Pay transparency in the field: Envy-inducing social comparisons may reduce job satisfaction

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Abstract

Following policy shifts and research results about positive effects on employee retention and performance, pay transparency is increasingly debated as a suitable managerial tool in performance management. However, laboratory research in management and economics has pointed to associated costs of transparency (i.e., the “dark side” of pay transparency), among them envy and decays in cooperation. Interestingly, empirical evidence from the field is largely missing in this debate. In the present research, we exploit a naturally occurring shift in the transparency policy of a mid-sized firm to investigate whether falling short of one’s expectations regarding relative pay (i.e., a reference point violation) influences experience of episodic envy and, subsequently, affects job satisfaction. We administered surveys before and after the firm introduced a transparency initiative to measure a transparency-induced update of prior beliefs. The results show an effect of reference point violation on job satisfaction through episodic envy, an effect driven by people who initially hold optimistic views regarding their own relative pay (i.e., those low in victim-sensitivity).

Keywords:

Pay transparency; pay secrecy; envy; prospect theory; victim sensitivity; behavioral economics

Introduction

Owed to shifts in policy (Friedman, 2014) and accompanied by research results suggesting positive effects on task performance as well as employee retention (Belogolovsky & Bamberger, 2014), pay transparency has experienced a renaissance in management research and practice (Bamberger & Belogolovsky, 2017; Lawler, 1966). For example, pay transparency is suggested as one possible means to reduce the gender wage gap in Western organizations and, more generally, to increase fairness of wages among all employees (Colella, Paetzold, Zardkoohi, & Wesson, 2007; Day, 2007). Whereas it remains rather common in Western organizations to keep employee salaries undisclosed, countries like the US, UK, and Germany have recently initiated pay transparency policies comprising crucial, yet largely unexplored, effects on organizations in the coming years (Bamberger & Belogolovsky, 2017).

Thus, it is an important task for management research to increase the body of knowledge regarding the effects of pay transparency on employees and organizations. Taking a “reference-dependence” (Kahneman & Tversky, 1979) perspective on the topic, the goal of the present research is to contribute to this endeavor by investigating the effects of a shift from a secret to a transparent payment scheme on job satisfaction, defined here as “a pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience” (Locke, 1976, p. 1300). We investigate the effect in the context of an actual switch in the payment scheme in a large European information and communication technology company.

Building on economic theories of reference-dependent utility calculations (e.g., Bell, 1985; Köszegi & Rabin, 2007; Loomes & Sudgen, 1986) as well as on previous work on emotional consequences of relative deprivation in organizational psychology (Smith, Pettigrew, Pippin, & Bialosiewicz, 2011), we hypothesize and find that a shift to pay transparency may produce adverse effects if employees learn that their a-priori expectations about their relative pay positions are violated. Investigating potential psychological pathways underlying this

effect, we show that experiences of episodic envy follow violations of relative pay expectations, which in turn are associated with lower levels of job satisfaction. Importantly, we find that this effect is moderated by victim sensitivity. Victim sensitivity describes stable character differences and measures variations in the degree to which people see themselves as victims of injustice (Schmitt, 1996; Schmitt, Baumert, Gollwitzer, & Maes, 2010; Schmitt, Neumann, & Montada, 1995). As a consequence, victim sensitive individuals adopt cynical world-views that have previously been associated with lower life income (Stavrova & Ehlebracht, 2016) due to less exposure to potentially fruitful cooperative social interactions. Applied to the context of this study, we assume that only people who do not already possess highly cynical views about their relative deprivation respond to pay transparency in a negative way through elevated levels of episodic envy.

Besides our conceptual contribution, the present research also aims to enrich the literature by adding field data to the body of knowledge. In general, research on pay transparency has focused surprisingly little on actual firm data. A large amount of literature stems either from laboratory studies relying on student samples using rather stylized, context-free experimental paradigms (e.g., Bamberger & Belogolovsky, 2017; Charness & Kuhn, 2007) or cross-sectional surveys of employees (e.g., Lawler, 1966). Notable exceptions are rare. For example, Ockenfels, Sliwka and Werner (2015) explore how regional differences in the legal framework regarding the transparency of bonus payments differentially affect various branches of a large, multinational firm and find that local variations in transparency laws selectively enable employees to construct “social references”. Falling behind those naturally occurring comparison standards negatively influenced employees’ job satisfaction. Mas (2017) uses a switch in the transparency system of the State of California and finds that pay transparency increases pay compression, an effect driven by pressure on top-earners (see also Shaw, 2014). In a previous study of the transparency laws of the State of California, Card, Mas, Moretti and

Saez (2012) show that prompting individuals to compare their pay with their peers negatively affects job satisfaction of the below-median earners.

Our study contributes to the identification of transparency effects in the field by accompanying a firm prior and after a pay communication switch, which enables us to show how a switch from pay secrecy to transparency affects employees' experiences of episodic envy and subsequent effects on job satisfaction.

