PSY-3900

Master's degree in psychology

Spring 2014

Verbal Measure, or Graphic Measure, or Both?

Psychometric Study of Organizational Identification

Lars Moksness

Department of psychology

UiT Norway's Arctic University

Running head: Psychometric Study of Organizational Identification

Supervisor:

Professor Floyd Webster Rudmin

Preface

The idea for this paper originated in my interest in social psychology, specifically cross-cultural psychology. Fascinated by the way culture influences behavior, I thought of ways to study this across borders. Having read about social identity theory during my studies, I found it to be a comprehensive and informative framework for explaining human social behavior. Playing with the idea of designing a project to measure social identity in various countries, I soon realized this would prove challenging, especially logistically. I considered contacting universities, but not wishing to draw my sample from non-representative populations such as students, I had to pursue different solutions.

During a university job fair I came to think of multinational companies to provide the perfect setting for the exploration of human behavior cross-culturally. These companies are situated in various countries, have a multicultural workforce, and the logistics for administering a survey are already in place. Also, all the employees share one common denominator, the company. Following the incorporation of social identity theory into organizational studies soon introduced me to the concept of organizational identification. Always a fan of efficiency, I researched fast and simple ways to measure organizational identification, and this lead me to the graphic measures.

I asked Professor Rudmin to be my supervisor based on his long experience, skills in methodology, and research design. He had also supervised on my BA thesis and was very helpful during that process. I brought my ideas to him, and he provided insights into the specifics of the research design and methods for this project. During this time I obtained the participation of a Norwegian multinational company in my study. Given that my thesis topic was not Prof. Rudmin's area of expertise, all literature search and review was conducted independently by me. During the work on the thesis Prof. Rudmin kept me on the straight and narrow in terms of analyses and proper formatting of my paper. He also provided useful feedback on my thesis-drafts during the last semester of the master program.

Tromsø, April 25, 2014

....

(Student)   25 April 2014   (Supervisor)   25 April 2014

Sammendrag (Norsk)

For å måle organisasjonsidentitet undersøkte dette forskningsprosjektet vitenskapelige ansatte ved et norsk universitet (N = 74), og ansatte i et norsk multinasjonalt selskap (N = 244). Tidligere forskning, rollen til sosial identitetsteori i organisasjonsidentitet, og en gjennomgang av målemetoder ble presentert. Data ble samlet inn med Identification with a Psychological Group Scale (IDPG) som består av 10 spørsmål, et verbalt identitetsspørsmål (VID) og et grafisk mål på identitet (GID). Fra IDPG måleskalaen ble en organisasjonsidentitetsskala på seks spørsmål trukket ut (OID scale). I pilotstudien (Studie 1), viste resultatene at OID skalaen hadde gode psykometriske egenskaper og den hadde signifikante korrelasjoner med GID ($r = .56$). Korrelasjoner mellom alder, kjønn, ansettelsesperiode, og lokasjon ble undersøkt, men ikke funnet å være signifikant. Det ble undersøkt om GID hadde en posisjonseffekt på de andre variablene, men ingen slik effekt ble funnet. Resultatene indikerte at produkter med firmalogo kunne være en markør for OID. Basert på resultatene fra Studie 1 var formålet i Studie 2 å måle organisasjonsidentitet i en multikulturell setting ved å bruke OID skalaen og GID. Om bruk av produkter med firmalogo kunne være en markør for OID ble også undersøkt, og en sammenheng ble funnet. Sammenfallende validitet mellom GID og OID skalaen ble vurdert ved hjelp av regresjonsanalyser, og resultatene bekreftet at skår på OID skalaen kunne predikeres fra skåren på GID, men med vide residualer. Korrelasjoner mellom OID skalaen og GID var moderat høye.

Nøkkelord: verbal, grafisk, måleskala, organisasjonsidentitet, identitet, sosial identitetsteori, multinasjonal

Abstract (English)

To measure organizational identification, this research surveyed the employees at a Norwegian university (N = 74) and a Norway-based multinational company (N = 244). Previous research, the role of social identity theory in organizational identification, and a review of measurement methods was presented. Data were collected with the 10-item Identification with a Psychological Group Scale (IDPG), a verbal identity item (VID) and a graphic identity item (GID). The 6-item Organizational Identification scale was extracted from the 10-item scale. In the pilot study (Study 1), results showed the OID scale had good psychometric properties, and significantly correlated with the GID ($r = .56$). Correlations between age, gender, years employed, and location were examined but not found to be significant. Serial ordering effect of the GID was investigated but no such effect was found. Results indicated items with company logo could be a marker of OID. In Study 2 the purpose was to measure organizational identification in a multinational company using the GID and OID scale from Study 1. If wearing items with the company logo was a marker of OID was also investigated, and a relationship was found. Convergent validity between the GID and the OID was assessed using regression analysis, and results confirmed that score on the OID could be predicted from the score on the GID, albeit with a wide range of residuals. Correlations between the OID and the GID were moderately high.

Keywords: verbal, graphic, measurement scale, organizational identification, identity, social identity theory, multinational.

Acknowledgements

Table of contents

Verbal Measure, Graphic Measure, or Both?

Psychometric Study of Organizational Identification

A concept receiving increasing attention in the scholarly literature is organizational identification (OID). Identities constitute a "root construct" (Albert, Ashforth, & Dutton, 2000, p. 13) for a range of organizational occurrences like inter- and intra-group dynamics, employees' sense of pride and worry about the organization, and an answer to the question "Who am I?"

History

The construct of OID is not a new one, and as early as 1939 a publication from the American Statistical Association ("Statistical News and Notes," 1939) used the exact phrase "organizational identification" in the context of favoring a decentralized organization of the Federal statistical services, because it was argued, quality statistical analyses required identification with the group who used the analysis. The result would be that organizational identification of statisticians at an agency level would be maintained.

In the 1940's, Norton (1949) queried " [t]o whom is one loyal – unit, section, branch, division, bureau, department, administration, government, country, people, world history, or what?" (p. 261). He further highlighted that current analysis assumed that organizational identification should "merge primary organization loyaly in a larger synthesis". More groundwork was done in the 1950's by Foote (1951), who spoke of human beings tendencies to identify with group members, and by March and Simon (1958) who proposed a detailed model of OID and formalized the construct.

The following years appeared to have seen a lull in the explicit research of OID, with a limited amount of papers published in the 1970's (e.g. Hall & Schneider, 1972; Hall, Schneider, & Nygren, 1970; Rotondi, 1972, 1974, 1975, 1976; Schneider, Hall, Nygren, 1971). However, in the 1980's the construct appears to have gained some momentum and became more accessible through the influential work of Albert and Whetten (1985). A few years later, Ashforth and Mael (1989) incorporated social identity theory (SIT) into the understanding of OID and later developed a widely used measure of OID (Mael & Ashforth, 1992). To date, the field of OID has blossomed and includes papers investigating OID in a wide variety of topics including pre-, during and post- merger scenarios (Amiot, Terry, Jimmieson, & Callan, 2006; Jos Bartels, Pruyn, & de Jong, 2009; Boen, Vanbeselaere, & Cool, 2006; van Dick, Ullrich, & Tissington, 2006), turnover intentions (de Moura, Abrams, Retter, Gunnarsdottir, & Ando, 2009; Harris & Cameron, 2005; Mignonac, Herrbach, & Guerrero, 2006; van Dick et al., 2004), and multinational companies (Reade, 2001a, 2001b; Vora & Kostova, 2007; Vora, Kostova, & Roth, 2007).

OID in the context of multinational companies (MNC) is of particular interest, in that it pertains to individuals attached to dispersed (across nations) organizational units. Vora et al. (2007) proposed subsidiary managers as being of strategic importance in that they bridge the various units of the MNC. Indeed, earlier work by Reade (2001b) suggested that managers differentiate between their local subsidiary and global organization in terms of separate group identifications. Furthermore, Doz and Prahalad (1986) offered that managers who are sensitive to both local and global interests are more effective than those only loyal to one entity. Is this dual identification also present for non-managerial employees?

1. Theoretical Background

Following Ashforth and Mael (1989), this paper views OID as a specific form of social identification, where an individual's identity is derived from his or her classification into social categories, or social groups. The social group has been defined as "a collection of individuals who perceive themselves to be members of the same social category" (Tajfel & Turner, 1979, p. 40), that is, individuals who define, describe and evaluate themselves in accordance with the label associated with the group. The norms of conduct associated with the group serves as guidelines for the members' behavior. Furthermore, in accordance with Albert and Whetten (1985) and Whetten (2006), this paper also operates under the assumption that OID is the central, distinctive and enduring attributes of an entity, thus providing an answer to the question "Who am I?" (as an individual) and "Who are we?"(as a collective). However, it should be noted that Ashforth, Rogers, and Corley (2011, p 1145) suggested the term "enduring" be altered to "continuous" in Albert and Whetten's definition of OID:

> Although Albert and Whetten (1985) used the term "enduring" rather than "continuous," subsequent research suggests that identity change at the collective is not only possible, but likely (Corley et al. 2006, Gioia et al. 2000), even if only over extended periods of time. Thus, "continuous" is a more appropriate descriptor than "enduring," especially across levels.

Vora et al (2007, p 331) employed the term "dual organizational identification", meaning "an individual's sense of identification with two organizational entities". These entities could be at various levels of analysis, such as between an individual and his or her

department and organization. The idea that individuals can identify with multiple entities is consistent with SIT (Ashforth & Mael, 1989).

In a similar vein, Ashforth et al. (2011) also elaborated upon the concepts of levels of self and levels of analysis. As the researchers noted, the two concepts regarding levels of self and levels of analysis can be easily confused. According to Ashforth and his colleagues levels of self refers to how an individual views his or her identity, for example at the individual level ("I am ambitious"), to the dyad/partnership ("I am a friend"), to the group ("I am a team member"), to the organization and industry. Levels of analysis, on the other hand, refer to "the identity of an entity as an entity" (Ashforth et al., 2011, p. 1144), meaning as a property of the collective not the individual (e.g. individual level, "I am ambitious", to the dyad/partnership, "we are a partnership", to the group level, "we are a team", to the organizational level, "we are a company", and the industry, "we are car retailers").

Definitions of Organizational Identification

An early description of organizational identification was offered by Patchen (1970) who listed several important and interwoven phenomena as its constituent parts. These comprised a perception of shared characteristics with the members of the organization, a feeling of solidarity with the organization, and support of the organization. Basically, the foundations of organizational identification rest on a notion that members share a sense of similarity with each in terms of interests and goals. Furthermore, the solidarity component Patchen described underscores the importance for members' sense of belongingness with the organization. Lastly, supportive component rests on a feeling of loyalty towards organizational goals and policies. This included the will to defend organizational goals and policies, according to Patchen.

Several definitions of OI have later been proposed. Many conceptualize OID in terms of cognitive constructs (Bergami & Bagozzi, 2000; Shamir & Kark, 2004), others along the lines of organizational commitment involving an emotional and moral element, or affective component, (Harris & Cameron, 2005; Lopes, 2002; O'Reilly & Chatman, 1986). A combination of both these elements can be seen in definitions which herald from SIT Ashforth, Harrison, & Corley, 2008; Ashforth & Mael, 1989; van Dick, 2001; van Dick, Wagner, Stellmacher, Christ, & Tissington, 2005). In a relatively recent meta-analysis of research in OID (Riketta, 2005, p. 360-361) , the key aspects of the various definitions of OID were presented and summarized as follows:

> Despite their heterogeneity, all these definitions imply that the organizational member has linked his or her organizational membership to his or her self-concept, either cognitively (e.g., feeling a part of the organization; internalizing organizational values), emotionally (pride in membership), or both.

There exists some confusion between the concepts of organizational identification and organizational commitment (OC), where some researchers employ the concepts interchangeably, and others view OID as a component of OC (See Ashforth & Mael, 1989; Ashforth, Harrison, & Corley., 2008). For example, Edwards and Peccei (2007, p. 30) specifically stated that the conceptualization they employed explicitly sought to differentiate OID from "the wider notion of commitment".

Another problem highlighted by Haslam, Ellemers, van Knippenberg, and Platow (2003) was that the distinction between social identification and social identity has become somewhat muddled and ambiguous. According to the authors, the same term of social identification has been used to refer to both the process and state of being identified. In other words, the tendency to consider oneself as a group member, and that of the self-image a group

member possesses is derived from the group membership. They further stated that in an organizational context "organizational identification (referring to the ties between the individual and the organization) should be differentiated from organizational identity (the content of the resulting identity)" (Haslam et al., 2003 p. 13).

Ingroup and Outgroup

The terms ingroup and outgroup refer to how people classify group membership in terms of belongingness to the group. A rough explanation would be the ingroup designates "us", and the outgroup "them". It is unclear when the terms saw first light, though the expression "ingroup" was used as early as 1906 when Summer (1906) coined the term "ethnocentrism". According to Rabbie and Horwitz (1969) this spawned a discussion related to the tendency of ingroups to devaluate outgroups (later known by the term ingroup bias). Further discussed by Merton (1948) again in terms of ethnicity, the outline of the concepts much stayed the same, i.e. outgroups constitute those who significantly differ from ourselves (race, nationality, religion) [sic] and the ingroup consists of those who belong.

Social Identity Theory

Social identity theory (SIT) is a social psychological analysis of group membership, group processes, and intergroup relations. SIT is particularly focused on the role of self-categorization in these instances, with interwoven concepts and subtheories from other arenas of group life (Hogg, 2006). The foundations of the theory were originally developed at the start of 1970 by Henri Tajfel, and has since become, as Hogg (2006) stated, one of social psychology's most significant general theories of the relationship between the self and group.

SIT rests on the notion that a social category (e.g. nationality, sports team, and work group) in which one falls, and which one feels belongingness to, imparts defining

characteristics on the actual category, in turn becoming a part of one's self-concept. People possess several such social categorical memberships, in a group or groups, of various importance and salience. Typically, the salience of any of these categories in a particular context becomes the basis for a person's self-regulation in that situation. An early researcher on individuals and society (Berger, 1966) illustrated this relationship well: "The individual *realises* [sic] himself in society – that is, he recognizes his identity in socially defined terms and these definitions becomes reality as he lives in society" (p. 107).

The theory was initially conceptualized to account for peoples' tendencies to display intergroup discrimination in minimal groups. What constitutes a minimal group is best understood through a brief explanation of the minimal group paradigm. In the minimal group paradigm, there should not be any difference between ingroup members and outgroup members apart from their group memberships (e.g. personal preferences for books, authors, sports teams etc.). This means that social categorization on its own is sufficient to elicit intergroup discrimination (Diehl, 1990; Oakes & Turner, 1980; Tajfel, Billig, Bundy, & Flament, 1971). The criteria that had to be achieved in order to satisfy the conditions for the paradigm is not within the scope of this paper to discuss (see Diehl, 1990 for an overview).

In summary, what Tajfel and his colleagues found (Tajfel et al., 1971), was that in a situation satisfying the criteria for the minimal group paradigm the subjects still acted in terms of their ingroup membership. Furthermore, the subjects in all three experiments favored the members of the ingroup against the members of the outgroup, despite the fact that participants had the option of acting in terms of the common good at a comparatively small cost to ingroup members. This phenomenon proved to be robust and the results were replicated in later studies. It also inspired Tajfel to develop what would be the foundations of social identity theory, unifying social categorization, comparison and identification under one banner.

