Does the tendency to take risks make people voice more automatic?

The Influence of Risk-Taking Tendencies On the Relationship between Attention Control and Voice Quality

Name	Simon van de Beek
Student number	10161708
Supervisor	Inge Wolsink
2nd supervisor	Roy Sijbom
Faculty	Organizational and Industrial Psychology University of Amsterdam
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Abstract

As market competition surges, companies are looking for new ways to innovate. Innovation benefits from employees who voluntarily point out problems and make suggestions for improvement, which is called *voice*. Although many studies delved into the frequency of voice (voice quantity), it is rather the quality of employee's ideas that is relevant for innovation. Therefore, voice quality plays a central role in this study. Since attention control influences creativity, we expect it to also influence voice quality – which is the selection and communication of creative ideas. Additionally we study whether risk-takers need less attention to voice qualitatively than risk-avoiders. As risk-takers experience less threat than risk-avoiders, we expect them to voice more often and with a higher quality over time. Eighty-one students generated ideas to improve their faculty and were distracted while voicing these ideas. Risk-taking tendencies were measured using a questionnaire. The results indicate that people indeed need attention to select high quality ideas and communicate them for voice, probably because attention creates systematic and persistent processing of information. Furthermore, risk-taking tendencies turn out not to influence the frequency of voice. However, the results show that frequent voicers voice effortlessly and automatically in comparison to infrequent voicers.

Keywords: employee voice, voice quality, risk-taking tendency, attention control

The Influence of Risk-Taking Tendencies On the Relationship between Attention Control and Voice Quality

Increasingly, companies all over the world undergo difficult times because their business model is challenged by competitors in the market. Take banking, for example: in the past, customers requested loans to start businesses, took out mortgages to pay for their homes or used e-banking to purchase products on the internet. New innovations, however, are threatening these business models. Nowadays, crowdfunding allows entrepreneurs to start businesses, peer-to-peer-financing helps people to finance housing and big webshops offer free to use credit cards to their clients (Clinch, 2013; Denning, 2014; Olinga, 2015). In order for classical banks to stay profitable and survive the future environment they will need to anticipate in a smart way. One way to survive the future competition is to be faster in developing innovative products by using the input of their employees. Innovation can be defined as 'the application of better solutions that meet new requirements and needs' (Maryville, 1992). In order to create an innovative culture within organizations, it is necessary for managers to successfully recognize the new needs of their clients and develop contemporary products that satisfy these needs. Organizations can gather sufficient information on both the needs and the answers on these needs by explicitly using the input of employees, who directly communicate with clients on a daily basis.

This specific employee input, 'pro-active and constructive communication of problems, challenging opinions and suggestions for improvement' (van Dyne & LePine, 1998; Morrison, 2011) is called employee voice. Voice is interesting to organizations because research links it to employee commitment (Wilkinson, Dundon, Marchington & Ackers, 2004), low quit rates (Batt, Colvin & Keefe, 2002; McClean, Burris & Detert, 2013), decision making quality (Beer and Eisenstat, 2000; Morrison, 2014) and even financial profit (MacKenzie, Podsakoff & Podsakoff, 2011). These financial profits could well be explained

by an increased innovation climate in the companies, started by voice. De Dreu and West (2001) for example found that team members raising questions about their way of working eventually led to an increase of divergent thinking with more innovation as a result. Furthermore, it was found that actively making constructive suggestions is an important step to innovation (Avey, Wernsing & Palanski, 2012). And employee voice was consistently linked to innovation in the public sector (Gambarotto & Cammozzo, 2010).

But despite the link between employee voice and innovation, all voice research focuses on how often (*frequency of voice*) employees communicate their ideas, and do not measure the usefulness and originality (*voice quality*) of these communicated ideas (Wolsink, Den Hartog, Belschak & Sligte, 2015). In other words – the current scholarly focus is on the prevalence of voice rather than the content of it. But as organizations may benefit more from employees voicing great ideas once in a while than from employees voicing ideas regularly but with a questionable quality, the focus of this study will be on the quality of voice rather than the frequency of it. And although many antecedents of voice have been considered, for example group size (LePine & Van Dyne, 1998), leadership behavior (Detert & Burris, 2007) and perceived organizational support (Eisenberger, Armeli, Rexwinkel, Lynch & Rhoades, 2001), the way people come to voice is still a black box until now. One way to open this black box of how people come to voice is by looking at cognitive factors. Indeed, Chiaburu, Marinova & Van Dyne (2008) noticed that cognitive factors play an important role in the voice process and are understudied at this moment.

In order to open the black box of how people come to voice, and more specifically qualitative voice, we would like to focus on the role of attention. The scarce amount of literature discussing the role of attention on voice is ambiguous. On the one hand, authors claim that the decision to come to voice is conscious and requires attention because within an organization, one needs to figure out which issues to voice, on what moment and to whom

(Chiaburu, Marinova & Van Dyne, 2008). On the other hand, authors claim that the decision to voice is rather automatic and depends on basic emotions such as anger about the unsatisfying work situation (Morrison, 2014). An earlier study seeking an answer to this ambiguity (Wolsink, 2013) found that the amount of attention that people have predicts the quality of their voice, but not their quantity. The current study is set up to replicate this finding and discover whether attention facilitates qualitative voice. However, it is questionable if attention leads to voice quality with all employees in the same way.

Rather, because voice in its nature is 'challenging to the status quo' and may lead to repercussions from managers and coworkers alike, we expect a specific type of employee to be attracted to voice behavior: the ones tending to take risks. As employees with risk-taking tendencies may perceive a situation to be safer to voice than employees without risk-taking tendencies (Sitkin & Weingart, 1995), risk-takers will probably voice more often than risk-avoiders. And as a result of this high frequency of voicing, risk-takers receive more practice and feedback, which over time leads them to voice with a higher quality than risk-avoiders. Therefore we believe that different people need different amounts of attention to reach the same voice quality: as risk-avoiders undergo less voicing practice – or are in general less involved with voicing, they need more attention than (trained) risk-takers in order to come up with a high-quality idea. It would be interesting for companies to know if risk-takers indeed come to a high voice quality while using less cognitive resources than risk-avoiders: hiring risk-tending employees would create an even more efficient organization. Taken all together, the goal of the present study is to answer the following research question:
'Do people need attention to voice high quality ideas, and does risk-taking tendency decrease this need for attention?'.

Theoretical Framework

Employee Voice

The concept of employee voice has its roots in the work of Hirschman (1970), who detected that dissatisfied customers did not always turn their backs to organizations ('exit'). Rather, they would stay and fight to turn around their dissatisfaction ('voice'). Later on, the exit-voice-theory was expanded to explain employee behavior as well (Freeman & Medoff, 1984). Voice is typically considered to be a proactive form of extra-role-behavior – work behavior that 'aids organizational effectiveness, but is neither a requirement of the individual's job nor directly rewarded by the formal system' (Vey, 2004, p. 119). Employees can either voice *upward* – focused towards persons who are able to take appropriate action (Detert & Burris, 2007) or *collegial* – focused on team members or other coworkers. Another distinction is that voice can either be suggestion-focused - containing ideas how to do things differently – or problem-focused - containing information about serious problems one has detected (Morrison 2011). As innovation is about creating a new product, this study looks at suggestion-focused voice rather than problem-focused voice. Furthermore, because implementing innovation needs approval from management, this study discusses upward voice.

However, as referred to earlier, the current scholarly focus is on the prevalence of voice (how often?) rather than the content of it (what is the quality?). For organizations to successfully implement innovation, the quality of ideas voiced by employees matters tremendously. If supervisors are regularly distracted by mediocre ideas brought forward by their employees, valuable time and resources are wasted. But if supervisors receive great ideas that have the potential to strengthen the business, their time and resources are well spent. Therefore, it is necessary to differentiate between voice ideas with a high and a low quality. In

order to do so, Wolsink (2013) proposed to consider voice quality as the communication of ideas and suggestions that are useful and original. This definition is based on the description of creativity: an idea is considered creative if is both feasible (what is it's practical use; utility?) and novel (how new, unique is it?) (Runco & Jaeger, 2012). As voice is about changing the work environment for the better, we believe these criteria can distinguish between high voice quality and low voice quality. An idea that is not original is simply repeating what is already known and will therefore not add new insights, while an idea that is not useful is uninteresting to implement. And although voice quality and creativity may seem comparable at first sight, we consider creativity to be about *idea generation* and voice quality about *idea selection and communication*. As such, we see voice quality as the selection and communication of creatively generated ideas.

