Group Dynamics: Theory, Research, and Practice

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Work Values and Work Engagement Within Teams: The Mediating Role of Need Satisfaction

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Building on self-determination theory, we examined the relationship between shared work values and work engagement within teams. Specifically, we expected that employees would show higher levels of work engagement when working in teams characterized by intrinsic relative to extrinsic work values, and that this relationship can be explained by basic psychological need satisfaction. Multilevel analyses using data from 307 employees taken from 31 teams working in a variety of sectors in Belgium and the Netherlands largely supported the hypotheses: Individual-level need satisfaction partially mediated the relationship between team-level work values and individual-level engagement. Implications for practice and theory are discussed.

Keywords: work values, work engagement, need satisfaction, self-determination theory, teams

Values form the core concept across the social sciences (Rokeach, 1973). Values—personal beliefs about what is right and wrong—provide an important explanation for understanding what makes people tick. Work values are personal beliefs about what is worth doing at work (Chou, Wang, Wang, Huang, & Cheng, 2008). Unlike most previous studies, the current study aims to investigate the effects of team-level, rather than individual-level, work values. Like Chou et al. (2008), we use the term "shared" to indicate that members of the same team hold similar work values. Following self-determination theory (SDT; Deci & Ryan, 2000), we distinguish between intrinsic and extrinsic team-level shared work values. We propose that individuals within teams that are characterized by more intrinsic, relative to extrinsic, work values will show higher levels of work engagement: That is, they will have a more persistent and pervasive work-related state of mind, characterized by vigor, dedication, and absorption (Schaufeli, Bakker, & Salanova, 2006). Moreover, we unravel the process through which shared work values exercise their impact and, propose that intrinsic, relative to extrinsic, team values are related to work engagement because they satisfy basic psychological needs, as defined in SDT. Our research model, which shows these hypothesized relationships, is presented in Figure 1.

By examining need satisfaction as a mediator in the relationship between shared work values and work engagement, our contributions to the literature are threefold. First, with few exceptions (Chou et al., 2008; Schyns, 2006; Young & Parker, 1999), work values have been studied as being attributes of the person. The dominance of studies focusing on individual-level work values is somewhat surprising given that work values also exist at levels other than this

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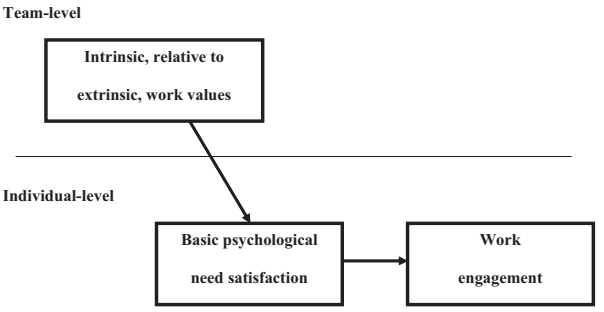

Figure 1. Research model linking team-level and individual-level constructs.

one, for example, the team level (Chou et al., 2008). Theoretical justification for the existence of team-level work values is provided by Schneider's (1987) attraction-selection-attrition model, and the group socialization literature (Moreland & Levine, 2001). The present study puts the existence of team values to the fore and extends the limited literature on team-level work values by examining their cross-level impact on work engagement.

Second, we rely on SDT to conceptualize shared work values and to explain the cross-level relationship between these values and individual-level work engagement. SDT is a well-supported theory that has been successfully applied to a wealth of motivational settings, including the workplace (Gagné & Deci, 2005; Van den Broeck, Vansteenkiste, De Witte, & Lens, 2008). To our knowledge, SDT has not yet been tested at the team level. To fill this void therefore, this study is among the first to examine the usefulness of SDT in defining values at the team level, and to explain how this team-level input influences individual-level output.

Third, we examine the team-level predictors of an outcome that has gained momentum in work and organizational psychology: work engagement (Bakker, 2011; Christian, Garza, & Slaughter, 2011; Halbesleben, 2010). Previous studies focused predominantly on the individual-level predictors of work engagement, mostly job resources (e.g., autonomy), and personal resources (e.g., self-efficacy; Bakker, Schaufeli, Leiter, & Taris, 2008). In doing so, prior research has largely ignored the possibility that work engagement may also be influenced by environment, leading to a call for more research on contextual predictors (Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013). In response, we focus on the associations of social context, and, in particular, shared team values, on the work engagement of each team member.

Theoretical Background and Hypotheses

Self-Determination Theory and Shared Work Values

Within the SDT framework, work values play an important role. SDT distinguishes between two broad types of work values, namely intrinsic and extrinsic (Van den Broeck, Vansteenkiste, & De Witte, 2008; Vansteenkiste et al., 2007). According to SDT, attaching importance to intrinsic values reflects "employees' natural desire to actualize, develop and grow at the work place (i.e., self-development), to build meaningful and satisfying relationships with colleagues (i.e., affiliation), and to help people in need (i.e., community contribution)" (Vansteenkiste et al., 2007, p. 253). Extrinsic work values, in contrast, pertain to striving for traditional success indicators, including prestige, status, and high income. Extrinsically orientated employees want to be superior to others and seek social approval. For them, work activities provide a means through which to gain admiration and self-worth (Vansteenkiste et al., 2007).

