completed

the questionnaires individually. The objective of the study was explained to them at the beginning of the session, although some specific details were not revealed until later. The subjects were also told that the study was not a test, so there were no 'right' or 'wrong' answers to the questions in the questionnaire, and that the questionnaire was designed to learn their *opinion* on matters to which the questions referred and not to see if their *knowledge* as to these matters was accurate. Finally, the participants were assured that their answers were confidential.

The questionnaire was divided into four sections. The first one consisted of items asking subjects to rate six occupations in terms of (*a*) *skills* that are required to work in these occupations, (*b*) *responsibility* that is involved in working in them, (*c*) *stress* that people working in these occupations are exposed to, and (*d*) *complexity* of typical activities performed in these occupations. In each dimension, the occupations were rated on a seven-point scale. For instance, in order to evaluate skills required to work in the occupations of interest, subjects used numbers from 1 to 7, with larger numbers indicating greater skills.

The next section of the questionnaire contained items that asked subjects to provide their estimates of earnings in the occupations that they rated previously. More specifically, for each occupation, they were asked how much they thought people in these occupations *actually earned* as well as how much they thought these people *ought to* or *deserve to earn* for the earnings to be fair, or just.

Items in the next section were adapted from 'questionnaire experiments' by Amiel and Cohen (1992, 1999). Each question in this section required participants to compare two fictitious income distributions in terms of inequality. These items were originally intended to test if popular perceptions of inequality followed axioms underlying the theory of inequality measurement (Cowell 2008, 2011). Finally, the last section of the questionnaire comprised items concerning the questionnaire and the study and subjects' social and demographics characteristics.

Once all the participants in a particular session completed their questionnaires, they could ask some questions relating to the study and if they did, the experimenter went on to answer them as well as provided them with further details concerning the design and objective of the experiment that had not been presented to the participants at the beginning of the session. After that, the subjects were paid and the session ended.

Questionnaire

As mentioned, some features of the questionnaire were explicitly varied. It is precisely this information that was kept hidden from the participants until after they all completed the questionnaires. If that information was revealed to them at

the beginning of the session, they would most likely respond to that information, so that the data collected in the study would be difficult to interpret. In other words, if the information about the features of the questionnaire that were varied – as well as about the reasons they were varied – was made available to the participants at the beginning of the session, the results of the study could be attributed to its design or to subjects' knowledge about hypotheses being tested. This is why it was decided to keep that information from the subjects until the end of the session.

Table 1 Median* estimates** by ESS5PL respondents of actual earnings and just earnings in 17 occupations

Occupation	Actual earnings	Just earnings
farm worker	1,500 PLN	2,500 PLN
unskilled factory worker	1,500 PLN	2,000 PLN
departament store clerk	1,500 PLN	2,000 PLN
bricklayer	2,000 PLN	3,000 PLN
skilled factory worker	2,000 PLN	3,000 PLN
secretary	2,000 PLN	2,000 PLN
city bus driver	2,000 PLN	3,000 PLN
bank clerk	3,000 PLN	3,000 PLN
small shop owner	3,000 PLN	3,500 PLN
doctor in general practice	4,000 PLN	4,000 PLN
university professor	5,000 PLN	7,000 PLN
chairman of a large enterprise	10,000 PLN	10,000 PLN
cabinet minister	10,000 PLN	8,000 PLN
attorney	10,000 PLN	6,000 PLN
Supreme Court judge	10,000 PLN	10,000 PLN
Member of Parliament	10,000 PLN	5,000 PLN
owner of a large factory	20,000 PLN	20,000 PLN

*Some respondents failed to provide their estimates for at least some of the occupations. Such missing cases were excluded from the analysis.

**NB: The estimates are given in Polish currency: Polski Nowy Złoty, or PLN. The exchange ratio of PLN to US dollar is approximately 3 to 1.

Occupations

The first feature of the questionnaire which was subject to experimental manipulation concerned the set of occupations rated by the study participants. Regardless of the questionnaire version, each subject rated six occupations. These occupations were *randomly selected* from a set of occupational titles used in the 5th round of the Polish edition of European Social Survey (hereafter, ESS5PL). In ESS5PL, respondents were asked to estimate *actual* and *just* earnings in a total of 17 occupations. In Table 1, median estimates are presented. The occupations were then divided into two groups. The first of them comprised those for which the median estimate of actual earnings is less than 10,000 PLN, and the second group – occupations for which the median estimate is at least 10,000 PLN.

From the list of 17 occupations that were rated by participants in ESS5PL, two random 'samples' were then drawn, the first of which was a 'stratified sample' with 4 occupational titles selected from among the low-income occupations and 2 – from among the high-income ones, while the second sample a simple random sample of low-income jobs. The resulting samples differ in terms of inequality in actual earnings: in the former sample the inequality is larger than in the latter one. The samples are presented in Table 2.

