UNIVERSITÀ DEGLI STUDI DI MILANO

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Workplace Bullying, Antecedents and Mechanisms

TESI DI DOTTORATO DI RICERCA di

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ORIGINAL ARTICLES INCLUDED IN THE THESIS

This thesis is based on two papers:

Paper I

Manuscript: Do personal dispositions affect the relationship between psychosocial working conditions and workplace bullying?

Francioli Laura (M.Sc), Høgh Annie (Prof.), Conway Paul M. (Prof), Costa Giovanni (Prof.), Karasek Robert (Prof.), Hansen Åse M. (Prof.)

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Paper II

Manuscript: Quality of leadership and workplace bullying: The mediating role of social community at work in a two-year follow-up study.

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LIST OF ABBREVIATIONS

NAQ   Negative Acts Questionnaire

SOC   Sense of Coherence

JDC   Job Demand Control model

SIT   Social Identity Theory

WBH   Workplace Bullying and Harassment cohort

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1. INTRODUCTION

Workplace bullying is an extreme deviant behaviour and a challenge in the field of organizational ethics. Over the past two decades, researchers have investigated three important factors: prevalence, antecedents, and outcomes of workplace bullying. Broadly recognized to be one of the extreme stressors in organizations (Hauge et al., 2010; Zapf et al., 1996), with a global estimate of 15%, ranging from 11% to 18%, some studies have revealed that nearly 95% of workers have had some exposure to bullying behaviours at work over a 5-year period (Fox & Stallworth, 2005). Bullying at work has been strongly linked to detrimental consequences for victims, witnesses, organizations, and society as a whole (Nielsen et al., 2010). During the last decade, attention has been focused on associated harmful consequences of workplace bullying (Salin, 2003). Several studies have shown that bullying is associated with severe health and well-being consequences, such as anxiety, depression, burn-out, sleep problems, altered physiological response (Nielsen & Einarsen, 2012b; Hogh et al., 2011), and post-traumatic stress symptoms (Nielsen et al., 2008; Hogh et al., 2012a). Throughout literature, there are two prevailing approaches to the understanding of workplace bullying. The first, known as the "work environment hypothesis" (Leymann, 1996), considers workplace bullying to be the result of poor psychosocial working conditions (Salin & Hoel, 2011), while the second approach regards employees' individual characteristics to be factors playing a prominent role in the aetiology of workplace bullying (Einarsen et al., 2011b). Within the work environment hypothesis, bullying has been linked to a large number of organizational antecedents. A consistent number of exploratory studies have brought a laundry list of work-related factors associated with bullying: high job demands, low job control, low social support, elevated levels of role conflict and role ambiguity, many changes at work, elevated levels of job insecurity (Zapf, 1999; Baillien & De Witte, 2009; Vartia, 1996). Leadership as an antecedent of workplace bullying is a recent area, which has attracted attention

from researchers (Hoel et al., 2010; Vartia, 1996; Ashforth, 1994; Skogstad et al., 2007). Despite the assumed theoretical relationship, this small body of empirical research has shown only associations between leadership styles and bullying, due to the cross-sectional nature of the study design. Reverse causation may apply since workers that are bullied are most likely to negatively evaluate their work environment and report less favorable leadership characteristics (Nielsen & Einarsen, 2013; Hauge et al., 2007). This led us to conclude that this association needs stronger empirical evidence in order to establish the causality.

In the tradition of the work environment hypothesis, however, there is poor empirical evidence (see as exception Balducci et al., 2011a) concerning the role played by individual characteristics, such as personality traits and vulnerability factors (Bowling N.A. et al., 2010) in the relationship between poor psychosocial working conditions and the probability of becoming a target of workplace bullying. Individual characteristics affect the way persons typically appraise external stimuli and cope with them (Semmer, 2003) and also influence the way employees perceive and deal with their psychosocial work environment, as well as the outcomes resulting from this experience. At an individual level, much of the research on personality and individual characteristics remains inconclusive (Aquino & Thau, 2009). Research efforts must therefore be addressed at this issue.

1.1. Aims

The overall project of this thesis is to investigate the work environment hypothesis of workplace bullying, and try to capture psychosocial and individual factors that may mediate or moderate the relationship between a poor work environment and the exposure to workplace bullying. Specifically, **Paper 1** concerns whether a personal characteristic, sense of coherence (SOC), moderates the relationship between the job demand-control model (JDC) and workplace bullying.

The JDC model represents a useful theoretical approach for capturing work-related psychosocial characteristics that are relevant to the emergence of workplace bullying. A better understanding of how individual differences impact on the relationship between the psychosocial work environment and exposure to workplace bullying may have important implications from both the theoretical (which are the mechanisms underlying the link between a poor psychosocial work environment and being a target of workplace bullying?) and the practical (how interventions contrasting workplace bullying should be designed?) standpoints.