According to SDT, the pursuit of intrinsic over extrinsic values leads to positive outcomes, whereas the pursuit of extrinsic over intrinsic values has fairly negative implications. Notably, intrinsic and extrinsic work values do not generally exclude each other. Employees may thus pursue both intrinsic and extrinsic values at the same time. According to SDT, the pursuit of

extrinsic values may not be detrimental per se, but will negatively affect individuals' functioning only when they overrule intrinsic values.

In line with this view, research has shown that attaching a high level of importance to intrinsic values and low importance to those that are extrinsic, is positively related to well-being, for example, in terms of positive affect, self-esteem, and life satisfaction, and negatively with indicators of ill-being, including negative affect, distress, and substance use (Lekes, Hope, Gouveia, Koestner, & Philippe, 2012; Romero, Gómez-Fraguela, & Villar, 2012; Vansteenkiste, Lens, & Deci, 2006). Similarly, in the context of work, it was shown that the pursuit of extrinsic over intrinsic work values relates negatively to job satisfaction, job search flexibility, vigor, and happiness, and positively to burnout, work-family conflict, and turnover-intentions (Roche & Haar, 2013; Van den Broeck, Vansteenkiste, Lens, & De Witte, 2010; Vansteenkiste et al., 2007).

Building on the conceptualization of individual work values, we advance that intrinsic and extrinsic values can also be conceptualized at the team level: Members of intrinsically oriented work teams collectively value personal growth and affiliation, whereas members of extrinsically oriented work teams collectively share the belief that success entails the pursuit of prestige, status, and high income. This is not to imply that all team members should hold exactly the same values, only that a substantial proportion of team members agrees with each other about what is seen as important within the team.

Several processes may act in concert to explain the emergence of shared team work values. Consistent with the person-environment fit literature (Kristof-Brown, Zimmerman, & Johnson, 2005), Schneider (1987; Schneider, Goldstein, & Smith, 1995), in his ASA framework, highlights the importance of three such processes: attraction, selection, and attrition. First, similarity in work values has been found to be an important determinant of attraction to organizations (Judge & Cable, 1997). Second, when assessing applicants, interviewers account for the fit between the applicants' work values and the values predominant in the work environment (Parsons, Cable, & Wilkerson, 1999). Third, as evidenced by several meta-analyses (Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005; Kristof-Brown et al., 2005), employees are likely to leave the organization if their work values do not fit those of the organization. We propose that the processes of attraction, selection, and attrition not only operate at the organizational level but also, at the team level, such that team members may share the same values.

Additionally, socialization may explain the emergence of shared work values. Socialization describes a process whereby a newcomer to an organization or a team learns, among other things, organizational and team values (Moreland & Levine, 2001). Through various socialization tactics, including orientation sessions, training programs, mentoring, and information dissemination, newcomers are taught what is considered appropriate and important both in the organization and in the team. This aligns with the idea that work values are to some extent dynamic: Individuals who continuously work in the same work environment may change their work values over time to align them more closely with the environmental demands (Wageman & Gordon, 2005). Together, these processes, over time, should facilitate and reinforce the emergence of shared work values in teams.

When team members hold similar views in terms of work values, those shared values result in congruous interpretations and compatible perceptions about environments (Cannon-Bowers & Salas, 2001; Chou et al., 2008). We propose that when team members share intrinsic, relative to extrinsic, work values, it enables them similarly to interpret the work environment as promoting personal growth and development, which, in turn, may result in increased levels of work engagement. Schaufeli and Bakker (2004) define work engagement as "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (p. 295). Vigor describes the willingness to invest effort in one's work and refers to high levels of persistence, energy, and mental resilience while working. Dedication refers to being strongly involved in one's work, and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption implies being fully immersed in one's work, such that time passes quickly and one has difficulties detaching oneself from work. Although related, work engagement is conceptually and empiri-

cally distinct from constructs such as job satisfaction, organizational commitment, job involvement, organizational citizenship behavior, and intention to remain at work (Bakker, 2011).

We argue that individuals will be more engaged when working in teams that prioritize intrinsic over extrinsic work values. Moreover, in line with SDT (Vansteenkiste et al., 2006), we advance that basic psychological need satisfaction is the underlying mechanism through which intrinsic as opposed to extrinsic team-level shared work values associate with individual-level work engagement. In the following paragraph, we discuss the link between shared work values and basic need satisfaction, as well as the link between basic need satisfaction and work engagement.

