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Voluntary or mandatory training participation as a moderator in the relationship between goal orientations and transfer of training

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Trainees can participate in organizational training programs voluntarily or mandatorily. To date, research has reported mixed evidence on the question whether voluntary or mandatory participation is associated with higher motivation and transfer of training. Grounded in the frameworks of participatory design, the notion of autonomy in basic psychological needs theory, and the 2 × 2 model of achievement goals, this meta-analysis examined the relationship between goal orientations and transfer of training in contexts of voluntary and mandatory training participation with a sample of N = 4729 trainees in k = 29 studies. Goal orientations were conceptualized in four dimensions: mastery-approach, mastery-avoidance, performance-approach, and performance-avoidance. Results of the primary meta-analysis indicated that mastery-approach orientation had the most positive correlation with transfer of training, followed by performance-approach, mastery-avoidance and performance-avoidance goal orientation. Meta-analytic subgroup analysis examined the effects of two conditions for training participation: voluntary participation and mandatory participation. The findings indicated that training participation significantly moderated the correlation coefficients of mastery-approach and performance-avoidance goal orientation, with more positive estimates when training enrollment was voluntary. Contrary to expectations, the correlation coefficient between performance-approach goal orientation and transfer of training was more

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positive when entry into training programs was obligatory and mandated. Implications for future research and the practice of training design and delivery are discussed.

Introduction

If trainees participate in a training program voluntarily, are they more motivated and do they transfer more than trainees who participate in a training program mandatorily (Baldwin *et al.*, 1991; Curado *et al.*, 2015)? This question can have implications for the design and delivery of human resource development programs in organizations worldwide. In an attempt of approaching an answer to this question, the present study aimed to examine if voluntary training participation results in more positive relationships between goal orientations and transfer than mandatory training participation. In the present study, transfer of training refers to the use of trained knowledge and skills back on the job (Burke & Hutchins, 2007; Chiaburu & Marinova, 2005; Quesada-Pallarès & Gegenfurtner, 2015).

Goal orientations and transfer of training

Goal orientations refer to individual tendencies that describe why individuals engage in task-related behavior (Dweck & Leggett, 1988; Elliot & McGregor, 2001; Fisher & Ford, 1998; Gegenfurtner & Hagenauer, 2013; Van de Walle *et al.*, 2001). Many conceptualizations of goal orientations exist. The 2×2 framework of Elliot and McGregor (2001) offers a widely used conceptualization that differentiates four types of goal orientations: mastery-approach, mastery-avoidance, performance-approach and performance-avoidance goal orientations. A mastery-approach goal (sometimes labeled a task goal, learning goal or mastery-approach goal) refers to develop competence or to master tasks. A mastery-avoidance goal refers to avoid failing to develop competence or making errors in a task. A performance-approach goal (sometimes labeled an ability goal, ego goal or performance goal) refers to demonstrate normative competence for others. A performance-avoidance goal (sometimes labeled an avoidance goal or ego-defensive goal) refers to avoid showing normative incompetence. Training research demonstrated that goal orientations play an important role in the transfer process, both in supporting transfer and in hindering transfer. Transfer of training can be defined as the use of trained knowledge and skills on the job (for more detailed discussions on the notion of transfer, see Burke & Hutchins, 2007; Gegenfurtner *et al.*, 2009; Segers & Gegenfurtner, 2013). How does transfer associate with mastery-approach, mastery-avoidance, performance-approach and performance-avoidance goal orientations?

Mastery-approach goal orientations are widely investigated. For example, a number of studies reported positive correlations between mastery-approach goals and transfer of training (e.g. Boyce *et al.*, 2008; Chiaburu *et al.*, 2010; Dragoni *et al.*, 2009; Laine & Gegenfurtner, 2013; Nordstrom *et al.*, 1998; Tziner *et al.*, 2007; Van de Walle *et al.*, 2010; Wilson *et al.*, 2002). A few studies also identified negative correlations between mastery-approach goal orientation and transfer (Holladay & Quiñones, 2003), particularly in training programs that were mandated (Orvis *et al.*, 2009; Towler & Dipboye, 2001).