The bright and dark sides of transparency

Broadly speaking, there are two lines of views in terms of the benefits or threats of transparency: Proponents of pay transparency typically argue that knowledge about a co-worker's pay may positively affect work outcomes as transparency reduces uncertainty about pay dispersion and thus serves as a tool to increase organizational trust (Mayer, Davis, & Schoorman, 1995). Increased trust, in turn, is positively linked to perceived organizational fairness and employee commitment (Charness & Kuhn, 2007; van den Bos & Lind, 2002). Advocates of pay transparency therefore conclude that the provision of pay transparency improves employees' judgments of organizational fairness (i.e., informational, procedural and informational) and leads to more accurate inferences on the pay-for-performance link with positive effects on motivation (Bamberger & Belogolovsky, 2017; Shaw, 2014; Vroom, 1964), job performance, and employee retention (Belogolovsky & Bamberger, 2014).

However, other research suggests that this positive view of transparency falls short by ignoring the fallibility of the human nature. Gomez-Mejia and Balkin (1992), for example, found that pay transparency increases envy-provoking comparisons, which was recently supported in a laboratory study by Bamberger and Belogolovsky (2017). Among the most recent body of research (Bamberger & Belogolovsky, 2010; 2017; Belogolovsky & Bamberger, 2014; Belogolovsky, Bamberger, Alterman, & Wagner, 2016), the view that pay transparency incurs a set of negative emotions such as episodic envy emerged as a robust finding throughout

several laboratory studies. These results raise some suspicion about the effectiveness of transparency initiatives as negative emotions such as envy towards higher paid others are known to direct uncooperative behaviors in the workplace (Dogan & Vecchio, 2001).

A reference point perspective on pay transparency

Contemporary behavioral economic theorizing argues that the evaluation of an outcome is influenced by how it compares to a comparison standard (i.e., often coined a “reference point”). Therefore, outcomes are not merely judged in absolute terms, but crucially depend on the context in which they are observed. This view originates from the seminal contributions of Kahneman and Tversky (1973; 1979), who introduced prospect theory into economic thinking. Perhaps the key message following prospect theory is that “losses loom larger than gains”, showing an imbalance between negative and positive deviations from the reference point. Since its publication, it was repeatedly shown, both in terms of economic models (e.g., Bell, 1985; Kőszegi and Rabin, 2006; Loomes and Sugden, 1986) and experimental work (Abeler, Falk, Goette, & Huffman, 2011; Camerer et al., 2016; Dohmen, Falk, Fliessbach, Sunde, & Weber, 2011; Exley & Terry, 2017; Gneezy, Goette, Sprenger, & Zimmermann, 2017; Ockenfels et al., 2015), that people evaluate outcomes relatively and suffer stronger from losses than they benefit from gains. This means that individuals do not only evaluate outcomes absolutely, but perhaps more importantly, that their outcome evaluations depend on a reference point. Therefore, a key open question is what constitutes a comparison standard serving as the reference point.

Behavioral economics research suggests *social comparisons* as a potential reference point, for example in effort provision (Mas & Moretti, 2009), risk attitude (Bougheas, Nieboer, & Sefton, 2013; Schwerter, 2013), or financial decision-making (Bursztyn et al., 2014; O. Dijk, Holmen, & Kirchler, 2014). In line with a large body of literature supporting peer effects (e.g., Calvó-Armengol, Patacchini, & Zenou, 2009; Falk & Ichino, 2006; Herbst & Mas, 2015;

Sacerdote, 2001; Zimmerman, 2003) in economic decisions, this literature indicates that how individuals compare to peers may be a crucial factor in evaluation of own outcomes.

Previous research in management (e.g., Bamberger & Belogolovsky, 2017) argues that a switch from pay secrecy to pay transparency increases information vividness (i.e., the salience) of relative pay that may prompt employees to more explicitly rely on such comparison information when considering whether their own level of pay is justified and to infer the possibility of relative deprivation. Although, in principle, it is possible that subjective derivations of relative pay occur under pay secrecy as well, it is clear that explicit communication boosts the relevance of such social reference points (see Bamberger & Belogolovsky, 2017 as well as the references therein; Nisbett & Ross, 1980; Tversky & Kahneman, 1983; van Dijk & Zeelenberg, 2003),

Psychological research, on the other hand, has long argued that social comparisons are a ubiquitous cognitive strategy to derive self-relevant knowledge (e.g., Festinger, 1954; Mussweiler, 2003), especially under conditions of uncertainty (Mussweiler & Posten, 2012). One of the most basic social needs of humans is to be treated fairly and to receive what they are entitled to (Lerner, 1977). An employee's level of pay does not only serve a material function but serves as a feedback about the fairness of social exchanges (Thibaut & Kelley, 1959) as well as their relational standing in a social group (Tajfel & Turner, 1986). When evaluating an aspect central to one's identity, it is not surprising that people turn to social comparisons (Festinger, 1954). More specifically, research suggests that the direction of social comparison processes typically follows an upward tendency (Buunk & Gibbons, 2007), meaning that humans typically compare with those in better positions. This is consistent with evolutionary thinking according to which comparisons with lower others does not spur motivation (Lange & Crusius, 2015). However, upward social comparisons encompass a

variety of risk factors that may be detrimental for the effectiveness of an organization as they may increase negative emotional consequences in terms of envy.