The Association Between Shared Work Values, Fulfillment of Basic Psychological Needs, and Work Engagement

At the heart of SDT is the postulate that individuals have three basic psychological needs: the needs for autonomy, competence, and relatedness (Deci & Ryan, 2000). The need for autonomy concerns the desire to experience a sense of volition and self-endorsement with respect to one's actions (de Charms, 1968; Deci, 1975). The need for competence refers to feeling effective in one's actions (White, 1959). The need for relatedness pertains to caring for and feeling cared for by important others (Baumeister & Leary, 1995).

In SDT, basic psychological needs are considered as the basis for individuals' growth-oriented movement. The basic psychological needs are necessities for healthy development, just as much as water and food are important for individuals' physical functioning (Deci & Ryan, 2000; Van den Broeck et al., 2008). The satisfaction of people's needs is therefore the fundamental input for promoting integrated functioning, which is achieved when people become gradually more likely to act in accordance with a refined and harmonious set of personal values and interest (Ryan, 1995). SDT thus maintains that need satisfaction facilitates personal growth, integrity, and well-being, whereas basic need deprivation leads to passivity, fragmentation, and ill-being (Ryan, 1995).

The concept of need satisfaction is particularly useful for understanding the impact of social environments on people's functioning. Social environments differ in the extent to which they facilitate or frustrate the satisfaction of basic psychological needs, which in turn affects employee functioning (Gagné & Deci, 2005). Specifically, SDT suggests that contexts where intrinsic rather than extrinsic work values are stressed or collectively cherished, likely satisfy basic needs. In contrast, needs are thwarted in contexts where extrinsic work values prevail (Van den Broeck et al., in press).

There are several reasons why team-level shared work values may influence individual psychological need satisfaction. First, shared intrinsic work values at the team level may foster integration process in which employees are encouraged to take in those values which fit with their growth oriented nature and help them to develop an integrated sense of self. Employees who are integrated are likely to engage freely in activities they consider important and of which they are capable. As such, they satisfy the needs for autonomy and competence, respectively. They may also satisfy their need for relatedness, as integrated functioning does not only refer to aligning all aspects of oneself, but also to aligning with others. In contrast, shared extrinsic work values divert employees from their true nature. Rather than contributing to feelings of harmony, extrinsic values foster a fragmentation and maladaptive functioning, including the search for external signs of worth and contingent approval, as well as the engagement in interpersonal comparisons, which thwarts fulfillment of the basic needs (see Vansteenkiste et al., 2006 for an overview).

Second, several interpersonal processes may be at play. In essence, we postulate that need satisfaction is the outcome of various team processes, such as safety, trust, learning, communicating, bonding, and helping (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). Regarding the need for autonomy, it can be argued that in teams where values of growth and self-development prevail, members will feel safe and encouraged by others to engage in tasks that are inherently rewarding and based on true interests. In such teams, members are more likely to be involved in decision making (Hetland, Hetland, Andreassen, Pallesen, & Notelaers, 2011), and to take personal initiative and express their true selves (Sonnentag, 2003). Having choices and being acknowledged may en-

hance one's sense of self-initiation, thus providing satisfaction for the need for autonomy (Deci & Ryan, 2000; Koestner, Ryan, Bernieri, & Holt, 1984). In contrast, when the team is primarily driven by status or power, its members are likely to feel pressured by ego-involved demands and stressful interpersonal comparisons (Lyubomirsky & Ross, 1997; Sirgy, 1998), both of which thwart the need for autonomy (Vansteenkiste et al., 2007).

Regarding the need for competence, it can be assumed that members of predominantly intrinsic oriented teams feel encouraged by others to engage in challenging and stimulating tasks. In such teams, members provide each other with positive feedback and errors are then seen as learning opportunities, as the team's focus is on the mastery of skills and knowledge rather than on outperforming others. Overall, team members are more likely to seek out tasks that allow them to develop new skills, thereby satisfying their need for competence (Vansteenkiste et al., 2007). In teams where extrinsic values prevail, members' success is measured in terms of financial gain, status, and prestige. Team members tend to over idealize wealth and possessions, which may result in feelings of envy and jealousy, and instigate a cycle of internal competition and a dog-eat-dog mentality (Duriez, Vansteenkiste, Soenens, & De Witte, 2007). Accordingly, team members are more likely to experience a sense of incompetence in attaining their extrinsic values (Kasser, 2002).

Finally, concerning the need for relatedness, members of teams in which affiliation is considered an essential value likely feel free to express their work-related and personal troubles (Van den Broeck et al., 2008). They are more likely to help each other and show empathic concern for fellow team members (Sheldon, 2005). Accordingly, in these teams, members are more likely to build and maintain close, authentic workplace relationships, fueling satisfaction of the need for relatedness satisfaction. When extrinsic values dominate in the team, members tend to "objectify" others and to use them as instruments to attain their materialistic values (Vansteenkiste et al., 2007). The instrumental view of others forms a barrier to the development of authentic relationships. A shared extrinsic work value orientation may therefore fail to satisfy team members' need for relatedness.