Table 2 Occupations whose earnings were assessed in the present study

Sample A: Large inequality	Sample B: Small inequality
attorney	farm worker
chairman of a large enterprise	bank clerk
city bus driver	city bus driver
doctor in general practice	doctor in general practice
bricklayer	bricklayer
small shop owner	small shop owner

Ordering of the occupational titles in the questionnaire

The second feature of the questionnaire used in the present study, which was explicitly varied, is the ordering of the occupational titles in individual items. In social surveys, such as International Social Survey Programme (ISSP) or International Social Justice Project (ISJP) the interviewer reads out the names of the occupational titles in a fixed order. It is conjectured that such ordering affects subjects' responses and in order to test this conjecture the occupational titles were listed in either a fixed or random order in the questionnaire items. It is hypothesized that respondents' estimates of earnings in the various occupations are subject to 'order effects' (Sudman, Bradburn, and Schwartz 1996). As a result, evaluations of earnings may appear more consistent than they really are, or – more precisely – a measure of the consistency of responses may reflect not only what people do think about earnings in the occupations, but also – the fact that the earnings are estimated in a fixed order.

Ordering of the questions

Finally, the third feature of the questionnaire that was manipulated is the order in which the actual and just earnings were estimated by the subjects. In previous studies, respondents first answered the do-earn question. The results of these studies are such that actual earnings are perceived to be, on average, higher than just earnings. Subjects' evaluations of the latter earnings may then be somewhat 'distorted' by their assessments of the former earnings, due to the anchoring effect. Thus, in order to be able to verify the validity of this conjecture the ordering of this question in the questionnaire was varied, so that some respondents rated just earnings first, while others – rated actual earnings first.

Table 3 Summary information about the sample

	Mean	Variance
Gender (1=female, 0=male)	0.76	0.18
Age (in years)	22.48	3.18
Originally from Warsaw? (1=yes, 0=no)	0.29	0.21
Graduate student? (1=yes, 0=no)	0.28	0.20

Thus, the present study can be said to use a 2 (large vs. small inequality) × 2 (fixed vs. random ordering of the occupations) × 2 (actual earnings first vs. just earnings first) between-subject design. Hence, there are eight distinct experimental conditions, or eight different versions of the questionnaire. There were 15 subjects per condition, with total sample size equal to 120. In Table 3, some summary information about the sample is given.

RESULTS

Testing Hypothesis 1

Analytical procedure

In order to test Hypothesis 1, we will employ a linear model of the following form:

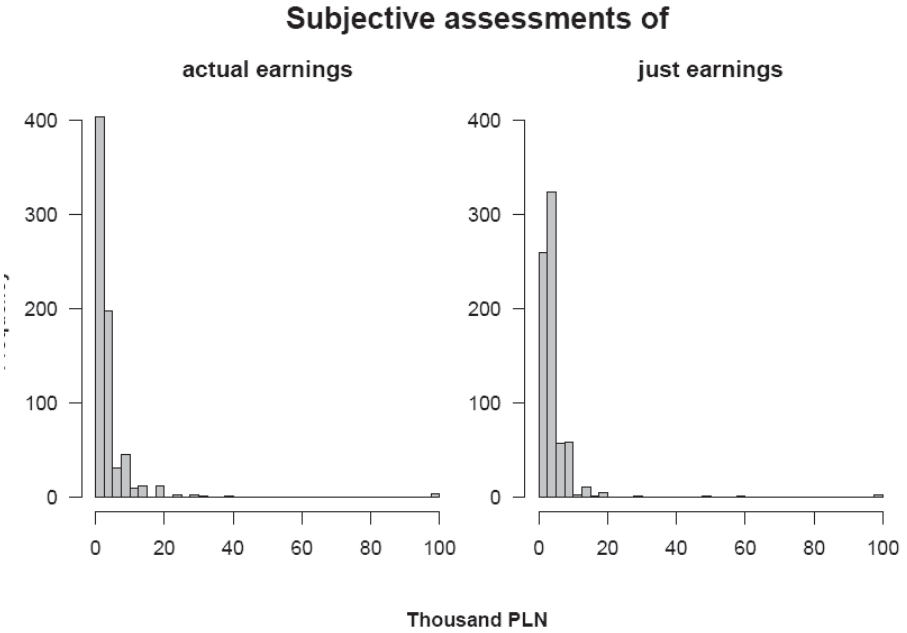
$$\ln(j_{gh}) = \beta_0 + \beta_1 \ln(a_{gh}) + \beta_2 s_{gh} + \beta_3 r_{gh} + \beta_4 p_{gh} + \beta_5 c_{gh} + \varepsilon_{gh} \quad (1)$$

where

- j_{gh} denotes evaluation of *just earnings* in occupation h by subject g,
- a_{gh} denotes evaluation of *actual earnings* in occupation h by subject g,
- s_{gh} denotes a measure of evaluation by subject g of the level of *skills* required to work in occupation h,
- r_{gh} denotes a measure of evaluation by subject g of *responsibility* involved in working in occupation h,
- p_{gh} denotes a measure of evaluation by subject g of *stress* that those working in occupation h are exposed to,
- c_{gh} denotes a measure of evaluation by subject g of *complexity* of typical activities performed by members of occupation h and
- the ε_{gh} are residuals while the β are simply regression coefficients.