Groups

Within the framework of SIT group is defined cognitively, in terms of peoples' subjective perception of themselves as group members. Tajfel (1982) defined group after either internal or external criteria, where the internal criteria are those of group identification and external criteria describe designations such as team member, pilot, banker etc. According to Hogg (2006) a group exists psychologically when three or more people view themselves as distinguishable from other people based on their perceived shared traits and behaviors. They identify and evaluate themselves in the same way, share attributes, and agree on points from which they differ from other groups, or outgroups.

Hogg clarified that social identity researchers do not view a dyad as a group, because of the tendency for dyads to be saturated by interpersonal processes and the need for at least three people to infer group norms from the behavior of others and lastly, that many group processes cannot occur in a dyad (Hogg, 2006). This is not to say that two people in the same place at the same time cannot be in a group, they can, if they are part of some larger group. For example, two members of a political party will share the common identity of that political party and identify with that group even though they may be the only two representatives of that party present.

Groups do not necessarily come of the same size and shape, and they may vary according to function, longevity and type. Here the distinction between the groups can be broadly described as a function of the attachment of the groups' members to the group identity or between themselves, or what Prentice, Miller, and Lightdale (1994) called common-identity groups and common-bond groups respectively. According to Hogg (2006) this social group distinction, of interpersonal and impersonal bonds, capture important aspects of the nature of the group. However, the consensus among social identity theorists appears to

be that of identification as representing the very essence of groupness. After all, people can belong to both types of group but if they do not feel any particular sense of belonging to the group, if they do not identify, "they may not think, feel, and behave as group members" (Hogg, 2006, p 117).

Indeed, in order to identify with the group it is enough for members, according to Ashforth and Mael (1989), to cognitively view themselves as psychologically intertwined with the fate of the group, whereas this cognitive construct is not necessarily linked to any specific behaviors and affective states. Additionally, it involves and to personally experience the successes and failures of the group. In accordance with Hogg and Turner (1987) they also drew a distinction between identification and internalization, in other words between "I am" and "I believe". What this means is that an individual can identify with a group because of an arbitrary membership status (it is my job) and at the same time disagreeing with the values of that group.

Several points, or consequences, regarding group membership was described by Tajfel in his early work on social identity and intergroup behavior (Tajfel, 1974): Firstly, it can be assumed that a person would want to stay a member of a group, and seek memberships in new groups, as long as these groups has, at least, some perceived positive contribution to the member's social identity. Secondly, a member will leave a group he or she is not happy with unless leaving the group causes conflict in the member's existing and acceptable social identity, or is otherwise prevented through some external factor. Thirdly, if these situations arise, group attributes could be re-assessed, or re-framed, to incorporate the undesirable features. On the other hand, the undesirable situation or feature could be met head-on in order to alter its perceived negative outcome. The last point Tajfel makes is that no group lives alone, and all the consequences regarding group membership will only acquire meaning in relation to, or through the comparisons with other groups.

The Components of Identification

As noted above group identification can be achieved when an individual cognitively views his or her fate as intertwined with that of the group. However, there exists some disagreement as to the behavioral and affective component of identification (Ashforth & Mael, 1989). Ashforth and Mael viewed both these components as potential antecedents and consequences of the cognitive perception of group membership, or in other words as a precursor to and result of the process of identification. This would, according to the authors, distinguish behavior and affect from that of identification.

Tajfel (1982), however, highlighted the evaluative and affective component as necessary components in identification. He viewed the possibility of achieving identification as *necessarily* consisting of two components: The cognitive component related to awareness of membership, and the evaluative component which implies this awareness has some value connotations. The emotional endowment of the awareness and evaluations comprised the third component, according to Tajfel.

SIT and the Organization

Ashforth and Mael (1989) viewed organizational identification (OI) in the light of social identification, as a "perception of oneness with or belongingness to a group, involving direct or vicarious experience of its successes and failures" (Ashforth & Mael, 1989, p. 34). They built on SIT's basic tenets, some of which are, that people have a tendency to classify themselves and others into meaningful social categories, as members of in-groups and out-groups, often assigning prototypical or stereotypical values to members of the groups, and engaging in behavior that strengthens in-group ties through exaggerating (perceived) positive attributes (in-group bias), while the opposite occurs for members of the out-group (Tajfel,

1974, 1982; Tajfel & Turner, 1979; Turner, 1985). Social identification emerges from these processes, together with other factors normally associated with group formation.

Operating under the assumptions of SIT, Ashforth and Mael (1989) made essential observations concerning two important functions that social classification serves: firstly, it provides a means to cognitively partition and order the social environment, providing individuals with the necessary framework to organize and define others. They cautioned, however, that stereotypical or prototypical characteristics linked to the category from which a person is classified, might not be entirely reliable (for example, Macrae, Stanger, & Hewstone, 1996) . The second point the authors made is that social classification also enables the individual to locate him- or herself, in the social environment. For instance, a man might identify himself according to where he works, political affiliation, age, which football team he supports, and what brands of clothes he wears. Internalizing the norms of the membership groups, be it a symbolic or actual membership, inspires the person to perceive the fate of the group as his own. As mentioned briefly above, it might provide at least a partial answer to the question "Who am I?"

In an organization an individual's social identity might be a more complex structure than one that only draws its sense of identification from the organization as a whole. With the given complexity and number of various social identities an individual can possess, it makes sense to also analyze organizational identification in greater detail than only identification derived from the super-ordinate structure of the organization. Indeed, as several researchers have noted, what the employees derive their sense of identification from could be their work-group, lunch-group, department, job-type (e.g. carpenter or mechanic), age cohort, and geographical location (Ashforth & Mael, 1989; Ashforth et al., 2011; Bartels, Pruyun, Jong, & Jouster, 2007; Foreman & Whetten, 2002; Van Knippenberg & Van Schie, 2000) . Additionally, Riketta and van Dick (2005) discovered through meta-analysis of employee

attachment (an antecedent of identification, see Crisp et al., 2009; Riketta & Van Dick, 2005) that on average workgroup attachment was stronger than that of organizational attachment.

Ashforth and Mael (1989) suggested some antecedents of identification that consisted of several factors which could potentially increase group identification. Although valid at an organizational level, the same could hold true at other levels of analysis within the organization. The first factor concerns how the group distinguishes itself from that of other groups, in terms of the values and practices of the in-group. The general tendency for in-groups to favor themselves and exaggerate their perceived positive attributes while at the same time exaggerating negative attributes of the out-group is also known as in-group favoritism or in-group bias (Brewer, 1979; Tajfel, 1974; Terry & Callan, 1998). This distinguishes the group from others and provides a unique sense of identity. Understandably, within the organization distinctiveness is governed by "clarity and impermeability of group domains and boundaries" (Ashforth & Mael, 1989, p. 24).

Groups that derive their identification from the conversion of negatively valued distinctions into positive ones (as perceived by group members) also form a strong sense of identity. For example, group members may not explicitly choose to represent a minority, but may be regarded negatively by other groups and group members who represent the majority (e.g. disgruntled groups in an organization). In this situation minority group members could recast the negative stereotype into a positive one (choosing particular clothes, language, or behavior). This serves to minimize the impact of the negative distinction and might also bolster positive identification within the minority group (Ashforth & Mael, 1989; Turner, 1985). However, even these sub-groups require members to conform to group norms (Hogg & Vaughan, 2008), so the mechanics of the intra-group processes are similar (about conformity, see Asch, 1956).

The second factor Ashforth and Mael (1989) discussed was how the prestige of a group increases identification through intergroup comparisons that bolster self-esteem. Willerman and Swanson (1953) studied group prestige in voluntary organizations at a US university in the 1950's and defined group prestige as "[t]he prestige of a group may be viewed as that part of a group's reputation which refers to its social visibility and to its evaluation as a "superior" group (Willerman & Swanson, 1953 p. 57). They found that generally, members of higher prestige groups were more satisfied with their membership, and that there was a reciprocal relationship between membership size and prestige, with changes in one affecting the other. This, in turn affected the group's ability to attract desirable members. Naturally, who would not want to identify with the winning team?

The third factor acting as an antecedent to identification is that of out-group salience. This means that a member's social identification with a specific workgroup or even organization could be determined by what other groups, or out-groups, are not. Determining what attributes are associated with an out-group could make the in-group's values and attributes more salient and in that way strengthening identification (Ashforth & Mael, 1989; Wilder & Shapiro, 1984).

Other factors, such as artifacts, symbols and organizational dress, could influence or trigger an employee's organizational identification (Pratt & Rafaeli, 1997; Wiesenfeld, Raghuram, & Garud, 2001). In the context of organizational dress (i.e. clothing with logo), Pratt and Rafaeli (1997) highlighted that wearing such clothing might be incorporated in a person's self-image and be seen as self-defining characteristic of that person's identification. The authors considered organizational dress, totems and symbols to be key markers of organizational identification. In other words, wearing clothes with the company logo appear to be linked to organizational identification at some level.

Organizational Identification and Multinational Corporations

There is an increasing interest in the study of how existing organizational theories apply to multinational corporations (MNCs). MNCs are more complex than domestic firms due to facilities and operations in more than one country, and they face challenges related to the coordination and integration amongst these dispersed organizational units. Dealing with an increasingly competitive global environment, achieving both local responsiveness and global integration is an important aspect of success (Bartlett & Ghoshal, 1988). In an organization that spans several countries and a plethora of cultures and languages, the importance of developing and nourishing shared values and goals, or OID, among high-level employees is clear (Leong & Tan, 1993; Reade, 2001b; Vora et al., 2007). It can be argued that OID amongst employees at all levels in the MNC is equally important, and certainly it is desirable with workers who identify with the organization in which they work. However, highly educated and managerial employees are more likely to possess positions which enable and require contact with entities situated internationally within the organization. This puts them in a position whereby the components of OID can be exchanged, developed and maintained within the organization as a whole. Indeed, Ashforth and Mael (2011) noted that individuals in powerful positions also have a great influence on other employees in terms of how OID is internalized and expressed.

According to some researchers, the role of MNC subsidiary managers is particularly important as they tend to develop dual identification, both with the subsidiary and the MNC, which subsequently enables them to act on the behalf of both (Reade, 2001a; Vora et al., 2007). Vora and colleagues (2007) conveyed how subsidiary managers are central to the functioning of the MNC because they bridge the units within the organization, and are expected to act in both the subsidiary's and the MNC's interests. The subsidiary managers will in the power of their position therefore possess several important roles affecting inter-unit

communication and cooperation. Indeed, Gregersen and Black (1992) suggested dual

commitment be of special importance to managers of foreign operations because these

managers must balance the interests of both the subsidiary and the MNC.

The definition of dual organizational identification (DOI) in this article follows that of

Vora and Kostova (2007) who stated that it refers to an individual's sense of identification

with two organizational entities, which might exist at various levels, such as department,

division, subsidiary, or overall organization. The idea that employees can identify with

multiple entities within the organization is as discussed above consistent with the principles of

SIT (Tajfel, 1974; Tajfel et al., 1971). Although, the research primarily has focused on

identification with a work group and the organization as a whole, Vora and Kostova (2007)

also noted that entities such as, county, area, state offices, and the MNC and subsidiary, have

been empirically explored. If, under some conditions identities overlap, for example

contextually, cognitively, or that the individual subjectively tolerates simultaneous

identifications, it is possible to experience multiple salient identities (Ashforth & Johnson,

2001). This occurs when identities overlap, are relevant to a particular context, are

cognitively linked to each other, and when individuals can tolerate such simultaneous

identifications.

Dual organizational identification (DOI), in this context towards both local and the

global MNC, is even considered to advantageous as it contains a sensitivity to both local

conditions and those of the MNC itself, which in turn can be central for succeeding within the

MNC (Doz & Prahalad, 1986). Individuals who strongly identify with the organization both

define themselves according to their organizational reference group and internalize the values

and interests of the collective and are motivated to act on behalf of, and contribute to, the

organization (Ashforth & Mael, 1989; Dutton, Dukerich, & Harquail, 1994) , and conceivably

stronger OID/DOI will lead to better job performance (Chen, Chi, & Friedman, 2013).

Even though the structure of the MNC is complex, Vora and Kostova (2007) proposed the most effective way for individuals in dealing with this is through developing equally complex psychological attachments to the MNC. According to the authors, the managers and employees "who are capable of integrating multiple organizational identifications will be more successful in handling complex organizational roles" (Vora & Kostova, 2007, p. 28). The authors found the role of the subsidiary managers to be of particular interest since they are more likely to find themselves in the situation where they experience DOI, and this has implications for the organization. Subsidiary managers act as boundary spanners between the local and the main office and because of their exposure might find themselves in a position whereby they develop a sense of oneness with both. Vora and Kostova (2007) refers to Thomas (1994) who stated that this type of boundary spanning behavior might influence both individual and sub-unit performance.

Multiple Levels of Analysis

The introduction of this article briefly touched upon Ashforth and colleagues (2011) contribution to the discussion concerning the exploration of organizational identity across levels of analysis. Although the measurement of nested identities (a job is nested within a department which is nested within an organization) across multiple levels of analysis is beyond the scope of the current work, it is none the less fruitful to briefly survey the theoretical implications this concept might have to organizational research. Multiple levels of analysis is, within this text, meant to include both levels of self and levels of analysis as specified by Ashforth et al. (2011). Dual organizational identification in the context of multinational companies, although it is strictly speaking multi-level (George & Chattopadhyay, 2005; Reade, 2001b; Vora & Kostova, 2007) has already been addressed in a previous section.

As mentioned above, levels of self refers to how the individual conceives his or her identity in relation to levels ranging from the personal or individual ("I am introverted"), dyad or relationship ("I am a friend"), group ("I am a team member"), and to the organization and industry ("I work for this car company/I work in the car industry"). These would in varying degrees provide information on the extent to which a person internalizes a given identity as a valid definition of self. Levels of analysis, however, places the individual as part of the collective, or extra-individual level, ("We are") rather than the individual ("I am"), and incorporates the same range as does levels of self. The individual level though, will be the same for both levels of self and levels of analysis, i.e. the starting point is the individual's notion of his or her identity at a personal level irrespective of how subsequent subjective definitions of self evolves.

Ashforth et al (2011) elaborated upon how collective identities form through a process of migrating from an individual cognition about identity ("I think"), which gives rise to shared cognitions of identity ("we think"), to the culmination of identity as an institutionalized reality transcending individuals ("it is"). The process of collective identity formation is in part explained through Wiley's (1988) notions of levels of social theory, which outlines an elaborate interaction between the "intrasubjective", the "intersubjective", and the "generic subjective" levels. What can be synthesized from these processes is effectively that the formation and migration of identification at the various levels occurs through interaction between individuals in different social categories, and how the same individuals conceive their social identity related to these categories and notions. Additionally, the authors highlighted how powerful individuals greatly influence the thinking and action of others, and in that way shaping the identification with various organizational entities.

Perhaps parallels can be drawn to the top-down and bottom-up influence mechanisms reported by Costa et al. (2013). Not explicitly pertaining to identification, but the influence

mechanisms the authors described, operating among actors in the organization and between

layers in the organization, could conceivably be understood within a social identity

framework (individual and group dynamics). The context from which teams and organizations

initiate development of individual cognitions, attitudes, and behaviors is known as top-down

effects. Bottom-up effects was defined as being initiated from the individual level, thus

influencing the functioning and outcomes of teams and organizations (Klein & Kozlowski,

2000).

