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Research article

Inclusion: Conceptualization and measurement

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Abstract

In the present research, we introduced a conceptual framework of inclusion and subsequently used this as a starting point to develop and validate a scale to measure perceptions of inclusion. Departing from existing work on inclusion and complementing this with theoretical insights from optimal distinctiveness theory and self-determination theory, we proposed that inclusion is a hierarchical two-dimensional concept consisting of perceptions of belonging and authenticity. In addition, we posed that in the process of inclusion, it is the group rather than the individual that has primary agency. From this conceptualization, we developed and validated the 16-item perceived group inclusion scale (PGIS). Data from two samples supported our proposed configuration of inclusion. In addition, the PGIS appeared to be a reliable measure of inclusion and was demonstrated to possess both nomological and predictive validity. Taken together, this research contributes to the conceptual refinement of the inclusion construct and offers researchers a reliable and valid tool to conduct future inclusion research. Copyright © 2014 John Wiley & Sons, Ltd.

Being included in groups is essential to humans (Correll & Park, 2005). Groups serve our material interests (Caporael & Baron, 1997), enhance our self-esteem (Leary & Baumeister, 2000; Tajfel & Turner, 1986), validate our beliefs (Hogg & Abrams, 1993), provide us with the notion of symbolic immortality (Greenberg et al., 1990), and offer us distinctiveness and acceptance (Brewer, 1991). Experiencing inclusion, however, is not a given but partly depends on the match between ourselves and other group members. In general, inclusion is more easily secured when other group members are more similar to us (Kristof-Brown, Zimmerman, & Johnson, 2005). However, in contemporary societies, homogeneous groups have become the exception rather than the rule (Hooghe, Trappers, Meuleman, & Reeskens, 2008).

Understanding how and under which conditions people in diverse groups feel included has therefore received increased interest from diversity scholars (e.g., Lirio, Lee, Williams, Haugen, & Kossek, 2008; Roberson, 2006). Yet, despite this attention, there is still considerable ambiguity and lack of consensus regarding the following: (i) the appropriate theoretical conceptualization of inclusion (Shore et al., 2011), and, as a related matter, (ii) the proper measurement of the concept. The present research addresses both these issues by introducing a conceptual framework of inclusion and subsequently using this to develop and validate a scale measuring perceived group inclusion.[1]

WHAT IS INCLUSION?

The concept of inclusion has recently received substantial attention in the diversity literature (e.g., Lirio et al., 2008; Miller, 1998; Pless & Maak, 2004; Roberson, 2006), and also in related fields such as social work (Mor-Barak, 2000), social psychology (Ellemers & Jetten, 2013), and educational research (Koster, Nakken, Pijl, & van Houten, 2009). Research across these disciplines has yielded a vast amount of definitions and conceptualizations of inclusion. In an attempt to identify the common elements of these definitions, Shore et al. (2011) recently defined inclusion as "the degree to which individuals experience treatment from the group that satisfies their need for belongingness and uniqueness" (p. 1265).

Three important things become apparent from this definition. First, inclusion is seen as the satisfaction of individual needs within a group. Second, inclusion consists of two components: belongingness and uniqueness. Third, it is the group that includes the individual, rather than the individual who connects to the group. We elaborate on these three points in the subsequent sections. From this analysis, we refine the definition of Shore and collaborators and use this as the conceptual basis for the development of our scale.

COMPONENTS OF INCLUSION

Following from the definition by Shore et al. (2011), inclusion is established when individuals have a sense of belonging to

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[1]Note that when we use the term inclusion in the present research, we refer to the individual psychological experience of inclusion, rather than to an objective assessment of whether the individual is included.

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the group and, at the same time, perceive themselves to be a distinct and unique individual. In exploring the theoretical underpinnings of the inclusion concept, we will therefore turn to two theories that specifically address the interplay between group belongingness and individuality: optimal distinctiveness theory (ODT) and self-determination theory (SDT).

According to ODT (Brewer, 1991; Brewer & Roccas, 2001), people have the opposing fundamental needs for belongingness and uniqueness. The need to belong is the motivation to form and maintain strong and stable relationships with other people. To satisfy this need, people need to have frequent and affectively pleasant interactions in a temporally stable group (Baumeister & Leary, 1995). Belonging is thought to consist of two components: group membership and group affection. Whereas group membership reflects the perceived strength of the bond between an individual and the group, group affection indicates the perceived positive valence of that bond (cf. Allport, 1954).

In contrast, the need for uniqueness is the motivation to have a distinctive self-concept. Satisfying this need requires that people perceptually distance themselves from meaningful others by downplaying one's commonalities with others or by defining oneself in terms of one's idiosyncratic traits and opinions (Snyder & Fromkin, 1977; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987).

Importantly, ODT posits that these two needs are opposing if they are strived for at the same level (e.g., the intragroup level; Brewer & Roccas, 2001). That is, ODT predicts that, as people feel more related to others, they also tend to feel less distinct and separate (cf. Sheldon & Bettencourt, 2002). Contrary to this prediction, and arguably more in line with the definition put forward by Shore et al. (2011) who conceptualized inclusion as the simultaneous satisfaction of belongingness and uniqueness needs, scholars have reasoned and empirically shown that an increased sense of belonging to a group is not necessarily accompanied by a diminished sense of individual uniqueness (Bettencourt, Molix, Talley, & Sheldon, 2006; Hornsey & Jetten, 2004). For example, it has been proposed that individuals can simultaneously satisfy belongingness and uniqueness needs by assuming a specific role within the group (Bettencourt et al., 2006) or by joining a group that encourages group members to express their individuality (Hornsey & Jetten, 2004). Yet another way to reconcile individuality with belongingness is reflected in the concept of *inductive social identity formation*, as introduced by Postmes, Spears, Lee, and Novak (2005). They argued that groups can form both top-down, such that individual group members adapt to an already existing group prototype, or bottom-up, such that the group prototype is defined over time, and is shaped by the contributions of all individual members. In this latter, inductive, process, retaining individuality is thus not merely reconcilable with belonging to the group but seen as the defining aspect of the group's identity (Jans, Postmes, & Van der Zee, 2012). Taken together, these lines of research suggest that it is feasible for individuals to belong to a group and, at the same time, to perceive being able to retain their individual features.

Corresponding with these insights, and in line with the notion that in the process of inclusion it is the group that includes the individual rather than the individual who connects to the group (a point on which we will elaborate later), Shore et al. (2011) stated that people are included in a group if they receive a sense of belonging from the group and, at the same time, are valued for their particular unique characteristics. We agree with these authors that both securing a sense belonging and valuing uniqueness are important elements of inclusion. Yet, at the same time, we propose that the "valuing uniqueness" component of inclusion requires to be conceptually refined.

In particular, we believe that valuing group members only for the non-overlapping (unique) part of their identity is not sufficient to result in perceptions of inclusion. Also, valuing people for their unique traits, insights, or perspectives most probably has different effects on group members depending on their majority or minority status within the group. That is, the more prototypical group members are, the less they benefit from others' appreciation of uniqueness. Indeed, research has shown that (cultural) majority group members are likely to experience exclusion in groups that emphasize the benefits of uniqueness (Plaut, Garnett, Buffardi, & Sanchez-Burks, 2011). As a consequence, a conceptualization that makes perceived appreciation of uniqueness a defining characteristic of inclusion may endanger the safe inclusion of prototypical group members. This is neither in line with the face validity of the concept, nor is it desirable for developing a scale to measure inclusion that will be applied in groups that consist of members who differ in their prototypicality. Thus, in our conceptualization, we need to consider an alternative component for valuing uniqueness that does address the need to be unique but applies to all group members, irrespective of their prototypicality.