Several observations concerning features of model (1) are in order. First, note that it uses logarithmic transformations of subjective evaluations of actual and just earnings. It uses the logarithmic transformations, because, as shown in Figure 2, distributions of the evaluations of earnings are heavily skewed. However, the transformation affects the relationship between just and actual earnings, as it amounts to assuming that the relationship between the original variables is multiplicative rather than linear.

Figure 2 Distributions of responses to the do-earn and should-earn questions

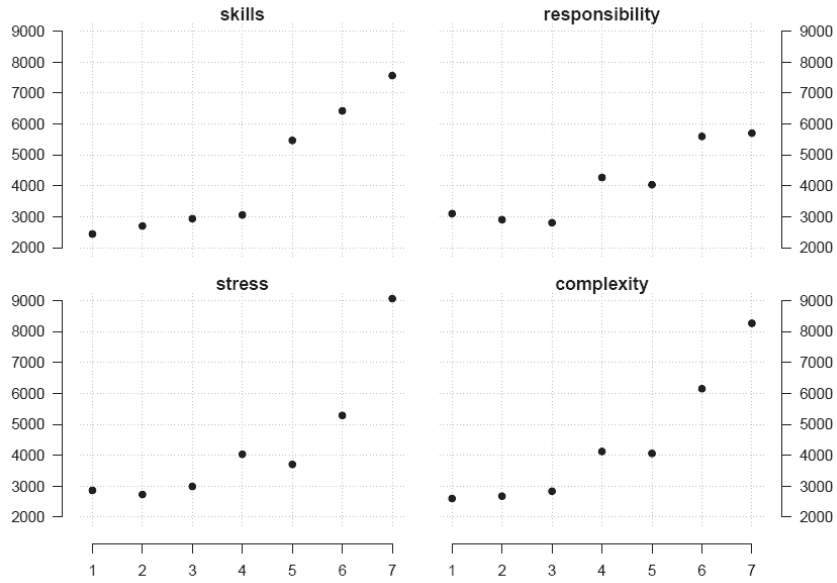


Second, the other independent variables in (1) – that is, those that refer to subjective evaluations of the occupations in terms of skills, responsibility, stress, and complexity – are also transformations of the original responses. The rationale behind this transformation is that the evaluations of just earnings seem to depend non-linearly on the perceptions of occupations with respect to skills, responsibility, stress, and complexity. This is shown in Figure 3. In order to 'correct for' this non-linearity, the following formula was used (see Jasso 2001 for details):

$$l_w^{gh} = \ln\left(\frac{1}{1-d_w^{gh}}\right) \tag{2}$$

In that formula, denotes a measure of 'standing' of occupation *g* along dimension *w* according to subject *h*, while means a *relative rank* of that occupation. The relative ranks were calculated for each subject, and each dimension of evaluation, separately, by first ranking the evaluations and dividing the raw ranks by m+1, with m being the number of occupations.

Figure 3 Mean subjective evaluations of just earnings in various dimensions



Third, using the double subscripts for variables in (1) is intended to emphasize a hierarchical, or multilevel, nature of the data, with a lower level being constituted by the occupations, or by how the subjects perceive them, and a higher level – by the subjects, or by the conditions (i.e. versions of the questionnaire) to which the subjects were assigned. Fourth, because of the multilevel nature of the data, there are assumed to be two sources of variation in the dependent variable: (*a*) *within-subject variation*, or departures of natural logarithms of individual estimates of just earnings provided by a particular subject from the mean for that subject, and (*b*) *between-subject variation*, or departures of the means for particular subjects from the grand mean. Because of the between-subject variation, estimates of the regression coefficients in (1) are expected to take on different values for different subjects. As a first step in modeling the between-subject variation, let us consider the following claims concerning the values of the coefficients:

$$\beta_{00} = \gamma_{00} + u_{0h} \tag{3a}$$
$$\beta_1 = \gamma_{10} \tag{3b}$$
$$\beta_2 = \gamma_{20} \tag{3c}$$
$$\beta_3 = \gamma_{30} \tag{3d}$$
$$\beta_4 = \gamma_{40} \tag{3e}$$
$$\beta_5 = \gamma_{50} \tag{3f}$$

