

**The Effects of Efficacy Beliefs on Training Outcomes:
Looking Beyond Self-Efficacy**

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Abstract

Previous research has shown that self-efficacy has an important influence on the effects of training. The present research broadens the view on efficacy beliefs by taking into account the role of collective efficacy and response efficacy on training outcomes. Additionally it explores the influence of supervisors on follower efficacy beliefs. To investigate these proposed relations, in the first study a survey was distributed to police officers before and after participation in a group training, in the second study follow up interviews were conducted. Although the results of the first study do not confirm the proposed relations, there are signs that response efficacy and collective efficacy may play a role, but more research is necessary to further explore the exact role of these efficacy beliefs. The second study showed that supervisors did influence the efficacy beliefs, the influence of vicarious experience was however much stronger. These findings can be attributed to the specific type of training, since most participants knew the training from national television. Future research should focus on further exploring the influence of response and collective efficacy and measuring the influence of supervisors on efficacy beliefs in a direct manner.

Management Samenvatting

Jaarlijks wordt er veel geld uitgegeven door bedrijven om werknemers te trainen en op te leiden. Uit onderzoek komt naar voren dat *self-efficacy* een grote invloed heeft op trainingsuitkomsten. Maar naast *self-efficacy*, wordt er in andere onderzoeksgebieden ook gesproken over andere efficacy overtuigingen, zoals *response efficacy* en *collectieve efficacy*. Daarnaast richt dit onderzoek zich ook op het effect dat efficacy overtuigingen van leiders hebben op de efficacy overtuigingen van hun volgers. Het doel van dit onderzoek is om de rol die efficacy overtuigingen speelt in een training context uit te breiden.

Om te testen in hoeverre deze andere vormen van efficacy invloed hebben op training uitkomsten zijn voorafgaand en na het voltooien van een workshop vragenlijsten verstuurd. De workshop werd gegeven aan politieagenten en had als doel om het vertrouwen en de veiligheid te vergroten en meer verbinding te creëren onder de collega's. Daarnaast zijn nog een aantal interviews gehouden om het effect van efficacy overtuigingen van leidinggevendenden op hun team te onderzoeken.

Uit de resultaten blijkt dat het toevoegen van *response efficacy* en *collectieve efficacy*, naast *self-efficacy* geen additionele verklaring geeft voor veranderingen in training uitkomsten. Tevens blijkt uit de interviews dat de efficacy overtuigingen van de deelnemers het meeste werden beïnvloed door meningen van collega's en wat ze al wisten uit de media. De invloed van efficacy overtuigingen van leidinggevendenden blijkt minder aanwezig. Het is echter van belang om de specifieke context bij de interpretatie van de bevindingen in het achterhoofd te houden.

Door niet enkel te focussen op het effect van self-efficacy zet dit onderzoek een eerste stap op weg naar een bredere blik op de rol van efficacy overtuigingen in trainingen uitkomsten. Er is echt nog veel vervolgonderzoek nodig om de exacte invloed verder te bepalen.

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The Effects of Efficacy Beliefs on Training Outcomes:

Looking Beyond Self-Efficacy

Organisations spend large amounts of money on training for employees. In order to optimise the benefits from training extensive research has been executed. This research has shown that self-efficacy is one of the most important factors, which influences training outcomes (Burke & Hutchins, 2007; Colquitt, Lepine, & Noe, 2000; Martocchio & Judge, 1997). Self-efficacy can be defined as belief in one's capabilities to perform a specific task (Bandura, 1977a). Meta-analyses have shown that higher self-efficacy beliefs can lead to better training outcomes (Burke & Hutchins, 2007; Colquitt et al., 2000).

Research has shown the importance of self-efficacy on training outcomes, however a rather narrow view has been taken with regard to efficacy beliefs. By only incorporating self-efficacy beliefs no attention is given to the social interactions, which could influence these beliefs, nor attention is given to the efficacy beliefs with regard to the training. The current research aims to broaden existing research by investigating how other efficacy beliefs also influence training outcomes.

Work of Bandura (1977c, 2000) explains other forms of efficacy beliefs. Since self-efficacy beliefs have such an important influence on training outcomes, it would be very interesting to see how these other forms of efficacy beliefs influence training outcomes. In health promotion literature, response efficacy is considered as an important variable, which has major influence on the actions and behaviour of people (Floyd, Prentice-Dunn, & Rogers, 2000). Response efficacy is defined as the belief that enacting a specific behavior will result in the changes one seeks (Bandura, 1977c). In a training context this would mean that people believe that following a specific training will lead to the outcomes they seek.

Risk literature and social change literature provides us with another interesting form of efficacy belief, collective efficacy (Kievik & Gutteling, 2001; Zomeren, Spears, Fischer, & Leach, 2004). Trainings are no longer just aimed at individuals gaining knowledge or developing skills that are needed for a job, but focus more on social and interpersonal skills. Additionally more trainings nowadays are given to entire teams. Since these trainings are not given to one person but to a team of workers, collective efficacy could also play a role in training outcomes. Collective efficacy can be defined as a group's shared belief in being able to together organize and execute required actions (Bandura, 1977b). By including response efficacy and collective efficacy the current research aims to broaden the view on efficacy beliefs in relation to training outcomes.

Individual efficacy beliefs are not only based on characteristics of an individual, such as personality, but are also influenced by the social context (Chiaburu & Marinova, 2005; Colquitt et al., 2000). Research of Chiaburu, Dam, and Hutchins (2010) has pointed out the importance of organizational and supervisor support for self-efficacy. Focusing on efficacy beliefs, supervisors also communicate about their own beliefs, and in doing so influence their team. As stated by Scaduto, Lindsay, and Chiaburu (2008, p. 165) "[...] focus on exchanges with the direct leader is important for creating more inclusive models of training effectiveness. [...] leaders and followers have established relationships, and it is useful to know how these relationships impact multiple dimensions of training [...]". In light of this notion it would be of great interest to explore if and how supervisor efficacy beliefs influence individual efficacy beliefs.

The goal of the current study therefore is to analyse to what extent self-efficacy, collective efficacy and response efficacy influence training outcomes and to explore if and how supervisors influence these efficacy beliefs.

Literature Review

The aim of this paper is twofold; first, it focuses on response and collective efficacy beliefs in addition to self-efficacy beliefs in relation to training outcomes. Secondly, it explores the influence of supervisor efficacy beliefs on follower efficacy.

Link between Follower Efficacy Beliefs and Training Outcomes.

The current study considers the link from self-efficacy, response efficacy and collective efficacy, as three parts of follower efficacy beliefs, to trainee reactions as well as to training learning. Before reviewing the literature on the different efficacy beliefs, this review will further look into different levels of training outcomes.

Training outcomes. Outcomes of a training can be quite diverse, they are however always related to new knowledge or developing certain skills (Baldwin & Ford, 1988). In order to know if a training has been effective, often evaluations take place after completion of a training. Trainings can be evaluated based on (1) reactions of participants, (2) learning by participants, (3) changes in behaviour of participants and (4) long term results (Kirkpatrick, 1967). The current research will focus on the first two categories of Kirkpatrick's (1967) taxonomy, because these evaluations can be attributed most directly to a training, without interference from external factors which influence the evaluation after completion of the training.. Although Kirkpatrick (1967) mentions that a learning outcome can also be a change in attitude, this topic is not further discussed in depth in his paper. Kraiger, Ford and Salas (1993) recognize that affective outcomes are not often considered in training outcomes. They emphasize that affective outcomes can be important outcomes of training as well, in addition to cognitive

and skill-based outcomes. Examples of such affective outcomes can be a change values, group norms or tolerance for diversity.

Alliger, Traver and Shotland (1997) proposed an augmented taxonomy in which they made additional distinction in the steps of Kirkpatrick's (1967) taxonomy. In the first step of Kirkpatrick's (1967) taxonomy, Alliger et al. (1997) made a distinction between affective and utility reactions. Whereas the first reactions are considered with liking, the second type of reactions focuses on the usefulness of the training. Their meta-analysis showed that there was an average correlation of 0.34 between affective and utility reactions, which might suggests that trainings are perceived more useful, when individuals have a positive experience in the training (Alliger et al., 1997). These results are supported by findings of Esfandagheh et al. (2012) and Tracey, Hinkin, Tannenbaum and Mathieu (2001). A second distinction is made with regard to learning outcomes. Alliger et al. (1997) distinguished immediate post-training knowledge, knowledge retention and behaviour/skill demonstration.

Whereas the distinction of the first step provides additional value for the current research, the distinction in the second step is focused too much on trainings that aim at knowledge and not on trainings concerned with social skills or intergroup relations. Therefore the current research will take both affective and utility reactions into account, but will only look at affective outcomes as a learning outcome.

Efficacy beliefs. As stated in the introduction a lot of research has focused on the effects of self-efficacy beliefs on training outcomes (Burke & Hutchins, 2007; Colquitt et al., 2000). In the following paragraphs the concept of self-efficacy beliefs will be discussed, but also response efficacy and collective efficacy are examined in relation to training outcomes.