In SDT it is assumed that the satisfaction of any need is likely to go hand in hand with the satisfaction of the remaining other two needs, such that all three are positively related. Accordingly, previous studies generally used the three needs to form a composite score of general need satisfaction (Deci et al., 2001; Lian, Ferris, & Brown, 2012; Van den Broeck et al., 2008; Vansteenkiste et al., 2007). We adhere to this approach and suggest that intrinsic, relative to extrinsic, team-level work values will facilitate basic psychological need satisfaction:

> *Hypothesis 1:* Holding intrinsic, relative to extrinsic, work values at the team level is positively associated with basic psychological need satisfaction at the individual level.

Abundant research provides evidence for the relevance of basic need satisfaction for people's functioning. The beneficial effects of need satisfaction have been demonstrated in field and laboratory studies, in different settings and in multiple countries, and in relation to different outcomes (Deci et al., 2001; Reinboth, Duda, & Ntoumanis, 2004; Sheldon, Ryan, & Reiss, 1996). For example, in the work context, need satisfaction has been positively associated with well-being (e.g., job satisfaction, self-esteem) and performance indicators (e.g., performance evaluations, number of hours worked), and negatively with ill-being (e.g., anxiety, somatization, job stress; Van den Broeck et al., 2008). Empirical support also comes from Vansteenkiste et al. (2007), who found need satisfaction related positively to vigor (in their study referred to as "vitality") and dedication among community employees. Similarly, Van den Broeck, Vansteenkiste, and De Witte (2008) found a strong positive relationship between need satisfaction and vigor. We elaborate on these findings in suggesting that need satisfaction mediates the association between shared team values and work engagement:

> *Hypothesis 2:* Basic psychological need satisfaction is positively associated with work engagement.
>
> *Hypothesis 3:* Basic psychological need satisfaction mediates the relationship between intrinsic, relative to extrinsic, team-level work values and individual-level work engagement.

Method

Procedure

We sent an invitation letter and a copy of the questionnaire to the human resources managers of 25 companies. One week later, the same persons were contacted by telephone in order to provide further details and obtain consent. Eighteen organizations agreed to participate. Questionnaires were sent to 466 potential participants through their companies' internal mail system. The questionnaire included several measures other than the ones used for the present study and was part of a survey package that also included a cover letter, a self-addressed stamped return envelope, and the endorsement of the project from senior management. The cover letter explained that the survey was seeking information about employee attitudes and well-being. The letter further stated that participation in the study was strictly voluntary and that the information would be kept strictly confidential: Only the researchers would have access, and the data collected would be used for research purposes only. The survey included an open question asking respondents to guess the purpose of the research. In their answers, none of the respondents referred to teamwork or team values.

Participants

Our sample included 358 service workers nested within 54 teams in Belgium and the Netherlands. We selected service workers because both countries rank among the most service-oriented economies in the European Union, and a predominant proportion of Belgian (77.4%) and Dutch employees (72.5%) work in the service sector (Central Intelligence Agency, 2007). In addition, in both countries a large proportion of firms rely on teamwork (61% in Belgium and 68% in the Netherlands; Ray & Smith, 2012). Each team consisted of members working together interdependently to provide service to customers: They frequently interacted, shared resources and information, and coordinated efforts. Their core functions included the following: IT and management consulting (77%), manufacturing (6.4%), banking/insurance and accounting (5.0%), telecommunications (4.1%), design (1.9%), legal aid (1.4%), real estate (1.1%), government (1.1%), food service (0.8%), and education (0.6%).

Three-hundred and 58 of the 466 employees returned their questionnaires (a response rate of 77%). The employees were nested within 54 teams. For aggregation purposes, we decided only to retain responses from teams where at least three members had responded. This approach is consistent with examples in the literature (Hofmann, Morgeson, & Gerras, 2003; Kunze & Bruch, 2010). The final sample consisted of 307 employees nested within 31 teams (mean team size = 10.58; SD = 10.36). 73% of the respondents were Dutch. The average percentage of women in a team was 33.3% (SD = 33.6%), and 20.8% of the total sample was female. On average, respondents had a mean age of 38.94 years (SD = 6.03), and worked 43.26 hr per week (SD = 8.56). Twenty-nine percent of the respondents occupied a supervisory position.

Measures

Work engagement. Individual-level work engagement was assessed using the nine-item version of the Utrecht Work Engagement Scale (Schaufeli et al., 2006). Example items are "At my work, I feel bursting with energy" (vigor), "I am enthusiastic about my work" (dedication), and "I am immersed in my work" (absorption). Items were scored on a 7-point rating scale ranging from 1 (*never*) to 7 (*always/every day*). Consistent with previous studies (Schaufeli et al., 2006; Sonnentag, 2003), the three engagement dimensions were combined in one overall work engagement score. Cronbach's alpha for the overall work engagement scale was .93.