In (3a) γ_{00} stands for the grand mean, or the mean value of the dependent variable aggregated across all the subjects. That is, because there were 120 participants in the study and because each participant provided his or her own evaluation of just earnings in 6 occupations, we obtained 720 subjective evaluations of just earnings and the grand mean is obtained by averaging all the 720 observations (or their natural logarithms, to be precise). In turn, the term u_{0h} in (3a) indicates how much the mean value of the log of subjective perception of just earnings for subject *h* departs from the grand mean. As for the remaining four predictors in (1), the estimates of the regression coefficients for these variables are claimed to be constant across all subjects. After appropriate substitutions and manipulations we arrive at:

$$\ln(j_{gh}) = \gamma_{00} + \gamma_{10} \ln(a_{gh}) + \gamma_{20} s_{gh} + \gamma_{30} r_{gh} + \gamma_{40} p_{gh} + \gamma_{50} c_{gh} + u_{0h} + \varepsilon_{gh} \quad (4)$$

In (4), the last two terms are *random effects*, with u_{0h} being the between-group residuals and ε_{gh} the within-subject residuals. The remaining terms in (4) constitute what are called *fixed effects*. The fixed effects are interpreted as regression coefficients, with the intercept γ_{00} indicating the mean value of the dependent variable when all independent variables are set to 0 and the slopes indicating the amount of change in the value of the dependent variable that is associated with a unit change in the value of a particular predictor when all the other predictors are kept constant. The random effects are assumed to be independently and normally distributed with mean 0 and constant variance.

Comparison of model (4) with (1) allows us to test if the between-subject variation in the value of the intercept is significant.

As a next step, we will consider a model that makes the following claims:

$$\beta_{00} = \gamma_{00} + u_{0h} \quad (5a)$$
$$\beta_{1} = \gamma_{10} + u_{1h} \quad (5b)$$
$$\beta_{2} = \gamma_{20} \quad (5c)$$
$$\beta_{3} = \gamma_{30} \quad (5d)$$
$$\beta_{4} = \gamma_{40} \quad (5e)$$
$$\beta_{5} = \gamma_{50} \quad (5f)$$

Formula (5a) is interpreted in the same manner as (3a). As regards equation (5b), γ_{10} denotes the mean value of the regression coefficient for the log of actual earnings, or the expected change in the dependent variable associated with a unit change in the log of subjective assessment of actual earnings, all else being equal. The term u_{1h} in that equation indicates how much the estimate of the regression coefficient for subject *h* departs from the mean value. Making appropriate substitutions gives:

$$\ln(j_{gh}) = \gamma_{00} + \gamma_{10}\ln(a_{gh}) + \gamma_{20}s_{gh} + \gamma_{30}r_{gh} + \gamma_{40}p_{gh} + \gamma_{50}c_{gh} + u_{0h} + u_{1h}\ln(a_{gh}) + \varepsilon_{gh} \quad (6)$$

Again, the terms in (6) are interpreted in much the same way as in (4), with the last three terms being the random effects and the remaining terms being the fixed effects. Comparison of model (6) with (4) allows us to test if the slope of the log of subjective assessment of actual earnings varies significantly across subjects.

Finally, once the significance of the between-subject differences has been established, we can attempt to model the differences using the characteristics of the study participants, in particular, which version of the questionnaire they were assigned to. This results in an extension of the model in (6) satisfying the following conditions:

$$\beta_{00} = \gamma_{00} + \gamma_{01}I_h + \gamma_{02}O_h + u_{0h} \quad (7a)$$
$$\beta_1 = \gamma_{10} + \gamma_{11}O_h + u_{1h} \quad (7b)$$
$$\beta_2 = \gamma_{20} \quad (7c)$$
$$\beta_3 = \gamma_{30} \quad (7d)$$
$$\beta_4 = \gamma_{40} \quad (7e)$$
$$\beta_5 = \gamma_{50} \quad (7f)$$

In (7a) I_h denotes the large-inequality condition, or a dummy variable that is equal to 1 if subject h was assigned to the large-inequality condition and 0 otherwise, and O_h means the ordering of the do-earn and should-earn questions in the questionnaire, or a dummy variable that takes on the value of 1 if subject h was asked the do-earn question first and 0 otherwise. Making appropriate substitutions and manipulations gives

$$\ln(j_{gh}) = \gamma_{00} + \gamma_{01}I_h + \gamma_{02}O_h + \gamma_{10}\ln(a_{gh}) + \gamma_{11}\ln(a_{gh})O_h + \gamma_{20}s_{gh} + \gamma_{30}r_{gh} + \gamma_{40}p_{gh} + \gamma_{50}c_{gh} + u_{0h} + u_{1h}\ln(a_{gh}) + \varepsilon_{gh} \quad (8)$$