Self - efficacy. Self-efficacy is an important variable often considered in training literature. In the literature with regard to training a distinction has been made between pre-training and post training self-efficacy. Pre-training self-efficacy can be defined as one's belief in being able to acquire knowledge and skills in the training setting (Tracey et al., 2001). Post-training self-efficacy on the other hand is concerned with "the feeling that one can successfully use the knowledge and skills obtained in training on job"(Esfandagheh et al., 2012, p. 176). When not specified most research investigates the role of pre-training self-efficacy, therefore self-efficacy and pre-training self-efficacy will be used interchangeably in the remainder of this paper. Self-efficacy can be described as a judgment about one's capabilities for a specific task (Gist, Stevens, & Bavetta, 1991). Self-efficacy is influenced by four factors, (1) past performance, (2) vicarious experience, (3) verbal persuasion and (4) emotional cues (Bandura, 1977c). Past performances can either be skill specific or more based on trainings in general. Vicarious experience is a source of self-efficacy when you see someone similar to you participate in a training and be successful. Verbal persuasion is when others convince you that you can succeed in a certain task. Finally emotional cues, such a sweating or feeling excited, can influence self-efficacy since they cause emotional arousal which gives us feedback about certain performances (Bandura, 1977c).

Multiple studies have shown that people with greater self-efficacy beliefs have better training outcomes (e.g., Tai, 2006; Warr, Allan, & Birdi, 1999). More specifically positive relations between pre-training self-efficacy and utility reactions and affective reactions were found by Tracey et al.(2001). Research of Esfandagheh et al. (2012) also found significant relations between pre training self-efficacy and affective and utility reactions. Gist et al. (1991)

state that, especially, in interpersonal tasks self-efficacy can play an important role, and this hypothesis was supported by their research.

Based on these previous findings, the current research will test the following hypothesis:

Hypothesis 1: Pre-training self-efficacy will be positively related to affective reactions

Hypothesis 2: Pre-training self-efficacy will be positively related to utility reactions

Hypothesis 3: Pre-training self-efficacy will be positively related to affective outcomes

Collective efficacy. Much of the research on training has focused on the individual characteristics, which influence the training outcomes. However more and more trainings are given to teams or even departments and the topic of these trainings are more often related to group processes. Therefore not only the beliefs of an individual about his or her performance will influence the training outcomes, also beliefs about the efficacy of the group are of importance. Collective efficacy gives additional insight since it concerns the individual perceptions of the efficacy of the group (Gibson, Randel, & Earley, 2000). It is of importance to differentiate collective efficacy from group efficacy. Group efficacy is the consensus of the group with regard to their own efficacy, while collective efficacy is the individuals' perception of efficacy. Another construct often used interchangeably is group potency. This can be defined as: the collective belief in a group that it can be effective" (Guzzo, Yost, Campbell, & Shea, 1993, p. 87). The difference however is that group potency is concerned with efficacy in general while collective efficacy is task specific (Bandura, 1977b; Gist, 1987).

Research into collective efficacy has mostly focused on the effect on collective outcomes.

In addition to having better group performance, research also showed that individual collective efficacy influenced individual performance (Earley, 1993). Based on the findings of collective efficacy in other research disciplines and the research of Earley (1993) the following hypothesis will be tested:

Hypothesis 4: Collective efficacy will be positively related to affective reactions

Hypothesis 5: Collective efficacy will be positively related to utility reactions

Hypothesis 6: Collective efficacy will be positively related to affective outcomes

Response efficacy.

Response efficacy is defined as the belief that enacting a specific behavior, for instance following a training, will result in the changes one seeks, such as changes in intergroup relations (Bandura, 1977c). This notion shows great resemblance with the notion of instrumentality as mentioned by Chiaburu and Lindsay (2008). They defined instrumentality as “an individuals belief that performing a specific behaviour will lead to a desired outcome” (Chiaburu & Lindsay, 2008, p. 200). Their research showed a relation between instrumentality and training transfer, the extent to which skills learned during training are transferred to the work floor. Unfortunately this notion has not received much attention in training literature. The results of Chiaburu and Lindsay (2008) show the importance of incorporating response efficacy in training research. However in their research no distinctions is made between different kind of reactions and outcomes. Since the direction of their findings was positive, the current research will test the following hypothesis:

Hypothesis 7: Response efficacy will be positively related to affective reactions

Hypothesis 8: Response efficacy will be positively related to utility reactions

Hypothesis 9: Response efficacy will be positively related to affective outcomes

Link between Supervisor Efficacy Beliefs and Follower Efficacy Beliefs

People are influenced in their efficacy beliefs by others through verbal persuasion, and one of the major possible sources of influence on the work floor is someone's supervisor (Bandura, 1977c; Govaerts & Dochy, 2014; Nijman, Nijhof, Wognum, & Veldkamp, 2016). There is however little research examining these relationships. In the current research supervisor efficacy beliefs are defined as the beliefs, which supervisors have with regard to efficacy of the training, of their followers or their team.

Most research that has been executed is concerned with the support and rewards from the supervisor after the training (e.g. Smith-jentsch & Brannick, 2001). In their meta-analysis Burke and Hutchins (2007) found that there is a moderate to strong relation between supervisor support and training outcomes, however findings are mixed and they urge for more research. Research of Chiaburu et al. (2010) has shown that supervisor support influences self-efficacy beliefs and research of Guthrie and Schwoerer (1994) showed that managerial support had a positive effect on utility reactions.

The current research takes a slightly different approach to researching the influence of supervisors. Instead of analysing the influence of supervisors after completion of a training, the current research aims to investigate if and to what extent supervisor can influence efficacy beliefs of their followers, a notion which was already suggested by Gist (1987) based on private communication with Bandura. She stated that supervisor's expectations could be viewed as input

for follower efficacy perceptions, since it is a manner of persuasive input. Therefore the following hypothesis will be tested:

Hypothesis 10: Supervisor beliefs of follower efficacy will be related to follower self-efficacy beliefs.

One of the few articles which also takes into account the framing of trainings by supervisors is by Tai (2006). He found that supervisor's training framing influences followers' self-efficacy. More specifically he concluded that if supervisors primary to a training frame a training as useful to trainees, this will lead to higher self-efficacy of their followers. In doing so supervisors send a message about response efficacy.

Research into risk communication has shown that response efficacy is a factor which can be manipulated to a great extent by external sources (Kievik & Gutteling, 2001). Research of Clark, Dobbins and Ladd (1993) showed that supportive supervisors can emphasize the utility of a training, and in doing so impact their followers. Extrapolating these finding to the current research, it is proposed that response efficacy with regard to a training can also be influenced by someone's supervisor. Based on the results found when considering the effects of supervisor support and the results of Tai (2006) the following hypothesis have been constructed:

Hypothesis 11: Supervisor response efficacy beliefs will be related to follower response efficacy

Conceptual Model

To give an overview of the literature and the proposed hypothesis a conceptual model was constructed, Figure 1 presents this model.

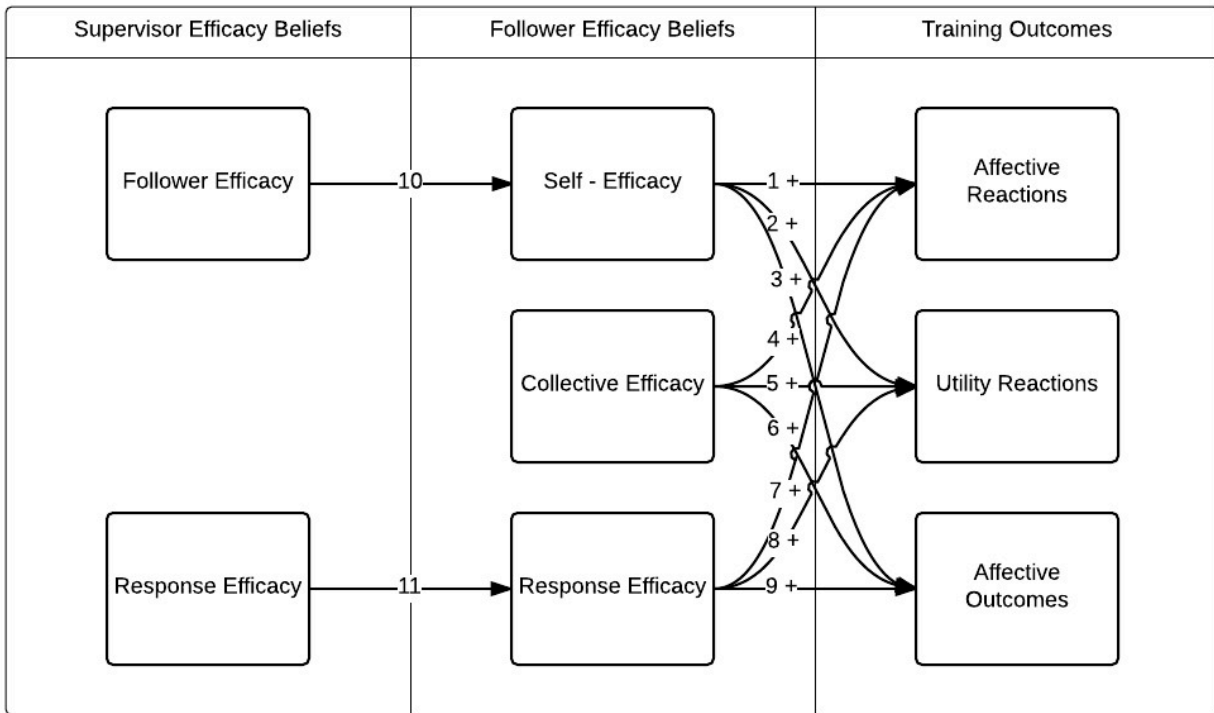


Figure 1 Conceptual Model

As shown in the model self-efficacy, collective efficacy and response efficacy of followers will have a positive relation with affective reactions, utility reactions and affective outcomes. It is proposed that supervisor's beliefs of followers efficacy will have a relation with followers self-efficacy. The model also suggests that supervisor's response efficacy beliefs are related to followers' efficacy beliefs.