Work values. Participants were presented with a list of 18 items, half of which represented intrinsic, and half of which represented extrinsic work values (Van den Broeck et al., in press; Vansteenkiste et al., 2007). The items were reworded to reflect the team level of analysis by changing the focus of the items to the team ("reference-shift consensus model;" see Chan, 1998). For instance, an item for measuring individual intrinsic work values was adapted to the team level by rewording it as follows: "In my team it is considered important to have a job in which people care about and support each other." An example of an item measuring team-

level extrinsic work orientation was adapted by rewording it as "In my team it is considered important to have a job in which you earn a lot of money." A 5-point rating scale, ranging from 1 (*totally disagree*) to 5 (*totally agree*) was used. Cronbach's alpha for the intrinsic scale was .76, and .85 for the extrinsic scale.

Basic psychological need satisfaction. Need satisfaction was measured using the Work-Related Basic Psychological Need Satisfaction Scale by Van den Broeck, Vansteenkiste, De Witte, Soenens, and Lens (2010). The Work-Related Basic Need Satisfaction Scale consists of three subscales corresponding to SDT's three basic needs: autonomy, competence, and relatedness. Each subscale has six items that are scored on a 5-point rating scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). A sample item of the autonomy subscale is as follows: "I feel free to do my job the way I think it could best be done." A sample item of the competence subscale is, "I really master my tasks at my job." A sample of the relatedness subscale is, "Some people I work with are close friends of mine." Bearing in mind that team-level work values are likely to relate to each of these three needs, we used the subscales for the three needs to create a basic psychological need satisfaction at work composite (Cronbach's alpha = .86).

Control variables. In all analyses, we controlled for potential individual-level and team-level confounding variables. First, gender (0 = male; 1 = female), age, nationality (0 = Dutch; 1 = Belgian), supervisory position (i.e., whether one has subordinates or not; 0 = no supervisory position; 1 = supervisory position), working hours, team size, and sector (consultancy and finance vs. other as reference category) were controlled for because of their potential link with the independent and the outcome variable considered in this study (Bakker, 2011; Wey Smola & Sutton, 2002).

Second, we controlled for overall work values. Employees who find work important in general will value both intrinsic and extrinsic work values highly, not because of the content of these values, but because all these values are connected to work. If this is found to be the case, then we will examine another construct, such as the overall importance of work, instead of the separate types of work values (Vansteenkiste et al., 2007). To examine the level of intrinsic work values as accurately as possible, it is therefore important to control for the general tendency of employees to attach high importance to any type of work values. In our study, we adhere to the analytical method recommended by Vansteenkiste et al. (2007): We test for the effect of intrinsic work values, simultaneously controlling for overall work values. In line with SDT terminology, the resulting coefficient of intrinsic work values provides an estimate of the importance of intrinsic work values *relative* to extrinsic work values. Cronbach's alpha for the overall work value scale was .81.

Data Analyses

With employees nested within teams, the data has a hierarchical structure. The independent variable (i.e., intrinsic work values) is a team-level variable. The mediating (i.e., basic need satisfaction) and dependent variable (i.e., work engagement) are individual-level variables. We conducted multilevel analysis (Stata 12.0) to account for the dependent nature of the measurements at the individual level (Hox, 2002). Prior to the multilevel analysis, we calculated aggregation statistics (the interrater agreement index $r_{wg(J)}$, intraclass correlation coefficient or ICC[1], ICC(2)), and compared different measurement models via confirmatory factor analysis.

We tested four multilevel models. First, we examined whether there was systematic between-team variance in the dependent variable. ICC(1) was used as an indicator of nonindependence for the dependent variable (Bliese, 2000). Next, we entered individual-level and team-level control variables into the equation: gender, age, nationality, supervisory position, working hours, team size, and industry. In the third model, the intrinsic work values score was entered into the equation after controlling for overall work importance ascribed to intrinsic plus extrinsic work values. Models 1 to 3 were tested with work engagement as the dependent variable, as well as with basic need satisfaction as the dependent variable. Finally, in the fourth model, we entered the proposed mediator, basic need satisfaction.

There would be evidence of mediation if any of the following held true: (a) intrinsic work values affected basic need satisfaction, (b) basic need satisfaction affected work engagement,

and (c) the effect of intrinsic work values on work engagement was reduced when controlling for basic need satisfaction (MacKinnon, Coxe, & Baraldi, 2012). We used bootstrapping to test the indirect effect.

We estimated the models using full maximum likelihood estimation method in order to compare model fit using deviance statistics. In each step, we tested the multivariate significance of effects by assessing whether model fit improved compared with the previous model. Model fit improves to the extent that the deviance statistic decreases. All continuous variables were centered around their sample means (i.e., grand-mean centering), in order to reduce problems with multicollinearity (Enders & Tofighi, 2007).

Results

Preliminary Analyses

Table 1 presents the mean scores, standard deviations, and correlations among the study variables. As shown in Table 1, intrinsic work values were positively associated with basic psychological need satisfaction and work engagement, both at the individual and aggregate-level. Need satisfaction and work engagement were also positively correlated, both at the individual and aggregate-level.