Attention Control

Before an employee actually voices (selects and communicates) his ideas to a supervisor, he will undergo the idea-generation-phase – also called creativity. Until now, debate has suggested that attention control is important for this idea generation. According to the Dual Pathway to Creativity Model (De Dreu, Baas & Nijstad, 2008), one explanation for creativity is that is stems from cognitive persistence - 'deliberate, focused and structured exploration of just a few cognitive categories' (De Dreu, Nijstad, Baas, Wolsink & Roskes, 2012, p. 658). Persistent thinking leads to obvious ideas at first, but will yield creative ideas once the more obvious ones have been checked and are filtered out. For example, when asked to name the most original animals, cognitive persistence helps to mentally scan a list of animals and only name the most original ones. So this cognitive persistence helps to achieve creative ideas.

There is proof that this persistence and focused effort depend on attention control. Attention control is considered an individual's ability to control attention while doing

different tasks (Kane & Engle, 2003). And fundamentally, the ability to control attention lies in ones working memory capacity (WMC). Working memory is a core executive function important for decision-making and conscious action planning (Oberauer, Süß, Wilhelm & Wittman, 2003), thinking about future opportunities and even creative insight (De Dreu, Baas, Nijstad, Wolsink & Roskes, 2012). In their study, de Dreu et al. (2012) found that participants with high attention control (high WMC) performed better on creativity tasks than participants with low attention control (low WMC). The authors concluded that attention control relates to creativity because it enables cognitive persistence – systematic and enduring processing of information. This systematic processing helps to filter irrelevant information and to stay focused on a single category intense enough to come up with creative ideas. In other words: attention control helps to generate ideas and suggestions that are useful and original.

However, as we have seen, voice quality is not merely about idea-generation (creativity) but also about selecting and communicating these ideas to supervisors who are able to implement them (qualitative voice). No research until now looked into the specific effects of attention control on qualitative voice, although Chiaburu, Marinova & Van Dyne (2008) noticed that cognitive factors play an important role in the voice process and are understudied at this moment. Nevertheless there are indications that attention control is vital for the ability to select. For example, according to Smith and Kosslyn (2007, p. 104) there is broad agreement that ‘attention involves selecting some information for further processing and inhibiting other information from receiving further processing’. In other words: it is impossible to meaningfully select information without attention, which indicates that attention is important to reach voice quality. Furthermore, we also expect the concentration stemming from attention control to be beneficial to the communication of voice. As attention facilitates cognitive persistence and helps an employee to filter out distraction (Lavie, 2010), we expect the communication of ideas to supervisors will be more fluent. So in summary: taking into

account that attention control is likely to benefit the creative thinking of employees, we would like to discover whether it also influences the selection and communication of their ideas (called employee voice). And as we expect that selecting and communicating qualitative voice requires sustained attention too, we therefore hypothesize that:

H1: Attention control facilitates the selection and communication of useful and original ideas.

Quantity Breeds Quality

The current literature on voice mainly studies the quantity of voice and neglects the usefulness and originality (*voice quality*) of communicated ideas (Wolsink, Den Hartog, Belschak & Sligte, 2015). For instance by asking employees to rate their 'own amount of ideas' for the organization (Detert & Burris, 2007) or by requesting direct supervisors to rate the 'degree to which their subordinates use voice' (Liang, Farh & Farh, 2012; Tangirala & Ramanujam, 2008; Walumbwa & Schaubroeck, 2009). A possible explanation for the current focus of scholars on voice quantity is that it may breed quality. An example of this quantity-breeds-quality-effect can be found in an experiment on brainstorming. When participants during a brainstorm session were asked 'What else?' multiple times, they generated *more* ideas. But in addition to a growth in amount of ideas that they generated, the *quality* of ideas has been shown to grow with it (Rietzschel, Nijstad & Stroebe, 2007). So in a more organizational context it can be expected that employees who voice more often, are also the ones voicing ideas with a higher quality because of the quantity breeds quality-effect.

Two explanations can be given for this effect. Firstly, the generation of a large number of ideas makes it more likely that one will eventually end up with a good idea (Rietzschel, 2005). Secondly, employees voicing regularly can be expected to show a steep learning-curve because they practice more and receive feedback from coworkers. As a result of this learning-curve, we expect regular voicers to be good voicers. Another consequence of voicing

regularly may be that it takes less cognitive resources to voice with a high quality. Where an infrequent voicer needs sufficient time, concentration and attention to come up with a high quality idea for the organization, a frequent voicer has learned how to generate a high quality idea effortlessly and thus needs less attention than an infrequent voicer. A previous study on voice quality indeed found that 'people who tend to voice often may be less reliant on their cognitive capacities to reach high quality voice as over time they may have learned how to voice well and usefully in a given context' (Wolsink, Den Hartog, Belschak & Sligte, 2015, p. 27). In other words: regular voicers may have learned to generate, select and communicate high quality ideas effortlessly and automatically. We therefore expect that:

H2: The amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people who voice infrequently than for people who voice frequently.

Risk-Taking Tendency as a Voice Stimulator

Where it is presumed that attention control facilitates voice quality and that frequent voicers need less attention control than infrequent voicers to reach high voice quality ideas, the question arises what *determines* how often people voice. We expect to find an answer to this question by looking at a core feature of speaking up: it is perceived to be risky. When examining the reactions of supervisors to employee voice, Burris (2012) found that employees may be explicitly punished for challenging the management. Supervisors can feel personally threatened by communicated problems, challenging opinions, suggestions and consider voicing employees as ''less loyal'' and as ''disruptors of organizational goals''. And the consequences of voice can be very serious. For example; it was found that communicating voice leads to a damaged reputation (Ashforth & Humphrey, 1995), disturbs work relationships (Adler & Kwon, 2002) and can even have negative career consequences (Detert & Edmondson, 2011). Moreover, in a sample of several organizations, 42% of the employees

reported withholding information when they felt they had nothing to gain, or something to lose, by sharing it (Detert, Burris & Harrison, 2010). These examples show that voice behavior is risky and that employees think twice before speaking up. Therefore, we expect an individual's risk perceptions to be influential when deciding whether to voice or not.

Risk-taking is 'behavior involved with some potential for danger or harm while also providing an opportunity to obtain some form of reward' (Leigh, 1999). The perception of 'the potential for danger' differs per person. Where some persons consider a particular investment to be a great financial risk, others experience it to be completely safe. The first individual most probably is a risk-avoider, the second one a risk-taker. Studies indeed suggest that more risk-tending employees perceive a comparable situation as less risky than employees with low risk-taking tendencies (Sitkin & Weingart, 1995). Where risk-averse voicers give more weight to potentially negative outcomes than positive outcomes, this is the other way around for risk-seekers. In other words: the risk perceptions of risk-avoiders and risk-seekers differ, which leads to a different tendency to show voice behavior. Therefore, we expect risk-takers to voice more often. Thus:

H3: People with high risk-taking tendencies voice more often than people with low risk-taking tendencies.

&

H4: The amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people with low risk-taking tendencies than for people with high risk-taking tendencies.

This Study

In order to answer the main question of this study – do people need attention to voice high quality ideas, and does risk-taking tendency decrease this need for attention - we developed a mixed experimental design. Participants underwent a generation and voicing task in which they first had to come up with ideas to improve their faculty, and then could select and communicate (voice) their best ideas. In the experiment, the attention of a participant was manipulated during the voice process, by offering a working memory load task (no load – high load). First, we expected participants with high attention control to voice more qualitative ideas than participants with low attention control (H1). Secondly, we expected participants with high risk-taking tendencies to be impacted less by a distortion in attention than participants with low risk-taking tendencies (H2). Lastly, we expected participants with high risk-taking tendencies to voice more often (H3) and with a higher quality (H4) than participants with low risk-taking tendencies. This study aims to contribute to the literature in three ways. Firstly, because voice can be a meaningful factor in organizations only if it has quality, it recognizes the importance of differentiating between voice quantity and quality. Secondly, it builds further on the finding that attention control is necessary for creativity and replicates a study of Wolsink (2013) to check whether attention control influences voice quality too. Thirdly, it looks at the risky nature of voicing within organizations and therefore researches whether individual risk-taking tendencies play an important role in explaining voice quality.