Mastery-avoidance goal orientations are still a novel concept. Consequently, only a small number of studies to date have included this construct (Vanthournout *et al.*, 2015). Chiaburu and Marinova (2005) reported a positive correlation between mastery-avoidance correlation and transfer of training, a correlation that was smaller than correlations of transfer with mastery-approach, performance-approach and performance-avoidance goal orientations. Steele-Johnson *et al.* (2010) as well as Pham *et al.* (2010) reported negative correlation estimates with transfer.

Performance-approach goal orientations are also widely addressed in training research. The available evidence suggests mixed findings. Some studies report positive correlations with transfer of training (e.g. Chiaburu & Tekleab, 2006; Gist & Stevens,

1998; Heimbeck *et al.*, 2003 Kozlowski *et al.*, 2001). In contrast, other studies suggest negative correlations with transfer of training (e.g. Bell & Kozlowski, 2002; Ford *et al.*, 1998; Maurer *et al.*, 2002; Rogers & Spitzmueller, 2009).

Performance-avoidance goal orientations are typically reported to have a negative correlation coefficient with transfer of training (Bell & Ford, 2007; Bell & Kozlowski, 2008; Brett & Van de Walle, 1999; Dierdorf *et al.*, 2010; Schmidt & Ford, 2003), although positive correlation estimates between performance-avoidance orientation and training outcomes are also documented (Chiaburu & Marinova, 2005).

In summary, the available evidence on the relationships between goal orientations and transfer of training is mixed. Among the possible reasons for the mixed evidence are characteristics of the specific samples and measurement instruments used in each study, which can confound with the true score population correlation (Schmidt & Hunter, 2015). Meta-analytic techniques can be used to inquire whether the different dimensions of goal orientations, after controlling for sampling error and error of measurement (Laine & Gegenfurtner, 2013; Rosenthal & Di Matteo, 2001; Schmidt & Hunter, 2015), exhibit a stable positive or negative influence on transfer. Based on Elliot and McGregor's (2001) framework, it can be expected that approach goals are positively related to transfer while avoidance goals are negatively related to transfer. Although goal orientations are frequently addressed in the training literature, a systematic comparison of the goal orientation – transfer relationship under different participation conditions is missing. Without more evidence, it would be premature to conclude how the influence of mastery-approach, mastery-avoidance, performance-approach and performance-avoidance goal orientations would influence transfer of training when trainees enter training programs voluntarily or mandatorily.

Voluntary and mandatory training participation

A number of studies examined how voluntary vs. mandatory participation in training affect motivation and training outcomes. Although none of these studies examined goal orientations, these examinations are interesting because they can suggest trends in how training participation and enrollment influence motivational and transfer-related outcomes. The available evidence can be clustered in three groups: (1) studies supporting voluntary participation, (2) studies supporting mandatory participation and (3) studies indicating marginal differences. First, in a classic study, Hicks and Klimoski (1987) reported that trainees who perceived a high degree of freedom to enter training had more positive reactions and higher achievement scores after training compared to trainees who perceived little freedom in their decision to enroll. More recently, Curado *et al.* (2015) demonstrated that trainees who attended training voluntarily had higher levels of autonomous motivation to transfer than trainees for whom training was mandated. Also Cohen (1990), Baldwin *et al.* (1991), Clark *et al.* (1993), Mathieu *et al.* (1992), as well as Yardley (2003) reported more positive training motivation and training outcomes when entry into training programs was voluntary.

A second group of studies indicated that trainees benefitted more when training was mandated. For example, Baldwin and Magjuka (1991) as well as Tsai and Tai (2003) reported that a mandatory program status resulted in higher levels of training motivation compared to a voluntary program status. Cotterchio *et al.* (1998), as well Rynes and Rosen (1995) indicated that training was more effective when participants were assigned to training. The success of mandatory training participation is explained with the belief of trainees that obligatory training must be important (Baldwin *et al.*, 1991; Tsai & Tai, 2003).