Aggregation statistics. Intrinsic and extrinsic work values were treated as a team-level variable and it was assumed that they would differ significantly across teams. In order to aggregate individual responses to the team level meaningfully, sufficient agreement within teams had to be demonstrated. Prior to aggregating, we first assessed within-team agreement in intrinsic and extrinsic work values, by means of the $r_{wg(J)}$ index (James, Demaree, & Wolf, 1984), using a uniform null distribution. We obtained a $r_{wg(J)}$ value of .95 and .92, both of which are above the conventionally acceptable value of .70 (Lebreton, Burgess, Kaiser, Atchley, & James, 2003). Next, we computed the intraclass correlation coefficient ICC(1) (Bliese, 2000) in order to examine the relative consistency of responses among team members. ICC(1) for intrinsic work values was.09, and for extrinsic work values .08, showing that there was a small to medium effect. This, in turn, suggested that team membership influenced employees' work values (Lebreton & Senter, 2008).

We estimated the reliability of the team mean using the ICC(2) (Bliese, 2000). ICC(2) was .48 for both intrinsic and extrinsic work values, which was somewhat lower than the threshold suggested, of .60 (Glick, 1985). This ICC(2) value is probably also a result of the inclusion of teams in the analyses that are rather small (Brown & Trevino, 2006). Even though low ICC(2) values suggest that it may be difficult to detect emergent relationships at the group level (Bliese, 2000), this does not need to prevent aggregation, as long as this aggregation is justified by theory and supported by a high within-group interrater reliability (Chen & Bliese, 2002).

Finally, we carried out a one-way analysis of variance (ANOVA) in order to test whether there were significant mean level differences between teams in terms of their intrinsic and extrinsic work values. The F value observed was statistically significant, $F(30, 307) = 2.07$, $p < .01$, $R^2 = .18$. Together, these indices

Table 1
Means, Standard Deviations, and Correlations for All Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Working hours	43.26	8.56	—	.27	−.01	.07	.56**	−0.26	.39*
2. Age	37.93	9.54	.14*	—	−.16	−.19	−.09	−.15	.06
3. Team size	20.30	12.66	−.07	−.04	—	.40*	.14	.20	.20
4. Intrinsic work values	3.93	0.47	.01	−.13*	.21**	(.76)	.54**	.74**	.58**
5. Overall work values	3.32	0.43	.17**	−.10	.12	.67**	(.81)	.06	.34
6. Need satisfaction	9.35	0.46	.11	.09	.04	.26**	.18**	(.86)	.37*
7. Work engagement	5.40	1.09	.20**	.07	.06	.33**	.30**	.22**	(.93)

Note. $N = 307$. Individual-level correlations are shown below the diagonal, aggregate-level correlations above.
* $p < .05$. ** $p < .01$.

provided sufficient justification for aggregation of individual work values to the team level.

Measurement model and common method variance. We compared different measurement models via confirmatory factor analysis (LISREL 8.54). First, we tested the expected measurement model, including six latent variables: work engagement, intrinsic and extrinsic work values, and the need for autonomy, relatedness, and competence. The model provided an adequate fit to the data; $\chi^2(762) = 2{,}022.10$, $p < .001$; root square mean error of approximation (RSMEA) = .07; standardized root mean square residual (SRMR) = .09; CFI = .92, Nonnormed Fit Index (NNFI) = .90.

To examine the potential for common method bias, we tested two models: Harman's single factor model, and a latent common method factor model. The Harman's single factor model—in which all items loaded on one factor—did not fit the data well; $\chi^2(945) = 10{,}437.20$, $p < .001$; RSMEA = .18; SRMR = .15; CFI = .72, NNFI = .71. In the final model, we added a single unmeasured latent method factor (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003) to the measurement model. In this model, all items loaded both on their expected factors and a latent common method factor. The common method factor model did not fit the data well; $\chi^2(812) = 3{,}069.29$, $p < .001$; RSMEA = .10; SRMR = .14; CFI = .88, NNFI = .86, which was worse than the fit of the expected measurement model; $\Delta\chi^2(50) = 1{,}047.19$, $p < .001$.

Hypothesis Testing

We first ran a multilevel analysis with basic need satisfaction as the dependent variable. The results showed that team-level intrinsic work values, after entering the control variables and overall work importance, were positively related to basic need satisfaction ($\gamma = 0.43$, $p < .001$). This supports Hypothesis 1 that holding intrinsic, relative to extrinsic, work values at the team level is positively associated with basic psychological need satisfaction at the individual level.

The results of the multilevel analysis with work engagement as the dependent variable are presented in Table 2. The intercept-only model showed that the ICC(1) for work engagement was .08, indicating that 8% of the variance in work engagement was explained at the team level.

As is shown in Step 3 of Table 2, team-level intrinsic work values were positively related to work engagement ($\gamma = 1.18$, $p < .05$). In Step 4, both team-level constructs and basic need satisfaction were included in the analyses. The estimation results showed that basic need satisfaction was positively associated with work engagement ($\gamma = .06$, $p < .05$), lending support for Hypothesis 2. Furthermore, the estimation results showed that, after controlling for basic need satisfaction, team-level intrinsic work values were no longer related to work engagement ($\gamma = 0.92$, *ns*). Together, these findings offer support for Hypothesis 3 which is that basic need satisfaction mediates the relationship between intrinsic, relative to extrinsic, work values at the team level and employee engagement at the individual level.