Measuring Organizational Identification: An Overview

The following paragraphs will draw extensively on Moksness (2012) overview of

common measurement methods of OI, of which the current work is the successor. The

methods may include surveys and interviews, utilizing questionnaires comprised of multiple-

item Likert-type items (Bartel, 2001; Cheney, 1983; Dutton & Dukerich, 1991; Elsbach &

Kramer, 1996; Mael & Ashforth, 1992; van Riel & Balmer, 1997). Some early and influential

measures such as the 25-item Cheney Organizational Identification Questionnaire (OIQ)

(Cheney, 1983), suffered, according to Edwards and Peccei (2007), from contamination, in

that they might have measured other constructs than OID, and inadequacy, displayed by a

weak link between conceptualization and practical operalization of the concept (Edwards,

2005; Edwards & Peccei, 2007). Similar issues were identified by the authors in one of the

main measurement tools of OID: the 6-item Mael and Ashforth OID scale (Mael & Ashforth,

1992).

Less common methods of measuring OID are single-item scales, and single-item

graphic scales (Bartels & Reinders, 2010; Bergami & Bagozzi, 2000; Dukerich, Golden, &

Shortell, 2002; Shamir & Kark, 2004). Although the concept of single-item measures is

alluring, many researchers have raised questions related to a single-item's potential reliability

and validity issues (Edwards & Peccei, 2007; Shamir & Kark, 2004). Shamir and Kark also pointed out that the single-item graphic scale was just as good as verbal measures, but not superior. It should also be mentioned that other authors are of a similar mind; that a single-item measure often has the same predictive value as multiple-item measures (Bergkvist & Rossiter, 2007; de Boer et al., 2004; Patrician, 2004). However, as Barret and Paltiel (1996, p. 2) concluded:

> This is not to recommend that in fact just one item is used in [sic] future, because the inherent measurement unreliability of a single item is significant. However, it is a moot point whether up to eight repetitive items are needed.

This statement captures the essence of the argument this review will try to make for single-item (graphic) scales, showing that they might not be better than the alternative, but, on the other hand, they can provide a neat and time-efficient measurement tool. Another important consideration is that the construct being measured is sufficiently narrow, in order to be reliably captured by the bipolar nature of a cognitive, graphic, representational scale, such as the Shamir and Kark (2004) OI measure.

These aspects will be further explored below, after some of the most influential verbal measures of OID have been presented. The focal point and substance of these measures will be the theoretical and operational perspective as laid out by Mael (1988), and Ashforth and Mael (1989; 1992).

Psychometric Scales

Several scales or measures have been developed, chiefly verbal measures like the Mael and Ashforth (1992) 6-item scale mentioned above, and to a lesser extent single item graphic measures similar to the ones employed by Bergami and Bagozzi (2000) and Shamir and Kark (2004). Graphic scales have also been used in pain research, such as the Pieces of Hurt tool

(Hester, 1979), the Oucher-Photographic Scale (Beyer & Aradine, 1986) and the Faces Pain

Scale (Bieri, Reeve, Champion, Addicoat, & Ziegler, 1990).

The main concept of the single-item measure in identity research is that it gives the

respondent the task of comparing his or her identity in terms of two circles with varying

degrees of overlap. The use of single-item measures is alluring, in that they provide a time

efficient and easy way of measuring a single concept like identity. However, use of single

item measures have been criticized based on their potential reliability and validity issues (see,

Edwards & Peccei, 2007). Even Shamir and Kark (2004) noted that the graphic scale was not

superior to the verbal scale, and hailed the need for further research. Indeed, employing a

graphic scale comprising of circles might, irrespective of the overlap, already signal some

degree of similarity. Furthermore, circles of equaling size might also be a source of confusion

when respondents are asked to indicate strength of identity with, say, an organization (which

is a larger entity). These notions are purely speculative and the questions ought to be explored

empirically, although that is beyond the scope of the current research.

Mael and Tetrick (1992) recognized identification as having important implications for

both employees and the effectiveness of the organization. In their study, they sought to

examine the uniqueness of OI by distinguishing it from organizational commitment, but also

the concept's relationship with job satisfaction, job involvement, and organizational

satisfaction. They hypothesized that OID was less related to the latter variables than to

organizational commitment. A ten-item scale, the Identification with a Psychological Group

scale (IDPG) (Mael, 1988), (Table 1) was devised to measure identification (with a

psychological group), and the fifteen-item Organizational Commitment Questionnaire (OCQ)

(Mowday, Steers, & Porter, 1979) was used to measure OC. The measurement scales were

submitted to 263 students at two different universities.

Furthermore, Mael and Tetrick (1992) demonstrated that the construct of OID as measured by the IDPG, was empirically distinct from OC, as measured by the OCQ. They concluded that the IDPG scale tapped into cognitive/perceptual processes whilst the OCQ scale appeared to have more affective components, which lead to extensive overlap with measures of job and organizational satisfaction.

The same year, Mael teamed up with Ashforth in what has become a widely cited and influential study (Mael & Ashforth, 1992). The theorists pursued the operalization of the conceptualization of OID which, in turn, rested on the precept that "OID is the perception of oneness with or belongingness to an organization, where the individual *defines* him or herself in terms of the organization(s) in which he or she is a member"(p. 104). They applied the Ashforth and Mael (1989) model to the (all-male) alumni of a religious college. The choice of this particular sample group rested on the assumption that the members of this organization shared a "common organization-wide identity", and would not experience demands from sub-entities within the organization (Mael & Ashforth, 1992).

Table 1: Items for Identification with a Psychological Group Scale (IDPG)
reported by Mael and Tetrick (1992)

---

1. When someone criticizes (this organization), it feels like a personal insult.
2. I'm very interested in what others think about (this organization).
3. When I talk about this organization, I usually say "we" rather than "they".
4. This organization's successes are my successes.
5. When someone praises this organization, it feels like a personal compliment.
6. I act like (name of organization) person to a great extent.
7. If a story in the media criticized the organization, I would feel embarrassed.
8. I don't act like a typical (name of organization) person.
9. I have a number of qualities typical of (name of organization) people.
10. The limitation associated with (name of organization) people applies to me also.

The OI measure in the Mael and Tetrick (1992) study comprised six items (Table 2), taken from the Mael (1988) IDPG. Responses followed a five-point Likert-scale format (1 = Strongly agree, 5 = Strongly disagree). Additionally, Mael and Ashforth employed measures of perceived organizational prestige, perceived organizational competition, perceived intraorganizational competition, and sentimentality.

Despite the Mael and Ashforth (1992) study's focus on a single sample, the findings clarified how corporate takeovers, mergers and restructuring contribute to the erosion of member loyalty. Furthermore, the authors stated that the more strongly an individual identifies with an organization, the more likely that person is to support the organization. The study performed by Ashforth and Mael (1992) provided a widely used tool for the operalization and conceptualization of OI. The knowledge obtained from their paper has been employed by various researchers within the field in more recent years, (For example, Edwards and Edwards, 2012; Johnson, Morgeson, & Hekman, 2012; Koovor-Misra, & Smith, 2011; Maguire & Phillips, 2008; Vuuren, Beelen, & Jong, 2010).

Table 2: Organizational Identification Scale reported by Mael and Ashforth (1992)

1. When someone criticizes (name of school), it feels like a personal insult.
2. I am very interested in what others think about (name of school).
3. When I talk about this school, I usually say 'we' rather than 'they'.
4. This school's successes are my successes.
5. When someone praises this school, it feels like a personal compliment.
6. If a story in the media criticized the school, I would feel embarrassed.

In a somewhat different vein, from a perspective reflecting consumers' OID, Fombelle, Jarvis, Ward, and Ostrom (2011) introduced the concept of "identity synergy",

which occurs when "individuals' involvement with an organization facilitates their pursuit of

other important social identities". The conceptualization was based on customers' multiple

identities, and was found to be positively related to identification with an organization.

Leaning on the theoretical and operational assumptions devised by Mael (1988),

Ashforth and Mael (1989), and Mael and Ashforth (1992), the authors employed an amended

version of the Mael and Ashforth (1992) OID measure, effectively dropping the sixth and

final item. Additionally, the authors developed a measure for member identity (MI), utilizing

much the same item structure as the five-item OID measure (Table 3), also measured using a

Likert-scale (1 = Strongly agree, 7 = Strongly disagree). Included in the survey were scales

for identity affirmation (Drigotas, Rusbult, Wieselquist, & Whitton, 1999), and perceived

support (Eisenberg, Fasolo & Davis-LaMastro, 1990). The membership base of a

metropolitan ZOO provided the research sample for the study, with a respectable 44,000

potential respondents.

Table 3: Member Identity Scale, reported by Fombelle et al. (2011)

1. When someone criticizes other members of the [organization], it feels like a personal insult.
2. I am very interested in what others think about other members of the [organization].
3. When I talk about other members of the [organization], I usually say 'we' rather than 'they.'
4. The members' successes are my successes.
5. When someone praises other members of the [organization] it feels like a personal compliment.

Fombelle and collaborators discovered that through consumers perception of what an

organization offers (support, affirmation, value congruence) in respect to their identities, their

perceptions of synergy grew, and these perceptions, in turn, generated identification with the

organization itself (Fombelle et al., 2011). These findings can have some noteworthy implications in relation to employees' OID, not just to consumer behavior. If employees' OID is strengthened based on the amount of synergic identities converging on their subjective perception of the organization, then broadening an organization's social exchange surface in relation to its employees makes sense. Perhaps this could be a method to limit turnover.

Single-Item Graphic Scales

Endeavoring to develop a more simplified and economical scale for the measurement of OID, Bergami and Bagozzi (2000) devised a measure comprising two items; a visual image (Figure 1) and a verbal item. The visual measure depicted two circles in various degrees of overlap, with the overlap representing various degrees of identification between the individual and the organization. This form of identity operalization draws on cognitive aspects of identification, stimulating the individual to consider to what degree subjective identity overlaps with the organization. The authors also considered affective commitment as being important to social identity in the organization, drawing on Allen and Meyer's (1990; 1996; 1997) influential conceptualizations within the field of commitment. In summary, identity referred to self-categorization, while commitment represented the link supplying organizational attachment motivation (Bergami & Bagozzi, 2000).

Figure 1: Graphic Measure of Organizational Identification reported by Bergami and Bagozzi (2000, p. 566).
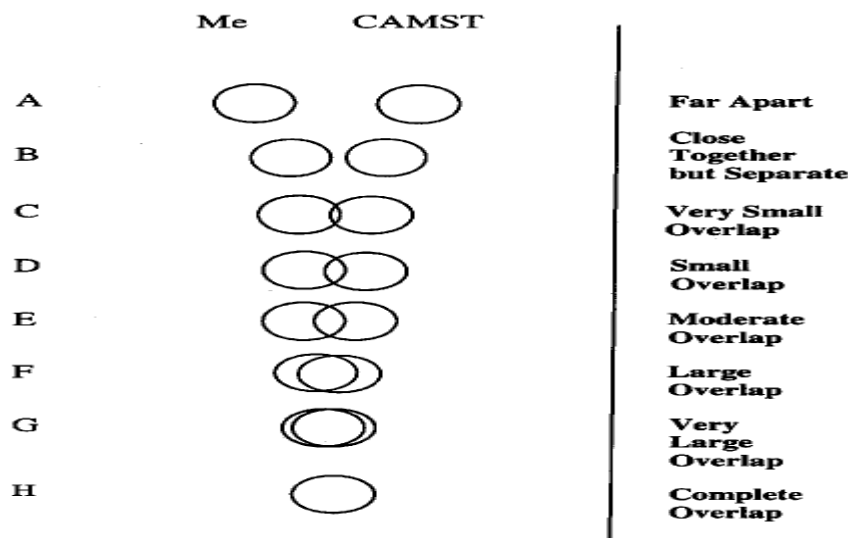
To ascertain the validity of the graphic scale, Bergami and Bagozzi employed the aforementioned Mael (1988) organizational identification scale. Additionally, measures for organizational prestige (Ashforth & Mael, 1992), stereotypes, self-esteem (Heatherton & Polivy, 1991), affective commitment (Allen & Meyer, 1990), and citizenship behavior (Konovsky & Pugh, 1994) were administered to the research sample (N = 2700), which comprised all employees of the Camst company in Italy, both male and female.

The results indicated satisfactory levels of reliability, validity and generalizability for their graphic scale, satisfying the first aim of their study. Bergami and Bagozzi emphasized that the graphic scale was specifically designed to avoid the confounding of antecedents characteristic of the Mael (1988) measure, thus providing "a sounder basis for testing hypotheses that relate identification to its causes and effects" (Bergami & Bagozzi, 2000, p. 572).

A different version of the graphic scale was developed by Shamir and Kark (2004) in order to measure identification with organizations and organizational subunits. Criticizing the

monotony and lengthiness of standard questionnaires, the theorists sought to develop a scale

that might reduce the common method variance of standard measures by interrupting

respondents' response styles (Shamir & Kark, 2004). The scale itself built on much the same

premise as the Bergami and Bagozzi (2000) measure, however only containing six

representations of overlap, and not seven.

For purposes of validation, verbal measures of OID (Mael & Ashforth, 1992; Riordan

& Weatherly, 1999), distinctiveness, cohesiveness, collective efficacy in the military sample

(Gal & Manning, 1987) and in the bank sample (Guzzo, Yost, Campbell, & Shea, 1993; Riggs

& Knight, 1994), organization-based self-esteem (Pierce, Gardner, Cummings & Dunham,

1989), and desire to remain in the unit (only measured in the military sample) (Shamir,

Zakay, Brainin, & Popper, 2000), were included in the survey. Respondents comprised

soldiers belonging to 50 field companies in the Israeli Defense Forces (IDF), staff members in

the same companies, and employees of 76 units of a large bank. Total amount of respondents

were 1956, both male and female. Two additional samples of students, only responded to the

graphical measure. The students were tested twice, two weeks apart, for reliability purposes.

Shamir and Kark validated the measure based on correlations between the graphic

scale and the verbal scales of identification ($r = .69$), and the correlations with antecedental

and consequential variables of identification (distinctiveness, $r = .25$, efficacy, $r = .34$,

cohesiveness, $r = .50$, and desire to remain, $r = .50$). Correlations are from the first military

sample. The researchers argued that a graphic measure can break the tediousness of

responding to standard verbal measures, thus providing the respondents with a welcome

respite during an often long and boring task answering questions. Indeed, the respondents in

the first three samples reacted positively to the introduction of a graphic measure in the

middle of a long survey. The authors cautioned that their findings did not indicate that the

graphic scale was superior to verbal scales of OID, only as useful as a verbal measure, underscoring the need for further research (Shamir & Kark, 2004).

Continuous vs Discrete Measurement

Likert scales were originally developed in 1932 as a bipolar measurement of attitudes, and responses could range from least to most, like to dislike, approve or disapprove, or agree or disagree (Likert, 1932). Scales should typically not consist of less than five response categories and "forced choice" surveys could omit the "neutral" option (Allen & Seaman, 2007). Allen and Seaman (2007) pointed out that an alternative method to the formal Likert scale could be the use of a continuous line or track bar. Using the GID as an example, a single image comprising two circles not overlapping could be presented to the respondent with the requirement of indicating strength of identification/overlap on a continuous 100 mm line. This approach is particularly suited for application in online surveys where track bars could be used, capturing the response on a continuum with great precision (Noel & Dauvier, 2007). However, the empirical exploration of measurement method for the graphic item was beyond the scope of the current research, and the traditional Likert format was employed in both studies.

Thesis Statement

The purposes of this paper are twofold. The primary purpose is to employ a psychometric verbal scale and graphic item for efficient measurement of organizational identification in a multinational company (Study 2). For this purpose an arrangement was made with a Norwegian multinational company to participate in the main study. Additionally, in order to ascertain the viability of a single-item graphic measure in the main study, possible serial order effects of the graphic item, and discover possible markers of identification, a pilot study (Study 1) was conducted at a Norwegian university.