Paper 2 addresses the mediation role of the social community at work in the relationship between quality of leadership and workplace bullying. Quality of leadership as an antecedent of workplace bullying has not been tested previously in a prospective way, and to my knowledge no published manuscripts within the bullying literature have addressed the role of the social community at work in mediating the leadership-bullying relationship. A low leadership quality may have the potential to erode the social community at work within the work environment and may thus enhance the risk of workplace bullying. Understanding this link between quality of leadership and bullying will enable researchers to reach a more accurate conclusion about preventive strategies.

1.2. Structure of the thesis

The thesis is structured as follows: Firstly, the background section describes a framework for understanding workplace bullying and the work environment hypothesis. This is followed by a conceptual model of the hypothesized moderated effect of sense of coherence between poor working conditions and workplace bullying. This section also includes a second conceptual model of the hypothesized pathway from leadership to bullying through the social community at work. Secondly, the data sources, the methodology for the two papers, and additional methodological considerations are discussed. Thirdly, the results of the two studies are summarized and fourthly,

these results and their potential sources of bias are discussed. Finally, following a discussion on the results of the two papers, conclusions, future perspective, and practical implications are discussed.

2. BACKGROUND

The purpose of this chapter is to present workplace bullying within the European perspective, with some historical notes, definition, and measurements, followed by a description of the nature and typologies of the bullying behaviours. Finally, consequences for targets, witnesses, and organization are described.

2.1. Workplace bullying

The interest in workplace bullying originated in Scandinavia in the 1980s, inspired by schoolchildren research (Einarsen et al., 2011b). The first book on workplace bullying was published in 1986 by Heinz Leymann, entitled "*Mobbing: Psychological Violence at Work*". He was a family therapist in the 1970s, and having had experience with family conflicts he investigated direct and indirect forms of conflicts at work (Leymann, 1996). He first argued that this problem was deeply rooted in organizational factors of the psychosocial work environment, leadership for instance.

The term mobbing was coined from the English term mob and was originally used to describe animal aggression. Leymann borrowed this term from the school bullying research (Olweus, 1993) to describe repeated negative behaviour in a workplace, which if repeated, could cause negative consequences for targets' health and well-being (Einarsen et al., 2011b). From Scandinavia, this concept spread to the other European countries creating the European perspective on bullying during the late 1990s. Several different terms or labels are used interchangeably by researchers around the world to describe this form of negative workplace behaviour. "Mobbing" is commonly

used in France and Germany (Leymann, 1990; Zapf, Knorz & Kulla, 1996). "Harassment" is the term preferred by some researchers in Finland (Bjorkqvist et al., 1994). In the USA, "aggression" (Baron & Neuman, 1998) and "emotional abuse" (Keashly, 2001) have been used. The term "workplace bullying" is used primarily by researchers in Australia (Sheehan, 1999), the United Kingdom (Rayner, 1997) and Northern Europe (Einarsen & Skogstad, 1996). Only slight differences exist between the concepts of bullying and mobbing.

The term bullying refers to a situation where a perpetrator behaves aggressively towards one or more targets, whereas the term mobbing is used to describe the consequences for the targets. These two terms focus on two different aspects of this phenomenon, one more related to the perpetrators and the other related to the victims (Zapf & Einarsen, 2005).

2.1.1. Definition

Although there is not an agreed definition of bullying in the literature (Coyne et al., 2004) researchers commonly use the following definition of workplace bullying:

> ''Bullying at work means harassing, offending, socially excluding someone or negatively affecting someone's work. In order for the label bullying (or mobbing) to be applied to a particular activity, interaction or process, it has to occur repeatedly and regularly (e.g., weekly) and over a period of time (e.g., about six months). Bullying is an escalating process in the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts. A conflict cannot be called bullying if the incident is an isolated event or if two parties of approximately equal strength are in conflict" (Einarsen et al., 2011b, p. 22).

Through this definition, four broad features have been differentiated: frequency, persistency, hostility, and power imbalance (Einarsen et al., 2011b). Hostility refers to negative acts from superiors or coworkers (Nielsen & Einarsen, 2012b). Targets find it difficult to defend themselves (Einarsen & Skogstad, 1996), and there is an imbalance of power between the parties, victims and perpetrators (Hoel et al., 2001), and this is not synonymous with hierarchical power (Cowie et al., 2002).