To examine the mediation hypothesis further, we bootstrapped the indirect effect of intrinsic work values on work engagement, using the SPSS macro provided by Preacher and Hayes (2008). The bootstrap estimates were based on 1,000 bootstrap resamples. The total and direct effects intrinsic work values on work engagement were 1.14, $p < .05$ and 0.89, $p < .08$, respectively. The difference between the total and direct effect is the total indirect effect through basic need satisfaction, with a point estimate of 0.25, and a 95% BCa bootstrap CI [0.04, 0.61]. Accordingly, we can claim that the difference between the total and the direct effect of intrinsic work values on work engagement is different from zero, providing further support for Hypothesis 3.

Discussion

The purpose of this study was twofold. First, we aimed to examine the cross-level effects of team-level work values on individual work engagement. The second objective was to unravel the mechanisms underlying this cross-level relationship. Using a self-determination perspective (Deci & Ryan, 2000), we therefore relied on basic psychological need satisfaction: To the extent that teams are guided by intrinsic, relative to extrinsic work values, members will experience a greater satisfaction of their basic needs (i.e., need for autonomy, competence, and relatedness). Need satisfaction, in turn, is ex-

pected to foster work engagement. Our empirical findings support our assumptions: Need satisfaction mediates the positive association between intrinsic, relative to extrinsic, team work values and individual work engagement.

Theoretical Contributions

To our knowledge, this study is one of the first to conceptualize and examine intrinsic and extrinsic work values at the team level, thereby acknowledging the importance of social context for satisfying basic psychological needs and, in turn, for being engaged at work. Although it is known that social environments differ in the extent to which they facilitate or frustrate the satisfaction of basic psychological needs, thereby affecting employee functioning (Gagné & Deci, 2005), this approach has rarely been used to examine the impact of work values. More importantly, to the best of our knowledge, SDT has never been tested before at the level of work teams, which is surprising, mainly for two reasons. First, SDT is a well-supported theory that has been successfully applied to a wealth of motivational settings, including the workplace, where teamwork is prevalent (Gagné & Deci, 2005; Schippers, Homan, & Knippenberg, 2013; Valeyre et al., 2009; Van den Broeck et al., 2008). Second, one of SDT's explicit assumptions is that the social context is important and must satisfy basic psychological needs in order for individuals to realize their full potential. Although scholars have often assumed that social characteristics have a strong impact on employee functioning, this important tenet of SDT has remained relatively understudied in terms of values. Instead, up to the present day, in the field of SDT, the focus was on individual intrinsic and extrinsic values. In showing that team-level work values influence work engagement by satisfying basic psychological needs, our study therefore makes an important theoretical contribution to the SDT literature.

Second, our research ties in with scholarly work in fields other than group dynamics and organizational behavior. For example, research in the context of parenting and relationships has indicated that the promotion of intrinsic relative

Table 2
Fixed-Effects Estimates (Top) and Variance-Covariance Estimates (Bottom) for Models Predicting Work Engagement

	Intercept only	Step 1	Step 2	Step 3
		Fixed effects		
Intercept	5.35 (0.09)	5.67 (0.32)	5.77 (0.32)	5.71 (0.31)
Gender[a] (γ_{10})		−0.04 (0.16)	−0.08 (0.16)	−0.04 (0.16)
Age (γ_{20})		0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Nationality[b] (γ_{30})		−0.63** (0.24)	−0.39 (0.25)	−0.36 (0.25)
Supervisory position[c] (γ_{40})		0.25 (0.15)	0.18 (0.15)	0.15 (0.15)
Working hours (γ_{50})		0.02* (0.01)	0.02** (0.01)	0.02* (0.01)
Consultancy (γ_{60})		0.08 (0.28)	−0.13 (0.29)	−0.11 (0.29)
Finance (γ_{70})		0.11 (0.29)	−0.12 (0.31)	−0.18 (0.31)
Team size (γ_{01})		−0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Team-level overall work values (γ_{02})			0.09 (0.46)	0.23 (0.48)
Team-level intrinsic work values (γ_{03})			1.18* (0.50)	0.92 (0.51)
Need satisfaction (γ_{60})				0.06* (0.02)
		Random parameters		
Level 2				
Var (intercept)	0.10	0.00	0.00	0.00
Level 1				
Var (residual)	1.11	1.07	1.04	1.02
−2 x log likelihood	923.92	887.16	878.93	873.02
Difference of −2 x Log (*df*)		36.76*** (*8*)	8.23*** (*2*)	5.91* (*1*)

Note. Numbers in parentheses are robust standard errors.
[a] 0 = male; 1 = female. [b] 0 = Dutch; 1 = Belgian. 0 = no supervisory position; 1 = supervisory position.
* $p < .05$. ** $p < .01$. *** $p < .001$.

to extrinsic values, as well as the pursuit of values by siblings, impacts on adolescents' adaptive functioning (Duriez, 2011; Kretschmer & Pike, 2010). Our findings add to this growing body of literature in that we show that values associated with the work context might be equally important for employee functioning and that employees' motivational processes can be linked to their perceptions of the team work environment.