Adding the variables I_h and O_h to the model changes the interpretation of its parameters. The reference group comprises the subjects that were assigned to the small-inequality condition and given the should-earn question before the do-earn question. The intercept γ_{00} denotes the mean value of the dependent variable when all the predictors are to 0 in the reference group. The coefficient γ_{01} indicates how much, on average, the intercept in the large-inequality condition departs from the intercept in the reference category, all else being equal. The coefficient γ_{02} indicates how much, on average, the intercept in the subsample that was asked the do-earn question first, differs from the intercept in the reference category, when all else is kept fixed. However, it is the coefficient γ_{11} that is most important for

testing Hypothesis 1, as it refers to the difference between the reference category and the subsample that was given the do-earn question first in terms of the effect of (the log of) actual earnings: if $\hat{\gamma}_{11} > 0$, then the association between (subjective assessments of) actual and just earnings is greater when the do-earn question is asked first, as predicted by Hypothesis 1.

The analyses reported in the following sections were all carried out using the R environment (R Development Core Team 2012), in particular the functions for estimating multilevel models available in the package nlme (Pinheiro et al. 2013).

Results of the test

In Table 4, the results of fitting models (1), (4), (6), and (8) to the data from the present experiment are presented. All the models were fit using restricted maximum likelihood (REML) estimation. The first three models are identical in terms of the fixed effects, but there are differences between them as to the random effects they contain. Let us begin by pitting model (4), the random-intercept model, against (1), the baseline model, in which no random effects are included. As mentioned earlier, comparison of the two models in regard to how well they fit the data is intended to see if there is indeed significant between-subject variation in the value of the intercept. If there is, then it makes sense to use mixed-effects linear regression to model the source of the variation. But if the between-subject differences with respect to the value of the intercept are not significant, the mixed-effects models are unnecessary.

In order to test for the significance of the between-subject variation, we use likelihood ratio (LR) test. The test statistic, G^2, is the negative of twice the difference between the likelihoods of the two models and is asymptotically chi-square distributed. Because the random-intercept model has one parameter more to estimate than the baseline model — namely, the variance of the term u_{0h} — the LR statistic is based on a single degree of freedom. The null hypothesis states that the intercept does not vary substantially across subjects, so there is no point in applying the mixed-effects models. Using the figures in Table 4 yields G^2=117.2 with df=1. A difference in log likelihoods as large as this is very unlikely if the null hypothesis is correct, because, given a single degree of freedom, $P\left(\chi^2 \leq 117.2\right) \ll 0.01$. Hence, we can conclude that the random-intercept model fits the data significantly better than the model without a random intercept.

The significance of the variation in the slope associated with the log of subjective evaluation of actual earnings is established in much the same way. Again, the null hypothesis claims that there is no variation in the steepness of the slope. The test statistic is asymptotically chi-square distributed and equal to the negative of twice the difference between the log likelihood the random intercept

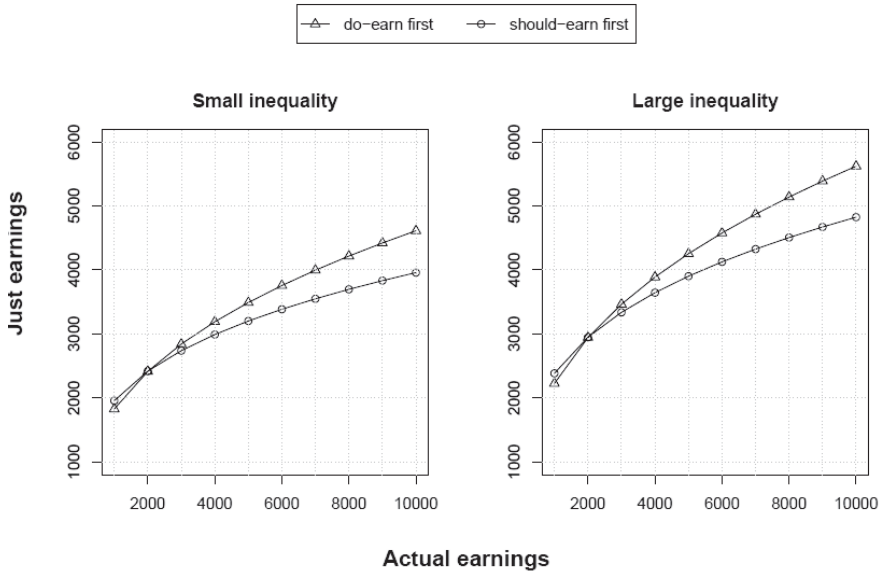
Table 4 Results of fitting the models to the data