Experience of envy as a psychological pathway to low job satisfaction

Envy is the painful emotion that may occur when people engage in comparisons with better off others (Lange & Crusius, 2015). Although experiences of envy vary consistently between individuals, it is an emotion experienced following situation-specific events, coined as “episodic envy”. Its motivating power can have both positive (“keeping up with the Joneses”) and destructive (“sabotaging the Joneses”) consequences. Episodic envy is based on negative comparisons in which “another individual obtains outcomes that one personally desires” (Dogan & Vecchio, 2001, p. 57; Parrott & Smith, 1993). According to Hirschman (1970), the perception of pay inequalities relative to a reference group leads to envy if an individual feels that his or her own pay expectations were not met while their co-workers could improve their economic situation. Thus, individuals react with envy towards pay inequalities if they evaluate them as a personal disadvantage. Using the research of expectations-based reference-dependent preferences (Kőszegi & Rabin, 2007), pay transparency allows individuals to update their *a-priori* expectation when they receive their relative feedback.

Building on existing research on pay transparency (e.g., Bamberger & Bologolovksy, 2017), the present research relies on episodic envy as a reaction to a reference point violation rather than as a personality trait (Cohen-Charash & Mueller, 2007; Schalin, 1979). In contrast to envy as a personality trait where individuals are chronically inclined to feel envious, episodic envy is an emotional state, which is limited to the conscious realization of another person’s advantage (Miceli & Castelfranchi, 2007). Because inequalities in pay tend to be concealed under pay secrecy, it is likely that episodic envy increases as pay becomes transparent. Generally, episodic envy is composed of harmful feelings like hatred, ill will and dissatisfaction which have been observed to lead to uncooperative behaviors in the workplace (Duffy, Scott,

Shaw, Tepper, & Aquino, 2012) and to decreased levels of helping behavior among people high in otherwise communal traits (Bamberger & Belogolovsky, 2017). Accordingly, making relative deprivation salient to individuals through transparent pay structures may affect them in harmful ways.

Effects of pay transparency: The moderating role of victim sensitivity

Previous research has provided mixed results in terms of consequences of pay transparency. Whereas some research has shown positive effects on variables such as employee retention and task performance (Belogolovsky & Bamberger, 2014), other research has provided results that put a less favorable view on transparency. The latter refers to findings where pay transparency lead to a lower inclination to help (Bamberger & Belogolovsky, 2017) or lower job satisfaction following from reference points violations (Card et al., 2012; Ockenfels et al., 2015). Potentially, these mixed results can be reconciled when taking systematic individual differences between employees into account. And in fact, research points to important moderators that qualify the general effects reported in pay transparency research. For example, Bamberger and Belogolovsky (2017) report that the effect of transparency on reduced levels of helping behavior is largely driven by individuals low in individualism beliefs, a personality trait tapping into the communal orientation of individuals. Furthermore, Bamberger and Belogolovsky (2010) show that individual differences in equity sensitivity qualifies the effect of pay transparency on task performance. For people highly tolerant of inequity, pay secrecy imposed a positive effect on task performance. Therefore, it is likely that transparency effects on reference point formation are also heterogeneous in terms of employees' personality.

As the revelation of relative pay is largely an issue of justice, it is likely that justice-related individual differences play a key role in how individuals respond to information of their co-worker' pay psychologically. Therefore, we focus on justice sensitivity, a personality

dimension measuring stable differences in the way in which people react emotionally to injustices and their individual level of rumination about such differences. While some people merely feel a sting of anger which quickly dissolves as time goes by, others experience a plethora of negative emotions and injustices stay on their minds for a long time (Gollwitzer, Süssenbach, & Hannuschke, 2015). The latter kind of individuals can be referred to as having a strong sensitivity to injustice from the victim's perspective (or "victim sensitivity", Gollwitzer et al., 2015). Victim sensitivity measures chronic individual differences in the justice motive (Gollwitzer, Rothmund, Alt, & Jekel, 2012; Gollwitzer et al., 2015; Schmitt, 1996; Schmitt et al., 2010; Schmitt et al., 1995) and was found to predict a variety of social cognitions, emotions, and behavior. Among them are suspicious cognitions about other humans, mistrust in social interaction, egoism, and uncooperativeness (Fetchenhauer & Huang, 2004; Gollwitzer & Rothmund, 2011; Gollwitzer, Schmitt, Schalke, Maes, & Baer, 2005).

Furthermore, it was found that victim sensitive individuals are particularly sensitive to "mean intentions" (SeMI model; cf. Gollwitzer & Rothmund, 2009; Gollwitzer, Rothmund, & Süssenbach, 2013), leading them to harboring a latent fear of being exploited and as well as being chronically hypersensitive to cues that are associated with untrustworthiness (Gollwitzer et al., 2015).