Composition of the Remainder of this Paper

To test the hypotheses two subsequent studies were executed. To give some insight in the circumstances under which the study was executed first the research context will be discussed. The remainder of the paper will first focus on study one, in which the effects of efficacy beliefs on training outcomes were tested. Afterwards the second study will be discussed, the focus of this study was on the relation between supervisor and follower efficacy beliefs. The paper will end with a combined conclusion and discussion of both studies.

Research Context

To investigate the effects of efficacy beliefs on training outcomes the current research was performed at the Dutch police. The Dutch police started a pilot consisting of a one-day training, which aims at improving internal safety, connection and trust. These topics are of great importance for the Dutch police, since it is going through a turbulent period with problems inside the organisation and considerable criticism from society. Problems include allegations of discriminating ethnic minorities in preventive searches and violent arrests, such as in the case of Mitch Henriquez (Amnesty International, 2013; De Zeeuw, 2015). In addition to criticism the Dutch police force is also facing major challenges within its organisation, such as problems with the forming of the National police (Ministerie van Veiligheid en Justitie, 2015) and on-going discussing about the collective labour agreement (van der Steur, 2015). All of these issues have had an extensive influence on the feelings of the police officers, which has led to a decline in co-workers and a decline in work motivation, while absenteeism went up (Nationale Politie Bond, 2015; Winterman, 2016).

In order to create a culture in which police have a safe work environment so that they can help get a safe society a series of trainings was considered. This started with a pilot in 2013 in which all team supervisors of the district Amsterdam participated in a Police Day. This day was a pilot to see if the designed training would help in creating connection and trust between colleagues and creating a more secure work environment. Based on this pilot the decision was made to use the Police Day as a manner to improve internal safety, connection and trust. As a kick-off three districts participated in the Police Days in the fall of 2015. These days start with icebreakers and exercises to create better interpersonal relations. The day builds up to an exercise in which the participants are asked to cross a line to show what they or people they know have gone through. These questions are for example related to drug use, post traumatic stress of violence against the police function. By doing so people can see that they share experiences with others, which leads to more understanding for colleagues.

Training outcomes of the day were increasing psychological safety and team identification. These training days provided the researcher with excellent opportunity to test the suggested hypothesis. The current research was combined with a general evaluation of the day and research of two other researchers.

Study One

Methodology

The following paragraphs will discuss the methods used during the first study. Quantitative research was used to test the hypotheses 1 to 12, which mainly focused on the relation between efficacy beliefs and training outcomes.

Procedure. Three departments of the Dutch police took part in a Police Day. The training day was followed with colleagues of the same department, however one of the departments was so large that the group was split in half and training was provided two times, in two consecutive days.

Participants received a survey before participating in the training and after participating. The department heads mailed surveys, containing pre-training measures, to the participants one week before the training of that department would take place. One week after the training the department chief mailed the second survey with post-training measures. Respondents were assured that their information would be treated confidentially and that they would remain anonymous. To be able to match results from the first survey they were asked to answer four questions which were translated into an identification code. Supervisors and followers received the same questionnaire. At the start of the questionnaire they were asked if they were supervisors or not. The questionnaire also had other questions, which were not relevant for the current research, but were used by researchers.

Participants.

Pre-training survey. In total around 450 police officers participated in one of the four trainings days. Of the 450 police officers 312 started with the pre-training survey. 34 of these respondents only filled out questions with regard to demographics, and will be excluded from the research. The response rate was 61.77%. There were 189 male respondents and 89 female respondents with a mean age of 39.09 ($SD = 10.86$), which ranged from 21 to 62 years. The Netherlands was the country of birth for 260 respondents. Other respondents came from Morocco (4), Turkey (3) and 6 respondents from various other countries. The questionnaire was filled in by 29 supervisors and by 249 followers. 106 respondents took part in the first training day, 88 respondents participated in the second day. 84 of the respondents followed either the third or the fourth training day.

Post-training survey. 200 respondents started with the post-training survey. 44 of these respondents only filled out questions with regard to demographics, and will be excluded from the research. Of the remaining respondents, 146 completed the entire survey. 42 of the pre-training and post-training surveys could be matched using the identification code, constructed in the pre-training survey. The mean age of the post-training survey was 41.37 ($n = 146$, $SD = 10.95$), with a range from 21 to 62 years. 54 respondents were part of the first training day, 34 respondents participated in the second day and 23 respondents took part in either the third or fourth day. Of 54 respondents it was not clear on which day they participated due to a mistake with sending the survey.

Measures. The surveys used in the current research had measures that were only used in the first survey, such as efficacy measures and demographics. Some measures were used in both the pre training survey and in the post training survey, such as psychological safety and team identification and other measures were only part of the post-training measures, such as training reactions. The following paragraphs will discuss these measures in more detail.

Pre-training measures. The survey mailed prior to the training assessed demographics, psychological safety, team identification, reactions, and efficacy beliefs. Surveys were provided in Dutch, where necessary translations were made to provide for Dutch questions. All responses were made on a 5-point Likert Scale, ranging from strongly disagree to strongly agree, with high values representing high levels for each variable, unless otherwise specified. Some values were reverse scored, which were adapted before analyses. Scale scores were computed by averaging the items of a construct to which participants responded.

Demographics. Participants were asked to create a unique identifying code by combining some items; examples of such items were the letters of their postal code and year of birth. Additionally they provided information on gender and function. The last questions of this part were related to if they were supervisors or not and when they were, how many people they had under their supervision.

Efficacy measures. Self-efficacy was assessed using a 5-item scale ($\alpha = .93$) based the scale of Guthrie and Schwoerer (1994). A representative item of this scale is "I expect that I am able to execute the skills that I learn during the Police Day during my work" and "I am confident that I can participate properly during the Police Day". The scores of these five items were averaged to form the construct self-efficacy. The scale for collective efficacy was also based on

the work of Guthrie and Schwoerer (1994) and also consisted of 5 items ($\alpha = .89$). The collective efficacy scale was adapted from the self-efficacy scale. Bandura (1977b) stated that collective efficacy is concerned with performance capability of the group as a whole; therefore the first part of the question was changed from an individual to group level. For example the question "I expect that I am able to gain knowledge and skills during the Police Day", was changed into "I expect that my team is able to gain knowledge and skills during the Police Day". The five items were averaged and together formed the construct collective efficacy.

Also based on the scale of Guthrie and Schwoerer (1994) were the measures for response-efficacy. The scale consisted of 5 items ($\alpha = .93$). This scale included items such as "The Police Day has the ability to increase connection, trust and safety" and "The Police Day will be effective in increasing connection, trust and safety". The items were averaged to form the construct response efficacy.

Efficacy beliefs of supervisors were measured in the same way as efficacy beliefs of followers. At the start of the survey respondents were asked to indicate if they were a supervisor or not.

Social Desirability. Based on information provided by the organisation, the researchers questioned to what extent participants would give social desirable answers to the questions, therefore a measure of social desirability was added to the research in order to control for moderation effects. The current research used the short version of the scale of Crowne and Marlowe (1960), created by Reynolds (1982). Examples of items include "It is sometimes hard for me to go on with my work if I am not encouraged", and "I sometimes feel resentful when I don't get my way". The scale originally consists of 13 items ($\alpha = .49$), however the deletion of

two items led to an increase in reliability ($\alpha = .67$), and therefore only the remaining 11 items were used to form the construct social desirability.

Pre- and post-training measures. In both questionnaires respondents were asked about Psychological safety and Team identification. Changes in these variables were considered as measurable affective outcomes of the Police Day. All responses were made on a 5-point Likert Scale, ranging from strongly disagree to strongly agree, with high values representing high levels for each variable, unless otherwise specified.