A third group of studies suggested that training assignment (voluntary vs. mandatory) had little effect on training motivation and training outcomes. For example, Dysvik and Kuvaas (2008) reported zero correlations between mandatory or voluntary attendance with task performance. Van Dongen and colleagues (2008) examined training with a digital simulator. The findings suggested that, when training was voluntary, a small number of participants were willing to train, largely because trainees lacked time for training during regular working hours. Training time only marginally

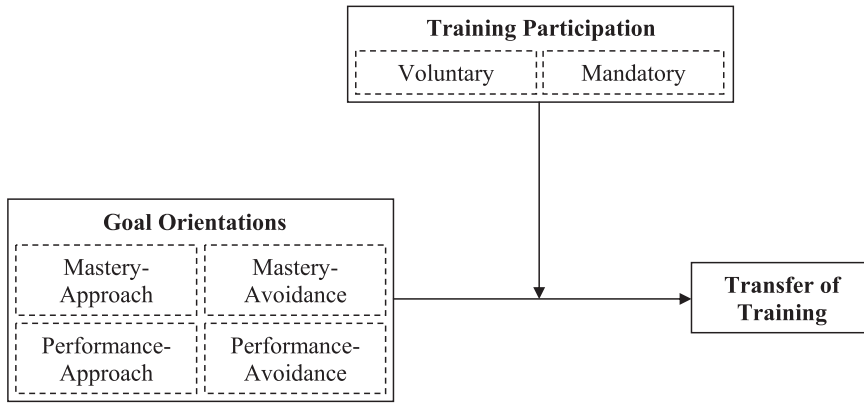


Figure 1: Graphical representation of the moderating effect of training participation on the relationship between goal orientations and transfer of training.

increased after introducing a competitive element and publically announcing individual training outcomes.

Positive effects of voluntary training participation can be explained with different theoretical frameworks, including participatory design research (e.g. Könings *et al.*, 2014) and the notion of autonomy in basic psychological needs theory (Deci & Ryan, 2012; Rosen *et al.*, 2014). Participatory design refers to the involvement of the learner when learning environments are designed and implemented (Könings *et al.*, 2014). The assumption is that being involved will increase engagement, motivation to learn and satisfaction with the learning environment. Conversely, if trainees have no choice or are uninvolved in training decisions, then this sense of not being heard can contribute to experiences of alienation, anonymity, and powerlessness (Könings *et al.*, 2014). In addition to participatory design, also basic psychological needs theory (Rosen *et al.*, 2014) highlights the motivating role of being involved. The assumption is that if learners feel autonomous in deciding whether to attend training or not, then this sense of autonomy and ownership results in higher levels of intrinsic motivation and contextual performance (Deci & Ryan, 2012). If the assumptions from both theoretical frameworks are true, then the relationships between goal orientations and transfer of training can be expected to be more positive when trainees have a choice to attend. At the same time, previous findings tended to suggest that voluntary training participation is not always effective, largely because of time constraints and the belief that mandated training must be important. It is thus an empirical question to test the effects of training participation on achievement goals and transfer of training. An answer to this question can have profound implications for the design and delivery of training programs in human resource development.

Study aims and hypotheses

The aim of the study was to meta-analyze the extent to which four dimensions of goal orientations correlate with transfer of training. A second aim was to estimate the moderating effect of voluntary or mandatory training participation on the goal orientation – transfer relationships. Figure 1 presents a graphical representation of the study aims. Eight hypotheses were formulated. First, and grounded in the 2 × 2 model of achievement goals (Elliot & McGregor, 2001), transfer of training was expected to have positive correlations with mastery-approach (Hypothesis 1) and negative correlations with mastery-avoidance (Hypothesis 2) goal orientation; similarly, it was expected that transfer of training had positive correlations with performance-approach (Hypothesis 3) and negative correlations with performance-avoidance (Hypothesis 4) goal orientation. Second, and grounded in the theoretical notions of autonomy (Rosen *et al.*, 2014)

and participatory design (Könings *et al.*, 2014), it was assumed that training participation would moderate the correlation coefficients. Particularly, the correlation estimates of training transfer with mastery-approach (Hypothesis 5), mastery-avoidance (Hypothesis 6), performance-approach (Hypothesis 7) and performance-avoidance (Hypothesis 8) goal orientations were expected to be more positive when participation in training was voluntary compared to mandatory.