In the last two decades, many empirical findings were put forward to support that notion. Victim sensitive individuals are more sensitive to even slight cues of untrustworthiness (Gollwitzer et al., 2012; Gollwitzer, Rothmund, Pfeiffer, & Ensenbach, 2009), even if these cues have only limited prognostic validity for a situation in which one might be exploited (Rothmund, Gollwitzer, Bender, & Klimmt, 2015; Rothmund, Gollwitzer, & Klimmt, 2011). Thus, victim sensitivity is associated with having a higher inclination to show aggressive and destructive behaviors (Bondü & Krahé, 2015), especially if they sense a risk of being exploited (Mohiyeddini & Schmitt, 1997; Schmitt & Dörfel, 1999; Schmitt & Mohiyeddini, 1996).

Finally, they were found to make more egoistic choices in social dilemmas (Fetchenhauer & Huang, 2004), and are less willing to help others in need (Gollwitzer et al., 2005), both in interpersonal and in intergroup situations (Süsslenbach & Gollwitzer, 2015).

Perhaps most importantly to the present research, they are more envious and more jealous (Schmitt, Gollwitzer, Maes, & Arbach, 2005), less willing to accept apologies from their partners (Gerlach, Allemand, Agroskin, & Denissen, 2012), and more likely to oppose political reforms because they attribute political reform to malicious motives of politicians (Agroskin, Jonas, & Traut-Mattausch, 2015). In other words, victim sensitive individuals are cynical and suspicious in social interactions. Cynicism and suspicion themselves have been associated with various justice-related outcomes. For example, cynical people report to receive less pay, which turns out to be self-fulfilling as people's cynicism leads them to reap less rewards from cooperation (Stavrova & Ehlebracht, 2016). In the context of pay transparency, victim sensitivity may therefore qualify the effects in important ways.

Conceptual model and hypotheses

Based on the reasoning above, we derived a conceptual model that assigns a central role to reference points violations (see Figure 1).

Insert Figure 1 about here

In general, we expect a reference point violation (i.e., falling short of one's expectation) incurs experiences of episodic envy. Experiences of episodic envy, in turn, negatively influence job satisfaction. Importantly, we expect that the influence of a reference point violation on episodic envy depends on victim sensitivity. As people high in victim sensitivity generally have a suspicious mindset about receiving just deserts, transparency of pay should not further elevate their levels of envy. Rather, we expect experiences of episodic envy to occur among people

typically not feeling victimized, thus, people *low* in victim sensitivity. As a prior condition for our conceptual model, we test the following prerequisite.

Hypothesis 1: People high in victim sensitivity have a more cynical belief about their level of pay before the pay transparency initiative. They believe that they earn less than comparable others before they receive feedback about their relative pay.

The following hypotheses are tested to find support for our conceptual model.

Hypothesis 2a: Reference point violations lead to increased feelings of episodic envy.

Hypothesis 2b: The effect of a reference point violation on feelings of episodic envy is moderated by individual differences in victim sensitivity.

Hypothesis 3a: There exists an indirect effect of reference point violations on job satisfaction through experiences of episodic envy.

Hypothesis 3b: The mediation in Hypothesis 3a is additionally moderated by individual differences in victim sensitivity following the conceptual model (see Figure 1).

Materials and method

Sample

The data were collected in an information and communication technology company with a total workforce of about 800 employees, headquartered in Germany. The company operates various smaller branch offices in different European countries. All current employees received an email invitation by the CEO of the company, in which they were asked to participate in a study related to a pay transparency initiative and which included a link to an online-questionnaire. Using this procedure, we managed to recruit $N = 327$ participants in a first wave, who completed at least 50 percent of the questions provided. Of these, $N = 102$ participants (39 females, one missing value) were then successfully recruited for the second wave and could clearly be matched to the responses from the first wave. Non-responder analyses showed no significant differences in terms of age, $\chi^2(4, N = 327) = 4.73, p = .32$, gender, $\chi^2(2, N = 327)$

= 4.99, $p = .08$, education, $\chi^2 (3, N = 327) = 3.84, p = .28$, home office location, $\chi^2 (4, N = 327) = 7.18, p = .13$, or job families, $\chi^2 (9, N = 327) = 5.81, p = .76$. The most frequently ($n = 41$) represented age group ranged from 30 to 35 years. A majority of $n = 64$ participants reported to possess the highest level of education (master's degree or equivalent). A majority of $n = 88$ participants were located in the headquarters of the company. Concerning job families, the largest group of $n = 33$ participants was assigned to software engineering, $n = 17$ to business services such as human resources, legal etc., and $n = 15$ to product and design. According to the senior manager responsible for human resources and organizational development, the structure of our final sample represented a good and representative image of the general structure of the employees at the company.