In doing so, we complement the conceptualization of Shore et al. (2011), which is inspired by ODT, with insights from SDT (Deci & Ryan, 1991, 2000). Similar to ODT, SDT posits that humans have fundamental needs that can be satisfied within a group context. Also, the needs distinguished in SDT closely resemble the needs identified in ODT. Specifically, SDT identified these needs to be "relatedness" and "autonomy."[2] The need for relatedness involves the desire to feel connected to others (Deci & Ryan, 2000), which can be seen as equivalent to the need for belongingness as it is defined in ODT. The need for autonomy involves the desire to experience choice, and the wish to behave in accordance with one's integrated sense of self (Deci & Ryan, 2000). Autonomy can thus be both task related ("what am I allowed to do?") and identity related ("who am I allowed to be?"). This latter form of autonomy, which has also been labeled *authenticity* (Bettencourt et al., 2006), resembles to some extent the need for uniqueness as it is defined in ODT. Similar to valuing uniqueness, valuing authenticity implies that group members are allowed to be different from each other. Unlike valuing uniqueness, however, valuing authenticity also implies that group members are just as well allowed to be similar to each other. In this sense, valuing authenticity is a broader concept than valuing uniqueness and may appeal to both atypical (e.g., minority) and prototypical (e.g., majority) group members. In addition to this, SDT posits that the need for relatedness and the need for autonomy can simultaneously be satisfied at the intragroup level. Thus, in contrast with ODT, but in line with the research we described earlier (e.g., Bettencourt et al., 2006; Postmes et al., 2005), SDT asserts that individuals are able to

[2]The third basic need postulated by SDT (experience of competence) is not addressed here, as it is not directly related to the issue of retaining individuality within a group. It therefore falls outside the scope of our inclusion conceptualization (for a similar line of reasoning, see Bettencourt et al., 2006).

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both retain their individuality and experience a sense of belonging within the group.

On the basis of this analysis, we propose that perceived authenticity, rather than perceived uniqueness, should be seen as a key component of inclusion. We define perceived authenticity as the extent to which a group member perceives that he or she is allowed and encouraged by the group to remain true to oneself (cf. Kernis & Goldman, 2006). Thus, in our view, authenticity consists of two subcomponents: *room for authenticity* and *value in authenticity*. Whereas room for authenticity captures the extent to which the group allows that individual group members feel and act in accordance with their true self, the value in authenticity component captures the degree to which the group actively encourages group members to be themselves within the group. This particular distinction can also be recognized in work on the defining features of inclusive organizations. For example, Cox (1991) makes a distinction between organizations that merely tolerate the presence of diversity and those that lend active support for diversity. Importantly, similar to perceptions of belongingness (Leary & Baumeister, 2000; Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), feelings of authenticity have been shown to be positively associated with individual well-being (Deci & Ryan, 2000) and group performance (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997).

In sum, we conceptualize inclusion as a two-dimensional concept, which is defined by perceptions of belonging and authenticity. In addition, we propose that these two dimensions each consists of two subcomponents. On the one hand, belonging can be further divided into group membership and group affection. On the other hand, authenticity is partitioned into room for authenticity and value in authenticity. Importantly, we consider belonging and authenticity to be interrelated, yet distinct concepts. At least theoretically, situations exist in which group members do receive a strong sense of belonging from the group but at the same time do not experience they are allowed to be themselves (i.e., assimilation). In contrast, group members may also perceive that the group considers them to be peripheral group members but simultaneously do perceive that they are allowed and encouraged to be themselves (i.e., differentiation; a similar point has been made by Shore et al., 2011). The same logic applies to our four subcomponents. That is, whereas in some groups it may be useful to distinguish between the different subcomponents of belonging and authenticity, in other group contexts they may be more closely aligned with each other. In short, we propose that, although theoretically inclusion may be further divided into multiple subcomponents, the question of whether this is empirically substantiated is likely to be context dependent.

INCLUSION VERSUS IDENTIFICATION

Importantly, the earlier conceptualization not only identifies the key components of inclusion but also underlines that inclusion is different from the related concept of social identification (Leach et al., 2008). This distinction is important because it helps to further clarify who the target and who the source is in the process of inclusion.

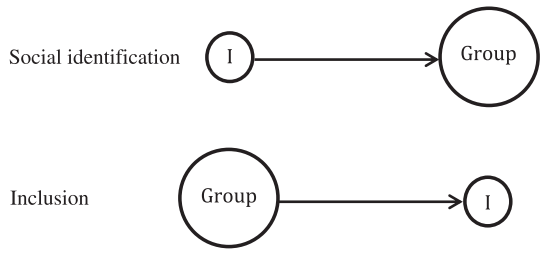

Figure 1. The individual–group relationship in social identification and inclusion

Consistent with social identity theory (Tajfel & Turner, 1986) and self-categorization theory (Turner et al., 1987), social identification has recently been defined as "the positive emotional valuation of the relationship between self and ingroup" (Postmes, Haslam, & Jans, 2013, p. 3) and as "the abstract psychological connection that an individual has to their in-group as a whole" (Leach et al., 2008, p. 146). Correspondingly, social identification is usually measured with items measuring how the individual appreciates and connects to the group. Importantly, these items reveal that in the concept of social identification, the link between self and group is such that the group is the target whereas the self is the actor who defines how close the link to the group is (e.g., "I identify with this group" and "I feel a bond with this group"; Ellemers & Jetten, 2013; Leach et al., 2008; Postmes et al., 2013).

Inclusion, on the other hand, can be seen as a function of the group's willingness to include the individual (Ellemers & Jetten, 2013). That is, perceived inclusion is determined by the signals that the individual receives from the group concerning his or her position within the group. Accordingly, inclusion should be measured with items in which the group is defined as the source and the individual as the target of inclusion (e.g., "This group gives me the feeling that I belong" and "This group allows me to be authentic"). This particular conceptualization of inclusion is in line with the sociometer theory (Leary & Baumeister, 2000), which poses that people constantly monitor their social environment for cues or signals that pertain to one's inclusionary status. Moreover, it fits with experimental manipulations of inclusion (and exclusion) in which it is the group that includes (or excludes) the individual (e.g., DeWall, Deckman, Pond, & Bonser, 2011).[3] Figure 1 portrays these different foci of identification and inclusion schematically.

Although inclusion and social identification can be assumed to often covary, at times, they may also be distinct and should therefore be considered different constructs. To illustrate, even marginal group members can perceive the group as central to the self. Similarly, it is possible that people perceive to be included in a group but do not identify with this group (Ellemers & Jetten, 2013). Another notable difference between inclusion and social identification refers to the types of groups that are involved. Although in theory, one can identify with groups that consist of people who one has never met, perceiving to be included in a group requires the experience of

[3]In the present research, "the group" refers to other group members. Yet, we maintain that other aspects of the group, such as specific group policies or promotion/reward systems, may also generate perceptions of inclusion. For example, affirmative action programs aimed at increasing female representation may be perceived as exclusionary by male employees (cf. Harrison, Kravitz, Mayer, Leslie, & Lev-Arey, 2006). We consider these elements to be part of what we have labeled "the group."

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actual interactions with other group members (Ellemers & Jetten, 2013). We will assess the empirical interplay between these two concepts in the development of our scale.

SYNOPSIS

To summarize, on the basis of existing inclusion conceptualizations and theoretical insights from ODT and SDT, we identified two components of inclusion: belonging and authenticity. By contrasting inclusion with the related concept of identification, we further posited that an individual's perception of the extent to which he or she is included is primarily based on cues and signals that are sent out by the group. Combining these insights, we thus define inclusion as "the degree to which an individual perceives that the group provides him or her with a sense of belonging and authenticity." We use this definition as the conceptual basis for the development of our scale.

OVERVIEW DEVELOPMENT AND VALIDATION

To develop and validate the perceived group inclusion scale (PGIS), we followed a stepwise procedure as recommended by Hinkin (1998). Accordingly, we first generated an initial item pool. Second, we administered the items to a sample of students and conducted an exploratory factor analysis (EFA). Third, we performed confirmatory factor analyses (CFAs) to compare our proposed hierarchical two-dimensional model with alternative factor configurations. In addition, we cross-validated the factorial structure of the PGIS in a sample of employees and established its convergent and discriminant validity. Fourth, we assessed the scale's nomological validity. Here, we correlated our inclusion components with constructs to which they theoretically should be related and then examined whether these relationships confirmed our theoretically derived predictions. Fifth, we assessed whether the PGIS possessed predictive validity, by regressing a number of group-level and individual-level outcome measures on our inclusion components.