Method

Literature searches and criteria for inclusion

To test this set of hypotheses, a psychometric meta-analysis of correlations using artifact distributions was performed following the procedures of Schmidt and Hunter (2015). Studies were included in the meta-analytic database if they reported a Pearson's correlation coefficient r between one of the four dimensions of goal orientations (mastery-approach, mastery-avoidance, performance-approach, performance-avoidance) and transfer of training. Effect sizes other than Pearson's r (such as Cohen's d , F , or t) were converted to r using the formulae reported in Rosenthal and Di Matteo (2001). Literature was retrieved in two steps. In the first step, the PsycINFO, ERIC, Web of Science and Google Scholar databases were searched using the keywords *goals*, *goal orientations*, *achievement goals*, *mastery orientation*, *learning orientation* and *avoidance* in combination with *transfer of training*, *training evaluation*, *training effectiveness*, *training application* and *training use* of manuscripts published between the years 1985 and 2015. In the second step, reference lists from retrieved articles were cross-referenced to locate additional studies. The literature search resulted in a total of $k = 29$ independent studies that contributed at least one effect size to the meta-analysis. Total sample size was $N = 4729$ participants.

Coding and tabulation of study information

The following information was tabulated from the retrieved studies. First, coding included Pearson's r of the goal orientation – transfer relationship, Cronbach's reliability estimate α of the independent variables (mastery-approach, mastery-avoidance, performance-approach and performance-avoidance goal orientation), and Cronbach's reliability estimate α of the dependent variable (transfer of training). The moderator variable (training participation) was coded as 0 = mandatory participation and 1 = voluntary participation. In addition, coding encompassed study characteristics and demographic characteristics, including first author, publication year, the number of participants N , their age (in years), and gender (percentage of females). Two independent and trained raters coded independently a random subset of three of the 27 studies. Because intercoder reliability was generally high, with a Cohen's κ estimate of 0.96, one rater continued to code the remaining studies.

Meta-analytic procedures

The meta-analytic procedures used in this study followed the methods of artifact distribution meta-analysis of correlations (Schmidt & Hunter, 2015) because these methods provide an improvement from earlier statistical formulae when information such as reliability estimates is only sporadically reported in the original studies. Analysis occurred in two stages. In the first stage, a primary meta-analysis was performed to estimate the population correlation coefficient ρ of the relationship between the different goal orientations and transfer of training. The distribution of Pearson's r was corrected for sampling error, resulting in the corrected correlation estimate r_c . The distribution corrected for sampling error r_c was then further corrected for error of measurement using the product of the compiled Cronbach's α reliability estimates of the independent and dependent variables, resulting in the population correlation coefficient ρ . In the second stage of the analysis, meta-analytic moderator estimation was performed using subgroup analysis to allow examination and reconciliation of

Table 1: Psychometric properties by goal orientation and training participation

Dimension	<i>k</i>	<i>N</i>	<i>r</i>	<i>r_c</i>	<i>SD_{rc}</i>	ρ	<i>SDρ</i>	%Var	95%CI	80%CV
Mastery-Approach										
Voluntary	17	2811	0.21	0.27	0.20	0.40	0.20	0.98	0.26; 0.28	0.18; 0.62
Mandatory	9	1439	0.12	0.12	0.19	0.18	0.19	0.99	0.11; 0.13	-0.06; 0.42
All	26	4250	0.18	0.20	0.19	0.30	0.19	0.99	0.19; 0.21	0.06; 0.54
Mastery-Avoidance										
Voluntary	2	491	0.03	0.00	0.14	0.00	0.00	0.99	-0.01; 0.01	0.00; 0.00
Mandatory	1	256	-0.08	-0.08	0.00	-0.11	0.00	1.00	-0.08; -0.08	-0.11; -0.11
All	3	747	-0.01	-0.03	0.12	-0.04	0.00	1.00	-0.04; -0.02	-0.04; -0.04
Performance-Approach										
Voluntary	17	2428	0.00	0.01	0.15	0.01	0.21	1.00	0.00; 0.02	-0.26; 0.28
Mandatory	7	1113	0.02	0.04	0.07	0.06	0.08	0.99	0.04; 0.04	-0.04; 0.16
All	24	3541	0.01	0.02	0.13	0.03	0.19	0.99	0.02; 0.02	-0.21; 0.27
Performance-Avoidance										
Voluntary	8	1454	-0.06	-0.05	0.14	-0.07	0.20	1.00	-0.06; -0.04	-0.33; 0.19
Mandatory	2	342	-0.17	-0.28	0.03	-0.45	0.06	1.00	-0.28; -0.28	-0.53; -0.37
All	10	1796	-0.08	-0.10	0.17	-0.15	0.24	0.99	-0.11; -0.09	-0.46; 0.16