Procedure and measures

The first wave's survey was conducted at the beginning of April 2017, shortly preceding the introduction of company-wide pay transparency initiative. The initiative became effective two weeks later. Prior to this, all employees in the company were familiarized with the pay transparency initiative during workshops, explaining the underlying motivation and the general bundling structure of different jobs for reasons of comparison. Employees were shown an example chart of the pay transparency information, including some information on the corresponding comparison group (job group, job level, number of employees, and the median yearly salary of this comparison group). The chart further consisted of an axis representing a fictitious salary range (e.g., ranging from 30.000€ to 70.000€). Above this axis, one symbol represented a fictitious internal median of the corresponding comparison group, and another symbol represented the fictitious external median (a comparison to other companies) of the corresponding comparison group. In addition, different circles represented hypothetical employees included in the corresponding comparison group. This procedure ensured that each employee was able to understand how to compare his or her own salary with different

employees from the same company in a similar job role/position (without knowing which salary corresponds to which employee), and with an internal and external median salary of the corresponding comparison group once the transparency initiative has gone live.

The goal of the first-wave survey was described as a scientific evaluation of the pay transparency initiative and participants also learned that there would be a short follow-up questionnaire after the pay transparency has been introduced. In order to increase trust and compliance on the part of the employees, they read that the scientific evaluation and data storage would be conducted by a scientific institution and that the company would only receive aggregated data reports, so that all data would be treated confidentially. Next, participants were asked to provide a code word to match them in a second-wave survey. The next part of the questionnaire consisted of the sociodemographic questions (gender, age, education, various job-classification-related measures, and income class). Next, participants were prompted to indicate their expected salary in comparison to similar positions/job roles from the company on a 7-point scale (-3 = clearly lower; 3 = clearly higher). Then, participants were prompted to indicate their expected salary in comparison to similar positions/job roles from other companies on a 7-point scale (-3 = clearly lower; 3 = clearly higher). Next, participants completed the ten items of the victim dimension of the justice sensitivity scale (Schmitt et al., 2005) on a 6-point scale (1 = strongly disagree; 6 = strongly agree). Sample items of this reliable measure ($\alpha = .83$) include “It bothers me when others receive something that ought to be mine” or “It makes me angry when others receive a reward that I have earned”. Then, participants provided a global measure of current job satisfaction by answering the question “Taking everything into consideration, how do you feel about your job as a whole?” on a 7-point scale ranging from “extremely dissatisfied” to “extremely satisfied”. Previous research indicates that job satisfaction is one of the very few constructs for which global measures consisting of one item may be as valid as composite measures (Dolbier, Webster, McCalister, Mallon, & Steinhardt,

2005). Due to reasons of brevity of the questionnaire and the corresponding demands of the company, we therefore opted for this one-item measure. The sequence of measures was randomized in order to control for systematic errors, which otherwise might result from sequential effects. Next, participants completed a number of additional measures, which are unrelated to the present research. At the end of the questionnaire, participants were thanked for their participation and they received the contact information of the scientific contact person.

The second-wave survey was conducted at the end of July 2017, roughly three months after the pay transparency initiative had gone live. According to the senior manager responsible for human resources and organizational development, who monitored the whole process, there were no noticeable reactions on the part of the employees, neither in a positive nor in a negative direction. In the introduction, participants were thanked for their participation in the first survey and they were reminded that the data from the first survey were only useful if they completed this second survey, as well. Again, they read that the scientific evaluation and data storage would be conducted by a scientific institution and that the company would only receive aggregated data reports, so that all data would be treated confidentially. Next, they were prompted to provide the code word of the first-wave survey. In the next part of the questionnaire, we again took a number of sociodemographic questions. Apart from the fact that theoretically some changes in the job-classification-related measures indeed would have been possible, this procedure additionally served as a backup in order to assign participants of the second survey correctly to the first survey, who failed to provide a correct code word. Next, participants were prompted to indicate their current salary in comparison to similar positions/job roles from the company on a 7-point scale (-3 = clearly lower; 3 = clearly higher). Then, participants were asked to indicate their current salary in comparison to similar positions/job roles from other companies on a 7-point scale (-3 = clearly lower; 3 = clearly higher). Participants were then asked to evaluate the overall efficacy of the salary transparency