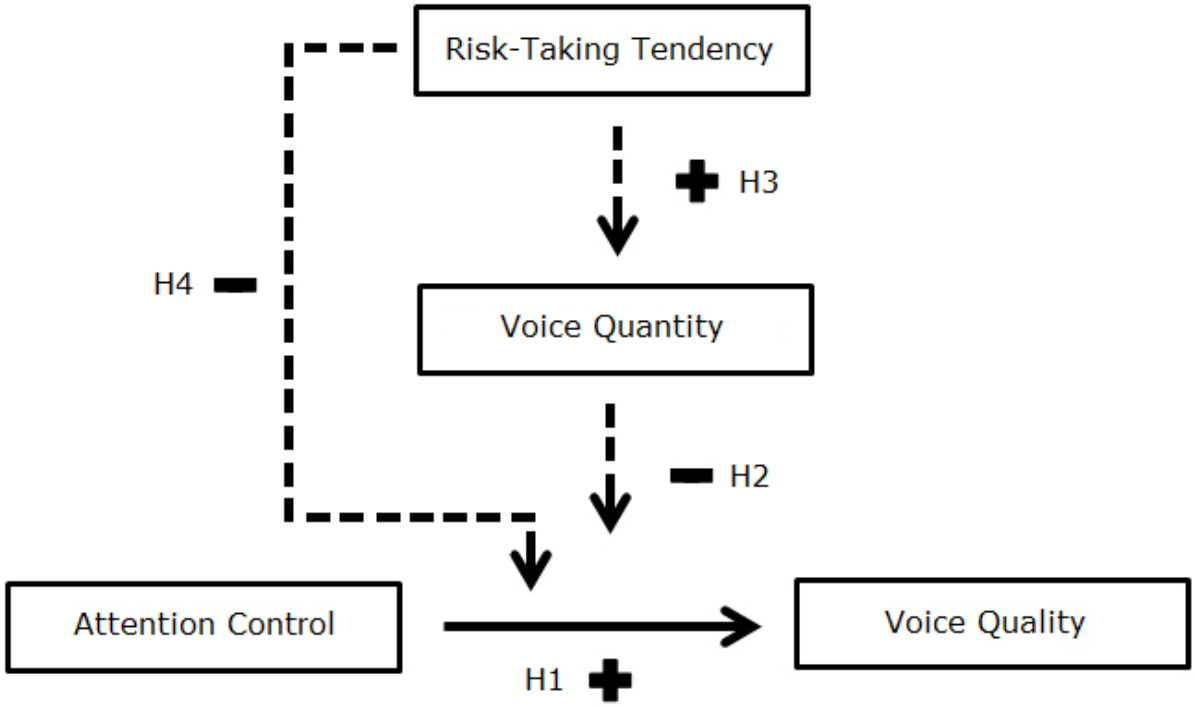

Figure 1. Conceptual Framework

Method

Sample

Students from the University of Amsterdam (N= 81, M_{age} = 21.18, SD_{age} = 3.10, 62% female) - mostly from the Faculty of Economics & Business (55%) and Psychology (36%) - participated in this experiment in exchange for a monetary reward. The reward ranged from €5 to €20, depending on the individual performance during the experiment. The aim was to test 90 participants, but the amount of lab time turned out to be inadequate to reach this goal. Eventually, the data of five participants was removed because they were not able to completely finish the experiment. We eventually analyzed the data of 76 participants (M_{age} = 21.20, SD_{age} = 3.08. 67% female).

Design

This study simulated an organizational setting where an employee works on his formal tasks and experiences an opportunity to show voice. Like on a regular day, the amount of attention control (working memory capacity) that the formal tasks requires, differs over time. The independent variables in this experiment was attention control (within-participants). The moderators were risk-taking tendency (between-participants, measured both prior to and after the experiment) and voice quantity (between-participants). The dependent variable was voice quality – the usefulness and originality of communicated ideas. The control variable was experiment leader trust. Attention control was manipulated with a load-task varying in difficulty. This load-task was communicated to be the primary task and participants received a 'salary' after finishing it correctly each time. As voice behavior is not considered a formal part of a job, the voicing task was framed as the secondary task. Participants could earn a 'bonus' or 'penalty' depending on the quality of their communicated ideas.

Materials

Manipulations and Independent Variable: Attention Control

To discover if a person's attention facilitated voice quality, participants were distracted while doing a voicing task. Test participants were manipulated with a high working memory load and then no working memory load (or vice-versa). In the low attention control (high working memory load) condition, participants had to count back from 107 in steps of 2 (107, 105, 103, et cetera). In the high attention control (no working memory load) condition, participants were asked to just repeat a base number (100, 100, 100). Participants had 3 seconds between each number count. Furthermore, participants were asked to count vocally, so that the experiment leader could hear the participant counting. Additionally, participants had to fill in their final number. If this number was correct, they received their base 'salary' of €2,50. As referred to

before – this load-task was framed as the primary task and participants had the option to do the secondary task (voicing) at the same time. This simulated a setting where an employee works on his formal tasks (base salary of €2,50) while experiencing an opportunity to show voice (bonus or penalty of €1). The setup of the voice task is explained later on in this paper.

Moderator Variables: Risk-Taking Tendency, Voice Quantity

Although the main focus of this study is voice quality, we expected risk-takers to voice more often than risk-avoiders. As a consequence of this 'quantity breeds quality'-effect, we expected risk-takers to voice with a higher quality than risk-avoiders. For this reason, voice quantity was considered as a moderator variable. In order to discover whether high risk takers voice more often and with a higher quality than risk avoiders, a risk questionnaire was used to assess the risk-taking tendencies of participants (Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005). This questionnaire was developed in order to measure 6 subscales of risk-taking tendency; more specifically recreational, health, career, financial, safety and social risks. An example of an item was: 'Please, could you tell us if any of the following has ever applied to you in the past? … Health Risks (For example smoking, eating unhealthy food, using drugs)'. Items were rated using a 5 point Likert-Type Scale (Never - Very often). Participants were asked to take this questionnaire two times: at least 3 days before the experiment, and just after the experiment. The version prior to the appointment asked questions in the light of the past, the version after the appointment asked questions in the light of the present. This was done because there are indications that people assess their risk-taking tendency more appropriately when thinking about the past (Nicholson et al., 2005). Also, the fact that participants took the survey prior to the experiment gives trust that their self-assessment is not influenced by experiences during the experiment. The risk questionnaire used after the experiment functioned as a tool to compare the results afterwards. An analysis performed after the experiments showed that both risk-taking tendency questionnaires

correlated strongly ($r(74) = .82$, $p < .01$). However, based on the arguments given earlier we decided to use the risk assessment taken prior to the appointment as our risk-taking tendency-variable.

Dependent Variable: Voice Quality

The voice-task of the experiment consisted of two parts. In the first part, called the generation-phase, participants had to generate 10 ideas to improve their own faculty. This task is an adaptation of the creativity task as designed by De Dreu, Baas and Nijstad (2008). Participants received a maximum of 10 minutes to complete their ideas. The generation-phase was characterized by a request from the computer to create the ideas, an anonymous setting and the absence of an incentive. The experiment leader rated the generated ideas immediately to ensure that ideas with the same quality were equally distributed over the attention conditions. After all the experiments took place, the quality of all generated ideas was estimated by three independent raters, judging ideas on the aspects 'originality' and 'usefulness'. An inter-rater reliability test was conducted to discover the level of consistency between the three raters (Weir, 2005). Following the interpretation norms of Cicchetti (1994), an inter-rater reliability of 0-0.2 indicates poor agreement; 0.3-0.4 indicates fair agreement; 0.5-0.6 indicates moderate agreement; 0.7-0.8 indicates strong agreement; and > 0.8 indicates almost perfect agreement. For usefulness, we calculated the intraclass-correlation using reliability statistics. The intraclass-correlation turned out to be reasonable with 0.59 and a 95% CI [.324, .732], $F(44,220) = 2.265$, $p < .001$. For originality, the intraclass-correlation turned out to be good with 0.79 and a 95% CI [.682, .874], $F(44,220) = 4.821$, $p < .001$. With these reliabilities in mind, we took the average of both scores as our voice quality measurement. The characteristics of others variables were $M = 2.84$ and $SD = 0.55$ for creativity (rate of generated ideas) and $M = 3.10$, $SD = 0.79$ for voice quality (rate of communicated ideas) regardless of load condition.

Following the generation-phase, the actual voicing-phase started. In this phase, participants could select the ideas they considered to be of a high quality and communicate them to the experiment leader. During this voicing phase, their attention was manipulated using the load conditions explained earlier. Due to the fact that voice behavior is not considered a formal part of a job (Vey, 2004), participants could choose to voice or not. And if they did decide to voice, they could communicate any number of ideas they saw fit. To build in a factor of risk that is associated with voice behavior, participants could lose or win €1 during this voicing task. Additionally, in order to add a social element, they received a letter written by the dean of their faculty, speaking about the possibility that their communicated ideas would be used to improve the faculty. To simulate a real voicing situation, the voicing-phase was characterized by voluntary voicing (participants could choose to voice or not), a feeling of social evaluation (because of the dean's letter and the communication towards the experiment leader) and a clear financial risk (in the form of a bonus or penalty).