Note: *k* is the number of data sources, *N* is total sample size, *r* is the uncorrected mean observed correlation, *r_c* is the corrected mean observed correlation, *SD_{rc}* is the standard deviation of the corrected mean observed correlation, ρ is the population correlation coefficient, *SD ρ* is the standard deviation of the population correlation coefficient, %Var is the percentage of variance attributable to sampling error and error of measurement, 95%CI is the 95% confidence interval around *r_c*, and 80%CV is the 80% credibility interval around ρ .

differences in ρ induced by training participation. Two subgroups were formed: one subgroup containing studies in which trainees attended the training voluntarily and one subgroup containing studies in which trainees attended the training mandatorily. Any study that did not explicitly report if trainees were free or mandated to participate was excluded from the meta-analysis. A criticism of the use of subgroups is that it reduces the number of studies per analysis, resulting in second-order sampling error. Although the present study contained a large number of data sources and participants, the possibility of second-order sampling error cannot be totally ruled out and is thus critically appraised when interpreting the findings (Schmidt & Hinter, 2015).

Results

Description of the included studies

The 29 studies that were included in the analysis totaled 4729 participants. On average, participants were 28.52 years (± 7.79) old. A total of 35.41 per cent (± 26.82) of the sample was female. Training participation was voluntary in 20 studies (68.97 per cent) and mandatory in nine studies (31.03 per cent). A total of 26 studies examined mastery-approach goal orientation (89.66 per cent); three studies examined mastery-avoidance orientation (10.35 per cent); 24 studies examined performance-approach orientation (82.76 per cent); and 10 studies examined performance-avoidance orientation (34.48 per cent). Univariate analysis of variance across the four goal orientations indicated that trainee age and gender did not significantly differ between voluntary and mandatory training conditions.

Results of the primary meta-analysis

The primary meta-analysis corrected the correlation coefficients between goal orientations and transfer of training for sampling error and error of measurement. Table 1 reports the psychometric properties. The results indicate that mastery-approach

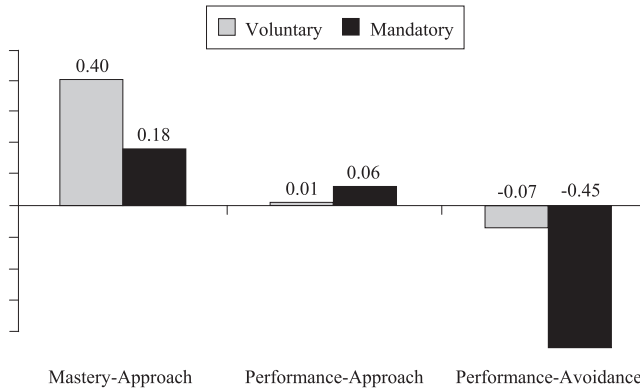


Figure 2: Population correlation coefficients ρ by training participation.

orientation has a correlation of $\rho = 0.30$ with transfer of training, which is more positive than the correlations of performance-approach ($\rho = 0.03$), mastery-avoidance ($\rho = -0.04$), and performance-avoidance ($\rho = -0.15$) goal orientation. These findings support Hypotheses 1–4. Table 1 also highlights that mastery-approach and performance-approach goal orientations are most frequently addressed in training research. In contrast, mastery-avoidance goal orientation is still a novel concept. Although it is frequently examined in the wider educational and educational psychological literature, mastery avoidance is less frequently addressed in research on training and development. Consequently, because it did not yet receive sufficient research attention, mastery-avoidance was excluded from the moderator analysis.