initiative (“After the introduction of salary transparency, my ability to compare my salary level with that of similar positions/job roles from the company has improved”) on a 6-point scale (1 = strongly disagree; 6 = strongly agree). This item served as some sort of manipulation check in order to make sure that the salary transparency indeed enabled employees to compare themselves with similar others from the company, which should also increase internal validity of our study. Next, participants completed a 9-item measure of episodic envy (Cohen-Charash & Mueller, 2007), which we slightly adapted to the context of our study. To elicit episodic envy, participants are usually asked to compare themselves to a person in their organization, whom they perceive themselves to be more successful. As we were interested in a measure of envious reaction towards employees of the same comparison group with a higher salary, we asked our participants to recall the two colleagues in similar positions/job roles with the highest salaries. By referring to two colleagues, we wanted to ensure that this comparison will also make sense, if the corresponding employee earns a high salary and can therefore at least use the other high earning colleague for comparison. Participants were then asked to what extent they agreed or disagreed with the following statements taken from the Cohen-Charash & Mueller (2007) measure on a 6-point scale (1 = strongly disagree; 6 = strongly agree). Some of the items (e.g., “I lack some of things X has”) were slightly rephrased in order to fit with our instructions (e.g., “I lack some of things the two colleagues have”), whereas for some of the items this rephrasing was not necessary (e.g., “I feel bitter”; “I feel envious”). Reliability was satisfying ($\alpha = .76$). Then, similar to the procedure from the first survey, the participants provided a global measure of current job satisfaction by answering the question “Taking everything into consideration, how do you feel about your job as a whole?” on a 7-point scale ranging from “extremely dissatisfied” to “extremely satisfied”. The sequence of measures was randomized in order to control for systematic errors, which otherwise might result from sequential effects. Next, participants completed a number of additional measures, which are

unrelated to the present research. At the end of the questionnaire, participants were thanked for their participation and they received the contact information of the scientific partner.

Results

Preliminary analyses

Because all of the data were self-reported, we first screened our variables for common method bias prior to all consecutive statistical tests. For this, Harman's single-factor test was calculated through Explorative Factor Analysis to check whether common method variance accounts for a considerable amount of the variance in all surveyed items (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). The results revealed that the expected amount of factors extracted for each variable explain 69% of the total variance while the single factor accounted for only 25.33% of the total variance. Based on this analysis, a common method bias does not present a problem to our study.

As a further step to ensure the quality of our results, we examined whether the change from secret towards transparent pay was effective (i.e., manipulation check). For this analysis, we evaluated participants' answers at T2 where they indicated (on a 7-point Likert scale from 1 (Strongly disagree) to 7 (Strongly agree)) to which degree they were better able to compare their own salary with that of colleagues from similar positions/job roles after the salary transparency introduction. The single-item measure was adapted from Bamberger and Belogolovsky's (2010) laboratory studies in which they manipulated secret and transparent salary conditions. Descriptive results show that 85% either *strongly agree*, *agree* or *somewhat agree* to be better able to compare their relative salary positions after salary transparency was introduced ($M = 4.47$, $SD = 1.17$). This indicates that the change from pay secrecy to pay transparency was noticed by the majority of participants and thus effective.

A preliminary condition for our conceptual model was that victim sensitivity would not affect the perception of increased pay information available after the introduction of pay

transparency (i.e., manipulation check). The nonsignificant correlation between victim sensitivity and the single item manipulation check supports our assumption ($r(99) = -.046$, *ns*, see table 1).

Composition of reference point violation variable

To investigate our theoretical model, reference point violation was computed as a difference variable between ‘Relative Salary’ at T2: “Now that the salary transparency initiative has gone live, please indicate where your own salary is currently located in comparison to similar positions/job roles from your company” and ‘Relative Salary’ at T1: “Please indicate your best guess: where would you currently locate your own salary in comparison to similar positions/job roles from your company?”. The resulting difference scores ranged between -4 and +3. Negative scores (< 0) resulted from a negative difference between the actual relative pay position under pay transparency (T2) and the expected relative pay position under pay secrecy (T1). In other words, individuals with negative scores expected to earn relatively more than their colleagues under pay secrecy and learned under pay transparency that they in fact earned less. Negative scores can therefore be interpreted as reference point violation. Likewise, scores ≥ 0 implied that individuals’ guesses on their relative salary position under pay secrecy were either confirmed under pay transparency (scores = 0) or exceeded (scores > 0). Thus, scores ≥ 0 can be interpreted as *no* (negative) reference point violation.

Main results

Summaries of mean values, standard deviations and bivariate correlations are displayed in Table 1.

Insert Table 1 about here

Following our argumentation that individuals high in victim sensitivity are more cynical about their relative pay position prior to pay transparency (*Hypothesis 1*), we tested for a significant and negative relationship between victim sensitivity and the expected relative salary position under pay secrecy. There was a significant negative relationship between victim sensitivity and expected pay positions in relation to other co-workers in similar job roles/positions, $r(99) = -.218$, $p < .05$. Thus, people high in victim sensitivity expect to be paid relatively less than people low in victim sensitivity, in line with *Hypothesis 1*.

To test whether reference point violation leads to increased episodic envy (*Hypothesis 2a*), a simple correlation was calculated. Without taking into account victim sensitivity as a moderator, the experience of reference point violation does not *per se* lead to increased levels of envy, $r(99) = -.111$, *ns*. However, in line with our conceptual model, we would expect that support for *Hypothesis 2a* is driven by people low in victim sensitivity. Thus, a non-significant effect may just results from the fact that – on average – our sample does not consist of people with particular negative victim sensitivity.