Firstly, definitions of workplace bullying emphasize two main features: repeated and persistent aggressive behaviour having a strong psychological nature (Leymann, 1996). Bullying is not about a single and isolated event, but the negative acts have to occur repeatedly and regularly, such as one at least once a week in the severe form. *Secondly*, the frequency of repeated negative acts has to occur repeatedly and regularly (e.g., weekly) and over a long-term duration of six months (Einarsen et al., 2011b). The problem arises of how to define the duration of bullying. Leymann (1990) suggested more than a six months-exposure as an operational definition of bullying, as this period of time is frequently used in the assessment of various psychiatric disorders. In practice, victims might feel bullied after a shorter time. Because it is still unknown what time frame is ideal to investigate the duration of bullying, there is a consensus among researchers that the duration is a matter of months and years, and the criterion of six months has been used in many studies (Einarsen et al., 2011a). *Thirdly*, the unwanted nature of the negative behaviour is a main characteristic of the concept of bullying. Victims experienced persistent insults and offensive remarks, criticism (Einarsen, 2000), or social exclusion and isolation (Williams, 1997). The concept of bullying describes situations where persistent negative actions and practices are directed against one or more employees; these unwanted negative acts, deliberate or not, cause humiliation and distress and may interfere with work performance and impact the perception of the working environment (Einarsen & Raknes, 1997).

Fourthly, the imbalance of the power between the parties, perpetrators and victims, is an important feature of the bullying phenomenon. In many cases, it is a leader or supervisor who subjects subordinates to aggressive behaviours, but this is not synonymous of hierarchical power (Cowie et al., 2002). The source of power may be informal, based on acknowledge and experience as origin of power (Hoel & Cooper, 2000). The imbalance of power is a situation where the targets find it difficult to defend themselves (Einarsen & Skogstad, 1996).

2.1.2. Nature of workplace bullying

Studies on workplace bullying demonstrate that the nature of this phenomenon is not an either-or phenomenon but a gradually evolving process (Leymann, 1990; Zapf & Gross, 2001). In the first phase of the bullying process, targets are typically subjected to aggressive behaviour, and the situation became worse with more direct aggressive acts (Björkqvist et al., 1992). Einarsen (1999) theorized four different phases: aggressive behaviours, bullying, stigmatization, and severe trauma. In the first phase, the negative behaviours may be "subtle", characterized as indirect aggression, and sometimes difficult to recognize for the victim (Leymann, 1990). After the initial phase, that can be very briefly, there is a stage where bullying is more directly and targets are humiliated, ridiculed and often isolated (Leymann, 1990). Thus, targets become stigmatized and find it more difficult to defend themselves (Einarsen & Skogstad, 1996). At this stage, victims are left with no role in the workplace, or they have meaningful work.

Leymann (1990) refers to this last stage as the "expulsion" where victims are forced out to the workplace. As a result of the bullying process, there is a prejudice against the victims that leads to consider the victim as a source of problem by the organization (Einarsen, 1999). Managers may see that person as a problematic person or a neurotic person instead of a victim of the organization itself (Leymann, 1990).

2.1.3. Measurement

As workplace bullying is a complex phenomenon, its assessment is not an unchallenging task. Linking back to the theoretical definition of bullying (p. 15), a measurement instrument should therefore be able to assess exposure to negative acts, the regularity and persistency of these acts, the process development, and the power imbalance between the parties, perpetrators and targets. Researchers in workplace bullying estimate this phenomenon by using two different approaches: the "self-labelling" approach (Nielsen et al., 2011) and the "behavioural" approach of bullying (Einarsen et al., 2009). Both methods are based on the employees' perception of being victims of bullying, but in different ways.

The self-labelling method

The "self-labelling" method is, as shown in the meta-analysis of Nielsen et al. (2009), the most frequently used approach. When applying this method, participants are usually given a single-item question asking whether or not they have been bullied within a specific time period. In some studies, a theoretical definition of bullying is offered to the participants. For this reason, the face validity of the method is convincing (Nielsen et al., 2009). However, the self-labelling method has some limitation that must be considered while interpreting study results. This method does not offer any insight in the nature of the negative acts involved, and any information about how it took place is ignored. This method is very subjective and personality, emotional factors, and cognitive factors may contribute as potential bias (Einarsen et al., 2011a).

The behavioural experience method

On the other hand, with a "behavioural" approach bullying is estimated by asking participants to indicate the frequency of the exposure to different types of negative acts. According to the behavioural approach, the *Negative Acts Questionnaire-Revised* (Einarsen et al., 2009) is the most

recognized and used. The NAQ-R investigates the frequency and the persistency of 22 different types of workplace bullying behaviours, from subtle, such as gossiping, to much more direct behaviors, such as physical abuse, without the term *bullying*. With this method there should be a lower risk for being influenced by cognitive and emotional processes (Einarsen et al., 2011a). With this method it is possible to measure the nature, the frequency, and the duration of the bullying behaviours, with the limit that the power distance between victim and perpetrator is ignored (Nielsen, 2009). Consequently, there is not an overlap between theory and operational definition.