STEP 1: ITEM GENERATION

We generated our initial item set using both inductive and deductive approaches (Hinkin, 1998; MacKenzie, Podsakoff, & Podsakoff, 2011). Initially, we formulated items on the basis of our conceptualization of inclusion as a two-dimensional construct involving perceptions of belonging (group membership and group affection) and perceptions of authenticity (room for authenticity and value in authenticity). To be consistent with our conceptualization of inclusion, the formulation of these items was subject to three criteria. First, items should pertain to the relationship between the group and the individual, rather than refer to the individual or the group in isolation. Second, the primary actor in the phrasing of the items should be the group rather than the individual. That is, items should capture an individual's perception of how the group sees and treats him or her, rather than how the individual relates himself or herself to the group. Third, the items should refer to the group as a whole, rather than to individuals with specific roles (such as coworkers and supervisors) to ensure that the instrument can be used throughout various contexts, which may or may not consist of these specific group members.

In a second step, using a deductive approach, we complemented our item pool with items derived and modified from existing scales that measure conceptually similar concepts. Most items had to be reformulated to meet the three criteria outlined earlier. Specifically, the items to measure belonging were complemented with items derived from scales measuring the following concepts: need to belong (Leary, Kelly, Cotrell, & Schreindorfer, 2007), group attachment (Smith, Murphy, & Coats, 1999), work-related basic need satisfaction (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010), and membership collective self-esteem (Luhtanen & Crocker, 1992). The items to measure authenticity were complemented with items derived from scales measuring authentic personality (Wood, Linley, Maltby, Baliousis, & Joseph, 2008), perceived authenticity (Sheldon et al., 1997), and personal autonomy (Sheldon & Bettencourt, 2002). Following these procedures, we arrived at an initial item pool of 44 items, which were proportionally divided between our four subcomponents (i.e., 11 items per subcomponent).[4]

STEP 2: EXPLORATORY FACTOR ANALYSIS

In the second step of our scale development and validation procedure, we administered our newly generated item pool to a sample of students and subsequently performed an EFA. The goals of this analysis were: (1) to obtain a preliminary indication of the factorial structure of the PGIS and (2) to reduce our initial item pool into a more parsimonious set of items.

Method

Participants and Procedure

Using an online questionnaire, we collected data from 277 first-year psychology students from the University of Groningen (in the remainder of the text, we call this the student sample). Sixty-six percent were female. Mean age was 20.32 years ($SD = 2.06$). As part of their curriculum, all students were allocated to a "student work group" together with other first-year students (the average group size was about 10 students). Throughout the entire first study year, these groups met on average about once a week for 2 hours. During these meetings, students completed and discussed individual and/or group assignments on topics such as scientific writing, presenting,

[4]We deliberately chose not to include any reverse-scored items in our scale for two reasons. First, research indicates that negated items may in fact constitute different constructs (Magazine, Williams, & Williams, 1996). In our case, negatively formulated items may measure exclusion rather than inclusion. Second, negative items have been found to be much harder to interpret and to require greater cognitive capacity than positive items (Pilotte & Gable, 1990). As a result, reverse-scored items often do not meet scale analyses criteria and may even constitute reverse-coding method factors (Cordery & Sevastos, 1993). Indeed, positively worded items have been found to be much more reliable and accurate than negatively phrased items (Schriesheim, Eisenbach, & Hill, 1991).

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and research methods. We collected our data around the midterm of the second semester (i.e., about 6 months after the students started with their study). Thus, we assumed that by then, students were able to reliably indicate the extent to which they perceived to be included.

Materials

Inclusion. We asked the respondents to rate the extent to which they perceived to be included in their group. Participants responded to all of the 44 items from our initial pool. Items were presented in a completely randomized order. We used a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Results and Discussion

To determine the number of factors to be extracted in the EFA, we first performed a parallel analysis (PA; Horn, 1965). A PA tests which of the eigenvalues of the resulting common factors reach significance. Therefore, a PA allows for a more statistically informed decision of the number of factors to be extracted in an EFA than the more commonly used "eigenvalue greater than one" criterion (Kaiser criterion; Timmerman & Lorenzo-Seva, 2011). This analysis yielded two significant eigenvalues, indicating that, in this sample, two factors should be extracted.

Next, an EFA was run using principal axis factoring with a direct oblimin rotation. We chose to perform an oblique rotation rather than the usual orthogonal varimax rotation, because we expected our factors to be interrelated. From the results of the PA, we specified the number of factors to be extracted in the EFA to be two. Following Hinkin's (1998) recommendations, we only retained those items whose factor loadings exceeded .50 and who had no cross-loadings larger than .20. Also, we excluded items with communalities lower than .50. This left us with 16 items (see Appendix). Each subcomponent was equally represented (i.e., four items for group membership, four for group affection, four for room for authenticity, and four for value in authenticity). Table 1 displays the factor loadings of these remaining items. The items for belonging and authenticity appeared to reliably load on separate factors (eigenvalues after rotation were respectively 8.60 and 8.83).

Table 1. Factor loadings from exploratory factor analysis

Item	Factor 1	Factor 2
This group gives me the feeling that I belong	**.92**	−.08
This group gives me the feeling that I am part of this group	**.94**	−.12
This group gives me the feeling that I fit in	**.79**	.04
This group treats me as an insider	**.82**	−.01
This group likes me	**.64**	.18
This group appreciates me	**.80**	.05
This group is pleased with me	**.58**	.18
This group cares about me	**.59**	.18
This group allows me to be authentic	.04	**.78**
This group allows me to be who I am	.13	**.70**
This group allows me to express my authentic self	−.05	**.88**
This group allows me to present myself the way I am	.07	**.76**
This group encourages me to be authentic	−.04	**.83**
This group encourages me to be who I am	.03	**.83**
This group encourages me to express my authentic self	−.02	**.85**
This group encourages me to present myself the way I am	.01	**.85**

Note: For each item, the strongest loading is in boldface.

STEP 3: CONFIRMATORY FACTOR ANALYSES

In the third step of our scale development and validation procedure, we performed a series of CFAs. These analyses served four specific goals. First, we wanted to obtain a more quantified and explicit indication of the goodness of fit of the factorial structure we found in the EFA. Second, we aimed to statistically compare the model fit of alternative factor configurations, including the hierarchical configuration that we proposed in our conceptualization. Third, we sought to provide evidence for the robustness of our scale. That is, we were interested in whether the factorial structure of the PGIS was equivalent across a number of groups. Fourth, we intended to establish the convergent and discriminant validity of our measurement model. To these ends, we collected additional data from a diverse sample of employees.

Method

Participants and Procedure

For this third step, we used the same student sample as we did in Step 2 and, in addition, collected data from an employee sample. In particular, a panel study was conducted among 468 people who were employed in various Dutch organizations ($M_{age} = 41.58$ years; $SD = 11.56$ years). Fifty-eight percent of these participants were female, and about three-quarters ($n = 344$) were Dutch nationals. Respondents worked in a broad range of different organizations. These organizations operated in 15 different sectors, with most participants employed in the health sector (20%) and in public governance (10%). The sample was selected such that all participants worked at least 20 hours/week in their organization. For the purpose of the present study, we asked them to indicate the extent to which they felt included in their group of direct colleagues. The size of this group was on average 12 people and ranged from 4 to 30.

Materials

Inclusion. Participants responded to the 16 remaining items of our inclusion scale. Again, all items were presented in a completely randomized order and the response categories ranged from 1 (*strongly disagree*) to 5 (*strongly agree*).

Results and Discussion

Competing Models of Inclusion

We first performed CFAs to statistically compare the model fit of several alternative factor configurations. In particular, we

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compared four alternative models (see Figure 2) and estimated the fit of these configurations for both of our samples. To determine which of the models fitted the data best, we subsequently compared their Akaike information criterion (AIC) values (Kline, 2011). In all models, the items were permitted to load only on the factors they were expected to indicate, and no item errors were allowed to correlate.

In the first model, all items were forced to load on one general inclusion factor. This is the simplest possible factor configuration and represents the notion that inclusion is a unidimensional concept. This model fitted the data poorly for both samples (for students: $\chi^2/df = 6.18$, root mean square error of approximation (RMSEA) = 0.14, comparative fit index (CFI) = 0.85, non-normed fit index (NNFI) = 0.83; for employees: $\chi^2/df = 9.17$, RMSEA = 0.13, CFI = 0.88, NNFI = 0.86; Table 2).