Psychological safety. Psychological safety was measured on a 5-item scale, based on the work of Edmondson (1999). The scale had a Cronbach's α of .71 in the pre-training survey and a Cronbach's α of .73 in the post-training survey. Examples of questions used are "My colleagues respect each other and value each others contributions", and "If you make a mistake on this team, it is often held against you". In order to translate psychological safety into an outcome measure, the change from the pre-training to the post-training was considered for the analyses. This variable is called Δ psychological safety, only participants who filled in both surveys were considered during these analyses.

Team identification. Team identification was measured on a 9-items scale, adapted from (Theodorakis, Dimmock, Wann, & Barlas, 2010). Items of this scale were for example "I think of my favorite team as part of who I am" and "My team has a lot to be proud of". Cronbach's alpha of the scale in the pre-training survey was $\alpha = .88$. In the post-training the reliability was $\alpha = .90$. To take team identification as an outcome measure, the analyses will work with Δ team identification. This is the change in team identification between the pre-training and post-training survey. Only participants who filled in both surveys were considered during these analyses.

Post-training measures. The second survey measured psychological safety and team identification again, but additionally measured the reactions to the training of the participants.

Reactions. Affective reactions were measured on a two-item scale. The scale was rated on a 10-point scale, ranging from 1 to 10. With 1 being the lowest appraisal and 10 the highest appraisal. An example of a question is "What is your overall reaction to the training". The correlation between these two items was significantly correlated, $r = .72, p < .001$.

Utility reactions were also rated on a 10-point scale, ranging from 1 to 10. The scale consisted of three items. An example of such an item is "The Police Day was able to increase a feeling of safety". Reliability of the scale was very high, $\alpha = .96$ and these three items were averaged together to form the construct utility reactions.

Results

This section will discuss the outcomes of the first study, in which the relations between efficacy beliefs of followers and training outcomes will be explored. Additionally the influence of social desirability on the outcomes will be discussed in this part.

Differences between groups. Since only 42 of the pre-training surveys could be matched to the post training surveys of the same person using an identification code, the first analyses that were performed were to see if there was any difference with regard to efficacy beliefs between the people who only filled out the both surveys and those who filled out only the first survey. These analyses were performed using gender, age, self-efficacy, response efficacy and collective efficacy scores. The results of these analyses can be found in Table 1. The analyses showed that there was no difference between the group who filled out both surveys and those who only filled

out the first survey. Therefore the sample was, even though the sample size was low, a good representation of the population and further analyses were performed to test the proposed relationships.

Table 1 Comparing the differences in groups, respondents who filled out both the pre- and post-test and respondents who only filled out the pre-test, on age, self-efficacy, response efficacy, collective efficacy and gender.

Variable	Pre- & Post-Test		Only pre-test		<i>t</i> -test	Sig. (<i>p</i>)
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
Age	41.39	10.56	39.22	11.72	1.28	0.20
Self-efficacy	3.65	0.50	3.51	0.65	1.58	0.12
Response efficacy	3.03	0.61	2.98	0.70	0.38	0.71
Collective efficacy	3.45	0.49	3.38	0.58	0.70	0.48
	% male	% female	% male	% female	χ^2	Sig. (<i>p</i>)
Gender	66.77%	33.33%	67.86%	32.14%	0.03	0.86

Effects of the training on affective outcomes. A paired-samples *t*-test was conducted to compare team identification before and after participation in the training. There was a significant difference in the scores on team identification from before the training ($M = 3.34$, $SD = 0.53$) and after the training ($M = 3.56$, $SD = 0.49$); $t(41) = -3.72$, $p < .01$. The results suggest that after the training people more strongly identified with their team.

Another paired-samples *t*-test was conducted to compare psychological safety before and after participation in the training. There was no significant difference in the scores on psychological safety from before the training ($M = 3.63$, $SD = 0.51$) and after the training

($M=3.66$, $SD = 0.54$); $t(40) = -0.36$, $p = .72$. In the case of this training, no evidence was found that participants afterwards felt more psychological safety than before the training.

Correlations between efficacy and reactions and outcomes. Prior to testing the hypothesis bivariate correlations were tested as can be seen in Table 2. These show that there was a moderate, positive correlation between follower self-efficacy and affective reactions as well as for utility reactions, which were statistically significant. There was no statistical significant relation between pre-training self-efficacy and change in psychological safety, or between pre-training self-efficacy and change in team identification.

Additionally there were a moderate, positive correlations between follower collective-efficacy and affective reactions as well as for utility reactions. There was no statistical significant relation between follower collective-efficacy and change in psychological safety, or between follower collective-efficacy and change in team identification.

As Table 2 shows, there was a weak, positive statistically significant, correlation found between follower response-efficacy and affective reactions. Additionally a moderate, positive correlation between follower collective-efficacy and utility reactions was found. There was neither a statistical significant relation between follower response-efficacy and change in psychological safety, or between follower response efficacy and change in team identification.

The table shows that there was a strong positive correlation between affective reactions and utility reactions. These show that there 65% of the variation in utility reactions can be explained by affective reactions.

Table 2 Means, standard deviations, and correlations among variables

Variables	<i>Mean</i>	<i>SD</i>	<i>N</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 Gender	-	-	284	1.00													
2 Age ¹	39.52	11.58	389	-.11	1.00												
3 Follower self-efficacy	3.54	0.62	226	.10	.03	1.00											
4 Follower collective efficacy	3.40	0.56	226	.01	.01	.74**	1.00										
5 Follower response efficacy	2.99	0.68	226	.06	.12	.62**	.53**	1.00									
6 Affective reactions	6.99	1.59	147	.19	.14	.48**	.42**	.37*	1.00								
7 Utility reactions	6.36	1.83	147	.29	.13	.56**	.42**	.44**	.81**	1.00							
8 Social Desirability	3.48	0.43	229	.07	.07	.28**	.16*	.21**	.24	.21	1.00						
9 Psychological safety 1	3.63	0.56	253	-.03	-.10	.15*	.24*	.14*	-.06	.09	.23**	1.00					
10 Psychological safety 2	3.57	0.62	152	-.03	.09	.31	.38*	.13	.21*	.22**	.45**	.56**	1.00				
11 Δ Psychological safety	0.03	0.52	41	-.30	.17	.16	.20	.11	.35*	.26	.21	-.33*	.54**	1.00			
12 Team identification 1	3.38	0.54	253	.07	-.02	.34**	.41**	.24**	.09	.44**	.18**	.38**	.46**	.19	1.00		
13 Team identification 2	3.47	0.58	152	.33*	.02	.51**	.52**	.41**	.42**	.49**	.29	.51**	.48**	.21	.74**	1.00	
14 Δ Team identification	0.22	0.39	42	.04	-.27	.08	.20	-.02	.19	.08	-.14	.09	.10	.06	-.42**	.22	1.00

Note: * $p < 0.05$; ** $p < 0.01$; ¹ Age of pre-training sample

Testing the model. Hierarchical regressions analyses were conducted to determine the extent to which self-efficacy, collective efficacy and response efficacy affect respectively affective reactions and utility reactions. Hierarchical regressions analyses are appropriated when a study wants to test both proven relations, which are entered in the first step and new propositions, which are explored in consecutive steps (Cohen & Cohen, 1983).

Self-efficacy was entered as independent variable at the first step of the analyses, since previous research has shown the relevance of this factor. In the second step collective efficacy and response efficacy were entered, new variables suggested by the current research. Additionally demographic variables, age and gender, were initially included in the analyses but were subsequently discarded because they did not have a significant correlation with these variables as can be seen in Table 2.

Table 3 show the results of the hierarchical regression analysis for affective reactions. The results of step 1 showed that self-efficacy significantly predicted affective ($\beta = 0.46, p < .01$). In step 2, collective efficacy and response efficacy were entered. Both collective efficacy ($\beta = -0.14, p = .58$) and response efficacy ($\beta = 0.28, p = .22$) did not significantly predict affective reactions or utility reactions. Overall self-efficacy explained 20.70% percent of variability in affective reactions.

Table 3 Hierarchical regression analysis results affective reactions

Independent variables	Dependent variables	
	Step 1	Step 2
	β	β
Self - efficacy	.46**	.37
Collective efficacy		-.14
Response efficacy		.28
R ²	0.21	0.24
Adj. R ²	0.19	0.18

Note: Dependent variable: affective reactions.

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

Table 4 gives an overview of the results of the hierarchical regression analysis for utility reactions. The results of step 1 showed that self-efficacy significantly predicted utility reactions ($\beta = 0.61, p < .01$). In step 2, collective efficacy and response efficacy were entered. Both collective efficacy ($\beta = -0.19, p = .41$.) and response efficacy ($\beta = 0.28, p = .17$) did not significantly predict affective reactions or utility reactions. Overall 36.72 percent of the variability in utility reactions was explained by self-efficacy.