Results of the meta-analytic moderator estimation

Meta-analytic moderator estimation suggested that training participation significantly moderates the influence of goal orientations on transfer. Figure 2 presents an overview. First, the correlation between mastery-approach orientation and transfer is higher when training participation was voluntary ($\rho = 0.40$) compared with mandatory ($\rho = 0.18$). The difference is statistically significant, $t = 34.51$, $SE = 0.006$, $p < 0.001$. This finding supports Hypothesis 5. Second, the correlation between performance-avoidance orientation and transfer is less negative when training participation was voluntary ($\rho = -0.07$) compared with mandatory ($\rho = -0.45$). The difference is statistically significant, $t = 34.76$, $SE = 0.011$, $p < 0.001$. This finding supports Hypothesis 8. However, contrary to Hypothesis 7, the correlation between performance-approach orientation and transfer of training is higher for mandatory ($\rho = 0.06$) compared with voluntary ($\rho = 0.01$) training participation, $t = 7.69$, $SE = 0.007$, $p < 0.001$.

Discussion

The present meta-analysis had two aims. One aim was to psychometrically cumulate and correct individual study findings examining the relationship between goal orientations and transfer of training (Schmidt & Hunter, 2015). For this purpose, goal orientations were conceptualized in four dimensions: mastery-approach, mastery-avoidance, performance-approach and performance-avoidance (Elliot & McGregor, 2001). In support of Hypotheses 1–4, the meta-analytic evidence suggests that mastery-approach orientation had the highest, most positive correlation estimate with transfer, while performance-avoidance had the lowest, most negative correlation estimate. The magnitude of the correlations between performance-approach and mastery-avoidance orientation with transfer were negligible and close to zero. These findings highlight the important role of a mastery-approach goal orientation for influencing the use of trained knowledge and skills after training on the job.

A second aim of the present meta-analysis was to estimate the extent to which voluntary or mandatory training participation moderated the goal orientation–transfer relationships (Baldwin *et al.*, 1991; Curado *et al.*, 2015; Gegenfurtner, 2011; Könings *et al.*, 2014; Rosen *et al.*, 2014). In support of Hypotheses 5 and 8, meta-analytic subgroup analyses suggested that the relationship between mastery-approach and performance-avoidance goal orientations with transfer of training were more positive when trainees participated by choice. These results tend to indicate that giving employees autonomy in their decision to participate in training programs is associated with more positive training outcomes. Surprisingly, the assumption that voluntary training participation would also result in more positive estimates for performance-approach orientation (Hypothesis 7) could not be confirmed; it seems that a social normative reference plays a minor role when choosing to participate in training programs. Test of Hypothesis 6 had to be postponed because cell sizes associated with the relationship between mastery-avoidance goals orientation and transfer of training were too small and did thus not warrant meta-analytic moderator estimation.

These findings have implications for future lines of inquiry. First, mastery-avoidance goal orientations need more research attention. Mastery-avoidance goals are conceptually distinct from performance-avoidance goals. Although both goal orientations share a negative valence (avoiding failure), they differ in the underlying definition of competence: mastery-avoidance goal orientations refer to avoid not mastering a task while performance-avoidance goal orientations refer to avoid that others notice one is not mastering a task (Elliot & McGregor, 2001). For example, with regard to avoidance goals, training research can address perfectionist trainees who strive to avoid doing anything wrong (and so avoid transfer) or older trainees late in their careers who strive to avoid stagnating or performing not as good as early in their careers. Goal orientation research has developed a number of novel conceptualizations (e.g. Elliot *et al.*, 2011, 2015; Gegenfurtner & Hagenauer, 2013). These conceptualizations can be tested in training research to estimate how different goal orientations influence the initiation and maintenance of transfer activities under different participation and enrollment conditions. Another direction for future inquiry concerns participatory design in training research. This study addressed the choice to attend training (Curado *et al.*, 2015; Hicks & Klimoski, 1987; Tsai & Tai, 2003; Yardley, 2003). Arguably, training assignment is an important factor (Baldwin & Magjuka, 1991; Tsai & Tai, 2003), but if we follow the premises of participatory design in research on learning and instruction, then it seems promising to evaluate how trainees can have their say also on other elements of the training program, including training content (Burke & Hutchins, 2007), length (Laine & Gegenfurtner, 2013), instructional format (Gegenfurtner *et al.*, 2014), group composition (Gebhardt *et al.*, 2015), participant age and expertise (Gegenfurtner & Seppänen, 2013; Gegenfurtner & Vauras, 2012), technology enhancement (Siewiorek & Gegenfurtner, 2010; Siewiorek *et al.*, 2013), mode of delivery (Gegenfurtner *et al.*, 2013) or assessment conditions (Könings *et al.*, 2014). Research bridging the gap between participatory design and human resource development is in its infancy and offers exciting avenues for future inquiry. A final direction for future research is associated with the motivational dimension under scrutiny. The present study was devoted to goal orientations. Based on the moderating effects discovered here, it would be fascinating to examine if similar patterns emerge with other motivational variables, including motivation to transfer (Curado *et al.*, 2015; Gegenfurtner *et al.*, 2009), transfer intentions (Gegenfurtner, 2013; Testers *et al.*, 2015), individual and situational interest (Knogler *et al.*, 2015) or task-related self-efficacy beliefs (Bell & Kozlowski, 2008).