In the second model, two factors were specified, one for the belonging items and one for the authenticity items. No distinction was made between group membership and group affection or between room for authenticity and value in authenticity. This configuration represents the model that was suggested by the EFA. Both residual and fit indices indicated that, in both

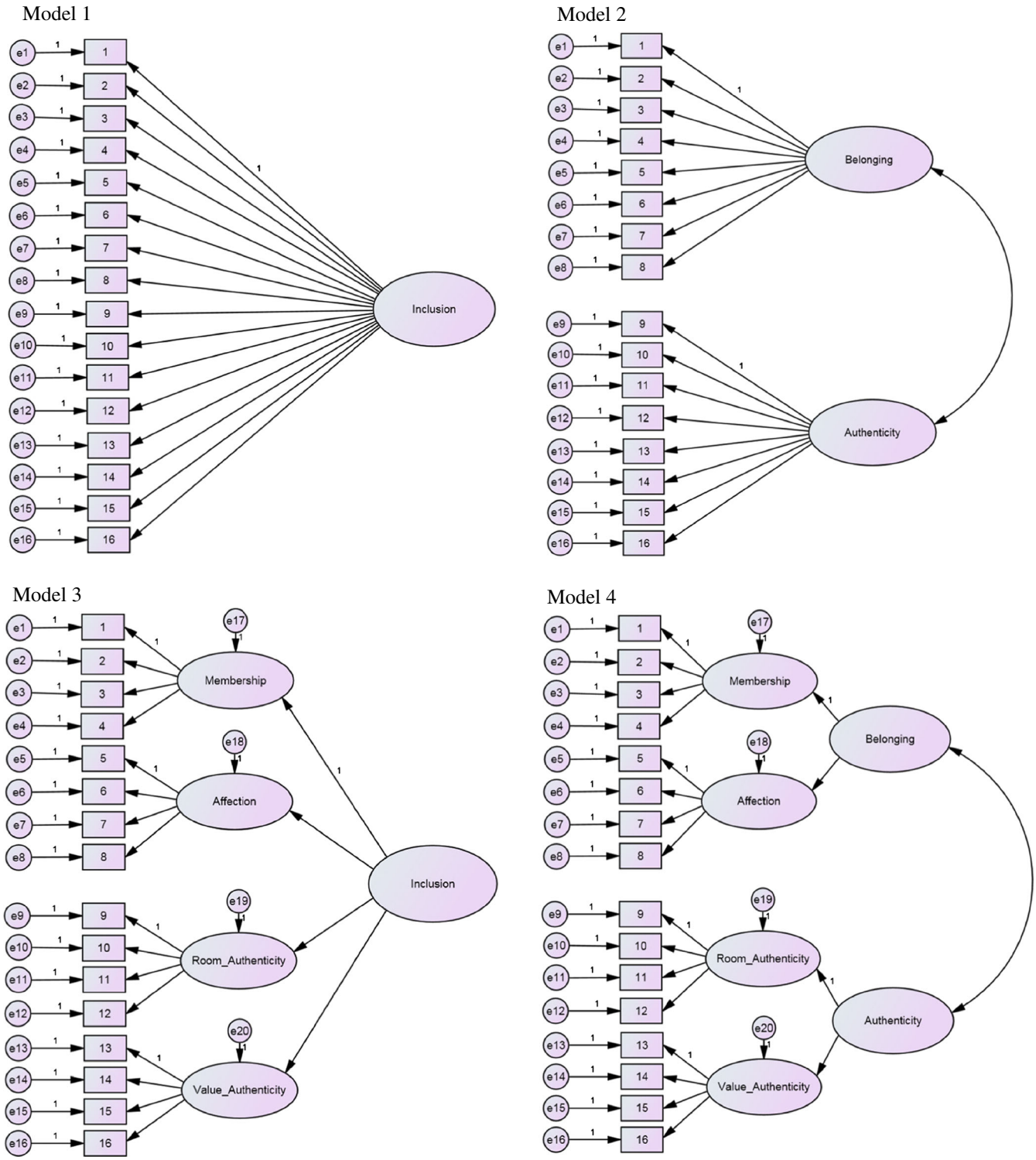

Figure 2. Competing models of perceived group inclusion

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Table 2. Model fit of competing models of perceived group inclusion

	Students				Employees			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
χ^2	642.42	278.05	267.24	185.66	953.20	524.73	435.97	352.80
df	104.00	103.00	100.00	99.00	104.00	103.00	100.00	99.00
χ^2/df	6.18	02.70	2.67	1.88	9.17	5.09	4.36	3.56
RMSEA	0.14	0.08	0.08	0.06	0.13	0.09	0.09	0.07
CFI	0.85	0.95	0.96	0.98	0.88	0.94	0.95	0.97
NNFI	0.83	0.95	0.95	0.97	0.86	0.93	0.94	0.96
AIC	706.42	344.05	339.24	259.66	1017.20	590.73	507.97	426.80

Note: RMSEA, root mean square error of approximation; CFI, comparative fit index; NNFI, non-normed fit index; AIC, Akaike information criterion.

samples, this configuration produced a sufficient fit to the data (for students: $\chi^2/df = 2.70$, RMSEA = 0.08, CFI = 0.95, NNFI = 0.95; for employees: $\chi^2/df = 5.09$, RMSEA = 0.09, CFI = 0.94, NNFI = 0.93). In addition, this model appeared to be an improvement over Model 1 as it yielded AIC values that were about half the size as in the first model (Table 2).

The third alternative model was a hierarchical model in which four first-order factors (group membership, group affection, room for authenticity, and value in authenticity) were specified to indicate one second-order factor of inclusion. Thus, this model presumes that it is necessary to distinguish between different components of belonging (group membership and group affection) and authenticity (room for authenticity and value in authenticity), thereby proposing a more refined factor structure than was suggested by the EFA. Importantly, in this model, the four separate components were not organized such that they indicate perceptions of belonging and authenticity, but rather such that they directly indicate perceptions of inclusion (Model 3 of Figure 2). This particular configuration yielded good fit to the data in both samples (for students: $\chi^2/df = 2.67$, RMSEA = 0.08, CFI = 0.96, NNFI = 0.95; for employees: $\chi^2/df = 4.36$, RMSEA = 0.09, CFI = 0.97, NNFI = 0.94) and appeared to be an improvement over Model 2 as it produced lower AIC values in both samples (Table 2).

In the fourth and final model, the same four first-order factors (group membership, group affection, room for authenticity, and value in authenticity) were construed but now were specified to indicate two second-order factors (belonging and authenticity; Figure 2).[5] This configuration most closely resembles our proposed conceptualization of inclusion. Thus, similar to the third model, this model presumes that it is useful to distinguish between the two different subcomponents of belonging and authenticity. Different from model 3, however, this model posits that belonging and authenticity are necessary second-order factors. This means that group membership and group affection are assumed to fall within the more abstract dimension of belonging, whereas room for authenticity and value in authenticity are assumed to fall within the more abstract dimension of authenticity. Hence, similar to Model 2, this model reflects our theoretical conceptualization of inclusion as consisting of two distinct components: perceptions of belonging and perceptions of authenticity. Unlike Model 2, however, this model further partitions each of these two components into two subcomponents. This fourth model produced excellent fit to the data (for students: $\chi^2/df = 1.81$, RMSEA = 0.05, CFI = 0.97, NNFI = 0.96; for employees: $\chi^2/df = 3.56$, RMSEA = 0.07, CFI = 0.97, NNFI = 0.96), with all item and first-order factor loadings exceeding .70 and differing reliably from zero ($p < .01$). In addition, an inspection of the AIC values indicated that, in comparison with the other configurations, this fourth model was superior in fit in both of our samples (Table 2).

[5]Note that this fourth model is statistically equivalent to a model in which a third-order factor is added (i.e., a general inclusion factor that indicates the two second-order factors of belonging and authenticity).

Multigroup Comparison

Although our proposed model of perceived inclusion appeared to fit equally well across both samples, we examined this directly by performing a multigroup comparison. This meant that we estimated a multigroup model in which both the factor configuration and the factor loadings were constrained to be equal for students and employees and subsequently used the fit of this model as an indicator of robustness (Kline, 2011). The model produced good fit to the data ($\chi^2/df = 3.00$, RMSEA = 0.04, CFI = 0.98, NNFI = 0.98), indicating that the factorial structure and factor loadings of the PGIS were equivalent for students and employees. To further demonstrate the robustness of the factorial structure of our scale, we performed two additional multigroup analyses. Specifically, we tested the following: (1) whether the structure was the same for men and women and (2) whether the structure was equivalent among cultural majority and cultural minority group members. Both models reached good fit (men/women: $\chi^2/df = 2.36$, RMSEA = 0.04, CFI = 0.97, NNFI = 0.97; cultural majority/minority: $\chi^2/df = 2.33$, RMSEA = 0.04, CFI = 0.97, NNFI = 0.97), indicating the scale's configural and loading invariance across these groups.