Control Variable: Experiment Leader Trust

The control variable was experiment leader trust. Since fluctuating emotions and behavior of an experiment leader may influence the way a participant perceives an experiment (Mook, 2001), questions were asked about the experiment leader. This was particularly relevant in this experiment because a participant voiced towards the experiment leader, and previous research showed that trust evoking leadership stimulates employee voice (Gao, Janssen & Shi, 2011). Lots of trust may lower the experienced riskiness of a situation, stimulating voice behavior. For this reason we wanted to measure experiment leader trust and preferred it to be stable over time. To measure experiment leader trust, four items were used (Özmen, 2014). For example: 'The experiment leader created a safe atmosphere that allowed me to take

initiative'. The questionnaire could be answered with a 7 point Likert-Type Scale (Very strongly disagree - Very strongly Agree).

Procedure

One week before the actual experiment, participants received a pretest that contained a (past) risk-taking tendency questionnaire. On the day of their appointment, participants entered a research room where they read information about the experiment and signed an informed consent. Participants were then told that the experiment took place in a cubicle and that the experiment leader would be present during their participation. After this explanation, both the participant and experiment leader entered the cubicle, where the participant would be seated behind a computer with a mouse and keyboard. From that moment onwards, the experiment, programmed in Presentation version 17.3, took place on the computer. Firstly, participants received an explanation about the so called working memory load-task. They were told that, during this experiment, this load task would be their primary, core task. In the task they would need to count backwards in steps given by the computer. Participants were instructed to pay attention, because the start number and deduction number would vary per load-task. Every time a participant ended on the correct number, he or she was granted €2,50. Counting needed to happen vocally in order for the experiment leader to check whether the load-task was actually performed.

After this instruction, a practice round on the load-task was offered to check whether participants had understood the instruction clearly. During this test load-task, one had to count backwards in steps of 2 starting with 100 (100, 98, 96, et cetera). When correctly filling in the end number, feedback was given that the participant had successfully understood the load-task. When filling in an incorrect number, the instruction of the load-task was given again and the participant got a new chance to successfully understand the load-task. Following the

practice round, the instructions of the generation-phase were shown by the computer. Participants were explained that they would need to come up with 10 ideas to improve their own faculty of the University of Amsterdam (UvA). After 7 minutes a clock would pop-up, encouraging them to keep up with the time. After finishing the generation-phase, participants underwent a second practice round on the memory load-task, this time while doing a selection task with animals. This second practice round functioned as a way to test whether participants still had the cognitive space to meaningfully read and select text while doing the load-task. Again, the participant was granted €2,50 when correctly filling in the load-task number.

Following the second practice round, participants came to the voice-phase. During this voice-phase, the attention control of participants was manipulated using either the high working memory load or no working memory load. It was explained that in the voice-phase, they would see 10 ideas: 5 of their own ideas (brought up in the generation phase) and 5 ideas of other students. This was to check afterwards whether participants simply clicked their own ideas (which they could recognize easily), or had consciously selected ideas that they considered to be of a high quality. The voice-phase would come up two times to show all of the 10 ideas. Next, the computer explained that the participant could choose to select and communicate ideas (voice) towards the experiment leader and the university. In addition to this, they were then given the letter by the dean of their faculty. Pointed out next was that this voice-phase was voluntary and that the load-task was again their primary task. After the voice-phase, the (present) risk-taking tendency questionnaire was presented. Additionally, control questions on how one perceived the experiment leader were asked. After the questions, participants received a debriefing and their monetary reward.

Analyses

This study had a mixed design because of the within-subject (attention control) and between-subject (risk-taking tendency, voice quality, voice quantity) variables. Experiment leader trust was considered a control variable. We used a repeated-measures ANOVA to test the first hypothesis (relationship attention control - voice quality), a repeated-measures ANCOVA to test the second hypothesis (relationship attention control - voice quality with voice quantity as a moderator), a linear regression analysis to test the third hypothesis (relationship risk-taking tendencies – voice quantity) and again a repeated-measures ANCOVA to test the fourth hypothesis (relationship attention control - voice quality with risk-taking tendencies as a moderator). As a moderator is a variable which changes the effect of the main independent variable on the outcome variable, we added them as a covariate in our statistical models.

Results

Hypothesis 1

Attention control facilitates the selection and communication of useful and original ideas

Main Effects

We predicted a positive main effect of attention control on voice quality [1]. This means that we expected to find that participants communicated higher quality ideas if they had high attention control rather than low attention control. Using a repeated measures ANOVA, we did not directly find a main effect of attention control on quality of voice $F(1,43) = 1.990$, $p = .165$ with an observed power of .28 and an overall effect size of .04.

[1] An assumption check performed prior to the main analysis showed that we met the 5 assumptions (Field, 2009) associated with the repeated measures ANOVA we intended to use.

Hypothesis 2

The amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people who voice infrequently than for people who voice frequently

Main Effect

However, when voice quantity was added as a covariate [1], we found a main effect of attention control on quality of voice $F(1,43) = 9.759$, $p < .001$ with an observed power of .86 and an overall effect size of .19 (see figure 2). This indicated that participants with high attention control voiced with a higher quality ($M = 3.23$, $SD = .72$, $n = 59$) than participants with low attention control ($M = 2.99$, $SD = .89$, $n = 51$) when controlling for voice quantity. An additional plot indicated (see figure 3) that there was an interaction effect of attention control and voice quantity on voice quality. Participants who voiced frequently were not impacted by the working memory load as much as participants who voiced infrequently. As voice behavior is seen as voluntary behavior, some participants chose not to voice during the experiment. For this reason, we were unable to determine the voice quality of these participants. Nevertheless, based on our data, we concluded that there is evidence for hypothesis 2 - the amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people who voice infrequently than for people who voice frequently. Or in other words: frequent voicers are less distracted by changes in attention control than infrequent voicers and are able to voice qualitatively despite having low attention control. This analysis also forms evidence for the first hypothesis (attention control facilitates the selection and communication of useful and original ideas) but only when controlling for voice quantity.