Table 4 Hierarchical regression analysis results utility reactions

Independent variables	Dependent variables	
	Step 1	Step 2
	β	β
Self - efficacy	.61**	.56*
Collective efficacy		-.19
Response efficacy		.28
R ²	0.37	0.41
Adj. R ²	0.35	0.35

Note: Dependent variable: utility reactions.

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

The results of the hierarchical regression analysis for change in psychological safety are shown in Table 5. The results of step 1 showed that self-efficacy significantly predicted a change in psychological safety ($\beta = 0.33, p < .05$). In step 2, collective efficacy and response efficacy were entered. Both collective efficacy ($\beta = 0.12, p = .58$) and response efficacy ($\beta = -0.15, p = .22$) did not significantly predict a change in psychological safety. Overall self-efficacy explained 10.89% of the variability in psychological safety.

Table 5 Hierarchical regression analysis results Δ Psychological Safety

Independent variables	Dependent variables	
	Step 1	Step 2
	β	β
Self - efficacy	.33*	.34
Collective efficacy		.12
Response efficacy		-0.15
R ²	0.11	0.35
Adj. R ²	0.08	0.04

Note: Dependent variable: Δ Psychological Safety

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

Table 6 shows the results of the hierarchical regression analysis for change in team identification. The results of step 1 showed that self-efficacy did not predicted a change in psychological safety ($\beta = 0.09, p = .58$). In step 2, collective efficacy and response efficacy were entered. Both collective efficacy ($\beta = 0.31, p = .25$) and response efficacy ($\beta = -0.22, p = .36$) did not significantly predict a change in team identification.

Table 6 Hierarchical regression analysis results Δ Team Identification

Independent variables	Dependent variables	
	Step 1	Step 2
	β	β
Self - efficacy	.09	.01
Collective efficacy		.31
Response efficacy		-.22
R ²	0.09	0.23
Adj. R ²	- 0.02	-0.03

Note: Dependent variable: Δ Team Identification

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

Additional analysis. Although hierarchical regressions analyses were appropriate for the analyses, also stepwise regression analyses were run. Self-efficacy is a factor, which has received a lot of attention in research, and therefore hierarchical regression analyses would be appropriate but in such analyses preference is given to self-efficacy. A stepwise regression does not include this preference and this would be appropriate in exploring the relationships.

A stepwise multiple regression was conducted to evaluate whether self-efficacy, collective efficacy and response efficacy were useful to predict affective training reactions. At step 1 of the analysis self-efficacy was entered into the regression equation and was significantly related to affective reactions, $F(1,36) = 9.40$, $p < .01$. The multiple correlation coefficient was .46, indicating approximately 20.7% of the variance of the affective training reactions could be accounted for by high self-efficacy scores. Collective efficacy and response efficacy scores did not enter into the equation at step 2 of the analysis ($t = -0.13, 1.14$, $p = 0.90, 0.26$).

Another stepwise multiple regression was conducted to evaluate to what extent affective training reactions could be predicted by self-efficacy, collective efficacy and response efficacy. At step 1 of the analysis self-efficacy was entered into the regression equation and was significantly related to utility reactions $F(1,36) = 20.95, p < .01$. The multiple correlation coefficient was .62, indicating approximately 36.8% of the variance of the utility training reactions could be accounted for by high self-efficacy scores. Collective efficacy and response efficacy scores did not enter into the equation at step 2 of the analysis ($t = -0.36, 1.19, p = 0.72, 0.24$).

Also for change in psychological safety a stepwise multiple regression was conducted. At step 1 of the analysis self-efficacy was entered into the regression equation and was significantly related to change in psychological safety $F(1,36) = 4.39, p < .05$. The multiple correlation coefficient was .33, indicating approximately 8.4% of the variance of change in psychological safety could be accounted for by high self-efficacy scores. Collective efficacy and response efficacy scores did not enter into the equation at step 2 of the analysis ($t = 0.25, -0.49, p = 0.80, 0.63$).

Finally a stepwise multiple regression was conducted for change in team identification. These analyses showed that none of the variables were a good enough predictor to be included in the model.

The effects of social desirability. Multiple regression analyses were conducted to ascertain whether or not the relationship between the different follower efficacy beliefs and the different training reactions were influenced by social desirability. To represent the interaction between follower efficacy beliefs or training outcomes and social desirability, the variables were

first centered and then multiplied together. The results from these analyses are presented in Table 7,8,9 and 10. These show that no interaction effects were found for social desirability on either of the efficacy beliefs or the training outcomes.

Table 7 Interaction effects for Social Desirability on Affective Reactions

Variable	B	SE(B)	β	t	Sig.(p)
Self-Efficacy x Social Desirability	0.36	0.75	0.10	0.48	0.64
Collective- Efficacy x Social Desirability	0.02	0.92	0.01	0.03	0.98
Response Efficacy x Social Desirability	-0.13	0.65	-0.05	-0.20	0.84

Table 8 Interaction effects for Social Desirability on Utility Reactions

Variable	B	SE(B)	β	t	Sig.(p)
Self-Efficacy x Social Desirability	-0.76	0.80	-0.19	-0.95	0.35
Collective- Efficacy x Social Desirability	-0.71	1.06	-0.12	-0.67	0.51
Response Efficacy x Social Desirability	-0.70	0.73	-0.23	-0.97	0.34

Table 9 Interaction effects for Social Desirability on Δ Psychological Safety

Variable	B	SE(B)	β	t	Sig.(p)
Self-Efficacy x Social Desirability	0.55	0.37	0.34	1.52	0.14
Collective- Efficacy x Social Desirability	0.77	0.43	0.32	1.79	0.08
Response Efficacy x Social Desirability	0.40	0.33	0.34	1.20	0.24

Table 10 Interaction effects for Social Desirability on Δ Team Identification

Variable	B	SE(B)	β	t	Sig.(p)
Self-Efficacy x Social Desirability	0.14	0.30	0.11	0.46	0.65
Collective- Efficacy x Social Desirability	-0.21	0.35	-0.12	-0.60	0.55
Response Efficacy x Social Desirability	-0.07	0.26	-0.07	-0.26	0.80

Discussion

Self-efficacy is an important factor that influences training outcomes. This study has extended the research area to also include the effect of collective efficacy and response efficacy on training outcomes, as well as the influence of supervisor efficacy beliefs on follower efficacy beliefs.

First, the results provide support for the effect of self-efficacy on training reactions. The hierarchical regression analyses showed that self-efficacy was a good predictor of affective and utility reactions, thereby confirming Hypothesis 1 and 2. The results show that people who score higher on self-efficacy, which assessed how well individuals thought they could perform the training, also scored higher on training reactions. These findings are in line with the findings of Tracey et al., (2001) and of Esfandagheh et al., (2012). The findings for Hypothesis 3 were mixed. Hypothesis 3 stated that self-efficacy would have a positive relation with affective training outcomes, which were measured by a change in psychological safety and by a change in team identification. Although the results showed that there was a relation between self-efficacy and psychological safety, such a relation could not be found for change in team identification. Therefore hypothesis 3 can only be partly confirmed. A critical remark has to be made with regard to these findings, since the second survey was sent shortly after participation in training (one week). To measure a change in behaviour, affective outcomes, it could be that more time

would be necessary. The training made the participants aware of the current state of their team, which could have a positive or negative effect. It could be that people were confronted with information and emotions, which made them think about the psychological safety within their team. Questions with regard to utility did cover the subject of connection within the team, and positive relations were found for this, however these had not (yet) translated to change in team identification or psychological safety. These findings show again the importance of self-efficacy on training outcomes.

Secondly this study proposed a relationship between collective efficacy and training outcomes. The hypothesized effects of collective efficacy on training outcomes were not found during the model test, therefore hypotheses 4, 5, and 6 had to be rejected. These findings are contradicting the finding of Earley, (1993), who found that collective efficacy beliefs had an influence on individual outcomes. It can be that the on-going reorganisations had his influence on the collectiveness of the teams and that this had its influence on the importance of collective efficacy beliefs.

Thirdly this study investigated the effect of response efficacy on training outcomes. The analyses showed that including response efficacy in the model did not have any additional effects. Therefore hypotheses 7, 8 and 9 have to be rejected. This is in contradiction with findings of Chiaburu and Lindsay, (2008). Maybe this contradiction can be explained by focusing on a slightly different concept, instrumentality instead of response efficacy. This is however unlikely since it is suggested that individuals' beliefs regarding the desirability of the outcomes obtained from training is related to training success (Vroom, 1964).

In addition to testing the hypothesis with hierarchical regressions analyses also stepwise regressions analyses were executed, to prevent favouring a prejudiced model, in which self-

efficacy was assessed first. These results were identical to the findings of the hierarchical analyses.

Additional analyses were performed to see if social desirability had an effect on the proposed relations. The analyses showed that such an effect could not be found, meaning that there was no difference on scores based on how socially desirable people filled out the survey.