Convergent and Discriminant Validity

Taken together, the CFAs confirm the empirical accurateness of our proposed hierarchical two-dimensional conceptualization across important groups. Yet, this evidence does not provide a straightforward answer to the question of whether we should proceed with our validation by computing composite scale scores at the level of the first-order factors (group membership, group affection, room for authenticity, and value in authenticity) or at the level of the second-order factors (belonging and authenticity; Russell, 2002). To decide upon this, we also assessed the degree of convergent and discriminant validity of this particular measurement model (Reise, Bonifay, & Haviland, 2013). Convergent validity refers to the degree to which items

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Table 3. Convergent and discriminant validity tests

		Students				Employees			
Factor name	Factor order	CR	AVE	MSV	ASV	CR	AVE	MSV	ASV
Group membership	1	0.91	0.71	0.86	0.86	0.91	0.73	0.87	0.87
Group affection	1	0.87	0.63	0.86	0.86	0.90	0.69	0.87	0.87
Room authenticity	1	0.90	0.70	0.84	0.84	0.91	0.72	0.85	0.85
Value authenticity	1	0.92	0.73	0.84	0.84	0.92	0.75	0.85	0.85
Belonging	2	0.96	0.93	0.72	0.72	0.97	0.93	0.82	0.82
Authenticity	2	0.96	0.91	0.72	0.72	0.96	0.92	0.82	0.82

Note: CR, composite reliability; AVE, average variance extracted; MSV, maximum shared variance; ASV, average shared variance.

indicating the same factor are related to each other. Discriminant validity reflects the extent to which items indicating one factor are discernible from items indicating another factor. By assessing these types of validity, one can decide which factors can be meaningfully used in further analyses, such as testing the nomological and predictive validity as we will do in the next steps of our validation procedure (Hair, Black, Babin, & Anderson, 2010). Convergent validity is established when, for each factor, the composite reliability is larger than the average variance extracted (AVE) and the AVE is larger than 0.50. Discriminant validity is established when, for each factor, the amount of variance extracted from its items (AVE) is greater than both the average (average shared variance) and maximum variance shared with items from other factors (maximum shared squared variance; Hair et al., 2010).

The results of these analyses (Table 3) indicated that, in both samples, the second-order factors of the proposed measurement model met all of these criteria but that the first-order factors had discriminant validity issues. That is, on the basis of these criteria, group membership was not discriminant enough from group affection, and room for authenticity could not sufficiently be distinguished from value in authenticity.[6] Hence, we decided to proceed with the validation using the composite scale scores for the two second-order factors of belonging and authenticity. Consistent with the hierarchical factorial structure, we constructed the composite score of belonging by averaging the mean score of the group membership subscale and the mean score of the group affection subscale. Similarly, the composite score of authenticity was computed by averaging the mean score of the room for authenticity subscale and the mean score of the value in authenticity subscale (see also Appendix).

Reliabilities and Descriptive Statistics

Table 4 shows the reliabilities and descriptive statistics of the PGIS as a whole and its two components. For both samples, the reliability of the total scale (α's > .96) and its components (α's > .93) was excellent. As would be expected from our CFAs, belonging and authenticity were strongly interrelated in both samples (r's > .77).

Table 4. Reliabilities and descriptive statistics

Sample	Component	α	*M*	*SD*	1	2
Students	Belonging	.93	3.61	0.68	—	.77**
	Authenticity	.95	3.61	0.66		—
	Total	.96	3.61	0.63		
Employees	Belonging	.94	3.82	0.64	—	.84**
	Authenticity	.95	3.67	0.63		—
	Total	.97	3.75	0.61		

$^{\dagger}p < .10$; $^{*}p < 0.05$; $^{**}p < 0.01$.

STEP 4: NOMOLOGICAL VALIDITY

In Step 4, we aimed to further validate the PGIS by assessing the scale's nomological validity. Nomological validity is the degree to which a scale is related to other variables to which it theoretically should be related. Establishing this type of validity thus ensures that a scale is actually measuring what it is supposed to measure (MacKenzie et al., 2011). Therefore, in this validation step, we correlated our scale with a number of constructs that we expected to be related to perceptions of inclusion.

As inclusion captures the extent to which an individual perceives to be included in a group, it is most likely to be related to both individual-level and group-level concepts. Thus, for our analysis, we selected both concepts that are situated at the individual level (e.g., self-esteem) and concepts that pertain to the group as a whole (e.g., psychological safety). In addition, some concepts were selected because we expected them to be particularly related to one of our inclusion components, and less with the other. This way, we were able to provide further evidence of the multidimensional nature of inclusion that we proposed in our conceptualization (MacKenzie et al., 2011). We tested our expectations with data from both our student and employee sample. In order to include as wide a variety of concepts as possible, we decided to measure different concepts across our two samples. For each sample, we introduce the measured concepts in the succeeding text and then explain how we think they are related to the inclusion components. Unless mentioned otherwise, we used a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

[6]Note that this evidence by no means invalidates our finding that our proposed measurement model (Model 4) fitted the data better than the model that did not distinguish between the subcomponents of belonging and authenticity (Model 2). Although related, these analyses serve distinct purposes and therefore also use different statistical criteria in their interpretation. Whereas the CFAs are used to determine which measurement model is most descriptive of the data, the convergent and discriminant validity are assessed to decide which factors can be meaningfully used in further analyses (such as testing the nomological and predictive validity). This latter analysis thus determines for which factors composite scale scores should be computed (Hair et al., 2010). Importantly, the hierarchical nature of our conceptualization is still reflected in our operationalization, as we constructed the belonging and authenticity scales from their respective subcomponents (see also Appendix).

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Method

Materials: Student Sample

Self-esteem. According to sociometer theory (Leary & Baumeister, 2000), an individual's self-esteem serves as an internal, subjective monitor of social belongingness. That is, self-esteem is thought to indicate the extent to which an individual perceives himself or herself to be a socially valued member of the groups to which he or she belongs. This prediction has received empirical support (Krehbiel & Cropanzano, 2000), although there is also evidence of the reversed relation, with self-esteem affecting perceptions of appreciation (Abrams & Hogg, 2001). Whatever cause and effect may be, the important conclusion we draw from this is that self-esteem is likely to be most strongly related to the belonging component of the PGIS.

As indicators of self-esteem, we considered both state self-esteem and trait self-esteem. Whereas state self-esteem refers to one's self-esteem within a particular setting, trait self-esteem refers to one's general level of self-esteem (i.e., beyond the specific group context) and is therefore assumed to be more stable over time (Heatherton & Polivy, 1991). Given that inclusion is inherently also a context-specific construct, we expect that state self-esteem will be more strongly correlated with our belonging component than trait self-esteem. We measured state self-esteem with seven items from the original 20-item scale of Heatherton and Polivy (1991). An example item is "I am worried about what other students think of me" (scores reversed; $\alpha = .83$). Trait self-esteem was measured with 10 items (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995), including "On the whole, I am satisfied with myself" ($\alpha = .87$).

Identification. As previously argued, we think that inclusion and identification are conceptually related. To better disentangle these concepts, it is important to first acknowledge that identification is not a unidimensional construct. Rather, it is thought to consist of two main components, self-investment and self-definition, which, in turn, are each comprised of multiple subcomponents (Leach et al., 2008). On the one hand, self-investment refers to the strength of the bond between self and the group (solidarity), the positive evaluation of the group (satisfaction), and the importance of the group to self (centrality). On the other hand, self-definition refers to the perceived similarity of self (self-stereotyping) and others (in-group homogeneity) in terms of an overarching group prototype. This latter form of identification thus presupposes that an overarching group prototype exists. However, such a group prototype may not always be present (as is for example the case in inductively formed groups that were introduced earlier). On this basis, it has been convincingly argued that the self-investment dimension best captures the concept of identification (Postmes et al., 2013). Thus, in our analysis, we choose to relate inclusion only to the self-investment components of identification.