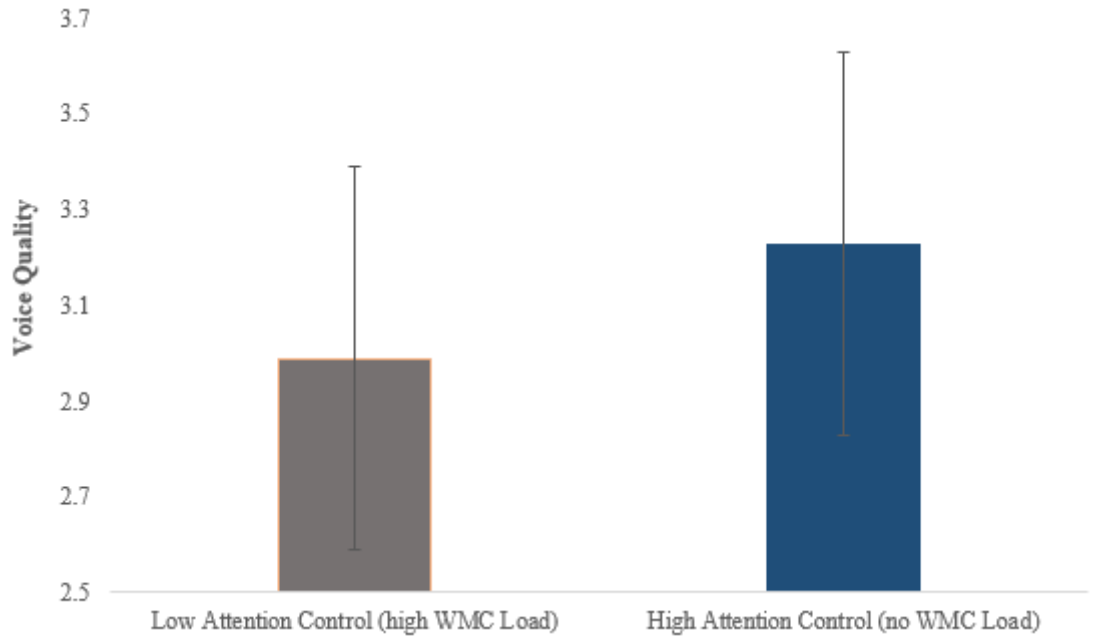

Figure 2. Voice quality per load condition

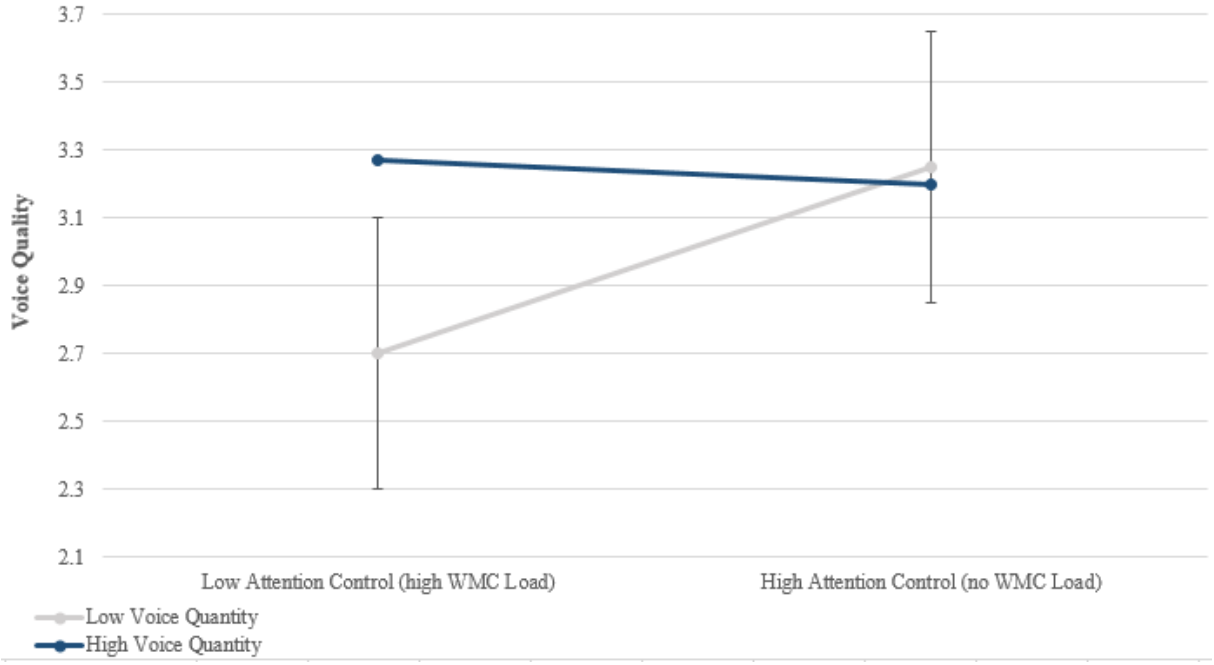

Figure 3. Plot of the interaction effect. Voice Quantity groups were based on the median (= 3).

Table 1. Descriptives and Correlations of Dependent, Independent and Control Measurements

Variables	#	*n*	*M*	*SD*	1	2	3	4	5	6	7
Creativity in generation phase	1	76	2.84	.55	α = .84						
Voice Quality (DV) under High Attention Control (no WMC load)	2	59	3.23	.72	.72**	α = .78					
Voice Quality (DV) under Low Attention Control (high WMC load)	3	51	2.99	.89	.60**	.48**	α = .69				
Overall Voice Quality (regardless of condition)	4	65	3.10	.79	.66**	.89**	.92**	α = .64			
Voice Quantity (Mod)	5	76	2.91	2.28	.40**	.01	.42**	.21	-		
Risk-Taking Tendency (Mod)	6	76	2.11	.64	.01	-.05	.11	.03	.02	α = .59	
Experiment Leader Trust (Contr)	7	76	6.11	.80	.18	.30*	.32**	.36	.12	.19	α = .86

Note: Correlations marked with one asterisk (*) were significant at $p < .05$, correlations marked with two asterisks (**) at $p < .01$.

Hypothesis 3

People with high risk-taking tendencies voice more often than people with low risk-taking tendencies

Main Effect

In order to determine whether risk-takers were more frequent voicers than risk-avoiders, we used a linear regression model. This model indicated[2] that risk-taking tendencies did not significantly predicted voice frequency, $\beta = .07$, $t(74) = .17$, $p = .860$. Additionally, risk-taking tendencies did not explain a significant proportion of variance in voice frequency $R^2 = -.01$, $F(1, 74) = .03$, $p = .860$. Therefore, although voice quantity did play a role in the attention-voice quality relationship examined earlier, it was not influenced by risk-taking tendencies in the current sample.

Hypothesis 4

The amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people with low risk-taking tendencies than for people with high risk-taking tendencies

Moderation Effect

In order to determine[1] whether risk-taking tendencies moderated the relationship between attention control and voice quality we conducted a repeated measures ANCOVA. To perform this ANCOVA, we created the two leveled dependent variable voice quality (under high and no load), and added risk-taking tendencies as a covariate. The results indicated that risk-taking tendencies did not function as a moderator $F(1,43) = 2.098$, $p = .155$ with an observed power

[2] A check suggested that we met the 5 assumptions (Field, 2009) associated with linear regression analysis.

of .29 and overall effect size of .05. Even when adding voice quantity as an additional covariate, risk-taking tendencies did not moderate the relationship between attention control and voice quality, $F(1,43) = 7.469$, $p = .009$ with an observed power of .76 and overall effect size of .15. We therefore concluded that within the current sample, the relationship between attention control and voice quality was not negatively moderated by risk-taking tendencies. There were no indications that participants with high risk-taking tendencies needed less attention than participants with low risk-taking tendencies to voice with a high quality.

Table 2. Results of Hypothesis Testing

Hypotheses	*F*	*t*	*p*
H1: Main effect of Attention Control on Voice Quality	1.990		.165
H2: Main effect of Attention Control on Voice Quality (with moderator/covariate Voice Quantity)	9.759		< .001
H3: Main effect of Risk-Taking Tendencies on Voice Quantity		.17	.860
H4: Main effect of Attention Control on Voice Quality (with moderator/covariate Risk-taking Tendency)	2.098		.155

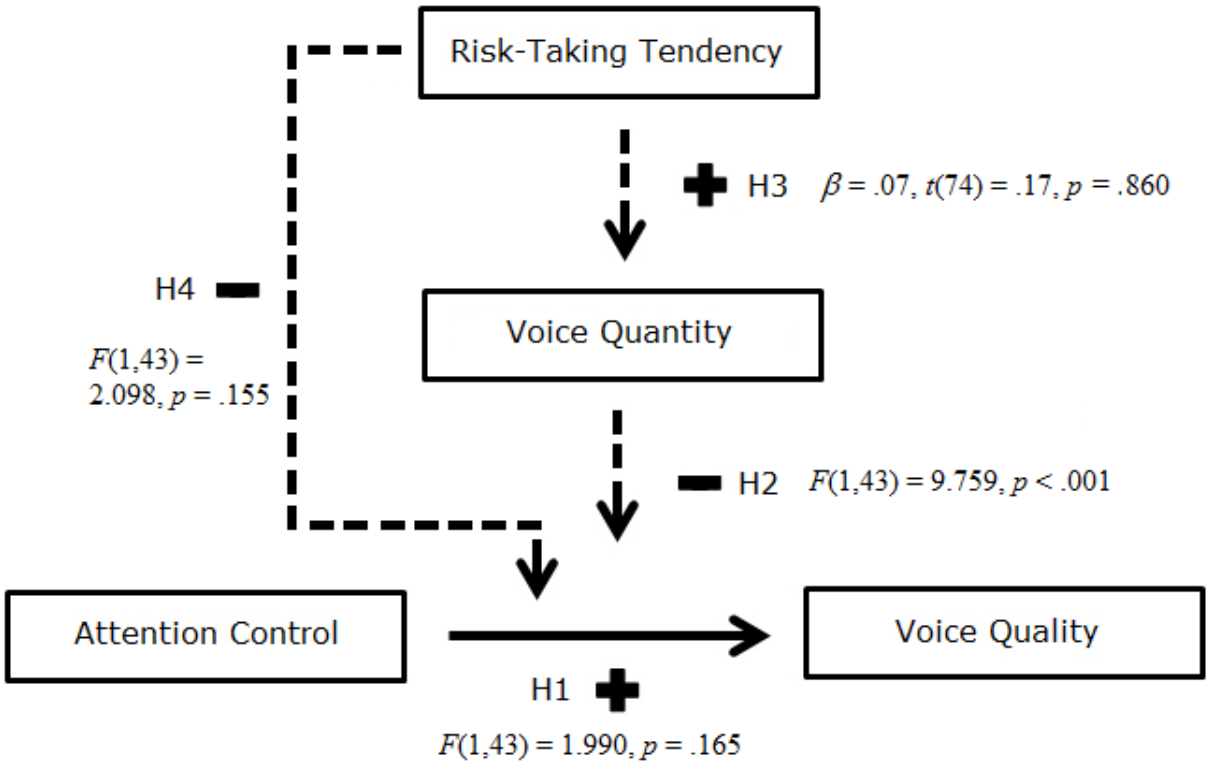

Figure 4. Conceptual framework and the results of analyses

Discussion

Results and Interpretations

This study aimed to discover whether people need attention to voice high quality ideas, and checked whether risk-taking tendencies decrease this need for attention. When controlling for voice quantity, the results support the notion that employees need attention to select and communicate useful and original ideas (voice quality). In other words – people who are not distracted with a working memory load task (and thus have high attention control) communicate higher quality ideas than people who are distracted with a working memory load task (and thus have low attention control). This finding confirms our prediction that attention is not only important for creativity, but also for the selection and communication of it – which is considered as voice quality. It is most probable that attention control creates cognitive persistence - systematic and persistent processing of information - and that this

cognitive persistence in turn influences quality of voice, which is the selection and communication of creative ideas. Where Chiaburu, Marinova and Van Dyne (2008) noticed that voice behavior is change-oriented in nature and might therefore be especially influenced by cognitive factors – an employee needs to decide what to voice on which moment and to whom - the current study indicates that this is the case. Attention is important for voice behavior, and especially for voice quality.