Fixed effects	(1)	(4)	(6)	(8)
Intercept	3.06	3.813	4.141	4.53
	(0.149)	(0.149)	(0.209)	(0.265)
	0.618	0.516	0.471	0.407
	(0.02)	(0.02)	(0.028)	(0.035)
s_{gh}	0.031	0.074	0.062	0.073
	(0.035)	(0.029)	(0.026)	(0.026)
r_{gh}	0.083	0.056	0.061	0.052
	(0.031)	(0.026)	(0.023)	(0.023)
p_{gh}	0.01	0.035	0.028	0.035
	(0.03)	(0.025)	(0.022)	(0.022)
c_{gh}	0.09	0.119	0.158	0.16
	(0.034)	(0.028)	(0.025)	(0.025)
I_h				0.198
				(0.035)
O_h				-0.733
				(0.364)
				0.096
				(0.047)
Random effects				
		0.039	1.966	1.823
			0.034	0.031
			-0.992	-0.994
		0.069	0.051	0.051
Fit statistics				
Log likelihood	-220.826	-162.242	-109.078	-99.269
AIC	455.652	340.485	238.155	224.537
BIC	487.639	377.04	283.85	283.886
N	719	719	719	719

$^{***}p<0.01$; $^{**}p<0.05$ $^{*}p<0.1$

model and log likelihood of the random slope model. The test statistic G^2 is now based on two degrees of freedom, however, because the random-slope model has two more parameters to estimate in comparison with the random-intercept model, the first one being variance of the term u_{1h} and the second — covariance of the termsu_{0h} andu_{1h}. Using appropriate data from Table 4, we have G^2=106.3 based on df=2, which is significant far beyond the conventional level of p=0.05. Hence, the variation in the slope of $\ln(a_{gh})$ is highly significant.

Figure 4 Graphical presentation of the effect of perceived actual earnings on predicted just earnings in different experimental conditions



Once we have established that there is indeed substantial variation across subjects with respect to the values of the intercept and the slope associated with the log of subjective evaluation of actual earnings, let us go on to examine whether or not that variation can be successfully modelled using the attributes of the subjects, i.e. the conditions they randomly assigned to. The rightmost column of Table 4 contains relevant figures. It is important to recognise, however, that the interpretation of the regression coefficients is somewhat complex, because the estimates reported in Table 4 pertain to the effects of transformations of the original variables and translating the magnitudes of these effects back to the original metric requires caution. Let us begin by discussing the effects of the subjective perception of actual earnings. As we can see, the estimate of the slope associated with this

variable is equal to 0.407. The meaning of this figure is that of two occupations compared by a particular subject which differ in terms of perceived actual earnings by one unit on a logarithmic scale, but are otherwise identical, the expected log of just earnings is greater by 0.407 for the occupation whose actual earnings are perceived to be greater. In other words, the expected difference in the log of just earnings of these two occupations is 0.407, which is equivalent to saying that the expected ratio of just earnings is equal to $e^{0.407} = 1.502$ for the two occupations and for the subjects in question. In still other words, increasing the log of perceived actual earnings by one unit adds 0.407 units to the expected log of just earnings, or multiplies the expected just earnings by a factor 1.502.

Note, however, that this result holds only for those subjects who were asked *the should-earn question first*. In the subsample that was asked *the do-earn question first*, the effect of the log of perceived actual earnings is estimated to be 0.407+0.096=0.503. Thus, if two occupations compared by a particular subject are identical in all respects except for perceived actual earnings, where they differ by one unit on the log scale, the one that is perceived to actually earn more is also believed to deserve 0.503 units more on the log scale. In line with the above interpretation, increasing the log of perceived actual earnings by one unit translates into adding 0.503 to the expected log of deserved earnings or multiplying the expected deserved earnings by a factor 1.654. Thus, the difference between asking the do-earn question first and asking the should-earn question first amounts to the difference between 1.654 and 1.502 in the rate at which expected proposed just earnings increase. This is illustrated in Figure 4.

That the slope associated with (the log of) perceived actual earnings is significantly steeper in the subsample that was given the do-earn question first is consistent with Hypothesis 1 above. Hence, the hypothesis can be said to be supported by our data.

Testing Hypothesis 2

Analytical procedure

The second hypothesis predicts that the subjective perceptions of just earnings agree to a greater extent in the large-inequality condition that in the small-inequality condition. We say that the amounts of just earnings proposed by two subjects are in agreement when the ordering of the occupations in terms of the amounts is the same in both cases. We say that they are in disagreement when ordering of the occupations with respect to just earnings proposed by one subject is the reverse of the ordering with respect to earnings proposed by the other subject. Between the extremes of complete disagreement and complete agreement there is a continuum of intermediate situations.