Note that the solidarity and satisfaction components of identification are similar to our belonging component in the sense that they refer to the *strength and valence* of the relationship that exists between the individual and the group. In contrast, the centrality component is conceptually more different from our inclusion components, as it refers to the *importance* of the group to self. Taken together, we expect solidarity and satisfaction to be more strongly related to belonging than to authenticity. In addition, we expect that, out of all identification components, centrality will be least strongly related to our inclusion components. Solidarity was measured with three items (e.g., "I feel a bond with this group"; $\alpha = .89$), satisfaction with four (e.g., "I am glad to be a member of this group"; $\alpha = .90$), and centrality with three (e.g., "This group is an important part of how I see myself"; $\alpha = .86$).

Materials: Employee Sample

Psychological safety. Psychological safety reflects the belief that the team will not embarrass, reject, or punish someone for speaking up (Edmondson, 1999). Although seeing the group as psychologically safe is also likely to be positively related to perceptions of belonging, we feel that psychological safety is conceptually closest to perceptions of authenticity. We therefore expect that the correlation with our authenticity component will be strongest. To measure psychological safety, we selected three items from the original seven-item scale of Edmondson (1999). An example item is "In my team it is safe to take a risk" ($\alpha = .78$).

Diversity climate. Diversity climate is the degree to which one perceives the group to be open toward and appreciative of differences between group members (Harquail & Cox, 1993). This concept is conceptually similar to psychological safety in that it captures the extent to which one believes that group members are allowed to deviate from each other. Unlike psychological safety, however, diversity climate also entails the perception that differences between group members are seen as positive within the group and therefore resembles our operationalization of authenticity even more closely. Hence, we expect a particular strong correlation between diversity climate and our authenticity component. An example item of the diversity climate scale we used (four items) is "In my team, differences between colleagues are seen as positive" ($\alpha = .86$).

Personal self-verification. Personal self-verification is the degree to which individuals feel that they are known and understood by others (Swann, 1983). Self-verification thus implies congruence between how an individual sees himself or herself and how he or she thinks to be seen by others. This correspondence is most likely to be achieved when individuals feel to be an integral part of the group and when they can act and feel authentically. Hence, we expect that personal self-verification will be related to both the belonging and authenticity components of inclusion. We measured self-verification with the same three items used by Wiesenfeld, Swann, Brockner, and Bartel (2007), including "My colleagues see me as I see myself" ($\alpha = .83$).

Results

Intraclass Correlation Analysis

Because the data of our student sample were nested (i.e., students were grouped into work groups), we first assessed whether we needed to adopt a multilevel analytic strategy. In principle, some groups could be more inclusive than others, which may result in a substantial proportion of between group

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variance. Note that we do not consider this to be an issue in the employee sample, as it is highly unlikely that some employees worked in the same organization. To assess whether it was appropriate to analyze the data of the student sample with multilevel analysis, we calculated the intraclass correlation coefficient (ICC) for all of our measured constructs (defined as the proportion of between-group variance relative to the total amount of variance; Field, 2005). We found that the ICC, when considering scores on the belonging component, was equal to .0043. For the authenticity component, the ICC was .00014. This suggests that 0.43% of the variation in scores on belonging and 0.014% of the variation in authenticity are situated at the level of the work group, with the remaining variation located at the individual level. For the other constructs, the average ICC was .0028 and ranged from .00028 to .011. Given these relatively low ICCs, it was not surprising that our analyses also revealed that none of these between-group variance components were significant (p's $> .05$). From these results, we decided that it was not necessary to perform multilevel analysis on our student data.

Main Analysis

Table 5 shows the zero-order and partial correlations of our inclusion components with the related constructs for both the student and employee samples. We calculated the partial correlation between a PGIS component and a related construct, by controlling for the correlation between the other component and that specific construct. Hence, a significant partial correlation between a PGIS component and another construct is indicative of explaining a unique part of variance of that construct. In addition, to more explicitly test our expectations, we analyzed whether the zero-order correlations differed significantly from each other by calculating the t-statistic for difference between dependent correlations (Cohen, Cohen, West, & Aiken, 2003).

The results were largely as expected. That is, in our student sample, state self-esteem was significantly more strongly correlated with our belonging subscale ($r = .46$) than with our authenticity subscale ($r = .38$), $t(274) = 1.99$, $p = .02$. The same pattern was shown for trait self-esteem ($r_{\text{belonging}} = .38$; $r_{\text{authenticity}} = .32$), although this difference was only marginally significant, $t(274) = 1.55$, $p = .06$. Also in line with our expectations, the self-investment components of identification (solidarity, satisfaction, and centrality) were all significantly (p's $< .05$) more strongly related to belonging ($r = .69$, $r = .64$, and $r = .42$, respectively) than to authenticity ($r = .51$, $r = .57$, and $r = .35$, respectively). Note that, as expected, centrality displayed the lowest correlation with belonging.

In the employee sample, consistent with our predictions, we found that the diversity climate was less strongly related to belonging ($r = .49$) than to authenticity ($r = .55$), $t(483) = -2.35$, $p < .01$. The same pattern was shown for psychological safety ($r_{\text{belonging}} = .35$; $r_{\text{authenticity}} = .38$), although this difference was not significant, $t(483) = -1.06$, $p = .14$. Finally, personal self-verification was more strongly related to belonging ($r = .68$) than to authenticity ($r = .62$), $t(483) = 3.23$, $p < .01$. Corresponding with what we expected, both belonging ($pr = .38$) and authenticity ($pr = .13$) explained a unique part of variance of personal self-verification.

Taken together, most of our predictions received empirical support. We therefore conclude that these findings provide evidence for the nomological validity of the PGIS and further support the notion that inclusion is a multidimensional concept.

STEP 5: PREDICTIVE VALIDITY

The final step in the validation of the PGIS was to establish its predictive validity. Predictive validity refers to the extent to which a scale is able to predict outcomes that it should theoretically predict (Hinkin, 1998). Here, we specifically expect that inclusion has positive effects on individual-level, interpersonal-level, and group-level outcomes. First, given that inclusion can be seen as the satisfaction of the individual needs for belonging and authenticity, it is likely that inclusion will predict individual well-being and performance. Second, as inclusion refers to the strength and valence of the relationship between the group and the individual, we also expect that inclusion will result in more

Table 5. Inclusion components: correlations with conceptually related measures

Sample	Measure	Statistic	Belonging	Authenticity	t-difference
Students	State self-esteem	r	.46**	.38**	1.99*
		pr	.27**	.06ns	
	Trait self-esteem	r	.38**	.32**	1.55†
		pr	.22**	.05ns	
	Solidarity	r	.69**	.51**	6.31**
		pr	.55**	−.06ns	
	Satisfaction	r	.64**	.57**	2.13*
		pr	.38**	.16**	
	Centrality	r	.42**	.35**	2.01*
		pr	.26**	.04ns	
Employees	Diversity climate	r	.49**	.55**	−2.35**
		pr	.08†	.28**	
	Psychological safety	r	.35**	.38**	−1.06ns
		pr	.07ns	.16**	
	Personal self-verification	r	.68**	.62**	3.23**
		pr	.38**	.13**	

Note: For each inclusion component, the table shows both the zero-order correlations and the partial correlations (controlled for the other inclusion component) with the related constructs. The significance of the difference between the zero-order correlations is tested with the t-statistic (one sided).
$^{\dagger}p < .10$; $^{*}p < 0.05$; $^{**}p < 0.01$.

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positive interactions with other group members. Third, we assume that inclusion may not only benefit the individual but can also be advantageous for groups as a whole. In this context, it has been argued that as group members perceive to be more included in their group, they become more likely to act in accordance with group goals (Ellemers & Jetten, 2013).