A second finding of this study supports our expectation that a quantity-breeds-quality-effects exists. We expected that, over time, regular voicers had learned to generate, select and communicate high quality ideas effortlessly and automatically. Or in other words: where infrequent voicers need lots of attention to reach voice quality, frequent voicers are trained to do so and voice qualitatively without needing much cognitive capabilities. It turns out that infrequent voicers experienced more distraction (see figure 2 for a visual presentation) than frequent voicers because of the working memory capacity-load. We therefore conclude that frequent voicers are less reliant on their cognitive abilities (attention control) than infrequent voicers. Most probably, this quantity-breeds-quality-effect is a product of a steep learning-curve: because regular voicer practice often, they receive feedback from coworkers and improve the quality of their voice rapidly. After a while, they are used to generating, selecting and communicating high quality ideas and do so automatically. Infrequent voicers however do not undergo this feedback-training and therefore need lots of attention to reach the same voice quality as frequent voicers.

Unexpectedly, the data did not support the third hypothesis – stating that employees with high risk-taking tendencies are more likely to voice. As studies suggested (Sitkin & Weingart, 1995) that more risk-tending employees perceive the same situation as less risky than employees with low risk-taking tendencies, we expected them to voice more often. However, the risk-tending participants in our experiment were not showing voice more often

than risk-avoiding participants. A possible explanation for not finding the risk-quantity-relationship lies in low perceived risk in the lab environment. As voice behavior may have social consequences at first – for example a damaged reputation (Ashforth & Humphrey, 1995) – and financial consequences at second – for example negative career consequences, (Adler & Kwon, 2002), we think social risks influence risk perceptions first and foremost.

In the current study, the amount of experiment leader trust was relatively high, and there was a positive relationship between voice quality and experiment leader trust (please see table 1). As participants were to voice towards this trusted experiment leader, and psychologically felt this to be their supervisor, they may not have experienced a risky voice situation. The trait activation theory suggests that 'individuals only express their traits when presented with trait-relevant situational cues' (Tett & Burnett, 2003). So in the current experiment, the risk-trait of risk-takers was simply not 'activated' because of the safe external situation. In relatively safe situations like this one, no differences are to be observed between people who are risk-taking and risk-avoiding. Possibly, the risk trait was activated if the external environment was perceived as riskier. In such a situation, risk-takers would voice more often than risk-avoiders.

A second reason for not finding an relationship between risk and voice quantity may lie in the way we defined and measured risk. We decided to measure risk-taking tendency, which is an individual characteristic. However, according to Mishra (2014), risk is rather a consequence of needs than a personality characteristic. According to the risk-sensitivity theory that she mentioned, there is a continuous shift in risk-preferences according to the needs that people want to fulfill. So in our study, participants who needed high quantities of money (for example because they needed money at the end of the month) would have been the most risk tending, and participants who had no financial needs would have been the most risk avoiding. Following this risk-sensitivity theory, no relationship can be expected between

risk-taking tendency as a personality trait and voice quantity. Taking risks simply is a consequence of the situation one is in at that moment. Therefore we advise researchers to carefully assess the financial and social needs of their participants, and check whether these needs predict the frequency of voice better than risk-taking tendency as a personality trait.

Subsequently, no proof was found for our fourth hypothesis, stating that the amount of attention control necessary to facilitate the selection and communication of useful and original ideas is higher for people with low risk-taking tendencies than for people with high risk-taking tendencies. Concretely: the relationship between attention control and voice quality was not negatively moderated by risk-taking tendencies. As we also did not find indications that risk-takers voiced more often (H3), it seems that risk-taking tendencies did not affect both the quantity or the quality of voice in the current study. However, we did find evidence for the quantity-breeds-quality-effect: regular voicers have a relatively high voice quality no matter their attention, so voicing often leads to quality. It's plausible that the current experimental setup didn't lead us to find the risk-quantity or the risk-quality-relationship. However, when the experimental setting is riskier and if risk is operationalized in a different fashion, we still expect these relationships to be visible.

Limitations and Suggestions for Future Research

A first methodological limitation of this study is the low power observed in some of the tests. As power is the ability of a test to detect an effect if the effect actually exists (Field, 2009), our analyses with low power were not able to detect effects that might be there in reality. This is a particular challenge in researching voice behavior: because it is voluntary in real life, it is also voluntary in experimental designs. The consequence is a smaller sample size than one initially starts with. In this research for instance, the data of 76 test persons was considered valid for analysis, while the data of just 45 participants (59%) could be used in the voice

analyses. Although 45 participants is not a dramatic amount considered the partial within-subjects design, the observed power still seemed low when testing the first hypothesis. Because of the observation of low power and the more general note that 'replication of empirical findings play a fundamental role in science' (Francis, 2012) while only 1.07% of psychological research is actually replicated (Makel, Plucker & Hegarty, 2012), we advise to repeat the current study. In our view, the focus in such a replication study should lie on the riskiness of voice – something that could be explored in more depth.

A second methodological issue was the riskiness of our experiment, or even the concept of risk within the present study. We expected that risk perceptions within our experiment arose because of the build-in financial incentives on the one hand, and the social signals coming from the experiment leader (to whom participants voiced ideas) on the other hand. We believe the financial risk was considerable: as most participants earned around €10 and on average voiced 3 ideas, they could win or lose 30% of their earnings based on voicing qualitatively. Voicing as such was financially risky. However, participants generally experienced a high trust in the experiment leader, and may therefore have experienced low social risks (reputation or relationship damage). Secondly, if participants considered the experiment leader to be their supervisor (because they voiced towards him), this relationship was very short-term. Even if the experiment leader behaved in a way that signaled social risk, this risk would only be limited to the experiment that took no longer than one hour. In real work settings, supervisors can create sustained social risks that lead to occupational stress for months on end (Brough & Williams, 2007).

Additionally, the mood and openness to voice of a supervisor may fluctuate over time. As social risks are the first risks that voicing employees encounter (a critical or even disapproving supervisor), we believe that the overall riskiness in our experiment was low. We therefore think the personality risk-trait within our participants was not activated, which led

risk-taking individuals to not voice often. For this reason we advise future researchers to manipulate social risks along with financial risks. We expect a riskier external condition to activate the risk-trait within participants with risk-taking tendencies. As a result, we think that risk-takers will voice more often because they perceive the risk of speaking up to be lower than risk-avoiders (Milliken, Morrison & Hewlin, 2003), which will lead to a higher voice quality over time. Alternatively, as Mishra (2014) suggests that risk is rather a consequence of needs than a personality trait, we propose researchers to study these needs. For example, seen the fact that voice behavior is socially risky and can lead to reputational or relationship damage, are participants with high harmonious needs more prone to these risks? And taking the financial riskiness of voice in consideration, are participants with high debts more risk-taking then participants without debts? This personal-needs rather than risk-trait perspective may offer additional insight in the stimulants of voice behavior within organizations.

A third issue that we advise voice-researchers to analyze in more depth is the relationship between voice quantity and quality. In the current study, we found regular voicers to be less influenced by distortions in attention that irregular voicers – they voiced high quality ideas effortlessly and automatically. However, it would be especially interesting for companies to know how *much* training individual employees need before they can voice with a high quality. Rather than giving time and space to every individual with an idea for the company, it would be beneficial to know after how much hours of voicing people are able to do it properly and without huge cognitive investment. We therefore advise voice researchers to develop an experiment with a longitudinal character, aiming to discover how much practice it takes for people learn to voice qualitatively without effort.

Contribution to Knowledge, Practical Implications and Concluding Thoughts

With the current study, we believe we have contributed to the literature in three ways. Firstly, as Wolsink (2013) suggested that voice can be conceptually split up between voice quantity and voice quality, we found proof for this notion. Where earlier studies conceptualized and measured voice in terms of frequency, this research too recognized that the content of voice is understudied and needs a closer look: it eventually is the quality of communicated ideas that determines successful innovation within organizations. Therefore we encourage scholars to differentiate between voice quantity (how many ideas?) and voice quality (how useful and original are these ideas?).