Study 1. Study 1 employed a shortened version of the Shamir and Kark (2004) single-item graphic measure (permission obtained from the authors), with the 10-item Mael (1988) identification with a psychological group scale (IDPG). From the IDPG scale, the standard 6-item Mael and Ashforth (1992) organizational identification scale (OID scale) was extracted. It was evaluated whether there was any serial order effect of the graphic item in the questionnaire (GID placed first or last). Furthermore, the pilot study aimed to investigate scale properties and internal validity of the IDPG and the OID scale and convergent validity with the graphic item (GID), and to assess if the shorter scale was better. A verbal identity item was added to the questionnaire as the verbal counterpart of the GID, and convergent validity between these items was also assessed. Whether there existed some relationship between organizational identification and company logoed items was also investigated in the pilot study.

Study 2. Where the pilot study was conducted with a homogenous Norwegian sample in a high SES setting, Study 2 aimed to investigate the GID in a multicultural setting. The organizational identification scale from the pilot study that proved to be superior was employed in the main study. It was expected that the item structure for the 6-item OID scale would be replicated in this context. Convergent validity analyses on the identification scale and the GID was conducted. If logo use could be a marker of OID was further explored.

3. Study 1 (Pilot Study)

Purpose

The purpose of Study 1 was to analyze the scale properties of the graphic identity item (GID) in a Norwegian sample, and whether placement of the GID biases the responses on the other items in the questionnaire. For this purpose, two questionnaires were designed, one with the GID as the first item (Version 1), and one with the GID as the last (Version 2). Other than

graphic item placement, the questionnaires were identical. Internal validity of the IDPG scale and the 6-item OID scale was assessed, and the scale witch performed best selected for further use. Convergent validity between the GID and the 6-item OID scale was evaluated by using regression analysis and interpreting correlations.

Methods

Instruments and procedure. The questionnaire comprised 15 items where 14 items were rated on a point Likert scale ranging from 1 (disagree completely) to 6 (agree completely). The 15th item was an edited version of the Shamir and Kark (2004) graphic measure comprising 6 rectangles containing two circles in varying degrees of overlap. These were coded from 1 (completely separate), to 6 (complete overlap), and was used to measure the respondent's strength of identification with the university. The instructions told the participant to imagine one circle represented him or her and the other the university, the task was then to indicate strength of identification by circling the box that represented this relationship best. Half of the questionnaires contained the GID as the last item and the other half as the first item, in order to investigate any serial order effect.

The questionnaire had two versions, one with the GID (Item 15) as the first item (Version 1), and the other version with the GID as the last item in the questionnaire (Version 2). For both versions an additional item "Please indicate how strongly you identify with the *name of university*" (verbal identity item, VID) was added to the questionnaire as the verbal counterpart of the GID.

Figure 2: Graphic Item
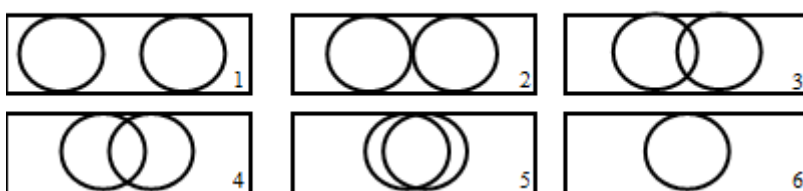
Organizational identification was measured with the 10-item Mael (1988) identification with a psychological group scale (IDPG). A sample item is "When someone criticizes this university, it feels like a personal insult". An additional four items were added to the questionnaire by the author. Item 6 ("Please indicate how strongly you identify with the *name of university*") was added in order to ascertain possible differences in verbal and graphic items concerning identification. The other items were: Item 12 ("I am familiar with the values of the *name of university*"), Item 13 ("I own merchandise with the university logo"), and item 14 ("The university should give me more merchandise with the university logo"). A much employed measure for OID has traditionally been the Mael and Ashforth (1992) 6-item organizational identification (OID) scale, which is the reduced version of the Mael (1988) scale. The 6-item scale is comprised of items from the IDPG scale, and the psychometric properties of the OID scale will also be presented.

Analysis plans. Internal consistency was determined by obtaining the alpha coefficient for the full verbal questionnaire (ID13), the IDPG scale, and the 6-item OID scale, and the OID scale with the VID (ID7). Factor analysis was performed on the ID13, IDPG, OID, and ID7 scale. A repeated measures mixed model analysis was conducted to determine whether location of the GID in the questionnaire was of any significant influence on the verbal item. Convergent validity was examined by correlating the 6-item Mael and Ashforth (1992) scale, and the VID with the GID. Additionally, regression scores were computed for the verbal and graphic item to further assess convergent validity of the measures. The questionnaire contained two logo items ("I own merchandise with the company logo", and "The University should give me more merchandise with the company logo"), these items were combined into one, and means scores used for further analysis. Correlations between the Logo Item and the verbal identity item (VID), OID scale and GID were also examined.

Participants. In this study, participants were university academic staff from four different faculties at a Norwegian university. Three of the faculties are situated at university campus while the fourth is at a different location. The author contacted staff throughout these four campuses and invited them to participate in the study. Data were collected in one stage in the end of March 2013 (N = 74). All questionnaires were distributed by the author and collected in closed envelopes. The participants were informed that the questionnaire was meant to survey university staffs' organizational identification.

Results and Discussion

A total of 74 people participated in the study, with 13 either declining participation or failing to return the questionnaire. Of the participants, 35 were male ($n = 35$) and 39 female ($n = 39$). The average age of the male participants was 44.88 ($SD = 10.73$) and the female participants 43.76 ($SD = 10.55$) years. Average tenure at the university was 10.74 ($SD = 8.74$) years for the male participants and 7.35 ($SD = 6.83$) years for the female participants. For the female participants the majority (49 %) had been employed at the University for 5 years or less, with 28 % of the sample possessing a career that exceeded 12 years and 23 % with tenures spanning 6-11 years. For the male participants the majority (37 %) had been employed for more than 12 years, 31 % for 5 years or less and 29 % employed for 6 to 11 years.

ID13 and IDPG scale. The ID13 scale consisted of all the verbal items (all items minus the GID). Reliability analysis determined that alpha would be significantly improved by deleting Item 9 ("I don't act like a typical *name of university* person"). With Item 9 deleted, as can be shown in Table 4, the questionnaire (ID13) employed in Study 1 had good psychometric properties. The alpha coefficient was $\alpha = .86$, and further item analyses showed that the alpha coefficient would not be significantly improved by deleting more items. The lowest inter-item correlation was $r = -.04$. The lowest item total correlation was $r = .38$.

Reliability analysis for the IDPG revealed a Cronbach's alpha of α = .77. Alpha was improved to α = .86 by deleting Item 9. A principal component fixed single factor analysis was conducted on the IDPG scale with Item 9 deleted, producing a factor structure accounting for 44 % of the total variance.

Table 4: *Means, Standard Deviations, Reliability Correlations, Correlations and Factor Loadings for the ID13 and ID7 Scale. Ordered by Mean Identification Score*

Scale Items (N = 14)	Mean	Std. Deviation	Lowest inter-item Correlation	Item total Correlation	Factor loadings ID13	Factor loadings ID7	r^b
When I talk about this university, I usually say "we" instead of "they".	4.20	1.50	.27	.58	.67	.71	.45*
I'm very interested in what others think about this university	4.10	1.00	-.04	.45	.57	.55	.30*
I have a number of qualities typical of university people.	3.97	.86	.05	.37	.39	-	.17
I am familiar with the values of the *name of university*	3.97	1.00	.10	.36	.42	-	.12
Please indicate how strongly you identify with *name of university*.	3.85	1.00	.28	.81	.87	.87	.43*
The limitation associated with university people applies to me also.	3.46	1.10	-.04	.37	.47	-	.28*
When someone praises this university, it feels like a personal compliment.	3.30	1.10	.01	.66	.74	.80	.45*
I act like a *name of university* person to a great extent.	3.30	1.30	.30	.72	.78	-	.45*
This university's successes are my successes.	3.20	1.20	.22	.77	.82	.85	.60*
If a story in the media criticized the *name of university*, I would feel embarrassed.	3.16	1.30	.24	.60	.64	.68	.41*
The university should give me more merchandise with the university logo.	3.11	1.77	.12	.50	.54	-	.20
Imagine one circle represents you and the other *the university*. Please indicate how strongly you identify with *name of university* by circling the box that represents this relationship best.	3.11	.86	.10	.54	.65	.66	-
When someone criticizes this university it feels like a personal insult.	2.95	1.26	.05	.50	.62	.72	.26*
I own merchandise with the university logo.[a]	1.48	0.50	.11	.49	.48	-	.19

Note: [a]1-3 = no, 4-6 = yes. [b]Correlations with the GID (Item 14). *Correlation is significant at the $p<.05$ level.

OID and ID7 scale. Reliability analysis for the 6-item OID scale determined that it had good psychometric properties, and would not benefit from deleting any items. The alpha coefficient was α = .82. The lowest inter-item correlation was r = .24. The lowest item total correlation was r = .43. Reliability analysis for the ID7 Scale yielded an alpha coefficient of α = .86, and the scale would not benefit from deleting any items. The lowest inter-item correlation was r = .22. The lowest item total correlation was r = .43.

A fixed single factor analysis was performed on the OID scale with the identity item (VID; ID7 Scale). The results determined all items loaded strongly on the organizational identification factor and accounted for 55 % of the total variance, indicating the OID scale with the VID to be a better scale for the purpose of measuring organizational identification in this context.

Mean scores, reliability measures and factor loadings are presented in Table 4. Literal mean scores range from approximately 3 – 4, which seem to indicate that respondents, on average, identified "normally" (1-2 low identification, 3-4 normal identification, 5-6 high identification) with the university. The lowest literal mean score for both genders was obtained on Item 1, indicating that criticism of the university is not perceived as a personal insult. The highest literal mean score was obtained on Item 3, indicating that both men and women are more inclined to say "we" rather than "they" when talking about the university. Extreme scorers on the OID scale were identified (1-2, vs 5-6), in order to determine if they could be identified by gender, age, years employed or logo. It was found that extremists are not distinguishable by these variables.

To establish if gender, age, years employed at the university, or location (faculty on campus/off campus) had any significant correlation with the mean OID score, VID, GID or Logo Item, intercorrelations were examined. As can be seen in Table 5, gender weakly

correlated with location and years employed at the university. Age showed a weak positive correlation with location, possibly because the average age of respondents at one location was higher than that of the other. The Logo item significantly correlated with the VID, $r(74) = .50$, $p < .05$, OID score, $r(74)$ r $= .51$, $p < .05$. The correlation was weaker with the GID, $r(74) = .23$, $p < .05$, but not statistically different.

Table 5: *Intercorrelations above the diagonal between Gender, Age, Location, Years Employed, OID Score, Verbal Item, Graphic Item and Logo Item. Descriptive Statistics Along the Bottom Two Rows*

Study (N = 74)	Gender	Age	Location	Years Employed	OID Score	Verbal Item	Graphic Item	Logo Item
Gender	----	-.05	.26	-.22	-.10	-.01	-.23*	-.04
Age		----	.24*	.76*	.05	.04	.10	.02
Location			----	.04	-.04	.01	-.10	.02
Years Employed				----	.12	.11	.12	.01
OID Score					----	.78*	.56*	.51*
Verbal Item						----	.43*	.50*
Graphic Item							----	.23
Logo Item								----
Range	0-1	24-67	0-1	0.1-33.0	1-6	1-6	1-6	
Mean	.53	44.27	.30	8.97	3.37	3.81	3.12	2.27
Standard Deviation	.50	10.57	.46	7.93	.97	.96	.79	.10

*Note*: Gender: 0=M, 1=F; * Correlation significant at the $p < .05$ level.

In order to investigate convergent validity between the verbal organizational identification score (6-item OID scale) and the GID, a regression analysis was performed. When verbal score was predicted it was found that the GID (Unstandardized B = .684, N=74, $p < .05$) was a significant predictor.

The model was: Verbal OID = 1.235 + .684(GID) + e

The model predicted that respondents on average answered 1.2 points lower on the GID. Unstandardized residuals ranged from -1.95 to 2.00 on OID score. Residuals were normally distributed, indicating random error. Regression diagnostics detected two potential outliers approaching the studentized deleted (SDR) cutoff point, indicating extremely positive or negative responses on the questionnaire. This was also the case for standardized residuals. Further scrutinizing residual plots revealed one variable to be a clear outlier. With outliers removed, residuals ranged from -1.62 to 1.43. The overall model fit was $R^2 = .32$.

*Serial order effect***.** The questionnaire was created in two versions, one with the GID as the first item (Version 1), and one with the GID as the last item (Version 2). Response choices was coded from 1 to 6 (see Figure 2). A mixed model repeated measures analysis of variance was performed to discern whether placement of the graphic measure in the questionnaire (Version 1 "first", Version 2 "last") did have any significant effect on the ID13. The first version was completed by $n = 35$ respondents, and the second version was completed by $n = 39$ respondents. Estimated marginal means for the two versions are presented in Figure 1. The within subject test indicated that there was a significant effect on the VID and the GID ($F (1, 72) = 36.42, p < .05$), in other words, whether respondents were presented with a verbal item or graphic item was significant. However, there was no significant interaction between the identity items and scale order ($F (1, 72) = .31, p > .05$), so no serial order effect.

Figure 1: *Estimated Marginal Means of the Verbal item and Graphic Item on Version 1 and Version 2*
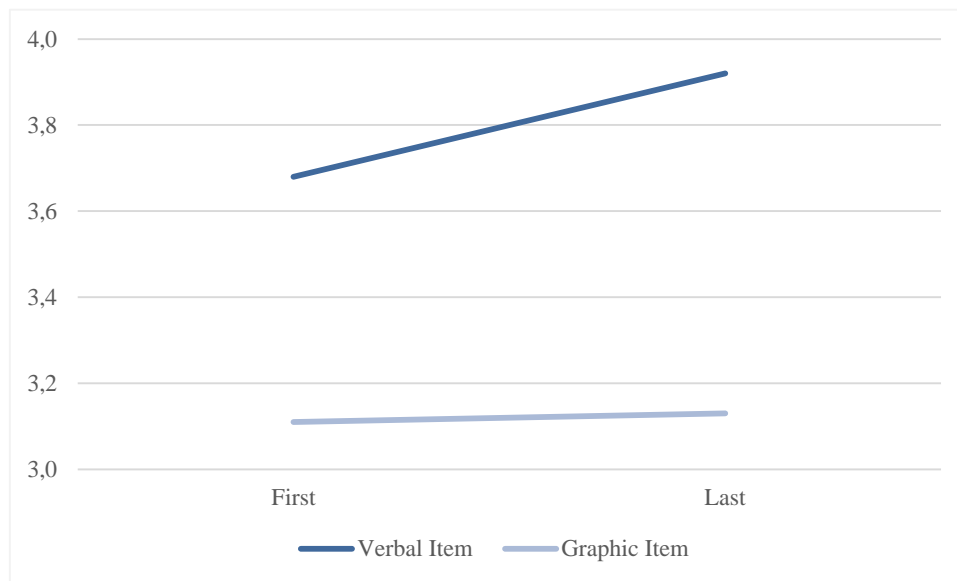
Verbal Item, *SD* = .84, Graphic Item, *SD* = .87 (First)
Verbal Item, *SD* = 1.05, Graphic Item, *SD* = .73 (Last)

Determining Test Length for OID Scale

In order to test the null hypothesis (H0: $\alpha_{diff} = 0$), if reducing the test length would significantly impact internal consistency, a t-test was performed. According to Feldt, Woodruff, and Salih (1987) the comparison of alpha coefficients obtained from the same sample is achieved by employing the formula,

$$t = \frac{(\alpha_1 - \alpha_2)(n - 2)^{1/2}}{[4(1 - \alpha_1)(1 - \alpha_2)(1 - p^2)]^{1/2}} \quad (DF = n - 2),$$

yielding $t = 5.62$, $p<.05$ in this instance. The results indicated the questionnaire would benefit from reducing the items, although alpha for test 1 was higher. This suggests that adding the verbal identity item does not necessarily improve the internal consistency of the OID scale.