In line with our conceptualization and with previous research (e.g., Deci & Ryan, 2000; Leary & Baumeister, 2000; Sheldon et al., 1997), we expect that both perceptions of belonging and perceptions of authenticity will predict these outcomes. However, also following from our conceptualization, we expect that their relevant impact may vary depending on the specific type of outcome assessed. In this respect, we distinguish between affective (mood within the group, work satisfaction, interpersonal trust, and group conflict) and productive outcomes (creativity, group performance, group learning behavior, and group creativity; see Van der Zee, Paulus, Vos, & Parthasarathy, 2009, for a similar distinction). We anticipate that belonging will be particularly predictive of affective outcomes, as this inclusion component captures the extent to which there is a perceived affective bond between the group and the individual (in fact, we labeled one of the belonging subcomponents "group affection"). In turn, we expect that authenticity will be particularly predictive of productive outcomes. In this context, it has been proposed that group members' identities constitute a potential resource that may be utilized to enhance group performance. This potential can be realized if group members feel comfortable to fully disclose their identities (Haslam, Eggins, & Reynolds, 2003). We therefore expect that perceived authenticity will be especially predictive of productive outcomes.

Besides these main effects (an additive model of inclusion), we also explored whether belonging and authenticity had a combined effect on our outcomes (a multiplicative model). That is, we tested whether the effect of belonging was to a certain extent dependent on the score of authenticity (or the other way around: whether the effect of authenticity was partly dependent on the score of belonging). One possible explanation for an interaction effect could be that whereas perceptions of belonging are likely to motivate individuals to actively participate in and contribute to the group (by creating a bond between the group and the individual), perceptions of value of authenticity may enable them to actually do so (by creating a scope for individual contributions). Thus, from this perspective, the combined presence of perceptions of belonging and authenticity seems to be a particular fruitful ground for improved outcomes, which would be reflected in a significant interaction effect. Finally, we assessed whether taking into account this interaction would change the predictive strength of the two main effects.

Because of practical restrictions, we were not able to include all of the outcome measures in both our samples. We specify later which measures were only included in one of our samples. Unless mentioned otherwise, we used a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Method

Materials

Positive and negative mood. We assessed group-specific well-being by measuring participants' typical positive and negative moods within the group. These two concepts have been shown to be essential and conceptually distinct components of well-being (Diener, 1994). Respondents were asked to indicate the extent to which they typically experienced eight different moods in their group on a 5-point scale ranging from 1 (*not at all*). Responses to "joyful," "happy," "pleasure," and "satisfaction" were used to measure positive mood ($\alpha_{students} = .93$; $\alpha_{employees} = .92$), whereas responses to "depressive," "worried," "frustrated," "unhappy," and "angry" were taken to indicate negative mood ($\alpha_{students} = .84$; $\alpha_{employees} = .87$).

Work satisfaction. We measured work satisfaction with three items from the Job Satisfaction Survey of Spector (1985). An example item is "I enjoy my work." Because this measure is typical for a work setting, we included work satisfaction only in our employee sample ($\alpha = .91$).

Interpersonal trust. Interpersonal trust is the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people. We adapted and adjusted a scale from Cook and Wall (1980), resulting in a scale of five items, including "I can trust my fellow students [colleagues] to lend me a hand if I needed it" ($\alpha_{students} = 76$; $\alpha_{employees} = .86$).

Group conflict. Group conflict was measured with six questions (Jehn & Mannix, 2001), including "How often do people get angry in this group?" ($\alpha_{students} = .76$; $\alpha_{employees} = .85$). All questions were answered on a scale ranging from 1 (*never*) to 5 (*very often*).

Individual creativity. Individual creativity was measured using an abbreviated scale (three items) from Zhou and George (2001). An example item is "I often come up with creative solutions to problems." Creativity was only measured in our student sample ($\alpha = .85$).

Group creativity. Group creativity was measured by adapting three items from the original scale from Zhou and George (2001), including "In my group, one is very creative." We solely measured group creativity in our employee sample ($\alpha = .92$).

Group performance. Group performance was assessed using two items adapted from a scale from Hackman (1987). These were "This group performs excellent" and "This group does superb work" ($r_{students} = .80$; $r_{employees} = .82$).

Group learning behavior. Group learning behavior is the extent to which a group engages in an ongoing process of reflection and action, characterized by asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions (Edmondson, 1999). Three items were used, including "We regularly take time to figure out ways to improve our team's work processes." Group learning behavior was only assessed in our employee sample ($\alpha = .86$).

Results

Intraclass Correlation Analysis

Again, we first determined whether the nested data from the student sample needed to be analyzed with multilevel analysis

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by calculating the ICC for each of the constructs listed earlier. We found that the average ICC was .011 and ranged from .00067 to .041. None of the between-group variance components were found to be significant (p's $> .05$). We therefore decided to not use multilevel analysis.

Common Method Variance Analysis

As all of the preceding measures were self-reported and collected in a cross-sectional manner, we also assessed to what extent our results were influenced by common method variance. In doing so, we conducted two *post hoc* analyses. First, we performed Harman's single-factor test, which is a widely used technique to address the issue of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). According to this procedure, items of all constructs should be entered into an unrotated EFA with the number of extracted factors constrained to be one. Common method variance is thought to be present when the resulting factor explains more than 50% of the variance in the items (Podsakoff et al., 2003). We found that the resulting factor accounted for 32% of the variance of the items in the student sample and for 36% of the variance in the employee sample.

As a second approach to assess the extent of common method bias, we added an unmeasured latent factor to our measurement model (i.e., to the model including all constructs used in the predictive validity evaluation) and assessed how much variance per item was due to common method variance (Podsakoff et al., 2003). We found that the incremental explained variance was on average 1.34% per item in the student sample and on average 6.50% per item in the employee sample. Although there is no clear consensus about cutoff values concerning the incremental explained variance of a common method bias factor, the findings of the meta-analysis of Williams, Cote, and Buckley (1989) may serve as a benchmark. They found that, in all of the studies they examined, approximately 25% of the variance per item was due to common method bias. For the present study, this suggests that common method bias, even though present, is likely to be minimal and probably did not impact our results substantially.

Regression Analyses

We performed a series of stepwise regression analyses. The first block of predictors included the standardized scores for belonging and authenticity. In the second block, we added the interaction term (cf. Cohen et al., 2003). Table 6 displays the results. As expected, we found that belonging and authenticity each predicted a unique portion of variance of almost all outcome measures. Specifically, we found significant effects for both belonging and authenticity in 11 of the 15 regression analyses we conducted. In the remaining four regressions, only authenticity was a significant predictor. We further hypothesized that belonging would be most predictive of affective outcomes (i.e., mood within the group, work satisfaction, interpersonal trust, and group conflict) and that authenticity would be the strongest predictor when considering productive outcomes (i.e., creativity, group performance, and group learning behavior). We found support for this hypothesis in 12 of the 15 regression analyses we performed (by comparing the standardized regression coefficients for belonging and authenticity). The only three exceptions to this pattern appeared when we regressed individual creativity and group conflict in the student sample and group performance in the employee sample.

In addition, we explored the existence of an interaction effect. We found evidence of a combined effect of belonging and authenticity in 10 of the 15 regression analyses we conducted, with most of the interaction effects situated in the employee sample (Table 6). However, as a result of the high correlations between belonging and authenticity, the addition of the interaction term led to relatively high levels of multicollinearity in both samples (variance inflation factors > 10). This prohibits us from drawing any reliable conclusions concerning the combined effect of belonging and authenticity (cf. Kutner, Nachtsheim, & Neter, 2004). Furthermore, we found that adding the interaction term did not decrease the strength of the main effects of belonging and authenticity, which indicates the suitability of an additive model of inclusion.

In sum, these findings provide support for the predictive validity of the PGIS. In addition, it delivers a further indication of the multidimensionality of the inclusion concept.

CONCLUSIONS AND DISCUSSION

Creating inclusive environments, in which people from diverse background perceive to be included, is a key challenge for groups. Yet, to date, the literature on perceived group inclusion displayed little agreement in the appropriate conceptualization and measurement of the concept (cf. Shore et al., 2011). In the present research, we addressed these issues by introducing a conceptual framework of inclusion and subsequently using this as a starting point to develop and validate a scale to measure perceptions of inclusion.

Departing from existing work on inclusion and complementing this with theoretical insights from ODT and SDT, we proposed that inclusion is a hierarchical two-dimensional concept consisting of perceptions of belonging and authenticity. In addition, we posed that in the process of inclusion, it is the group rather than the individual that has primary agency. From this conceptualization, we developed and validated the 16-item PGIS. Data from two samples supported our proposed configuration of inclusion. Furthermore, we found evidence for the robustness of this factorial structure. In particular, the structure was found to be equivalent for students and employees, for men and women, and for cultural majority and cultural minority group members. The invariance across these groups is especially important as it ensures that the PGIS can be adequately administered in a wide range of groups. Finally, we demonstrated that the PGIS is a reliable measure of inclusion and possesses both nomological and predictive validity.