The study has implications for the practice of human resource development (HRD) officers and training designers. First, for HRD officers, the findings suggest that transfer of training seems more likely when trainees feel autonomous in deciding whether or not to attend training programs (Deci & Ryan, 2012; Rosen *et al.*, 2014). Thus, it seems plausible to recommend adopting a voluntary participation policy. Of course, there are situations in which particular knowledge and skills have to be trained, mandating enrollment. In those situations, offering options or choices for trainees to decide which program to attend, or when to attend it, can still help in supporting the trainee

need of feeling autonomous and self-determined (Deci & Ryan, 2012; Rosen *et al.*, 2014). Second, for training designers, the results of this study indicate that learners benefit more from training when they can participate in the decision-making process associated with the training. This offers training designers the possibility to gather information on preferred training programs, to re-design existing curricula based on trainee preferences, and to involve trainees in implementing novel training formats within the organization.

Finally, this study has some limitations that should be noted. One limitation is associated with the fact that the population correlation estimates ρ were corrected only for sampling error and error of measurement. The decision to correct for these artifacts was based on the frequent availability and reporting of sample size and reliability information. However, the original study reports might have been influenced by other biases as well (Schmidt & Hunter, 2015). Therefore, the true population estimates of the goal orientation – transfer relationships may be somewhat larger than those reported here. Another limitation of the present study is that some cells contained a small number of studies, particularly in the case of mastery-avoidance and performance-avoidance orientations. Although correcting for bias on a small scale mitigates sampling error compared with uncorrected estimates in individual studies, the risk of second-order sampling error is acknowledged. This limitation can be addressed with more individual studies on the goal orientation – transfer relationship (Rosenthal & Di Matteo, 2001; Schmidt & Hunter, 2015). Finally, a third limitation refers to the conceptualization of goal orientations. The present study differentiated four dimensions of goal orientations. Alternative or more recent conceptualizations exist that would warrant inclusion (e.g. Elliot *et al.*, 2015), as would an account of motivational constructs beyond goal orientations to examine their variance when training participation is voluntary or mandatory.

Conclusion

In summary, how can we answer the question stated in the beginning of this manuscript: if trainees participated in a training program voluntarily, are they more motivated and do they transfer more than trainees who participated in a training program mandatorily? An answer to this question can have important implications for those engaged with training design and delivery. Based on the present meta-analytic synthesis of 4 dimensions of goal orientations, 29 individual studies, 63 effect sizes, and 4729 trainees, the empirical answer tends to be: yes. It seems that offering trainees the choice to attend has a moderating effect on the relationship between goal orientation and transfer of training, with more positive estimates for mastery-approach and performance-avoidance orientation. If organizations decide to adopt a mandatory training policy, a performance-approach orientation tends to be supported, which in turn is less highly associated with transfer of training. It seems thus recommendable to offer enrollment in training programs on a voluntary basis – if practically possible and organizationally desirable. Future analyses are encouraged to extend the first steps reported here to the examination of how participatory design and feelings of autonomy can influence motivation and transfer in corporate training and development.

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