Summary Study 1

The purposes of Study1 were to determine if a graphic item (six squares containing two circles in various degrees of overlap) could be used to measure identity, if there was any serial order effect of the graphic item, in addition to ascertain the reliability and convergent validity of the Mael and Ashforth (1992) 6-item Organizational Identification scale (OID scale) as opposed to the earlier 10-item Mael (1988) IDPG scale.

Analysis did not discover any serial order effect of the GID. In other words, it was not important for the respondents if they were presented with the GID at the beginning of the questionnaire or at the end. However, some issues with the GID arose when regression analysis found both an intercept and slope effect with the GID as a predictor for verbal OID, with a wide margin of error. Although the score on the GID would be able to predict verbal OID, the range would render the prediction meaningless. It is uncertain if performance of the GID was influenced by the sample size and socio-demographic setting. The sample in the pilot study was small and drawn from a homogenous Norwegian population, in a high SES setting. Investigating the performance of the GID in a multicultural setting, would therefore be of benefit in order to lend more strength to a conclusion concerning the measure's overall usability.

Further results from Study 1 showed that the OID scale had good internal validity and convergent validity with the GID, VID, and the Logo Item. Items with company logo might be a marker of OID and should be studied further. Based on these results, the decision was made to employ both the GID and the 6-item Ashforth and Mael (1992) OID scale in Study 2. A questionnaire item concerning use of items with the company logo should also be added in order to explore the connection with OID further.

3. Study 2

Purpose

The purpose of Study 2 was to measure organizational identification in a multinational company using the GID from Study 1 and the 6-item OID scale. Results from Study 1 indicated that items with the company logo could be a possible marker of OID. Employees' use of company branded items when off work was therefore further explored in the main study in order to determine any possible connection with OID. Also, analysis in Study 1 discovered uncertainties regarding the GID, warranting further research in a multicultural setting. Furthermore, convergent validity between the GID and the OID scale was assessed using regression analysis. Strength of identification with company entities (work-group, company, work-site, profession) was also explored.

Methods

Instruments and procedure. The questionnaire comprised 17 items where 6 items (items 6 – 11) were rated on a point Likert scale ranging from 1 (disagree completely) to 6 (agree completely). Items 1 -4 regarded gender, years employed at the company, in which country participants worked, and at which location. Item 5 asked participants whether they wore items with the company logo when off work ("Never", "Rarely", "Sometimes", "Frequently"). Items 6 – 11 corresponded to the 6-item Organizational Identification scale developed by Mael and Ashforth (1992). The language in the six items was improved. Item 12 was the edited version of the Shamir and Kark (2004) graphic measure employed in Study 1. The instructions told the participant to imagine one circle represented him or her and the other the company, the task was then to indicate strength of identification by selecting the box that represented this relationship best. Item 13 asked participants to choose from a list of four (work-group, work-site, company, and profession) which they identified the least and most

with, only being able to select two. Item 14 listed three values ("Passionate", "Accountable", and "Prepared") which also corresponded to the company values. The respondents were asked to rank-order them from 1 to 3, 1 being the most important and 3 the least important among the three. The decision to rank-order the values of the company was made to reduce social desirability. Item 15a asked participants to indicate which question was the hardest to answer, and 15b asked to explain why. The 17th and final item gave respondents the opportunity to suggest one way which could increase their identification with the company. The questionnaire was developed in English using the Questback online surveying tool and administered through the company headquarters via email-link.

Analysis plans. Internal consistency was determined by obtaining the alpha coefficient for the 6-item OID scale, and the complete 9-item scale (verbal items, ID9). An exploratory principal components factor analysis was conducted to determine the underlying factor structure. Summarized frequencies for items pertaining to company values and locus of identification (work-group, company, work-site, and profession) was prepared for presentation in Figures 4 and 5. Organizational identification level was obtained by calculating participants' scores on the OID scale. An ANOVA was conducted to determine if the independent variables gender, and years employed had any significant effect on the OID scale. Convergent validity of the OID scale and the GID was assessed by performing a regression analysis on predicted values of OID score with the GID as the independent predictor. Correlations between the GID and the OID scale were also examined. Frequencies on the Logo item ("When off work do you wear items with the company logo?") were combined with the mean OID score to compare the levels. A non-parametric Kruskal-Wallis test was performed on the OID scale and the GID with the Logo item to discover if there was a significant difference in medians on frequency of wearing items with the company logo on OID and GID score. OID scores and GID scores were averaged and categorized in three

levels ("low", "normal", "high"). Which items in the questionnaire the respondents found most difficult to answer will also be presented.

Participants. The sample consisted of employees from a Norwegian multinational company represented in 20 countries world-wide. The company is a global provider of engineering, design, and manufacture for seat comfort, driver and motion control systems, fluid assemblies, and industrial driver interface products. Established in 1987, with corporate headquarters in Norway, the company employs more than 10.000 people world-wide. Participants in the study was 2000 white-collar workers in 40 units situated in 20 different countries. The questionnaire was distributed electronically, in English, via company headquarters in October 2013.

Results and Discussion

The study received a total of 244 respondents (12 % response rate) from 30 units in 14 different countries. Of the participants, 172 were male ($n = 172$) and 72 were female ($n = 72$). Average period employed at the company was 2 years for the male participants ($SD = 1.15$) and 2.1 years ($SD = 1.24$) for the female participants. For the female participants half (50 %) had been employed at the company for 5 years or less, followed by 24 % having worked there for more than 15 years. About 18 % had worked there between 6 to 10 years, while the final 8 % had stayed on from 11 to 15 years. In the male sample almost half (49 %) had been employed for 5 years or less, followed by 22 % having worked there between 6 to 10 years. 18 % of the male sample have had careers exceeding 15 years and the final 11 % between 11 – 15 years.

Reliability analysis on the OID scale confirmed it had good psychometric properties in this sample with a Cronbach's alpha of $\alpha = .88$. The lowest inter-item correlation was $r = .42$ and the lowest item total correlation was $r = .56$. Reliability measures for the complete 9 item

scale (ID9) also displayed decent psychometric properties with an alpha coefficient of α = .79, although the inter-item correlation matrix exhibited some negative correlations, indicating problems with items 13 and 14, possibly because of a low response rate on these items. An exploratory principal components factor analysis with varimax rotation could not be conducted on all verbal items (ID9 scale), because of missing data on items 13 and 14. The decision was made to drop items 13 and 14 from the analysis and perform the factor analysis on the OID scale with the Logo item ("When off work do you wear items with the company logo?"). Results confirmed the psychometric properties of the ID7 with one factor accounting for 53 % of the variance. KMO measure of sampling adequacy was .91. All items loaded strongly on the OID factor, with the exception of item 5 which loaded just above the cut-off point (.30). The Logo item will be dropped from the ID7 scale and analyzed separately.

In order to investigate convergent validity between the verbal organizational identification score (6-item OID scale) and the GID, a regression analysis was performed. When verbal score was predicted it was found that the GID (unstandardized B = .509, $p <$ .05) was a significant predictor.

The model was: Verbal OID = 2.657 + .509(GID) + e

Unstandardized residuals ranged from -1.95 to 1.99. Residuals were normally distributed. Regression diagnostics detected five potential outliers approaching the studentized deleted (SDR) cutoff point, indicating extremely positive or negative responses on the questionnaire. Scrutinizing studentized deleted residual plots reconfirmed these five variables to be clear outliers. Standardized residual plots detected two outliers. The Normal Q-Q plot of standardized residuals showed errors to be normally distributed. However, the Detrended Normal Q-Q plot indicated a biased and homoscedastic distribution of errors,

possibly due to a slight non-linear relationship. With outliers removed, residuals ranged from

-2.19 to 1.99. The overall model fit was $R^2 = .31$.

Table 7: *Means, Standard Deviations, Reliability Correlations and Correlations for the ID7 Scale. Ordered by Mean OID Score*

Factor/ Scale	Scale Items ($n = 7$)	Mean	Std. Deviation	Lowest inter-item Correlation	Item total Correlation	Factor loadings	Correlation with GID
Organizational Identification	I usually say "we" rather than "they" when I talk about this company.	5.17	1.10	.41	.57	.68	.43*
	This company's successes are my successes.	4.92	1.25	.51	.75	.84	.51*
	I am very interested in what others think about this company.	4.80	1.17	.42	.66	.75	.42*
	It feels like a personal compliment if someone praises this company.	4.59	1.32	.52	.75	.84	.52*
	I feel embarrassed if a story in the media criticizes this company.	4.59	1.32	.37	.68	.77	.37*
	I feel insulted if other people criticize this company.	4.42	1.32	.42	.74	.82	.42*
	Graphic item/ select the image that represents the strength of identification with company	4.11	1.07	.37	.34	.67	-

Note: *Correlation is significant at the $p < .05$ level.

Frequencies for Item 13 ("To which of these [workgroup, company, work-site, profession] do you most and least identify with") and Item 14 ("Which values are most important to you?") are presented in Figure 3 and Figure 4. Respondents were given the option to select which question was the hardest to answer, and 81 % of the respondents ($n = 75$) who opted to comment indicated item 13 and 14 were the most difficult questions to answer. Another 17 % ($n = 13$) experienced item 12 (graphic identity item) to be the most difficult. Comments reflected a reluctance to select only two of the options available in item 13 because of their collective importance. Regarding item 14 the responses showed many participants saw the values as similar and hence difficult to rank-order. Item 12 was difficult

to understand for some and for others difficult to choose the right option as the images did not

exactly reflect their opinion.

Figure 3: *Frequencies for Item 13 "To which of these do you most and least identify with?"*
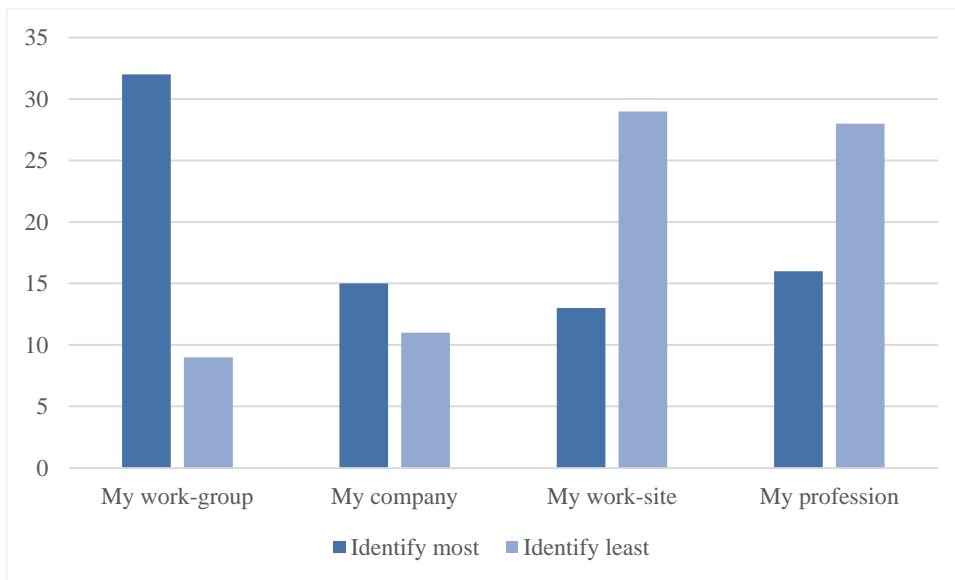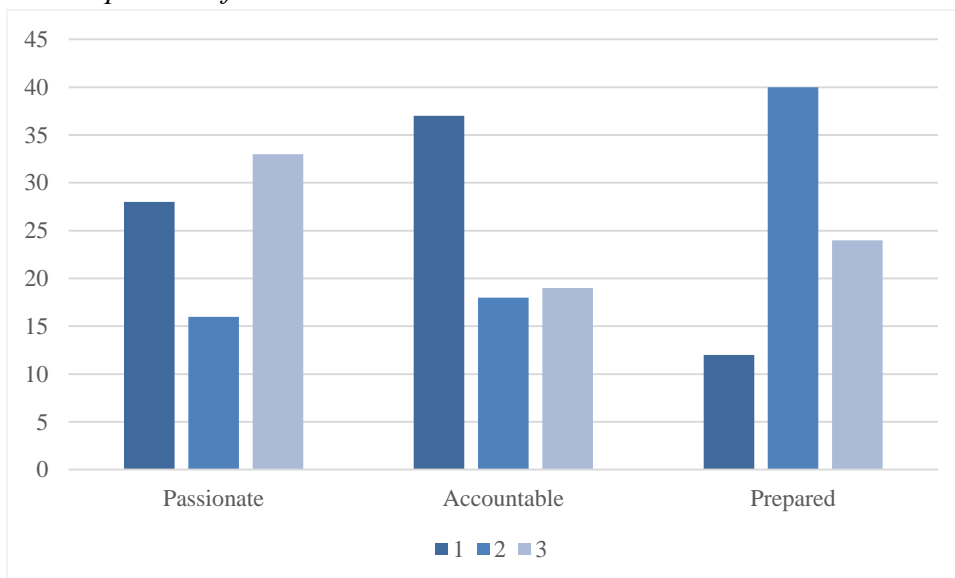

Figure 4: *Item 14 "Which values are the most important to you? Rank the values from 1 to 3, where 1 indicates the most important value and 3 the least important of the values"*

Correlations between gender, years employed, and OID score, GID score and Logo

item were examined. Results are presented in Table 8, and indicated no significant

correlations between gender, how long a person has been employed, where they work, OID

score, There was a significant correlation between the OID scale and the GID ($r = .56$, $n = 244$, $p < .05$), and the OID and GID significantly correlated with the Logo item ("When off work do you wear items with the company logo?") ($r = .23$ to $.25$, $n = 244$, $p < .05$). The OID scale and the GID did not significantly correlate with years employed at the company, but a weak negative correlation between gender and wearing items with the company logo was found ($r = -.18$, $n = 244$, $p < .05$).

Table 8: *Intercorrelations above the diagonal between Gender,*
Years Employed, OID Score, Logo Item, and Graphic Item.
Descriptive Statistics Along the Bottom Two Rows

Study (N = 244)	Gender	Years Employed	OID Score	Logo Item	Graphic Item
Gender	----	.03	-.07	-.18*	-.11
Years Employed		----	-.02	..08	..07
OID Score			----	.24*	.56*
Logo Item				----	.25*
Graphic Item					----
Range	1-2	0-40	1-6	1-4	1-6
Mean	1.30	8.39	4.75	1.97	4.11
Standard Deviation	.46	8.38	.97	.99	1.07

Note: Gender: 1=M, 2=F, *Correlation is significant at the $p < .05$ level

Organizational Identification

Participants' level of organizational identification was obtained by averaging scores on items corresponding to the OID scale, and on the GID. Response rates varied greatly between countries. Countries were sorted according to region ("Europe", "North America", "South America", and "Asia"). Employees' mean scores and standard deviations for the OID scale and GID by region is presented in Table 9. Mean organizational identification score for all participants was 4.75 (SD = .97, N = 244).