We find it important to stress that although we started our research from the notion that inclusion is a relevant concept to consider in heterogeneous groups, we believe this to be equally true for homogenous groups. Furthermore, we see no theoretical obstacles in translating our conceptualization to other group contexts than the specific ones we focused on in the empirical part of the present research. That is, we believe that belongingness and authenticity in conjunction define

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Table 6. Results of regression of outcome measures on the inclusion components

		Students				Employees			
		Step 1		Step 2		Step 1		Step 2	
Dependent variable	Predictor	β	R^2	β	R^2	β	R^2	β	R^2
Positive mood	Belonging	.51**		.52**		.32**		.46**	
	Authenticity	.22**		.23**		.24**		.23**	
	Belonging × Authenticity			.04ns				.28**	
			.48		.48		.29		.34
Negative mood	Belonging	−.34**		−.31**		−.30**		−.36**	
	Authenticity	−.29**		−.27**		−.12†		−.11†	
	Belonging × Authenticity			.15**				−.12*	
			.34		.36		.16		.17
Work satisfaction	Belonging					.29**		.41**	
	Authenticity					.13*		.12†	
	Belonging × Authenticity							.23**	
							.16		.20
Trust	Belonging	.36**		.36**		.36**		.50**	
	Authenticity	.23**		.23**		.19**		.18**	
	Belonging × Authenticity			.02ns				.27**	
			.31		.31		.28		.33
Group conflict	Belonging	.04ns		.03ns		−.17*		−.24**	
	Authenticity	−.27**		−.28**		−.16*		−.15†	
	Belonging × Authenticity			−.05ns				−.13**	
			.06		.06		.10		.11
Individual creativity	Belonging	.28**		.27**		−.01ns		.13†	
	Authenticity	.25**		.25**		.24**		.23**	
	Belonging × Authenticity			−.03ns				.26**	
			.25		.25		.05		.10
Group creativity	Belonging					−.02ns		.12ns	
	Authenticity					.36**		.35**	
	Belonging × Authenticity							.26**	
							.12		.17
Group performance	Belonging	.25**		.27**		.33**		.47**	
	Authenticity	.26**		.27**		.11†		.10†	
	Belonging × Authenticity			.12*				.28**	
			.23		.24		.18		.23
Group learning behavior	Belonging					.09ns		.21**	
	Authenticity					.38**		.37**	
	Belonging × Authenticity							.24**	
							.20		.25

†$p < .10$; *$p < 0.05$; **$p < 0.01$.

inclusion in all types of interactive groups. Yet importantly, the extent to which these components are aligned with each other may very well differ between groups. To illustrate, and as already hinted at earlier, some groups may force their members to forsake their authentic self in order to fit in (i.e., to assimilate). A typical example of such a group could be a military squadron in which soldiers perceive to belong to the group but at the same time do not feel they are encouraged to behave in an authentic manner. In contrast, other groups may provide its members with a low sense of belonging yet allow and encourage them to be themselves (i.e., to differentiate). A typical example of this particular configuration is an organization that hires external consultants. Whereas these consultants are probably seen as peripheral organizational members, they are likely to be valued for their authentic insights. An interesting line for future research is to systematically sample different types of groups and explore how belonging and authenticity are related to one another across these groups. In addition, for those groups in which the degree of correlation between the two inclusion dimensions is relatively low, the interactive effect of belonging and authenticity can be analyzed more reliably than we were able to do in the present research. Importantly, we think that our newly developed scale may be a particularly suitable instrument to explore these ideas as we deliberately formulated its items in a general manner to ensure the scale's applicability across a wide range of groups (e.g., organizations, schools, group of close friends, and sports teams).

Furthermore, although situations invariably exist in which our inclusion components are highly correlated with each other, we firmly hold that this diminishes neither the theoretical accuracy nor the practical usefulness of our conceptualization. As we will further outline later, being able to distinguish between multiple components of inclusion may be very informative in certain research contexts. In this light, it is worth noting that although belonging and authenticity were highly correlated with each other in both of our samples, we still found support for the multidimensional nature of the construct when we assessed the factorial structure, the nomological validity, and the predictive validity of the PGIS. Relatedly, we think that our distinction between the subcomponents of belonging (group membership and group affection) and authenticity (room for authenticity and value in authenticity) not only resulted in a more refined

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conceptualization but also enriched the development of our scale as it allowed us to tap into a wider spectrum of inclusion aspects.

Importantly, our conceptualization offers a clear theoretical framework on which future research may build. An interesting path for future studies is for example suggested by the results of our predictive validity assessment. Here, we found that belonging was particularly predictive of affective outcomes, whereas authenticity appeared to be the strongest predictor when we considered productive outcomes. Future research may elaborate on these findings by explicitly testing why and under which conditions these differential effects occur. Furthermore, future research may also test the idea that the relative importance of establishing either group members' belongingness or authenticity in predicting group performance could be dependent on the nature of the group task. In this regard, it can be hypothesized that performance on tasks that predominantly demand efficiency may benefit most from establishing perceptions of belonging, whereas performance on tasks that require creative processes may benefit most from securing authenticity.

The present research may also contribute to the refinement of experimental inclusion research. Whereas in our conceptualization, inclusion consists of perceptions of both belonging and authenticity, in existing experimental studies, inclusion is often manipulated by just altering perceived levels of belongingness. For example, an often-used manipulation in inclusion (and exclusion) research is cyberball—a cyber-analogue of a ball-tossing game (Williams, Cheung, & Choi, 2000). In this game, participants receive the ball from the fictional other players either a proportionate amount of times (inclusion condition) or a disproportionate low amount of times (exclusion condition). Although we see this as a clear manipulation of the extent to which someone is considered to belong to the group, we hold that this does not directly manipulate the extent to which someone is allowed and encouraged to be themselves within a group. Our research suggests that inclusion manipulations also need to address authenticity. On the basis of our present results, we may hypothesize that people who are provided with a low sense of belonging and at the same time are forced to adjust themselves to the group will report lower individual well-being and other relevant outcomes than those who are considered to be peripheral group members but at the same time are allowed to remain themselves within the group.

Furthermore, our conceptualization and scale might prove to be useful in research focusing on identifying the determinants of inclusion. In this regard, a crucial feature of our conceptualization is that we identified the group to be the primary actor in creating perceptions of inclusion. This directional flow underlines the responsibility and the power that groups and organizations have in establishing perceptions of inclusion among its members. Indeed, to date, various organizational interventions aimed at enhancing inclusion have been proposed, such as adopting "all-inclusive" managerial perspectives toward diversity (e.g., Stevens, Plaut, & Sanchez-Burks, 2008), developing inclusive leadership styles (Shore et al., 2011), and promoting "inclusion competencies" among employees (Pless & Maak, 2004). Combining the PGIS with these existing frameworks offers a promising road for future inclusion research.

In sum, by proposing that inclusion consists of perceptions of belonging and authenticity and by identifying the group as the primary source of these perceptions, this research provides a conceptual refinement of the inclusion construct. At the same time, it also equips researchers with a valid and reliable measurement instrument that can be used in future inclusion research.

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APPENDIX

THE PERCEIVED GROUP INCLUSION SCALE

This group…

1. …gives me the feeling that I belong
2. …gives me the feeling that I am part of this group
3. …gives me the feeling that I fit in
4. …treats me as an insider
5. …likes me
6. …appreciates me
7. …is pleased with me
8. …cares about me
9. …allows me to be authentic
10. …allows me to be who I am
11. …allows me to express my authentic self
12. …allows me to present myself the way I am
13. …encourages me to be authentic
14. …encourages me to be who I am
15. …encourages me to express my authentic self
16. …encourages me to present myself the way I am

1–4: group membership subscale; 5–8: group affection subscale; 9–12: room for authenticity subscale; 13–16: value in authenticity subscale.

The composite scale scores for the higher-order components of belonging and authenticity are computed by averaging the mean scores of the corresponding subscales. That is, belonging is computed by averaging the score mean score of the group membership subscale and the mean score of the group affection subscale. Authenticity is computed by averaging the mean score of the room for authenticity subscale and the mean score of the value in authenticity subscale.

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