Unfortunately there was not enough data to explore the relationship between supervisor's efficacy beliefs and follower efficacy beliefs. Since this is still an interesting research path to explore, an additional study was executed to provide some insight in these relations. However based on the current research hypothesis 10 and 11 have to be rejected.

Conclusion

Study one took a first step in exploring the effects of different efficacy beliefs on training outcomes. By not only considering self-efficacy but also collective and response efficacy it aimed to broaden the research area. Additionally, it aimed to explore the role of supervisor efficacy beliefs of the efficacy beliefs of followers. Results confirm the relationship between self-efficacy and training outcome but do not support the proposed relationship between response efficacy and training outcomes or between collective efficacy and training outcomes. Due to a lack of data the influence of supervisor's efficacy beliefs on follower efficacy beliefs could not be tested. In order to explore these proposed relationships a second study was conducted, which aimed at exploring the influence of supervisor efficacy beliefs on the efficacy beliefs of their followers.

Study Two

Based on the literature review two hypotheses were proposed for the influence of leader efficacy beliefs on follower efficacy beliefs. The data gathered from Study 1 did not provide insight into the proposed relationships, so in order to investigate the proposed relationships a second study was executed. The goal of this second study was to explore the relationship between leader efficacy beliefs and follower efficacy beliefs.

Methodology

The second study was qualitative of nature, which aimed at gaining more insight in the relation between supervisor and follower efficacy beliefs. In order to get a good insight into this relation the current research made use of semi-structured interviews. Using semi-structured interviews gave the opportunity to get the information wanted but also provided the option to explore topics that emerged during the interview more in-depth. Since the research was explorative this would provide the researcher with the most information.

Procedure. Interviews were either conducted face-to-face at the location of the participants or by phone. All interviews were recorded using a tape-recorder after permission of the participants. Interviews were conducted in Dutch, since Dutch was the mother tongue of the people that were asked for the current research; therefore conducting the interviews in Dutch enabled them to speak more freely. Interviews lasted between 25 minutes and 35 minutes. For the semi-structured interview a topic list was made with subjects to discuss during the interview. These topics included experiences with the Police Day, effects of the Police Day, efficacy beliefs of the Police day before the Police Day and the influence of the supervisors on their efficacy

beliefs. After the interviews the recordings were transcribed by the researcher. Transcriptions were sent to participants for approval or adjustments.

Participants. In total 6 participants were interviewed, these participants were put forward by their department heads. The department heads were asked to select people who were a good representation of the team. Three of the respondents were male and three of them were female. Participants of all the different training days were interviewed. One of the interviewees had a supervising role, while the others were all team members.

Results

This section will discuss the outcomes of the second study, in which the influence of supervisor efficacy beliefs on efficacy beliefs of followers will be explored. It will start with the experiences of the participants. There after the influence of the supervisors will be discussed. Additionally the findings with regard to the relation between efficacy beliefs and training outcomes will also be discussed.

Experiences with the Police Day. At the start of the interview the interviewees were asked about their experience with the Police Day. The reactions were mainly positive with some critical remarks. Examples of statements include: *“I found it a pleasant experience. At the start I was a bit reserved, but later I was more open to it. I am happy that we took part in it.”* (Interviewee 6) and *“I thought it was a good day, I got something out of it* (Interviewee 2) and *“I think it is a good method, I completely stand behind it* (Interviewee 5). Some of them even were a bit surprised that they liked it *“It was better than I initially thought* (Interviewee 1). Although

the experiences were positive most of the interviewees did have some critical remarks. These remarks were mainly concerned with the fact that they felt they were pushed in a certain direction as described by interviewee 4: “ *You have the feeling that you are slightly steered in a direction. The questions that they ask, the music, the whole setting. They are really searching for the emotions*”. This feeling was also shared by interviewee 3 who stated: “ *What actually happens is, they start digging and then certain feelings come up*”.

The influence of supervisor follower efficacy beliefs on self-efficacy of followers.

The interviews showed that supervisor's did not influence the self-efficacy beliefs of their followers. When asked directly two of the four team members, indicated that they did not speak with their supervisor about the training and their role in it (*Interviewee 3 & 4*). The other two team members did not discuss this topic during the interview (*Interviewee 1 & 2*).

Interestingly, four of the six respondents stated that they based their efficacy beliefs on what they had seen on television or on experiences of fellow colleagues. “*I was a bit prepared. I looked at the internet, so I knew what was coming*” (*Interviewee 2*) and “*the colleagues on the work floor [influenced me the most]*” (*Interviewee 6*). However one interviewee stated that the television program did not influence his opinions. “*Actually, they [the program] did not, not at all [influence me]. I went to the training without preconceived ideas*” (*Interviewee 3*).

Looking back at their experience some of the participants mention that their expectations based on what they saw on television were not a good representation of the actual training (*Interviewee 1 & 4*). Interviewee 1 stated for example: “*no, it is just a very short part, is it just a small collection of moments, and that doesn't make it anywhere near what the day is truly like*”.

The influence of supervisor response efficacy beliefs on follower response efficacy.

The interviews showed that response efficacy beliefs of supervisor had an influence on the response efficacy beliefs of the followers. Interviewee 4 indicated that the opinion of the supervisors did influence his response efficacy. He stated: “ [...] *it had already been done before by a group of supervisors. [...] and there were some negative stories about it and then you do take those into account (Interviewee 4).* One of the interviewees had a supervising role and stated that her fellow supervisors were aware of the influence they had on their followers. She gave the example that one of her fellow supervisors was not very enthusiastic about the training but that he did not share this with his followers, and only mentioned it privately to her (*Interviewee 5*). She also stated: “ *I think that, when a supervisor states this is nonsense, that the group also acts to this* ” (*Interviewee 5*).

However, as stated by one of the interviewees, positive efficacy beliefs of a supervisor could also have a negative influence on the efficacy beliefs of the followers. She stated, “ *He was really enthusiastic about it [...] but it irritated a lot of people in some way (Interviewee 1).* Later in the interview she explained that the influence of the supervisors depends to a large extent on their credibility and the way they are perceived in the organisation in general (*Interviewee 1*).

Similar to the findings for self-efficacy, response efficacy of most participants was also influenced to a great extent by what they had seen on television. One of the interviewees stated: “*I had seen it on television, with students at schools. And I thought this will never work with us*” (*Interviewee 4*).

Training Outcomes. In addition to questions about the influence of leaders on efficacy beliefs, the interviews also focused on the effects of the training on the short term and the long term. This was done to further investigate the findings of Study 1. The interviews show a very similar image of the results found in Study 1. All the interviewees state that they found the training a valuable experience, and that it was a good method to open dialogue, however most of them did not notice any change in behaviour on the long term. Examples of such statements include, “ *at the moment everyone is very conscious about it, but when you are back at work and the train continues, then it suddenly disappears again (Interviewee 3).* And “ *In the first week you saw people hugging etcetera. But after some time that diminishes again, everybody goes back to business as usual*”(Interviewee 4). It was very interesting to notice that there were two interviewees who indicated that they did feel a change after the day. These interviewees were both from the same team and participated in the same Police Day. Interviewee 5 stated: “ *I do see some changes but I find it hard to pinpoint them because you just work in your own group.*”. Interviewee 6 gave the following example: “ *We have created an atmosphere in which you can say anything. Even if something is bothering you or you are not feeling great. I can’t talk for the other groups but in my group you notice this. And I think that the Police day contributed to this*”. This interviewee also mentioned a method used at his department which helped in maintaining what was learned during the training “*[We still talk about it] even till today. There are poster on some doors and you could write on it what your experience was of the Police Day [...] if you think that something has to be changed on the work floor [...] you can write al those things on a poster and those are taken into account and action is taken on some of the items.*”(Interviewee 6). Although this is a very interesting finding, it could be influenced by an alternative factor, which is also mentioned by both interviewees. During the interviews both interviewees explained

that they started working in fixed groups since three months, this was shortly after the Police Day.

Discussion

The interviews gave some interesting insights. Whereas response efficacy was influenced to a certain extent by supervisor efficacy beliefs, which could be an indication for hypothesis 11, no such effects were found for the influence of supervisor perceptions of follower efficacy on follower self-efficacy. In accordance with the statement of Bandura, as reported by Gist (1987), the interviews underlined the importance of credibility of a supervisor for influencing follower efficacy beliefs.

Interestingly follower self-efficacy and follower response efficacy were mostly influenced by what people had seen on television or what they heard from colleagues. This leads to the surprising finding that in this case vicarious experience had a major influence on follower efficacy beliefs (Bandura, 1977c). However interpreting this finding has to be done with great caution, since in the months before the training a program was broadcasted on national television, which made use of the same principles. This television program worked with a very similar name and before the training there was often referred to this program. These circumstances make that these findings should be considered in the right context.

During the research a lot of interviewees answered the question in a very particular manner. Almost of them did not answer the question in a direct way, but mentioned opinions of colleagues instead. They for example stated: “ *it didn’t have much effect on me but it did have an effect on many other colleagues*”. These findings were very particular and are in line with the

proposed influence if social desirability in the first study. This is a topic, which has to be further explored.