For a particular pair of subjects, the agreement is measured by correlating the amounts of just earnings they provided. We use Kendall's τ, a rank correlation coefficient, to measure the agreement. Kendall's τ is bounded between −1 and 1, the former corresponding to the case of perfect disagreement, the latter – to the case of perfect agreement. By averaging the values of τ over all pairs of subjects in a group, we obtain a measure of agreement for that group (Balkwell, Bates, and Garbino 1980; Karpiński 2012).

Table 5 Mean perceived differences between the occupations by condition

	Earnings	Skills	Responsibility	Stress	Complexity
Small inequality	811.75	1.54	1.64	1.45	1.56
Large inequality	6158.10	1.76	1.56	1.75	2.01
Difference	5346.35	0.22	−0.08	0.29	0.46
p value	0.00	0.00	0.82	0.00	0.00

Recall, however, that, according to Hypothesis 2, the expectation of more agreement in the large-inequality condition than in the small-inequality condition requires that differences between the occupations being rated be greater in the former than in the latter. That is, even if evaluations of just earnings are in greater agreement in the former condition than in the latter, one cannot reasonably conclude that Hypothesis 2 is supported unless one has established that perceived differences between the occupations are indeed greater in that condition than in the other one. Therefore, before going on to compare measures of agreement in the two conditions, we will compare the groups in terms of perceived differences between the occupations.

In order to quantitatively express how different the occupations are in the eyes of the subjects with respect to actual earnings, skills, responsibility, stress, and complexity, we use standard deviations of their subjective evaluations of the occupations in these dimensions. That is, for each participant in the study we compute standard deviation of his or her evaluations of the occupations in each of the five dimensions. In turn, the two inequality conditions are compared in terms of how different on average the occupations are perceived to be by subjects in these conditions along each dimension. Table 5 shows the results.

For each dimension of interest, Table 5 reports (*a*) the mean standard deviation in the small-inequality condition, (*b*) the mean standard deviation in the large

inequality condition, (*c*) the difference in the means, and (*d*) *p* value for one-tailed *t* test for the significance of the difference. As it turns out, subjects in the large-inequality condition perceive the differences between the occupations to be significantly greater than subjects in the small-inequality condition in all dimensions except for responsibility. The exception may be due to a somewhat confusing nature of the concept of responsibility, as some subjects complained during the post-experimental session, pointing out that it may refer to responsibility for others' well-being (in which case doctor, bricklayer, bus driver, and farm worker score high in this dimension, as their mistakes are potentially dangerous for people's health) or responsibility for employees (in which case CEO and shop owner bear more responsibility than others), etc. Apart from this one exception, however, the results in Table 5 are consistent with expectations.

Given that perceived differences between the occupations are greater in the large-inequality condition, we can conclude that the antecedent condition in Hypothesis 2 is met and proceed to a direct test of that hypothesis, that is, to the comparison of average levels of agreement in the two inequality conditions using the procedure outlined earlier on. In each inequality condition, there were 60 subjects, which gives a total of 1,770 pairs per condition. For each pair, the value of Kendall's τ was computed, as a measure of agreement between the amounts of just earnings proposed by the subjects in that pair. The average value of τ in the large-inequality condition equals 0.656 and in the small-inequality condition it equals 0.411. The difference between the means is statistically significant at p=0.05 (t=27.3, df=3538). This result is consistent with Hypothesis 2. Thus, we can conclude that the hypothesis is supported by our data.

Testing Hypothesis 3

In order to test Hypothesis 3, the following quantities were obtained for each subject:

1. estimate of actual earnings in the first occupation evaluated by a subject,
2. mean estimate of actual earnings in the remaining five occupations evaluated by the subject.

These two variables were then correlated, using Kendall's τ. An analogous procedure was then applied to the responses to the should-earn questions. Results of the analyses are presented in Table 3, where the relevant correlations and corresponding *p* values are shown. The *p* values refer to significance of the correlation, as determined by one-sided *t* test with df=58. We used one-sided test, because Hypothesis 3 predicts a positive correlation between the anchor and the responses. The number of degrees of freedom in the test reflects the fact that the subsample was further divided according to whether the occupations were printed in the questionnaire in the fixed order.

Table 6 Correlations between 'anchors' and 'responses' in responses to the do-earn and should-earn questions

	Just earnings		Actual earnings	
Occupation in fixed order?	Correlation	*p* value	Correlation	*p* value
Yes	0.580	0.000	0.474	0.000
No	0.605	0.003	0.616	0.005

As we can see, the correlations in Table 6 are positive, which is in line with Hypothesis 3. Further, the magnitudes for the responses to the do-earn questions are close to the magnitudes for the should-earn questions, which also agrees with the hypothesis, although one should note that the difference between the correlations is slightly greater in the case of the subjects for whom the occupations were printed in the fixed order. Thus, the proposition that subjects face uncertainty when they make judgments concerning both actual and just earnings is supported by our data.