Turning to *Hypothesis 2b*, we tested whether a reference point violation affects episodic envy when accounting for individual differences in victim-sensitivity. To do so, we relied on the PROCESS software provided by Hayes (2013), using 5.000 reiterations in all bootstrapped tests. *Hypothesis 2b* assessed a simple moderation using Model 1 of PROCESS. The interaction of a reference point violation and victim sensitivity is significantly associated with episodic envy, $\beta = .2906$, $p < .05$. Figure 2 depicts the direction of this interaction. Specifically, the results show that, jointly, a reference point violation, victim sensitivity, and their interaction account for 28% of the variance in episodic envy, $R^2 = .2782$, $F(3, 90) = 11.5633$, $p < .001$. Simple-slopes analyses exhibit that the interaction effect on episodic envy is significant for individuals low (-1 SD) in victim sensitivity ($\beta = -.2541$, $p < .05$) but not for individuals moderate (0) and high (+1 SD) in victim sensitivity, $\beta = -.0649$, *ns*; $\beta = .1244$, *ns* (Aiken &

West, 1991). This result is in line with our conceptual model suggesting that pay transparency may have negative effects on people who typically expect not to be the victim of injustices.

Insert Figure 2 about here

In a next step, we investigated whether episodic envy mediates the relationship between a reference point violation and job satisfaction (*Hypothesis 3a*). Testing the mediation effect of episodic envy in the relationship between a reference point violation and job satisfaction without accounting for victim sensitivity as a moderator, the effect does not emerge as significant. The 95% bias-corrected confidence interval for the indirect effect of reference point violation on job satisfaction at T2 through episodic envy included zero, $\beta = .268$; $SE = .0278$; 95 % CI [-.0233; .0874]. However, in a similar logic as presented in *Hypotheses 2a* and *2b*, the effect should be primarily driven by people low in victim sensitivity. As above, this leads to the logical conclusion that the proposed relationship largely depends on whether the effect for people low in victim sensitivity is large enough to drive a significant effect for the total sample. When not accounting for victim sensitivity, at least in the present sample, episodic envy does not lead to a significant mediation effect.

Hypothesis 3b specifically accounts for victim sensitivity as a moderator in the relationship between reference point violation and job satisfaction through episodic envy. We calculated a moderated mediation and find strong support for our theoretical model. Using PROCESS (Hayes 2013) model 7 show a significant conditional indirect effect of reference point violation on job satisfaction at T2 through episodic envy for distinct levels of victim sensitivity (conditional indirect effect = $-.1089$, $SE = .0596$, 95% CI [-.2702, $-.0205$]). The 95% bias-corrected confidence interval for low levels of victim sensitivity (-1 SD) did not include 0 which means that the indirect effect between reference point violation and job satisfaction at

T2 was significant and positive for individuals low in victim sensitivity, $\beta = .1258$ SE = .0569, 95% CI [.0370, .2670]. The indirect effect for individuals high in victim sensitivity (+1 SD) was not significant because the 95% bias-corrected confidence interval included 0, $\beta = -.0032$, SE = .0958, 95% CI [-.1936, .1872]. Thus, individuals who show a low victim sensitive personality report less job satisfaction when they fall behind their relative pay expectancies (i.e., reference point violation). No such effects occurred for people with high or average levels victim sensitivity.

The overall pattern of these results thus confirms our theoretical model suggesting that pay transparency may lead to decreased job satisfaction when employees experience a reference point violation, but only for people low in victim sensitivity. More concretely, our results indicate that job satisfaction is significantly and negatively decreased for individuals who – as a result of pay transparency – experience reference point violation and have low levels of victim sensitivity.

Robustness checks

To address the robustness of our effect, a robustness check accounting for several control variables was calculated in addition. In general, accounting for several control variables does not alter the interpretation of our model results. Controlling for baseline job satisfaction measured at T1, as well as age, gender, income, and the subjective feeling about a better comparison base following the pay transparency initiative corroborates our results. First, confirming construct consistency, job satisfaction at T1 is significantly associated with job satisfaction at T2 ($\beta = .50$, $p < .0005$). Additionally, the perceived increase in salary transparency after its introduction (i.e., measured by the manipulation check) is also significantly and positively correlated with job satisfaction at T2 ($\beta = .2944$, $p < .01$). The analysis further revealed that our significant moderated mediation effect is maintained (conditional indirect effect = $-.1089$, SE = .0596, 95% CI [-.2702, -.0205]). Therefore, episodic

envy mediates the relationship between reference point violation and job satisfaction at T2 for low levels of victim sensitivity in addition to the significant associations between our control variables (i.e., job satisfaction at T1 and manipulation check) and job satisfaction at T2. All other controls (age, $\beta = .1124$, *ns*; gender, $\beta = .00$, *ns*; income, $\beta = .0102$, *ns*) were unrelated to our dependent variable. Together, the results argue in favor of the robustness of our findings.