Secondly, as Chiaburu, Marinova and Van Dyne (2008) noticed that cognitive factors play an important role in the voice process and are understudied at this moment, the current research broadened the understanding of the mental processes involved with voicing qualitatively. Earlier studies found that attention control allows for systematic and persistent processing of information, that in turn leads to creativity (de Dreu et al., 2012) and voice quality (Wolsink, 2013). Our finding that this systematic processing of information also influences voice quality (the selection and communication of creative ideas) replicates earlier findings and therefore creates more trust in them. On a more general note, this study acknowledges the need for scholars to look at the effects of distraction and stress on work life. In this research, having low attention led to a low voice quality. The bigger implication however may be that attention control influences a wider range of information related tasks. For example, organizations involved with traffic (e.g. taxi companies) could benefit from looking at the attention control of their employees and reduce the amount of (costly) incidents with their vehicles (Strayer & Johnston, 2001). Or hospitals could bring down the amount of fatalities by assessing their doctor's attention control and try to bring it up (McGowan,

Humphries, Burke, Conry & Morgan, 2013). All in all, we therefore believe that the construct of attention control deserves a more prominent role in the organizational sciences.

However, our finding that the quantity-breeds-quality-effect exists, shows that the role of attention control in voicing qualitatively is different for frequent and infrequent voicers. This finding indicates that the mental processes of frequent and infrequent voicers differ. Frequent voicers presumably do not need the 'persistent processing of information'-route that requires sustained attention. Rather, they rely on a 'voicing automatically through experience'-route. A regular voicer has learned which issues to voice, on what moment and to whom (Chiaburu, Marinova & Van Dyne, 2008) and no longer needs lots of cognitive abilities to voice qualitatively. By finding indications that the quantity-breeds-quality-effect exists, we found proof for two different attention-routes in voice behavior: a 'persistent processing of information'-route and a 'voicing automatically through experience'-route. Thirdly, as voice behavior is 'challenging to the status quo' in its nature, we gave a prominent role to risk in this study. As risk-tending employees perceive the same situation as less risky than employees with low risk-taking tendencies (Sitkin & Weingart, 1995) we expected them to voice more often. Although we were not able to detect such an effect with the data of our sample, most probably due to low power, we nevertheless advice to look into the effects of risk more closely. As risk is such a prominent factor surrounding voice behavior, we think risk in relationship to voice quality should be considered in depth.

In a more practical sense, based on this study, we are able to offer two forms of advice to companies that like to create an innovation climate. As our study suggests that attention control is important for employees to voice with a high quality, our first advice is to create 'Employee Silence Rooms' where no mobile phone, talking or music is allowed. These Silence Rooms can create an attentive atmosphere that supports cognitive persistence needed for a high voice quality within the company. Using specially designed 'Voice Apps',

employees are able to generate, select and communicate their most innovate ideas to their company. Comparable with the well-known ‘use 20% of your time to do what you like’-philosophy of tech company Google (Mediratta & Bick, 2007), we would like to stimulate businesses to give employees sufficient time to come up with qualitative voice. In this way, people are able to use the Silence Rooms frequent enough to create great ideas. Important, as we found frequent voicers to come up with high quality ideas with ease.

Secondly, as attention control ultimately is influenced by working memory capacity, we advise companies to recruit and select employees based on their working memory capacity. Although we didn’t measure individual differences in working memory capacity in the current study, we did find that participants voiced with a higher quality when we manipulated them to have high rather than low attention control. In other words, we expect employees having high working memory more able to come up with a high quality of voice than employees having low working memory capacity. The combined effect of these two implementations may create more qualitative voice and innovation within the organization. By taking a closer look at the content of voice rather than just the quantity of it, we have come one step closer in bringing innovation to companies. And as this study indicates that the ability to control attention plays a vital role in voicing qualitatively, we hope to have inspired business leader to implement measures that facilitate their employees’ attention.

References

Avey, J. B., Wernsing, T. S., & Palanski, M. E. (2012). Exploring the process of ethical leadership: The mediating role of employee voice and psychological ownership. *Journal of Business Ethics*, *107*(1), 21-34.

Baas, M., De Dreu, C. K., & Nijstad, B. A. (2008). A meta-analysis of 25 years of mood-creativity research: Hedonic tone, activation, or regulatory focus?.*Psychological bulletin*, *134*(6), 779.

Batt, R., Colvin, A. J., & Keefe, J. (2002). Employee voice, human resource practices, and quit rates: Evidence from the telecommunications industry.*Industrial & Labor Relations Review*, *55*(4), 573-594.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Beer, M., & Eisenstat, R. A. (2000). The silent killers of strategy implementation and learning. *Sloan Management Review*, *41*(4), 29-40.

Bos, B. (2014) The effect of employee voice on innovative behavior, mediated by affective commitment. *Tilburg University.*

Burris, E. R. (2012). The risks and rewards of speaking up: Managerial responses to employee voice. *Academy of Management Journal*, *55*(4), 851-875.

Brough, P., & Williams, J. (2007). Managing Occupational Stress in a High-Risk Industry Measuring the Job Demands of Correctional Officers. *Criminal Justice and Behavior*, *34*(4), 555-567.

Clinch, M. (2013, October 21). Retail banks' worst nightmare? Google. Retrieved November 14, 2015, from http://www.cnbc.com/2013/10/21/retail-banks-worst-nightmare-google.html

Chiaburu, D. S., Marinova, S. V., & Van Dyne, L. (2008). Should I do it or not? An initial model of cognitive processes predicting voice behaviors. In *Academy of Management Proceedings* (Vol. 2008, No. 1, pp. 1-6). Academy of Management.

Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology.*Psychological assessment*, *6*(4), 284.

De Dreu, C. K. W., Nijstad, B. A., Baas, M., & Roskes, M. (2010). The merits of executive control in creativity.

De Dreu, C. K., & West, M. A. (2001). Minority dissent and team innovation: the importance of participation in decision making. *Journal of applied Psychology*,*86*(6), 1191.

De Dreu, C. K., Nijstad, B. A., Baas, M., Wolsink, I., & Roskes, M. (2012). Working memory benefits creative insight, musical improvisation, and original ideation through maintained task-focused attention. *Personality and Social Psychology Bulletin*, *38*(5), 656-669.

Denning, S. (2014, December 5). Forbes - Can Banks Master Disruptive Innovation? Retrieved November 14, 2015, from http://www.forbes.com/sites/stevedenning/2014/12/05/innotribeswift-can-banks-master-disruptive-innovation

Detert, J. R., & Burris, E. R. (2007). Leadership behavior and employee voice: Is the door really open?. *Academy of Management Journal*, *50*(4), 869-884.

Detert, J. R., & Edmondson, A. C. (2011). Implicit voice theories: Taken-for-granted rules of self-censorship at work. *Academy of Management Journal*,*54*(3), 461-488.

Detert, J. R., Burris, E. R., & Harrison, D. A. (2010). Debunking four myths about employee silence. *Harvard business review*, *88*(6), 26.

Dietrich, A. (2004). The cognitive neuroscience of creativity. Psychonomic bulletin & review, 11 (6), 1011-1026.

Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades, 2001.

Francis, G. (2012). Publication bias and the failure of replication in experimental psychology. *Psychonomic Bulletin & Review*, *19*(6), 975-991.

Freeman, R. B., & Medoff, J. L. (1984). What do unions do. *Indus. & Lab. Rel. Rev.*, *38*, 244.

Field, A. (2009). Discovering Statistics Using SPSS (3rd ed.). London, UK: Sage publications.

Gao, L., Janssen, O., & Shi, K. (2011). Leader trust and employee voice: The moderating role of empowering leader behaviors. *The Leadership Quarterly*,*22*(4), 787-798.

Gambarotto, F., & Cammozzo, A. (2010). Dreams of silence: Employee voice and innovation in a public sector community of practice. *Innovation*, *12*(2), 166-179.

Hirschman, AO. (1970) Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States. Cambridge, MA: Harvard University Press.

James, L. R., & Brett, J. M. (1984). Mediators, moderators and tests for mediation. *Journal of Applied Psychology*, *69*, 307-321.

Judd, C. M., & Kenny, D. A. (1981). Process analysis: Estimating mediation in treatment evaluations. *Evaluation Review, 5*, 602-619.

Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological methods*,*6*(2), 115.

Kane, M. J., & Engle, R. W. (2003). Working-memory capacity and the control of attention: the contributions of goal neglect, response competition, and task set to Stroop interference. Journal of experimental psychology: General, 132 (1), 47.

Lavie, N. (2010). Attention, distraction, and cognitive control under load.*Current Directions in Psychological Science*, *19*(3), 143-148.