Conclusion

In order to explore the effect of supervisor's efficacy beliefs on follower efficacy beliefs this second study was conducted. The results show that there are indications that supervisor's response efficacy beliefs do influence the response efficacy beliefs of the followers. Meaning that if supervisors communicate about the usefulness of a training, this can lead to followers who also perceive the training to be more useful. These findings need to be interpreted with cautiousness since only explorative interview were executed to investigate this relationships. No confirmation was found for the influence of supervisors on self-efficacy beliefs. In addition to the proposed relationships the current research found that the colleagues have an influence on efficacy beliefs. This is a finding, which has to be further investigated.

General Discussion

The aim of this paper was to broaden the view of the effects of efficacy beliefs on training outcomes. This was done by not only investigating the role of self-efficacy on training outcomes but by also exploring the role of response and collective efficacy. In addition it also explored the relationship between supervisor efficacy beliefs and follower efficacy.

The results of the current research demonstrate the importance of self-efficacy beliefs on training reactions. Study 1 showed that that self-efficacy was a good predictor of affective and utility reactions. The hypothesized effects of response and collective efficacy were not found during the model test. The findings of previous research, that there is a correlation between utility reactions and affective reactions was confirmed by Study 1 (Alliger et al., 1997; Esfandagheh et al., 2012; Tracey et al., 2001). However the results found by the current study were far stronger, correlation of 0.81, than reported in the meta-analysis of (Alliger et al., 1997), who reported an average correlation of 0.34. A possible explanation for this finding could be the set up of the survey. Questions with regard to affective reactions and utility reactions were asked together.

Looking at the training more pragmatically, the research found that the effects had minimal influence on the work environment. The results of the study showed that after the training respondents scored higher on psychological safety, however no effect was found for team identification. Information from the second study confirmed the finding of study one that there were some changes in the work environment directly after the training, people were more open and shared more. Most of the respondents stated that, although the training was perceived neutral to positive and initially there were some changes. However they did not notice change in their work environment anymore after three months.

The interviews gave some interesting insights into the influence of supervisors. Study 2 showed that response efficacy was influenced to a certain extent by supervisor efficacy beliefs. This is congruent with the finding of Kievik and Gutteling (2001) that response efficacy is easily influenced by external sources. No such effects were found for the influence of supervisor perceptions of follower efficacy on follower self-efficacy. This is not congruent with previous research findings. The Pygmalion effect states that enhanced learning or performance can be the results of positive expectations of others (Gist, 1987). Gist (1987) specified that leaders' expectations could be viewed as persuasive input to the follower's efficacy perceptions and that the strength of the influence could depend on a leader's credibility. The interviews underlined the importance of credibility of a supervisor for influencing follower efficacy beliefs.

Interestingly follower self-efficacy and follower response efficacy were mostly influenced by what people had seen on television or what they heard from colleagues. This leads to the surprising finding that in this case vicarious experience had a major influence on follower efficacy beliefs (Bandura, 1977c).

Limitations

Several limitations of the current research should be noted. The context in which the study took place was very specific and the question rises to what extent the findings of the research can be generalized to other research context and other kind of trainings, such as teambuilding exercises or feedback training. This in combination with the fact that a television program with an almost identical training was shown on national television before the training, this could have had a significant impact on the findings, specifically with regard to the influence of supervisor efficacy beliefs.

Additionally, the attrition rate of the sample between the two points of data was very high. Unfortunately only 42 surveys could be matched from the two data collections. This again raises the questions how generalizable for other populations, but also to what extent the relations found are a good representation of the current sample. However primary analyses showed that there was no difference between the group that filled out both surveys and the group that only filled out the first survey.

Based on the current research it is very hard to make statements about causality. Although there was an increase in team identification after the training, it is very hard to attribute these changes only to the training, other factors could also have influenced these findings. This could be both internally, a change in scheduling method as in one of the departments, or an external events such as the incident in Paris, which happened the evening after one of the trainings. In order to control for the influence of these factors research would be needed in which these factors are more controlled, an experiment in a controlled environment with a control group would be more suited for this.

Another concern of the current research is the extent to which respondents gave socially desirable answers. This was a topic, which was first raised during one of the initial meetings with the project team and was taken into account by the researchers in the first study. Even though analyses showed that there was no interaction effect for social desirability in the first study, it was interesting to see how interviewees answered some of the questions in the second study. Most of them not directly answered a question but stated the opinions or influence of others or the entire groups. It would be very interesting to further explore the reasons behind this line of answering.

Finally, one of the goals of the current research was to explore the influence supervisor efficacy beliefs had on follower efficacy beliefs. In the current research this was only done by qualitative research. Therefore it was hard to assess the extent of the influence of the supervisors. In addition these interviews were held months after the training, which does not exclude rationalization of the interviewees.

Future Research

Although no evidence was found for the proposed relations with regard to response and collective efficacy or for the role of supervisor efficacy beliefs, there is not enough evidence to disregard the proposed relationship. Therefore future research should consider further exploring these topics. No effects were found for affective outcomes, as mentioned in the limitations this could be because the second survey was sent shortly after the training. It would be of great interest to perform a longitudinal study in which affective outcomes were measured during a longer period of time. It could be that shortly after the training an increase in affective outcomes could be found since participants are made aware of their behaviour and their consequences. It could however also be that participants have been made more conscious about what is lacking in their team and would perceive less team identification and psychological safety. This could also show after what time the levels return to the level before the training, and when a new intervention would be necessary. In addition it would give insight into what events have an influence on the levels of psychological safety and team identification.

To better measure the influence of supervisor efficacy beliefs, future research should focus on measuring the followers' perceptions of their supervisor's efficacy beliefs. The interviews showed that supervisor response efficacy beliefs can have a great influence, it however also showed that there are some prerequisites to assure that these influence is positive. Future research should focus on the conditions under which supervisor efficacy beliefs can have a positive influence on follower efficacy beliefs.

Another interesting research path would be to focus on the influence of informal leaders on follower efficacy beliefs. Such a path was already taken by Pescosolido (2001) who found that informal leaders influenced collective efficacy beliefs, especially in the beginning of group forming. Exploring to what extent these findings also can be found for response efficacy and maybe even self-efficacy would be of great interest.

Coincidentally the second study also showed the importance of vicarious experience on efficacy beliefs, this leads to the thought that it would be interesting to explore to what extent colleagues efficacy beliefs influence each other.

Practical implications

As shown in Study 2 the response efficacy beliefs of followers were influenced to a great extent by their supervisors. Although the first study did not prove the influence of response efficacy on the training outcomes, it would be of great importance for supervisor to be aware of this influence. The interviews also show that none of the supervisors directly talked with their followers about self-efficacy. This can be seen a missed opportunity since results of Study 1 show that self-efficacy does have a strong effect on training outcomes. Therefore it would be

wise for supervisors to dedicate more time to addressing self-efficacy beliefs of followers in bilateral conversations.

The research also poses another challenge for companies in which such trainings are given. As shown by the results in Study 1 and confirmed by Study 2 most of the participants did not notice any long-term change in work atmosphere. Although there are some indications that the day can have a good influence on the work relations, the challenge is to assure that changes that started during the training are also continued in the work environment. Both studies show that there is room for improvement on this topic.

Recommendations for the Dutch police. The current research was executed at the Dutch police, based on Study 1 and Study 2 certain concrete recommendations can be made for this organisation. The interviews showed that there were some differences between the three departments. In one of the departments directly after the training there were put up poster to continuously keep working on creating a better work environment. By doing this participants were reminded about the training and after three months they still had the feeling that the training had had some effect, while in the other two departments no such actions were mentioned and the interviewees stated there had been no lasting effect. Assuring that there is a visible reminder of the training may help the lasting effect of the training, additionally it might help if people are asked to actively contribute to such a reminder.

The research also showed that colleagues influenced the opinions of participants to a large extent. Selecting the right people to act as ambassadors for the current training can contribute to the perception people have of the training. This role does not have to be taken by people in a leading position, direct colleagues would have the same, or even better effect.

Theoretical implications

This study once again confirms the importance of self-efficacy on training outcomes. It however also went one step further and explored which other forms of efficacy beliefs could have an effect on training outcomes. The literature review showed that collective and response efficacy provide additional insight in to this topic. These proposed influences were not found during this study however disregarding these topics would be unwise. In addition to exploring the role of response efficacy and collective efficacy, the current research also explored which role supervisors can play in influencing these efficacy beliefs. Based on previous research it was proposed that self-efficacy of followers can be influenced by the efficacy beliefs supervisors have of their followers. Although these influences were not found in the current research, the proposition needs to be further explored. The research did show signs that supervisor's response efficacy beliefs had an effect on the response efficacy beliefs of their followers. Overall the current research looked beyond the current literature on training outcomes and broadened the research on efficacy beliefs by including insights from different research areas.