Table 9: *Mean Scores and Standard Deviations by Region for the Organizational Identification Scale and the Graphic Item*

Region	Participants (N = 244)	GID Mean	Standard Deviation	OID Mean	Standard Deviation
Europe	95	4.16	.89	4.49	.96
North America	98	3.90	1.19	4.82	1.00
South America	23	4.43	1.08	5.22	.83
Asia	28	4.46	1.04	5.02	.78
All Regions	244	4.11	1.07	4.75	.97

The OID scores were further categorized into three organizational identification levels (1 - 2 = "low", 3 - 4= "normal", and 5 - 6 = "high"). Organizational levels for all participants on the OID scale and the graphic identity item (GID) are presented in Figure 5. As can be seen from the figure, respondents' OID scores were slightly higher than their scores on the GID in both the "low" and "normal" categories. However, there was a 10 % difference in the amount of people who scored in the "high" category on the OID scale as opposed to the GID, indicating a tendency in this sample to be slightly more conservative with selecting an image that reflects level of identification on the GID compared to actual OID score.

Figure 5: *Organizational Identification Levels on the Organizational Identification Scale and Graphic Identity Item for all Participants*
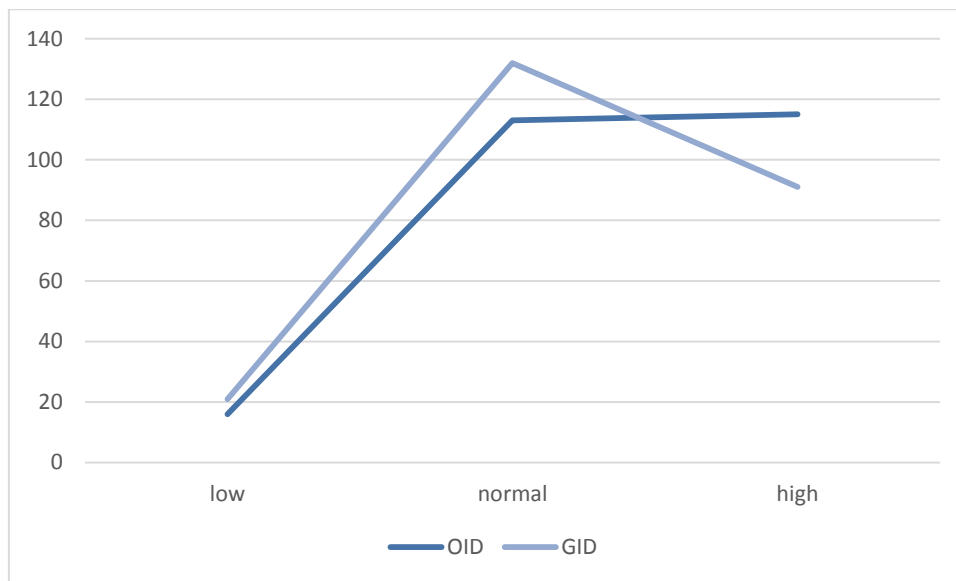

OID, $SD = .61$, $n = 244$
GID, $SD = .61$, $n = 244$

Respondents' scores on the GID were subtracted from the mean scores on the OID scale in order to determine any discrepancies between the two. These scores were then classified according to three levels "high GID low OID" (>1), "middle GID and OID" ($< -1 – < 1$), and "low GID high OID" (< -1). It was found that 61 % of the respondents ($n = 149$) had GID scores which were 1 point different from the OID scale score, and 35 % ($n = 86$) of the respondents had low GID scores compared to their OID score, which means participants tended to select a lower option on the GID compared to what their OID scores reflected. The remaining 4 % had signaled a stronger identification when presented with the GID than what their actual OID score indicated.

Figure 6 shows mean scores for gender on the OID scale and the GID. To determine if gender had any significant impact on the independent variables an ANOVA was conducted. It was found that gender did not have a statistically significant effect on organizational identity as measured by the OID scale ($F(1,242) = .29$, $p > .05$), and the GID ($F(1,242) = .09$, $p > .05$).

Figure 6: *Mean Scores for Males and Females on the Organizational Identification Scale and the Graphic Identity Item*
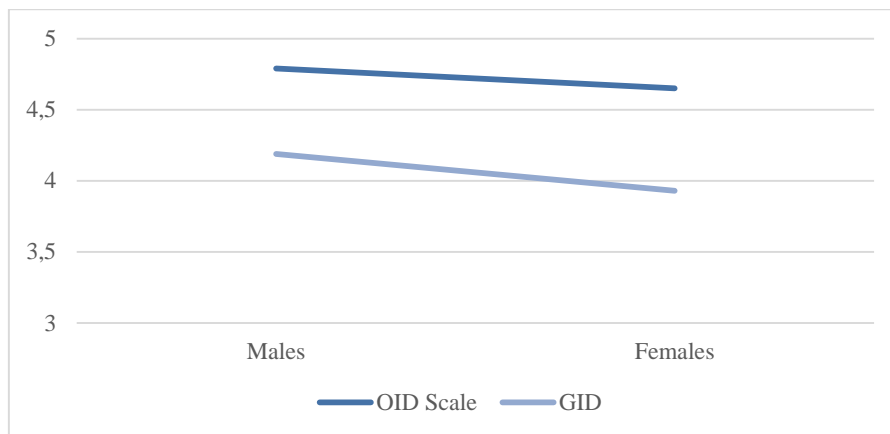
OID, *SD* = .99 – GID, *SD* = 1.03 (Males, *n* = 172)
OID, *SD* = .96 – GID, *SD* = 1.13 (Females, *n* = 72)

Logo Item

In Figure 7, the mean OID score and mean GID score is compared to frequency of wearing items with the company logo on the full sample (N = 244). Results showed that OID score increased with the reported increased frequency of wearing company logoed items. A Kruskal-Wallis test was conducted to evaluate the differences among the four logo conditions ("never", "rarely", "sometimes", "frequently") on median change in frequency of wearing Logo items off work with OID score χ^2(3, N = 244) = 10.44, p < .05). The results indicated there was a significant difference in the medians. This effect was clearly seen with the GID as well χ^2 (3, N = 244) = 17.58, p < .05. Also, mean GID scores were lower than that of the OID scale. The Logo item was significantly correlated with the OID scale (r = .24) and the GID (r = .25).

When further exploring the connection between OID and company branded items it was discovered when countries were arranged according to region, only the Asian region saw a drop in OID score in the "Frequently" category compared to the other regions. Conversely, in South America respondents who reported "never" and "rarely" wearing logoed items

scored in the "high OID" segment, while respondents in the "frequently" category scored the

highest of all respondents.

Figure 7: *Organizational Identification Score, GID Score and Wearing Items with the Company Logo*
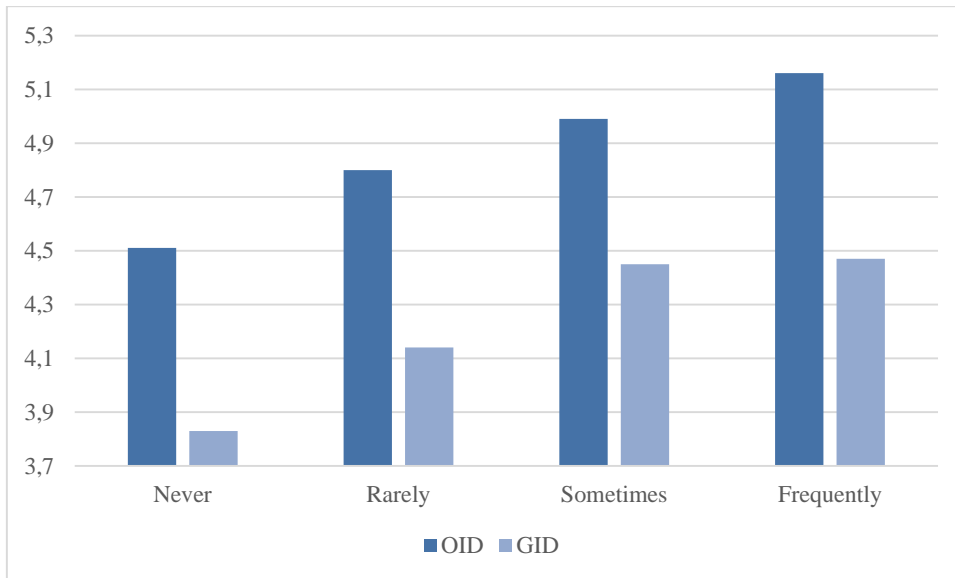
Never: *SD*=1.11 *(n = 106)*; Rarely: *SD*=.85 (*n*=57);
Sometimes: *SD*=.79 (*n*=64); Frequently: *SD*=.66 (17)

Figure 8: *Organizational Identification Score and Wearing Items with the Company Logo. Sorted by Region*
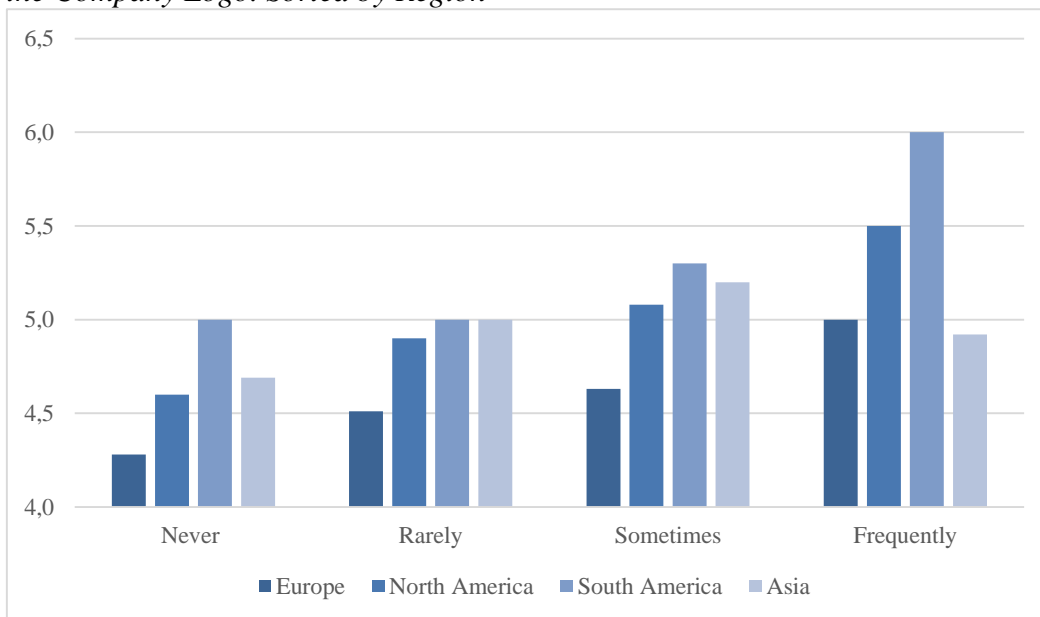
Europe: Never, SD=1.04(n=45); Rarely, SD=.81(n=20);Sometimes, SD=.99(n=22);Frequently, SD=.60(n=8)
North America: Never, SD=1.19(n=49); Rarely, SD=.85(n=24);Sometimes, SD=.52(n=21);Frequently, SD=.79(n=4)
South America: Never, SD=1.01(n=6);Rarely, SD=1.16 (n=5);Sometimes, SD=.59(n=11);Frequently, SD=na(n=1)
Asia: Never, SD=1.08(n=6);Rarely, SD=..72(n=8); Sometimes, SD=.75(n=10); Frequently, SD=.55(n=4)

Summary Study 2

The sample in Study 2 was drawn from a heterogeneous, multicultural population. It aimed to measure organizational identification and to investigate whether the GID employed in the first study would perform better in a multicultural setting. The 6-item OID scale was employed in the study as the verbal measure of organizational identification. It was determined the OID scale had good internal validity and convergent validity with the GID. Overall the OID scale had good psychometric properties. The GID significantly correlated with the OID scale, and both measures correlated significantly with the Logo item. However, as a predictor of verbal OID, the GID did not perform adequately. Furthermore, it was found that how often an employee wore items with the company logo was connected to the strength of identification with the company. The Logo item significantly correlated with both the OID scale and the GID. Non-parametric tests determined the frequency levels to be significantly different for both the OID scale and the GID with the Logo item. These results indicated that wearing items with the company logo was a marker of organizational identification in Study 2. Whether it is wearing items with logo more frequently that causes higher OID or high OID that influences frequency of wearing logoed items, is difficult to say.

The present findings indicate that future research into graphic items ought to change its course. The performance of the graphic item is still uncertain and unreliable, and interpretations of results can be difficult. Investigating the depth of a construct like identification on a single item graphic measure, as you can on a verbal scale, is not possible. Although these results are in disfavor of the graphic measure, a graphic measure, as employed in the present research, has not necessarily exhausted its value. Future research could investigate design, discrete versus continuous measurement, and aim to employ a graphic item as a supplement to a verbal scale.

4. General Discussion

This paper drew upon the notion that organizational identification could be efficiently measured by employing a graphic item and a verbal organizational identification scale. Performance of the two measures was compared and evaluated. Company branded items, or items with the company logo, could be seen as a marker of organizational identification, and this relationship was explored in both studies. Data were collected at a Norwegian university and a Norwegian multinational company. Results indicated the verbal 6-item OID scale to be a good measure of organizational identification, performing well in both studies. The graphic measure, on the other hand, suffered from difficulties with adequately predicting verbal OID score and weak correlations with verbal items in both studies.

OID Scale

The results from the present studies recorded good scale properties with coefficient alpha levels at $\alpha = .82$ (N = 74) in the university sample and $\alpha = .88$ (N = 244) in the multinational company (MNC). Mael (1988) reported an alpha coefficient of $\alpha = .81$ in a sample of employed business and psychology students (N = 700) and Ashforth (1990) registered an alpha coefficient of $\alpha = .83$ in a sample of managers from a variety of organizations and hierarchical levels.

In order to test the equality of alpha coefficient between the revised OID scale in Study 2 and the established Mael and Ashforth (1992) scale, a Feldt test of alpha equality between independent samples was conducted. The first steps in this procedure was devised by Feldt (1965) and the test for equality of alpha coefficients saw further development over the following 20-year period (Feldt et al., 1987). The Feldt test for comparing Cronbach's alpha levels of two independent samples (H0: $\alpha 1 = \alpha 2$) produced a Kendall's coefficient of concordance $W = .63$, $p < .05$. Based on the criterion for rejection, or that the hypothesis of

equality is rejected when the probability is less than the significance level (Feldt et al., 1987), the null-hypothesis is retained and it could be assumed that the alpha levels are not significantly different.

Measured on a 5-point Likert scale Mael and Ashforth (1992) reported a mean OID score of 3.46 in a sample of alumni (N = 297) from an all-male college in the United States. In the present studies and measured on a 6-point Likert scale the mean OID for all participants (N = 74) in the Norwegian university sample was 3.49, and mean OID score was 4.75 in the MNC (N = 244). Additionally, in a sample measuring professional and organizational identification among auditors (Bamber & Iyer, 2002) using a 5-item version of the OID scale, the authors reported a mean OID score of 4.23 (N = 252).