However, it is important to remember that the evidence for anchoring effects in the present study is rather weak. The anchoring effects observed by Markovsky (1988) and Markovsky and Eriksson (2012) were powerful, because they found positive correlations between subjective estimates of just rewards and *randomly determined* levels of actual rewards. In the present study, the actual rewards (earnings) were not randomly assigned to occupations or manipulated by the researcher. However, if the subjects held firm beliefs concerning actual and just earnings in the occupations under study, one may suspect that the correlations between the first response and the mean of the remaining responses would be much smaller. Further studies on the anchoring effects in the responses to the do-earn and should-earn questions are clearly needed in order to investigate more fully conditions under which these responses are affected by anchoring effects. Recall that subjects in the present study were students, some of whom worked part time or were looking for a job. Perhaps they had confident views about actual pay, but only in regard to those jobs they were interested in and were they asked about actual earnings in these jobs, their responses would be less susceptible to anchoring biases. More generally, people may hold more or less firm beliefs about earnings in the occupations they are familiar with and for these jobs their responses to the do-earn and should-earn questions are less likely to be affected by anchors. This conjecture is worth looking into in future studies.

CONCLUSION

There are several implications the present experiment suggests as regards future studies using the do-earn and should-earn questions. The first one concerns the set of occupations whose earnings are evaluated by subjects. Depending on the composition of this set, the degree of agreement between subjective assessments of just earnings may appear to be relatively large or relatively small. Because the degree of agreement is a measure of normative consensus as to who should get how much for their work, this is a discouraging result, since it suggests that some non-random fluctuation is implicated in the measure that is a side-effect of the study design and has little to do with the phenomenon being studied. This feature may be rather difficult to overcome unless future studies make more informed choices as to the selection of the occupations to be included in the do-earn and should-earn questions. This would require a high-quality database with information on status characteristics of the occupations. A good place to start might be a recent classification of occupations, as developed by Domański, Sawiński, and Słomczyński (2009), and accompanying occupational scales which measure standing of the occupations with respect to skills, complexity, or material remuneration. One can therefore take into account the differences with respect to the characteristics when sampling the occupational titles to be included in the do-earn and should-earn questions. This way, the degree of status consistency in the sampled occupation can be explicitly controlled by the researcher.

Second, results presented in this paper give support to the hypothesis that ordering of the do-earn and should-earn question matters, as it affects which referential structures are salient for the participants in the study. Asking the do-earn question first activates an outcome-based referential structure, which links reward levels with what one has accomplished, given that actual earnings are a measure of accomplishment. If an outcome-based referential structure is made salient in the given situation, those who have accomplished more are believed to deserve more than those with little accomplishment. In other words, reward levels are matched with levels of achievement in this situation, contributing, in the context of the do-earn and should-earn studies, to the strength of association between actual and just earnings. Changing the order of the questions changes the referential belief that is salient to the subjects when making judgments concerning just pay for the occupations in question. That is, criteria in terms of which the amounts of just earnings for the occupations are decided are different when the should-earn question is asked first, the implication being that much caution is needed when designing a questionnaire containing the do-earn and should-earn questions to make sure that only the desired referential structures are activated by the research design.

The study also replicates results from earlier experiments (Markovsky 1988) showing that estimates of just rewards are subject to anchoring effects, although it has to be emphasized that the evidence for anchoring in the present study is rather weak. As mentioned above, the previous experiments explicitly manipulated the amounts of actual earnings that were salient to the subjects, whereas in the present study the actual earnings were estimated by the subjects themselves. However, the present study suggests that the estimates of actual earnings are affected by anchoring bias in much the same way as the estimates of just earnings. This is an interesting finding and further research might aim at working out the conditions affecting the degree of uncertainty that subjects face when they make both types of judgments.

NOTES

1 Detailed information on ISSP and ISJP, including their methodologies, questionnaires, sampling designs, and the like, can be found on their respective websites: www.issp.org and www.butler.edu/isjp/.

2 The principle of organized subsets, as a model of how information on status distinctions between actors is processed, was tested against a number of competing theoretical arguments. These alternative principles of processing status information, even though they differ in details, agree that social actors tend to *ignore* some information on status distinctions that are salient in the immediate situation. For instance, one of the alternative principles claims that actors take into account only those pieces of information that are beneficial to them and ignore those pieces that are not. Still another principle claims that actors focus on the largest subset of status distinctions that are consistent. Experimental tests (Balkwell et al. 1992; Berger et al. 1992) showed that the principle of organized subsets fares better as a predictor of behavior.

4 For a related argument, consult Balkwell, Bates, and Garbino (1980, 1981, 1982).

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