Discussion and conclusion

Following an increased interest in pay transparency research in recent years (e.g. Bamberger & Belogolovsky, 2017; Mas, 2017), the present research contributed field results from a large, European information and communication technology company. Using a two-wave survey, the present research provided support that transparency-induced reference points violations lead to elevated levels of episodic envy, which in turn translate into lower degrees of job satisfaction. The results are qualified by stable interindividual differences in the victim sensitivity personality trait (e.g. Gollwitzer et al., 2005). Whereas people high in victim sensitivity hold chronic cynical beliefs about the fairness they receive, people otherwise low in victim sensitivity are particularly affected by reference point violations incurred by the pay transparency initiative of the firm. The results could be interpreted in a way that there is not much to gain from pay transparency. While there are negative effects of a reference point violation for people low in victim sensitivity, people high in victim sensitivity do not reduce their level of episodic envy when learning that they are not victimized. Their level of episodic envy remains unaffected, even when they are positively surprised regarding their relative income following the transparency initiative.

Our results are meaningful for organizational practice in various ways. First, against the background that pay transparency may have detrimental effects on social behavior (Bamberger, & Belogolovsky, 2017; Ockenfels et al., 2015), it is questionable whether transparency laws can actually increase organizational effectiveness, especially in industries with highly

interdependent task structures (Williams, 2007). However, if transparency is taken as a “legal given”, organizations may need to respond optimally by re-designing their compensation systems to motivate helping, for example by turning it into an individually measurable metric. “Economic engineering” research on the behavioral design of incentive systems (Berger, Sliwka, & Herbertz, 2011; Bolton & Ockenfels, 2012) has provided several use-cases of how this goal may be reached.

Second, envy has been conceptualized as a two-edged sword (Lange & Crusius, 2015). Whereas malicious envy may lead to uncooperative and destructive behaviors, benign envy has been associated with productive motivational consequences. Thus, it may be promising for organizations to steer the direction of envy. Quite likely, whether envy takes the form of benign or malicious envy may depend on whether pay differences are seen as just. Therefore, it may be fruitful for organizations to not only include information on relative pay, but also by raising awareness about the underlying reasons that are causing pay differences. Potentially, employees who understand the origin of pay differences better are able to use these attributions to increase their own level of productivity and to infer how they are able to reach higher pay levels themselves. Companies may need to invest in ways to reduce psychological biases such as the actor-observer bias (Jones & Nisbett, 1971) or overconfidence (Jones & Harris, 1967) as these are fundamental in the correct attribution of one’s contribution to the company and the derived entitlements following these contributions.

Finally, as the evidence of detrimental effects regarding pay transparency accumulates, law makers need to question their *modus operandi* arguing that pay transparency is a productive policy tool. The human psyche may be a real-world constraint while theoretical results supporting pay transparency may not be transferable to the field easily. Especially the contributions of behavioral economics (Kahnemann, 2011; Thaler, 1991, for an overview) have consistently shown that realistic assumptions about human behavior are an important element

to consider when trying to put economic theories to work in the field, in particular when executing organizational strategies intended to increase the functioning of modern companies.

FIGURE 1
Conceptual Model

FIGURE 2
Moderating effects of victim sensitivity on the relationship between reference point violation (RVP) and episodic envy

Table 1

Means, standard deviations and correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
<i>Controls</i>	1 Reference Point Violation ^a	-0.34	1.41	1								
	2 Episodic Envy ^c	2.54	.689	-0.11	1							
	3 Victim Sensitivity ^b	3.67	.672	0.04	.43**	1						
	4 Job Satisfaction at T2 ^c	5.05	1.33	0.03	-.26*	-.35**	1					
	5 Job Satisfaction at T1 ^b	5.41	1.10	-0.07	-.11	-.32**	.45**	1				
	6 Age ^d	-	-	-0.05	.09	.02	.09	.05	1			
	7 Gender ^e	-	-	0.01	.31**	.20	-.03	.09	.13	1		
	8 Income ^f	-	-	0.07	-.24*	-.15	.18	.15	.45**	-.17	1	
	9 Manipulation Check	4.47	1.17	-0.13	-.02	-.05	.28**	.06	.01	-.11	.04	1

Note. N = 102; ^a Computed as a difference variable between 'Relative Salary' at T2: "Now that the salary transparency initiative has gone live, please indicate where your own salary is currently located in comparison to similar positions/job roles from your company" and 'Relative Salary' at T1: "Please indicate your best guess: where would you currently locate your own salary in comparison to similar positions/job roles from your company?", scores < 0 fall within reference point violation, scores ≥ 0 fall within no reference point violation; ^b Measured at T1; ^c Measured at T2; ^d 1 = <30, 2 = 30-35, 3 = 36-40, 4 = 41-45, 5 = >45; ^e 1 = Male, 2 = Female, 3 = Don't want to answer; ^f 2 = 24.999 or less, 3 = 25.000-34.999, 4 = 35.000-44.999, 5 = 45.000-54.999, 6 = 55.000-64.999, 7 = 65.000-74.999, 8 = 75.000-84.999, 9 = 85.000-94.999, 10 = 95.000 or more; ** p < .01; * p < .05.

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