Based on the low number of participants in Study 1, any assumptions based from this sample regarding the OID scale's reliability should be made tentatively. However, Study 2 received an adequate number of participants and the tendencies spotted in Study 1 was reaffirmed. Drawing on the results from Study 2, the OID scale was determined to be a reliable measure of organizational identification.

The Graphic Identity Item

Study 1 was designed to analyze the scale properties of the GID, and whether the placement of the GID in the questionnaire would bias the responses on the other items. No serial order effect was found. The GID significantly correlated with both the OID scale and the VID. Further results showed that the GID performed uncertainly in measuring the same underlying concept as the OID scale. The GID was the weakest link, replicating the assumption made by Shamir and Kark (2004) that a graphic item is not necessarily superior to verbal scales. Still, based on the homogenous nature of the sample in Study 1, it was decided to further investigate the performance of the GID in a multicultural, non-academic setting.

In Study 2 the VID was not added and the GID was analyzed with the respondents' OID scores. Identity scores were calculated and compared showing that the majority (61 %) of the respondents had GID scores that were one point off as compared to their verbal OID score. The remaining scores showed larger discrepancies. Regression analysis did find the GID to be a significant predictor of verbal OID in both studies, but with large residuals, effectively yielding predictions with a wide margin of error. The GID as employed in the present research is therefore not a good predictor of verbal OID.

The GID produced consistent results in both studies, with significant correlations ($r = .56$) between the GID and the OID scale, but merits further investigation as to why identity scores on the GID were consistently lower than that of the OID. It could be because respondents had difficulties understanding the item and also that they chose the option closest to the middle, under the impression that the "middle ground" is neutral (Kalton, Roberts, & Holt, 1980; Kulas, Stachowski, & Haynes, 2008), as was most often the case in Study 1. For Study 2, the mode was option 4 and 5 on the GID, possibly due to a ceiling effect or even social desirability. The graphic item is by itself, not nuanced enough to answer these questions satisfactory. Furthermore, being constrained by predefined visual categories as representations for the strength of organizational identification, could make a selection difficult. Still, the GID was employed two different studies, in 14 different countries, and results indicated it not being affected by cultural factors.

Limitations

Particular limitations with the present study firstly concerns the low number of participants in Study 1. Cochran's formula for adequate sample size indicated a sample of N = 170 would be sufficient with an a priori significance level of .05 and acceptable error at 3 % (see Bartlett, Higgins, & Kotrlik, 2001). The survey did not achieve this goal with a total

number of 74 participants. Secondly, these participants were further divided by the administration of two versions of the questionnaire, effectively creating smaller groups. The number of participants in Study 2 met the criterion for adequate sample size, but the 244 participants were unevenly scattered over 30 units in 14 countries complicating any analysis at the country or unit level.

Further limitations of the present study concern the lack of different interventions with the concept of OID. In order to investigate the impact of a graphic item in organizational studies, dimensions concerning, for example, turnover intentions, absenteeism, loyalty, productivity and happiness could have been added. However, the choice to only pursue OID was a conscious one, because the present study aimed only to test a verbal measure of OID and a graphic measure. Another key factor was to keep the survey as short as possible.

Regarding questionnaire design in Study 2, challenges arose when participants were requested to choose to which of four organizational entities (work-group, work-site, organization, profession) they identified most and least with. Limiting the participants to only two options ("most" and "least") might have caused confusion resulting in a very low response rate. Also, comments reflected respondents' impression that they identify equally with all. In retrospect, a five-point discrete rating system should have been employed to asses all four values individually. On a side note, identification with for example a person's work-group, might be best investigated through traditional implicit measures of which "work-group id" is the underlying factor.

The OID scale is a widely used and validated measure of OID, and has been hailed as being preferable to other scales in studies aimed at predicting work behavior (see Riketta, 2005). Despite the evidence provided of the psychometric properties of the OID scale, it should be noted that the OID scale like any other self-report measure, is subject to the same

limitations as other self-report measures in terms of disclosure, perception, and interpretation (Stone, Bachrach, Jobe, Kurtzman, & Cain, 2009). Multiple item measures should, however, be more reliable than single item measures. According to classical test theory and the Spearman Brown formula (see Kelley, 1925), the effects of true score variance and random error is potentially cancelled out by constructing multiple response items, providing a more reliable measurement (Woods & Hampson, 2005).

Single-item graphic measures are desirable in that they provide an easy and straight forward method of measuring identification by allowing the respondent to conceive of his or her identification in terms of cognitive distance or overlap between two entities. Findings by Shamir and Kark (2004) pointed to graphic scales being of similar usefulness as a verbal scale, but not superior. The authors also highlighted that graphic items need substantial research to find evidence to support their validity and reliability, and called for more studies investigating the concept further. Woods and Hampson (2005) noted that an issue with single items could be that of content validity when broader constructs are measured with single items. Single items also suffers from the ability to provide measures of internal reliability, but according to the authors this could be alleviated through factor analysis with items from longer scales. The use of single item measures is controversial and researchers have particularly highlighted issues concerning random measurement error and lack of precision in discriminating between the fine degrees of an attitude (Nunnally, Bernstein, & Berge, 1967; Spector, 1992; Zuckerman, Hodgins, Zuckerman, & Rosenthal, 1993). This could, in part, lend an explanation to the consistently lower score on the GID than the OID in the present studies; option 3 provided the closest match and was therefore chosen most often.

Another potential limitation of the GID is the design of the item itself. Not only limiting in that it predefines and imposes artificial boundaries, it also imposes a predefined visual construct on respondents' identification (e.g. circles of same size). To date, no study

has been found that investigates this question further, specifically, whether the visual item itself might benefit from more careful design. It is possible that a redesign of the GID could improve its results, and this avenue of research should be explored further.

Future Studies

Results from the current research reflected an overwhelming tendency among the employees in Study 2 to identify the most with their work-groups and the least with their work-site and profession. The dynamics in these relationships, between an employee and organizational entities at different levels is receiving increasing attention and is a promising future field of research (Ashforth et al., 2011; Chen et al., 2013; Reade, 2001b; Vora & Kostova, 2007; Vora et al., 2007). Nevertheless, to the author's knowledge no measure of organizational identification has sought to incorporate several of these levels of analysis into one comprehensive organizational identification scale. An OID scale of this type would be of benefit for multinational companies and academic institutions alike.

As briefly touched upon above, a topic for future research could be the investigation of graphic item design and the option of discrete versus continuous rating and how this affects respondents' impression of the GID. The present study received most of its inspiration from articles that gave little detail as to the process behind the purposeful design of the GID (Bergami & Bagozzi, 2000; Shamir & Kark, 2004). Shamir and Kark, however, acknowledged that discrete response categories might restrict respondents although they opted for the discrete version in their study. Some research has found that discrete versus continuous response categories on verbal items showed no benefit of one over the other (Lange & Söderlund, 2004), but a preference among respondents for the continuous has also been recorded (Hubbard, Little, & Allen, 1989; McKelvie, 1978). The researchers also discovered that the length of the line of measurement (75 mm, 100 mm, and 125 mm) did not appear to

be subject to any perceptual distortion. Note that Hubbard et al. (1989) employed the designation "graphic scale" to mean a continuous rating scale, not images.

What can be learned from this is that although the continuous option did not offer advantages over discrete in terms of validity and reliability, a continuous rating scale was preferred among respondents. This is an important point, especially when a sample is drawn from a population subject to increasing demands on their time. Perhaps future research into the development of an organizational identification scale would benefit from striving to develop an applied measure of OID to be used in an organizational setting. Not necessarily a superior alternative to existing scales in terms of psychometric properties, but just as good. Most importantly, it would be developed with company professionals in mind, not academics, an in those settings aspects such as brevity and efficiency would be preferable to longer and more complex measures. Comments from management in Study 2 also reflected this desire for a short and efficient measure of OID.

Verbal Measure, or Graphic Measure – or Both?

In line with the results and analyses from the present research, the GID in its current format is not a good measure of OID. Consequently, a future scale of organizational identification ought to focus on verbal items measuring underlying concepts through implicit questions and statements. As noted above, a future OID scale could benefit from endeavoring to measure OID across various levels of analysis, for example between work-group, profession, company, and department, all in one OID scale. If a future researcher wishes to employ a graphic measure in this context, more work should be put into the design of the measure (what shapes captures identity, if any), how it is measured (discrete vs. continuous), and how it is understood by respondents.

References

Albert, S., Ashforth, B. E., & Dutton, J. E. (2000). Organizational identity and identification: Charting new waters and building new bridges. *Academy of Management Review, 25*(1), 13-17.

Albert, S., & Whetten, D. A. (1985). Organizational identity. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 7, pp. 263-295). Greenwich, CT: JAI Press.

Allen, I. E., & Seaman, C. A. (2007). Likert scales and data analyses. *Quality Progress, 40*(7), 64-65.

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational and Organizational Psychology, 63*(1), 1-18.

Allen, N. J., & Meyer, J. P. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behavior, 49*(3), 252-276.

Allen, N. J., & Meyer, J. P. (1997). *Commitment in the workplace: Theory, research, and application*. Thousand Oaks, CA: Sage Publications.

Amiot, C. E., Terry, D. J., Jimmieson, N. L., & Callan, V. J. (2006). A longitudinal investigation of coping processes during a merger: Implications for job satisfaction and organizational identification. *Journal of Management, 32*(4), 552-574.

Asch, S. E. (1956). Studies of independence and conformity: I. A minority of one against a unanimous majority. *Psychological Monographs: General and Applied, 70*(9), 1-70.

Ashforth, B. E., Harrison, S. H., & Corley, K. G. (2008). Identification in organizations: An examination of four fundamental questions. *Journal of Management, 34*(3), 325-374.

Ashforth, B. E., & Johnson, S. A. (2001). Which hat to wear? The relative salience of multiple identities in organizational contexts. In M. A. Hogg & D. J. Terry (Eds.), *Social identity processes in organizational contexts* (pp. 31-48). Hove, UK: Psychology Press.

Ashforth, B. E., & Mael, F. (1989). Social identity theory and the organization. *Academy of Management Review, 14*(1), 20-39.

Ashforth, B. E., Rogers, K. M., & Corley, K. G. (2011). Identity in organizations: Exploring cross-level dynamics. *Organization Science, 22*(5), 1144-1156.

Bamber, E. M., & Iyer, V. M. (2002). Big 5 auditors' professional and organizational identification: Consistency or conflict? *Auditing: A Journal of Practice & Theory, 21*(2), 21-38.

Barrett, P., Paltiel, L., Pulloxhill, M., Bedford, N., Bedfordshire, A., & Zealand, N. (1996). Can a single item replace an entire scale? POP vs the OPQ 5.2. *Selection and Development Review, 12*(6), 1-4.

Bartel, C. A. (2001). Social comparisons in boundary-spanning work: Effects of community outreach on members' organizational identity and identification. *Administrative Science Quarterly, 46*(3), 379-413.

Bartels, J., Pruyn, A., & de Jong, M. (2009). Employee identification before and after an internal merger: A longitudinal analysis. *Journal of Occupational and Organizational Psychology, 82*(1), 113-128.

Bartels, J., Pruyn, A., De Jong, M., & Joustra, I. (2007). Multiple organizational identification levels and the impact of perceived external prestige and communication climate. *Journal of Organizational Behavior, 28*(2), 173-190.

Bartels, J., & Reinders, M. J. (2010). Social identification, social representations, and consumer innovativeness in an organic food context: A cross-national comparison. *Food Quality and Preference, 21*(4), 347-352.

Bartlett, C. A., & Ghoshal, S. (1988). Organizing for worldwide effectiveness: The transnational solution. *California Management Review, 31*(2), 54-74.

Bartlett, J. E., Kotrlik, J. W., & Higgins, C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning, and Performance Journal, 19*(1), 43-50.

Bergami, M., & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology, 39*(4), 555-577.

Berger, P. (1966). Identity as a problem in the sociology of knowledge. *European Journal of Sociology, 7*(01), 105-115.

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research, 44*(2), 175-184.

Beyer, J., & Aradine, C. (1986). Content validity of an instrument to measure young children's perceptions of the intensity of their pain. *Journal of Pediatric Nursing, 1*(6), 386-395.

Bieri, D., Reeve, R. A., Champion, G. D., Addicoat, L., & Ziegler, J. B. (1990). The Faces Pain Scale for the self-assessment of the severity of pain experienced by children: Development, initial validation, and preliminary investigation for ratio scale properties. *Pain, 41*(2), 139-150.

Boen, F., Vanbeselaere, N., & Cool, M. (2006). Group status as a determinant of organizational identification after a takeover: A social identity perspective. *Group Processes & Intergroup Relations, 9*(4), 547-560.

Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin, 86*(2), 307-324.

Chen, Y. C., Chi, S. C. S., & Friedman, R. (2013). Do more hats bring more benefits? Exploring the impact of dual organizational identification on work-related attitudes and performance. *Journal of Occupational and Organizational Psychology, 86*(3), 417-434.

Cheney, G. (1983). On the various and changing meanings of organizational membership: A field study of organizational identification. *Communications Monographs, 50*(4), 342-362.

Corley, K. G., Harquail, C. V., Pratt, M. G., Glynn, M. A., Fiol, C. M., & Hatch, M. J. (2006). Guiding organizational identity through aged adolescence. *Journal of Management Inquiry, 15*(2), 85-99.

Costa, P. L., Graça, A. M., Marques-Quinteiro, P., Santos, C. M., Caetano, A., & Passos, A. M. (2013). Multilevel research in the field of organizational behavior: An empirical look at 10 years of theory and research. *SAGE Open, 3*(3), 1-17.

Crisp, R. J., Farrow, C. V., Rosenthal, H. E. S., Walsh, J., Blissett, J., & Penn, N. M. K. (2009). Interpersonal attachment predicts identification with groups. *Journal of Experimental Social Psychology, 45*(1), 115-122.

de Boer, A. G., van Lanschot, J. J., Stalmeier, P. F., van Sandick, J. W., Hulscher, J. B., de Haes, J. C., & Sprangers, M. A. (2004). Is a single-item visual analogue scale as valid, reliable and responsive as multi-item scales in measuring quality of life? *Quality of Life Research, 13*(2), 311-320.

de Moura, G. R., Abrams, D., Retter, C., Gunnarsdottir, S., & Ando, K. (2009). Identification as an organizational anchor: How identification and job satisfaction combine to predict turnover intention. *European Journal of Social Psychology, 39*(4), 540-557.

Diehl, M. (1990). The minimal group paradigm: Theoretical explanations and empirical findings. *European Review of Social Psychology, 1*(1), 263-292.

Doz, Y., & Prahalad, C. (1986). Controlled variety: A challenge for human resource management in the MNC. *Human Resource Management, 25*(1), 55-71.

Drigotas, S. M., Rusbult, C. E., Wieselquist, J., & Whitton, S. W. (1999). Close partner as sculptor of the ideal self: Behavioral affirmation and the Michelangelo phenomenon. *Journal of Personality and Social Psychology, 77*(2), 293-323.

Dukerich, J. M., Golden, B. R., & Shortell, S. M. (2002). Beauty is in the eye of the beholder: The impact of organizational identification, identity, and image on the cooperative behaviors of physicians. *Administrative Science Quarterly, 47*(3), 507-533.

Dutton, J. E., & Dukerich, J. M. (1991). Keeping an eye on the mirror: Image and identity in organizational adaptation. *Academy of Management Journal, 34*(3), 517-554.

Dutton, J. E., Dukerich, J. M., & Harquail, C. V. (1994). Organizational images and member identification. *Administrative Science Quarterly, 39*(2), 239-263.