Leigh, B. C. (1999). Peril, chance, and adventure: Concepts of risk, alcohol use and risky behavior in young adults. Addiction, 94, 371–383.

LePine, J.A. & Van Dyne, L. (1998). Predicting voice behavior in work groups. *Journal of Applied Psychology*, 83(6), 853-868.

Lewin, D. (2010). Employee Voice and Mutual Gains. In *The Oxford Handbook of Participation in Organization*. Oxford: Oxford University Press.

Liang, J., Farh, C. I., & Farh, J. L. (2012). Psychological antecedents of promotive and prohibitive voice: A two-wave examination. *Academy of Management Journal*, *55*(1), 71-92.

MacKenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Challenge-orientated organizational citizenship behaviors and organizational effectiveness: do challenge-oriented behaviors really have an impact on the organization's bottom line?. *Personnel Psychology*, *64*(3), 559-592.

Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research - how often do they really occur?. *Perspectives on Psychological Science*, *7*(6), 537-542.

Maryville, S (1992). "Entrepreneurship in the Business Curriculum". *Journal of Education for Business*. Vol. 68 No. 1, pp. 27-31.

McClean, E. J., Burris, E. R., & Detert, J. R. (2013). When does voice lead to exit? It depends on leadership. *Academy of Management Journal*, *56*(2), 525-548.

McGowan, Y., Humphries, N., Burke, H., Conry, M., & Morgan, K. (2013). Through doctors' eyes: A qualitative study of hospital doctor perspectives on their working conditions. *British journal of health psychology*, *18*(4), 874-891.

Mediratta, B., & Bick, J. (2007, October 21). The Google Way: Give Engineers Room. *The New York Times*.

Milliken, F. J., Morrison, E. W., & Hewlin, P. F. (2003). An exploratory study of employee silence: Issues that employees don't communicate upward and why. *Journal of management studies*, *40*(6), 1453-1476.

Mishra, S., & Lalumière, M. L. (2011). Individual differences in risk-propensity: Associations between personality and behavioral measures of risk. *Personality and Individual Differences*, *50*(6), 869-873.

Mishra, S. (2014). Decision-Making Under Risk Integrating Perspectives From Biology, Economics, and Psychology. *Personality and Social Psychology Review*, 1088868314530517.

Mook, D. G. (2001). Experimental control 1: obscuring factors. In *Psychological research: The ideas behind the methods* (p. 230). New York: Norton.

Morrison, E. W. (2011). Employee voice behavior: Integration and directions for future research. *The Academy of Management Annals*, *5*(1), 373-412.

Morrison, E. W. (2014). Employee voice and silence. *Annu. Rev. Organ. Psychol. Organ. Behav.*, *1*(1), 173-197.

Morrison, E. W., & Milliken, F. J. (2000). Organizational silence: A barrier to change and development in a pluralistic world. *Academy of Management review*, *25*(4), 706-725.

Naldi, L., Nordqvist, M., Sjöberg, K., & Wiklund, J. (2007). Entrepreneurial orientation, risk taking, and performance in family firms. *Family business review*, *20*(1), 33-47.

Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, *8*(2), 157-176.

Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, *8*(2), 157-176.

Nijstad, B. A., De Dreu, C. K., Rietzschel, E. F., & Baas, M. (2010). The dual pathway to creativity model: Creative ideation as a function of flexibility and persistence. *European Review of Social Psychology*, *21*(1), 34-77.

Oberauer, K., & Bialkova, S. (2009). Accessing information in working memory: Can the focus of attention grasp two elements at the same time?. *Journal of Experimental Psychology: General*, *138*(1), 64.

Oberauer, K., Süß, H. M., Wilhelm, O., & Wittman, W. W. (2003). The multiple faces of working memory: Storage, processing, supervision, and coordination. *Intelligence*, *31*(2), 167-193.

Olinga, L. (2015, April 3). Peer-to-peer lending is surging in the US, and it could hurt big banks. Retrieved November 13, 2015, from http://uk.businessinsider.com/afp-peer-to-peer-lending-surges-in-us-challenging-traditional-banks-2015-4?r=US&IR=T

Özmen, G. (2014). Risk-taking behavior, attention control and voice quality. *Universiteit van Amsterdam*, 1 - 37.

Rietzschel, E. F. (2005). From quantity to quality: cognitive, motivational and social aspects of creative idea generation and selection. *Kurt Lewin Instituut dissertatiereeks*.)

Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. *Creativity Research Journal*, *24*(1), 92-96.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2007). Relative accessibility of domain knowledge and creativity: The effects of knowledge activation on the quantity and originality of generated ideas. *Journal of Experimental Social Psychology*, *43*(6), 933-946.

Rusbult, C. E., Farrell, D., Rogers, G., & Mainous, A. G. (1988). Impact of exchange variables on exit, voice, loyalty, and neglect: An integrative model of responses to declining job satisfaction. *Academy of Management Journal*,*31*(3), 599-627.

Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of management Journal*, *38*(6), 1573-1592.

Strayer, D. L., & Johnston, W. A. (2001). Driven to distraction: Dual-task studies of simulated driving and conversing on a cellular telephone.*Psychological science*, *12*(6), 462-466.

Süß, H. M., Oberauer, K., Wittmann, W. W., Wilhelm, O., & Schulze, R. (2002). Working-memory capacity explains reasoning ability—and a little bit more. *Intelligence*, *30*(3), 261-288.

Smith, E. E., & Kosslyn, S. M. (2007). *Cognitive psychology: Mind and brain*. Upper Saddle River, N.J: Pearson/Prentice Hall.

Tangirala, S., & Ramanujam, R. (2008). Exploring nonlinearity in employee voice: The effects of personal control and organizational identification. *Academy of Management Journal*, *51*(6), 1189-1203.

Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology*, *88*(3), 500.

Unsworth, N., Fukuda, K., Awh, E., & Vogel, E. K. (2014). Working memory and fluid intelligence: Capacity, attention control, and secondary memory retrieval.*Cognitive psychology*, *71*, 1-26.

Van de Ginste, C. (2015, April 10). Seven trends shaping organizations today. Retrieved from http://across-technology.com/seven-trends-shaping-organizations-today

Vey, M. A., & Campbell, J. P. (2004). In-role or extra-role organizational citizenship behavior: Which are we measuring?. *Human Performance*, *17*(1), 119.

Walumbwa, F. O., & Schaubroeck, J. (2009). Leader personality traits and employee voice behavior: mediating roles of ethical leadership and work group psychological safety. *Journal of Applied Psychology*, *94*(5), 1275.

Weber, E. U., Blais, A. R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors. *Journal of behavioral decision making*, *15*(4), 263-290.

Weir, J. P. (2005). Quantifying test-retest reliability using the intraclass correlation coefficient and the SEM. *The Journal of Strength & Conditioning Research, 19*(1), 231-240.

Wilkinson, A., Dundon, T., Marchington, M., & Ackers, P. (2004). Changing patterns of employee voice: Case studies from the UK and Republic of Ireland.*The Journal of Industrial Relations*, *46*(3), 298-322.

Wolsink, I. (2013). *Attention Control and Voice Quality*. Manuscript in preparation.

Wolsink, I., Den Hartog, D. N., Belschak, F. D., Sligte, I. (2015). *Forthcoming*. Manuscript in preparation.

Appendix A

Risk-Taking Tendency questions (first past, then present)

In welke mate waren de onderstaande risico's in het verleden (tenminste een jaar geleden) op u van toepassing?

/

In welke mate zijn de onderstaande risico's nu (in het heden) op u van toepassing?

1. Recreatie risico's (bijvoorbeeld extreme sporten als rots klimmen, scuba duiken, trail-running)
2. Gezondheidsrisico's (bijvoorbeeld roken, ongezonde voeding, hoog alcohol en/of drugs gebruik)
3. Carrière risico’s (bijvoorbeeld het stoppen met een baan zonder een nieuwe baan te hebben of het opstarten van een eigen bedrijf)
4. Financiële risico’s (bijvoorbeeld gokken, risicovolle investeringen)
5. Veiligheidsrisico’s (bijvoorbeeld snel rijden, door oranje rijden, vuurwerk afsteken)
6. Sociale risico's (bijvoorbeeld je verkiesbaar stellen of publiekelijk een regel of beslissing bekritiseren)

Likertschaal van Helemaal niet van toepassing (1) tot Helemaal van toepassing (7).

Appendix B

Experiment Leader Trust questions

In hoeverre zijn de volgende stellingen voor jou van toepassing?

1. De experimentleider creeërde een veilige omgeving om initiatief te nemen.

2. De experimentleider lijkt me een eerlijk mens.

3. De experimentleider waardeert initiatief.

4. Ik vertrouw de experimentleider.

Likertschaal van Helemaal niet van toepassing (1) tot Helemaal van toepassing (7).