Conclusion

Training practitioners and researchers have often studied the role of self-efficacy beliefs on training outcomes, but have not focused on the role of collective efficacy or response efficacy in group trainings. This study attempted to fill this gap by analysing the role of the efficacy beliefs on training outcomes. The findings confirmed the importance of self-efficacy on training reactions. No evidence was found that collective efficacy and response efficacy had considerable influence on training reactions. However there is enough opportunity to further investigate the proposed relations. The interviews showed that leader's perceptions of followers' efficacy did not influence self-efficacy beliefs. Leader response efficacy beliefs however did have an influence on follower response efficacy beliefs. These findings provide a first step to including a broader perspective to efficacy beliefs in training. However more research is necessary to support the proposed hypothesis.

References

- Alliger, G. M., Traver, H., & Shotland, A. (1997). A Meta-Analysis of the Relations among Training Criteria. *Personnel Psychology*, 50(2), 341–358.
- Amnesty International. (2013). *Nederland: Proactief politieoptreden vormt risico voor mensenrechten in Nederland*. Amsterdam.
- Baldwin, T. ., & Ford, J. K. (1988). Transfer of Training : A Review and Directions for Future Re. *Personnel Psychology*, 41(1), 63–105.
- Bandura, A. (1977a). Self-efficacy : Toward a Unifying Theory of Behavioral Change. *Psychological Review*, 84(2), 191–215.
- Bandura, A. (1977b). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. (1977c). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (2000). Exercise of Human Agency Through Collective Efficacy. *Current Directions in Psychological Science*, 9(3), 75–78.
- Burke, L. A., & Hutchins, H. M. (2007). Training Transfer : An Integrative Literature Review. *Human Resource Development Review*, 6(3), 263–296.
- Chiaburu, D. S., Dam, K. Van, & Hutchins, H. M. (2010). Social Support in the Workplace and Training Transfer : A longitudinal analysis, 18(2).
- Chiaburu, D. S., & Lindsay, D. R. (2008). Human Resource Development International Can do or will do ? The importance of self-efficacy and instrumentality for training transfer. *Human Resource Development International*, 11(2), 199–206.
- Chiaburu, D. S., & Marinova, S. V. (2005). What predicts skill transfer ? An exploratory study of goal orientation , training self-efficacy and organizational supports. *International Journal of Training and Development*, 9(2), 110–124.

- Clark, C. S., Dobbins, G. H., & Ladd, R. T. (1993). Exploratory field study of training motivation: Influence of involvement, credibility, and transfer climate. *Group & Organization Management, 18*(3), 292–307.
- Cohen, J., & Cohen, P. (1983). *Applied Multiple Regression/Correlation for the Behavioral Sciences*. (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Colquitt, J. A., Lepine, J. A., & Noe, R. A. (2000). Toward an Integrative Theory of Training Motivation : A Meta-Analytic Path Analysis of 20 Years of Research. *Journal of Applied Psychology, 85*(5), 678–707.
- Crowne, D. P., & Marlowe, D. (1960). A New Scale of Social Desirability Independent of Psychopathology. *Journal of Consulting Psychology, 24*(4), 349–354.
- De Zeeuw, H. (2015). Politiegeweld, klassenjustitie? Dit is wat we weten over dood Henriquez. *NRC*. Retrieved from <http://www.nrc.nl/nieuws/2015/06/30/politiegeweld-klassenjustitie-wat-weten-we-over-de-dood-van-mitch-henriquez>
- Earley, P. C. (1993). East meets West meets Mideast: Further explorations of collectivistic and individualistic work groups. *Academy of Management Journal, 36*(2), 319–348.
- Edmondson, A. (1999). Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly, 44*(2), 350–383.
- Esfandagheh, F. B., Harris, R., Oreyzi, H. R., Bakhtiari, F., Harris, R., & The, H. R. O. (2012). The impact of extraversion and pre-training self- efficacy on levels of training outcomes. *Human Resource Development International, 15*(2), 175–191.
- Floyd, D. L., Prentince-Dunn, S., & Rogers, R. W. (2000). A Meta-analysis of research on Protection Motivation Theory. *Journal of Applied Social Psychology, 30*(2), 407–429.
- Gibson, C. B., Randel, A. E., & Earley, P. C. (2000). Understanding Group Efficacy an empirical

- test of multiple assessment methods. *Group & Organization Management*, 25(1), 67–97.
- Gist, M. E. (1987). Self-Efficacy: Implications for Organizational Behaviour and Human Resource Management. *Academy of Management Review*, 12(3), 472–485.
- Gist, M. E., Stevens, C. K., & Bavetta, A. G. (1991). Effects of Self-Efficacy and Post-Training Intervention on the Acquisition and Maintenance of Complex Interpersonal Skills. *Personnel Psychology*, 44(4), 837–861.
- Govaerts, N., & Dochy, F. (2014). Disentangling the role of the supervisor in transfer of training. *Educational Research Review*, 12, 77–93.
- Guthrie, J. P., & Schwoerer, C. E. (1994). Individual and contextual influences on self-assessed training needs. *Journal of Organizational Behavior*, 15(5), 405–422.
- 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.
- Kievik, M., & Gutteling, J. M. (2001). Yes, we can: motivate Dutch citizens to engage in self-protective behavior with regard to flood risks. *Natural Hazards*, 59(3), 1475–1490.
- Kirkpatrick, D. L. (1967). Evaluation of Training. In R. L. Craig & L. R. Bittel (Eds.), *Training and development handbook: A guide to human resource development* (pp. 87–112). New York: Mc Graw-Hill.
- Kraiger, K., Ford, J. K., & Salas, E. (1993). Application of Cognitive, Skill-Based, and Affective Theories of Learning Outcomes to New Methods of Training Evaluation. *Journal of Applied Psychology*, 78(2), 311–328.
- Martocchio, J. J., & Judge, T. A. (1997). Relationship Between Conscientiousness and Learning in Employee Training: Mediating Influences of Self-Deception and Self-Efficacy. *Journal of Applied Psychology*, 82(5), 764–773.

- Ministerie van Veiligheid en Justitie. (2015). *Herijkingsnota*. Retrieved from <https://www.rijksoverheid.nl/documenten/rapporten/2015/08/31/tk-bijlage-herijkingsnota>
- Nationale Politie Bond. (2015). *Halverwege de nationale politie*.
- Nijman, D. J. J. M., Nijhof, W. J., Wognum, A. A. M., & Veldkamp, B. P. (2016). Exploring differential effects of supervisor support on transfer of training. *Journal of European Industrial Training*, 30(7), 529–549.
- Pescosolido, A. T. (2001). Informal Leaders and the Development of Group Efficacy. *Small Group Research*, 32(1), 74093.
- Reynolds, W. M. (1982). Development of Reliable and Valid Short Forms of the Marlowe-Crowen Social Desirability Scale. *Journal of Clinical Psychology*, 3(1), 119–125.
- Scaduto, A., Lindsay, D., & Chiaburu, D. S. (2008). Leader influences on training effectiveness : motivation and outcome expectation processes. *International Journal of Training and Development*, 12(3), 158–170.
- Smith-Jentsch, K. A., Salas, E., & Brannick, M. T. (2001). To Transfer or Not to Transfer ? Investigating the Combined Effects of Trainee Characteristics , Team Leader Support , and Team Climate. *Journal of Applied Psychology*, 86(2), 279–292.
- Tai, W. (2006). Effects of training framing, general self-efficacy and training motivation on trainees' training effectiveness. *Personnel Review*, 35(1), 51–65.
- Theodorakis, N. D., Dimmock, J., Wann, D., & Barlas, A. (2010). Psychometric Evaluation of the Team Identification Scale among Greek Sport Fans : A Cross-validation Approach. *European Sport Management Quarterly*, 10(3), 289–305.
- Tracey, J. B., Hinkin, T. R., Tannenbaum, S., & Mathieu, J. E. (2001). The Influence of Individual Characteristics and the Work Environment on Varying Levels of Training

- Outcomes. *Academy of Management Proceedings*, 12(1), 210–214.
- van der Steur, G. A. (2015). *Verkenner CAO*. Den Haag.
- Vroom, V. H. (1964). *Work and motivation*. New York: John Willey & Sons. Inc.
- Warr, P., Allan, C., & Birdi, K. (1999). Predicting three levels of training outcome. *Journal of Occupational and Organizational Psychology*, 72, 351–375.
- Winterman, P. (2016, March 2). Ziekteverzuim onder politie-agenten explodeert. *AD*. Retrieved March 21, 2016, from <http://www.ad.nl/ad/nl/38261/Nieuws/article/detail/4254930/2016/03/02/Ziekteverzuim-onder-politie-agenten-explodeert.dhtml>
- Zomerén, M. Van, Spears, R., Fischer, A. H., & Leach, C. W. (2004). Put Your Money Where Your Mouth Is ! Explaining Collective Action Tendencies Through Group-Based Anger and Group Efficacy. *Journal of Personality and Social Psychology*, 87(5), 649–664.
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