Edwards, M., & Peccei, R. (2007). Organizational identification: Development and testing of a conceptually grounded measure. *European Journal of Work and Organizational Psychology, 16*(1), 25-57.

Edwards, M. R. (2005). Organizational identification: A conceptual and operational review. *International Journal of Management Reviews, 7*(4), 207-230.

Edwards, M. R., & Edwards, T. (2012). Company and country effects in international mergers and acquisitions: Employee perceptions of a merger in three European countries. *Economic and Industrial Democracy, 33*(3), 505-529.

Edwards, M. R., & Peccei, R. (2007). Organizational identification: Development and testing of a conceptually grounded measure. *European Journal of Work and Organizational Psychology, 16*(1), 25-57. doi: 10.1080/13594320601088195

Eisenberg, R., Fasolo, P., & Davis-LaMastro, V. (1990). Perceived organizational support and employee diligence, commitment, and innovation. *Journal of Applied Psychology, 75*(1), 51-59.

Elsbach, K. D., & Kramer, R. M. (1996). Members' responses to organizational identity threats: Encountering and countering the business week rankings. *Administrative Science Quarterly, 41*(3), 442-476.

Feldt, L. S. (1965). The approximate sampling distribution of Kuder-Richardson reliability coefficient twenty. *Psychometrika, 30*(3), 357-370.

Feldt, L. S., Woodruff, D. J., & Salih, F. A. (1987). Statistical inference for coefficient alpha. *Applied Psychological Measurement, 11*(1), 93-103.

Fombelle, P. W., Jarvis, C. B., Ward, J., & Ostrom, L. (2011). Leveraging customers' multiple identities: Identity synergy as a driver of organizational identification. *Journal of the Academy of Marketing Science, 40*(4), 587-604.

Foote, N. N. (1951). Identification as the basis for a theory of motivation. *American Sociological Review, 16*(1), 14-21.

Foreman, P., & Whetten, D. A. (2002). Members' identification with multiple-identity organizations. *Organization Science, 13*(6), 618-635.

Gal, R., & Manning, F. J. (1987). Morale and its components: A cross-national comparison. *Journal of Applied Social Psychology, 17*(4), 369-391.

George, E., & Chattopadhyay, P. (2005). One foot in each camp: The dual identification of contract workers. *Administrative Science Quarterly, 50*(1), 68-99.

Gioia, D. A., Schultz, M., & Corley, K. G. (2000). Organizational identity, image, and adaptive instability. *Academy of Management Review, 25*(1), 63-81.

Gregersen, H. B., & Black, J. S. (1992). Antecedents to commitment to a parent company and a foreign operation. *Academy of Management Journal, 35*(1), 65-90.

Guzzo, R. A., Yost, P. R., Campbell, R. J., & Shea, G. P. (1993). Potency in groups: Articulating a construct. *British Journal of Social Psychology, 32*(1), 87-106.

Hall, D. T., & Schneider, B. (1972). Correlates of organizational identification as a function of career pattern and organizational type. *Administrative Science Quarterly, 17*(3), 340-350.

Hall, D. T., Schneider, B., & Nygren, H. T. (1970). Personal factors in organizational identification. *Administrative Science Quarterly, 15*(2), 176-190.

Harris, G. E., & Cameron, J. E. (2005). Multiple dimensions of organizational identification and commitment as predictors of turnover intentions and psychological well-being. *Canadian Journal of Behavioural Science/Revue Canadienne des Sciences du Comportement, 37*(3), 159-169.

Haslam, S. A., Ellemers, N., van Knippenberg, D., & Platow, M. (2003). *Social identity at work: Developing theory for organizational practice*. New York: Psychology Press.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60*(6), 895-910.

Hester, N. K. O. (1979). The preoperational child's reaction to immunization. *Nursing Research, 28*(4), 250-254.

Hogg, M. A. (2006). Social identity theory. In P. J. Burke (Ed.), *Contemporary social psychological theories* (Vol. 13, pp. 111-1369). Stanford, CA: Stanford University Press.

Hogg, M. A., & Turner, J. C. (1987). Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology, 26*(4), 325-340.

Hogg, M. A., & Vaughan, G. M. (2008). *Social psychology*. Harlow: Pearson, Prentice Hall.

Hubbard, R., Little, E. L., & Allen, S. J. (1989). Are responses measured with graphic rating scales subject to perceptual distortion? *Perceptual and Motor Skills, 69*(3f), 1203-1207.

Johnson, M. D., Morgeson, F. K. P., & Hekman, D. R. (2012). Cognitive and affective identification: Exploring the links between different forms of social identification and personality with work attitudes and behavior. *Journal of Organizational Behavior, 33*(8), 1142-1167.

Kalton, G., Roberts, J., & Holt, D. (1980). The effects of offering a middle response option with opinion questions. *Journal of the Royal Statistical Society, 29*(1), 65-78.

Kelley, T. L. (1925). The applicability of the Spearman-Brown formula for the measurement of reliability. *Journal of Educational Psychology, 16*(5), 300-303.

Klein, K. J., & Kozlowski, S. W. J. (2000). *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. San Francisco: Jossey-Bass.

Konovsky, M. A., & Pugh, S. D. (1994). Citizenship behavior and social exchange. *Academy of Management Journal, 37*(3), 656-669.

Kovoor-Misra, S., & Smith, M. A. (2011). Artifacts, identification and support for change after an acquisition. *Leadership & Organization Development Journal, 32*(6), 584-604.

Kulas, J. T., Stachowski, A. A., & Haynes, B. A. (2008). Middle response functioning in Likert-responses to personality items. *Journal of Business and Psychology, 22*(3), 251-259.

Lange, F., & Söderlund, M. (2004). Response formats in questionnaires: Itemized rating scales versus continuous rating scales. *SSE/EFI Working Paper Series in Business Administration*, 1-16.

Leong, S. M., & Tan, C. T. (1993). Managing across borders: An empirical test of the Bartlett and Ghoshal [1989] organizational typology. *Journal of International Business Studies, 24*(3), 449-464.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of psychology, 22*(140), 5-55.

Lopes, P. N. (2002). Emotions at work: How far can they take us? *PsycCRITIQUES, 47*(2), 165-167.

Macrae, C. N., Stangor, C., & Hewstone, M. (1996). *Stereotypes and stereotyping*. New York: Guilford Press.

Mael, F. (1988). *Organizational identification: Construct redefinition and a field application with organizational alumni*. Wayne State University. Unpublished work.

Mael, F., & Ashforth, B. E. (1992). Alumni and their alma mater: A partial test of the reformulated model of organizational identification. *Journal of Organizational Behavior, 13*(2), 103-123.

Mael, F., & Tetrick, L. E. (1992). Identifying organizational identification. *Educational and Psychological Measurement, 52*(4), 813-824.

Maguire, S., & Phillips, N. (2008). 'Citibankers' at Citigroup: A study of the loss of institutional trust after a merger. *Journal of Management Studies, 45*(2), 372-401.

March, J., & Simon, H. A. (1958). *Organizations*. (Vol. 9). New York: Wiley.

McKelvie, S. J. (1978). Graphic rating scales—How many categories? *British Journal of Psychology, 69*(2), 185-202.

Merton, R. K. (1948). The self-fulfilling prophecy. *The Antioch Review, 8*(2), 193-210.

Mignonac, K., Herrbach, O., & Guerrero, S. (2006). The interactive effects of perceived external prestige and need for organizational identification on turnover intentions. *Journal of Vocational Behavior, 69*(3), 477-493.

Moksness, L. (2012). *Organizational identification*. University of Tromsø. Unpublished work.

Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior, 14*(2), 224-247.

Noel, Y., & Dauvier, B. (2007). A beta item response model for continuous bounded responses. *Applied Psychological Measurement, 31*(1), 47-73.

Nunnally, J. C., Bernstein, I. H., & Berge, J. M. t. (1967). *Psychometric Theory* (Vol. 226). New York: McGraw-Hill

O'Reilly, C. A., & Chatman, J. (1986). Organizational commitment and psychological attachment: The effects of compliance, identification, and internalization on prosocial behavior. *Journal of Applied Psychology, 71*(3), 492.

Oakes, P. J., & Turner, J. C. (1980). Social categorization and intergroup behaviour: Does minimal intergroup discrimination make social identity more positive? *European Journal of Social Psychology, 10*(3), 295-301.

Patchen, M. (1970). *Participation, achievement, and involvement on the job*. Englewood Cliffs, New Jersey: Prentice-Hall

Patrician, P. A. (2004). Single-item graphic representational scales. *Nursing Research, 53*(5), 347-352.

Pratt, M. G., & Rafaeli, A. (1997). Organizational dress as a symbol of multilayered social identities. *Academy of Management Journal, 40*(4), 862-898.

Prentice, D. A., Miller, D. T., & Lightdale, J. R. (1994). Asymmetries in attachments to groups and to their members: Distinguishing between common-identity and common-bond groups. *Personality and Social Psychology Bulletin, 20*(5), 484-493.

Rabbie, J. M., & Horwitz, M. (1969). Arousal of ingroup-outgroup bias by a chance win or loss. *Journal of Personality and Social Psychology, 13*(3), 269-277.

Reade, C. (2001a). Antecedents of organizational identification in multinational corporations: Fostering psychological attachment to the local subsidiary and the global organization. *International Journal of Human Resource Management, 12*(8), 1269-1291.

Reade, C. (2001b). Dual identification in multinational corporations: Local managers and their psychological attachment to the subsidiary versus the global organization. *International Journal of Human Resource Management, 12*(3), 405-424.

Riggs, M. L., & Knight, P. A. (1994). The impact of perceived group success-failure on motivational beliefs and attitudes: A causal model. *Journal of Applied Psychology, 79*(5), 755-766.

Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of Vocational Behavior, 66*(2), 358-384.

Riketta, M., & van Dick, R. (2005). Foci of attachment in organizations: A meta-analytic comparison of the strength and correlates of workgroup versus organizational identification and commitment. *Journal of Vocational Behavior, 67*(3), 490-510.

Riordan, C. M., & Weatherly, E. W. (1999). Defining and measuring employees' identification with their work groups. *Educational and Psychological Measurement, 59*(2), 310-324.

Rotondi, T. (1972). Personality implications of organizational identification. *Personnel Administration, 35*(3), 24-28.

Rotondi, T. (1974). Creativity and organizational identification in research and development environments. *Public Personnel Management, 3*(1), 53-58.

Rotondi, T. (1975). Organizational identification: Issues and implications. *Organizational Behavior & Human Performance, 13*(1), 95-109.

Rotondi, T. (1976). Identification, personality needs, and managerial position. *Human Relations, 29*(6), 507-515.

Schneider, B., Hall, D. T., & Nygren, H. T. (1971). Self image and job characteristics as correlates of changing organizational identification. *Human Relations, 24*(5), 397-416.

Shamir, B., & Kark, R. (2004). A single-item graphic scale for the measurement of organizational identification. *Journal of Occupational and Organizational Psychology, 77*(1), 115-123.

Shamir, B., Zakay, E., Brainin, E., & Popper, M. (2000). Leadership and social identification in military units: Direct and indirect relationships. *Journal of Applied Social Psychology, 30*(3), 612-640.

Spector, P. E. (1992). *Summated rating scale construction: An introduction*. Newbury Park, CA: Sage.

Statistical News and Notes. (1939). *Journal of the American Statistical Association, 34*(205), 112-135.

Stone, A. A., Bachrach, C. A., Jobe, J. B., Kurtzman, H. S., & Cain, V. S. (2009). *The science of self-report: Implications for research and practice*. Taylor & Francis e-Library: Lawrence Erlbaum Associates.

Summer, W. G. (1906). *Folkways: A study of the sociological importance of usage, manners, customs, mores, and morals*. Oxford, England: Ginn.

Tajfel, H. (1974). Social identity and intergroup behaviour. *Social Science Information, 13*(2), 65-93.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology, 33*(1), 1-39.

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*(2), 149-178.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-47). Monterey, CA: Brooks/Cole.

Terry, D. J., & Callan, V. J. (1998). In-group bias in response to an organizational merger. *Group Dynamics: Theory, Research, and Practice, 2*(2), 67-81.

Thomas, D. C. (1994). The boundary-spanning role of expatriates in the multinational corporation. *Advances in International Comparative Management, 9*(2), 145-170.

Turner, J. C. (1985). Social categorization and the self-concept: A social cognitive theory of group behavior. In E. J. Lawler (Ed.), *Advances in group processes: Theory and research* (Vol. 2, pp. 77-122). Greenwich, CT: JAI Press.

van Dick, R. (2001). Identification in organizational contexts: Linking theory and research from social and organizational psychology. *International Journal of Management Reviews, 3*(4), 265-283.

van Dick, R., Christ, O., Stellmacher, J., Wagner, U., Ahlswede, O., Grubba, C., . . . Tissington, P. A. (2004). Should I stay or should I go? Explaining turnover intentions with organizational identification and job satisfaction. *British Journal of Management, 15*(4), 351-360.

van Dick, R., Ullrich, J., & Tissington, P. A. (2006). Working under a black cloud: How to sustain organizational identification after a merger. *British Journal of Management, 17*(1), 69-79.

van Dick, R., Wagner, U., Stellmacher, J., Christ, O., & Tissington, P. A. (2005). To be(long) or not to be(long): Social identification in organizational contexts. *Genetic, Social, and General Psychology Monographs, 131*(3), 189-218.

van Knippenberg, D., & van Schie, E. C. M. (2000). Foci and correlates of organizational identification. *Journal of Occupational and Organizational Psychology, 73*(2), 137-147.

van Riel, C. B. M., & Balmer, J. M. T. (1997). Corporate identity: The concept, its measurement and management. *European Journal of Marketing, 31*(5/6), 340-355.

Vora, D., & Kostova, T. (2007). A model of dual organizational identification in the context of the multinational enterprise. *Journal of Organizational Behavior, 28*(3), 327-350.

Vora, D., Kostova, T., & Roth, K. (2007). Roles of subsidiary managers in multinational corporations: The effect of dual organizational identification. *Management International Review, 47*(4), 595-620.

Vuuren, M., Beelen, P., & Jong, M. D. T. (2010). Speaking of dominance, status differences, and identification: Making sense of a merger. *Journal of Occupational and Organizational Psychology, 83*(3), 627-643.

Whetten, D. A. (2006). Albert and Whetten revisited: Strengthening the concept of organizational identity. *Journal of Management Inquiry, 15*(3), 219-234.

Wiesenfeld, B. M., Raghuram, S., & Garud, R. (2001). Organizational identification among virtual workers: The role of need for affiliation and perceived work-based social support. *Journal of Management, 27*(2), 213-229.

Wilder, D. A., & Shapiro, P. N. (1984). Role of out-group cues in determining social identity. *Journal of Personality and Social Psychology, 47*(2), 342-348.

Wiley, N. (1988). The micro-macro problem in social theory. *Sociological Theory, 6*(2), 254-261.

Willerman, B., & Swanson, L. (1953). Group prestige in voluntary organizations: A study of college sororities. *Human Relations, 6*(1), 57-77.

Woods, S. A., & Hampson, S. E. (2005). Measuring the Big Five with single items using a bipolar response scale. *European Journal of Personality, 19*(5), 373-390.

Zuckerman, M., Hodgins, H. S., Zuckerman, A., & Rosenthal, R. (1993). Contemporary issues in the analysis of data: A survey of 551 psychologists. *Psychological Science, 4*(1), 49-53.