Finally, our study also contributes to the literature on work engagement. Previous research has predominantly focused on individual-level predictors of work engagement, mostly in terms of job and personal resources (Bakker et al., 2008; Van den Broeck et al., 2013). In doing so, prior research has thus largely ignored the possibility that work engagement may also be influenced by the wider environment (Van den Broeck et al., 2013). Our investigation of how intrinsic and extrinsic values at the team level indirectly influence work engagement taps into this very issue. As research on work engagement gains further momentum, it may be important to clarify the importance of team work values relative to other contextual predictors, such as shared learning orientation, psychological safety, and shared leadership (Bunderson & Sutcliffe, 2003; Carson, Tesluk, & Marrone, 2007; Edmondson, 1999).

Limitations and Future Research

Like any study, ours has potential limitations. First, as our study relied on a cross-sectional survey design, no inferences about causality can be made. Team-level and individual-level constructs might influence each other and studies using time-lagged research designs (temporally separating independent, dependent, and mediator variables) would provide an important step toward establishing causal relationships.

Second, work values, need satisfaction, and work engagement, were obtained through self-reports, increasing the risk of common-method bias. In order to mitigate common-method bias we took several a priori measures (Conway & Lance, 2010; Podsakoff et al., 2003), such as the use of construct-valid measurement scales; we protected respondent anonymity, instructed that there were no right or wrong answers, and we aggregated work values to the team level. In line with these measures, a posteriori tests for common method variance indicated common method variance does not pose a serious threat to the interpretation of the results from this study. Moreover, self-reports are justifiable and probably even necessary, when studying constructs that are self-referential, such as need satisfaction and work engagement (Chan, 2009).

Third, further research could also continue investigating team-level work values and how they influence outcomes other than work engagement, for example, performance and commitment. Such studies may also want to include individual values, in order to study the assumptions of person-environment fit (Kristof-Brown et al., 2005). Such studies would be particularly interesting, as our current work shows that intrinsic relative to extrinsic work values are the ones that have the most profound effect on work engagement. According to the person-environment fit literature, however, such effects would be moderated by the values of the individual employee: Intrinsic relative to extrinsic team values would be most beneficial for employees who attach more importance to intrinsic values rather than extrinsic ones, whereas a predominant extrinsic orientation at the team level would be beneficial for employees pursuing mostly extrinsic values.

Fourth, by sampling teams from a wide variety of industries, ranging from sales to education, we aimed to obtain substantial variation in the team-level shared work values. For example, a sales environment is generally characterized by the employees pursuing extrinsic work values, whereas teaching takes place in an environment that emphasizes the importance of caring for and helping others, and can therefore be assumed to be more intrinsically oriented (Sagiv & Schwartz, 2000;Vansteenkiste et al., 2006). However, such potential differences also hint at organizational-level factors that may influence the self-determination processes, something that we have put aside for future research. Although methodologically challenging, such three-level designs that encompass organizational, team, and individual factors might help break further ground in the research on how the environment, also in terms of values, may impact on employee functioning, also in terms of work engagement.

Practical Implications

Our results highlight that an important role is assigned to social contexts, such as the work environment, in order to bring out the best in people in terms of work engagement (Van den Broeck et al., 2008). Work engagement, in turn, will benefit individual and unit performance, as has been consistently found to be the case in earlier research (Bakker, Demerouti, & Sanz-Vergel, 2014). In most companies, work teams are the norm for how day-to-day operations of the business are conducted. SDT advises that the encouragement of intrinsic values will lead to better outcomes than the promotion of extrinsic values. This is important in view of the development of organizational cultures, including organizational values, as well as team values, but is also a valuable aspect for consideration with respect to the development of human resource management practices, such as training programs and pay for performance. Whereas the former is likely to signal intrinsic values, the latter is most likely to evoke extrinsic values among team member.

Apart from the importance of work values, again the current results also highlight the value of basic need satisfaction for employee functioning. Previous studies have shown that good job design (Van den Broeck et al., 2008), supervisory support (Deci et al., 2001; Lian et al., 2012), and HR-practices such as training, mentoring, and developing practices (Marescaux, De Winne, & Sels, 2013) among others, foster need satisfaction. The current study adds to this line of work in showing that team members may also play a role. This is also supported by the findings of Greguras and Diefendorff (2009) in that person–group fit may foster satisfaction concerning the need for relatedness. Managers may want to aim to allow their teams to have the time to make such a positive impact and/or encourage such behavior, for example, by taking part in team building exercises.

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