Since the negative acts involved in the bullying phenomenon may differ from country to country we used an adaptation of this revised questionnaire (see Chapter 3 for details), because it appears to better estimate workplace bullying in our study. We agree with what Giorgi et al. (2013) argued on the behavioural approach, suggesting that questionnaires like NAQ-R would be more appropriate when adapted rather than simply translated.

2.1.4. Individual and organizational consequences

Bullying as an extreme form of stress at work (Zapf et al., 1999;Zapf et al., 1996) is linked to negative consequences for individuals and organizations.

Individual consequences

Over the past two decades, studies on the effect of workplace bullying have shown that exposure to negative acts may have devastating consequences on the targets' health and well-being, such as depression, anxiety, sleep problems, altered physiological response (Nielsen & Einarsen, 2012b; Hogh et al., 2011), and post-traumatic stress symptoms (PTSD; Nielsen et al., 2008; Hogh et al., 2012b). Furthermore, bullying has been associated with musculoskeletal complaints (Vie et al., 2012), psychosomatic symptoms such as headaches, hypertension, respiratory, and cardiac

complaints (Einarsen et al., 2011a). A few studies have addressed the physiological consequences of negative behaviours with biological measurements among workers (Hansen et al., 2011; Hansen et al., 2006; Kudielka & Kern, 2004). Hansen et al. (2011) showed that frequently bullied persons had a lower level of salivary cortisol compared with the reference group of non-bullied workers.

Finally, bullying at work also affects witnesses or bystanders. A study of Vartia et al. (2001) showed that non-bullied witnesses reported significant levels of general stress and mental stress reactions compared with non-bullied workers.

Organizational consequences

Workplace bullying has direct and indirect organizational consequences.

Direct consequences for organizations include more frequent turnover, higher number of sick days, job dissatisfaction, lowered organizational commitment, less creativity and innovation, higher costs through tribunals, and lowered productivity (Escartin et al., 2013; Nielsen & Einarsen, 2012a; Hogh et al., 2011).

Indirect consequences for organizations include damaged reputation, negative publicity, and loss of customers or job applicants (Hoel et al., 2011).

2.2. Organizational risk factors

Already in the 1980s Leymann argued the importance of organizational factors as antecedents of workplace bullying. He was the first to emphasize the important pathway from a poor psychosocial work environment to bullying. There have been only limited studies in the 1990s and early 2000s. During the last twenty years, many studies in this field have focused on the role of a

poor psychosocial work environment as one of the main antecedents of workplace bullying (Notelaers et al., 2010).

2.2.1. The work environment hypothesis of workplace bullying

The work environment hypothesis is a perspective that highlights the prominent role of the organization in the aetiology of workplace bullying. Workplace bullying is seen as a complex and dynamic process with several work-related causes, and this is found in areas such as job design and work organization, organizational cultures and climate, leadership, reward systems, and organizational changes (Salin & Hoel, 2011). The presence of job stressors in the working environment (e.g. role conflict and ambiguity, work pressure, harsh physical conditions etc.) may directly favor the occurrence of workplace bullying (Salin & Hoel, 2011); in addition, experiences of occupational stress are likely to deplete individual resources, leading the worker to become an "easy target" of negative behaviour (Baillien et al., 2011a). When testing the work environment hypothesis, Baillien et al. (2011b) recently observed that using well-established models of work stress may provide a better insight (both theoretically and statistically) of the organizational determinants of workplace bullying rather than adopting explorative approaches whereby lists of possible antecedents are examined. Among available theoretical perspectives, during the last thirty years the Job Demand-Control Model (JDC; Karasek, 1979) is likely to be the leading one in testing the relationship between work stress and health.

2.2.2. The job demand control (JDC) model

In the first paper we hypothesized that perceiving poor psychosocial working conditions, as assessed through the JDC model (Karasek, 1979), is positively related to the probability of reporting oneself as a target of workplace bullying.

According to the JDC model, experiences of work stress are most likely occurring in work situations characterized by high psychological demands (in terms of time pressure, workload, task concentration, and role conflicts) and low job control (in terms of decision authority and skill utilization) (Karasek & Theorell, 1990). Two hypotheses have been formulated on how the two model components, i.e. job demand and job control, combine in influencing health. According to the *job strain hypothesis*, high job demands and low job control act in an additive way in causing stress-related health outcomes, whereas the *buffer hypothesis* claims that higher job control acts as a moderator by reducing the negative health impact of job demands (multiplicative effect). In their recent systematic review, Häusser and colleagues (2010) found stronger support for the job strain hypothesis compared to the buffer hypothesis. In fact, throughout literature the additive combination of high job demands and low job control was consistently found to predict poor psychological and job-related well-being (Häusser et al., 2010) and also impaired physical health, e.g. musculoskeletal complaints and cardiovascular diseases (see for example Van der Doef & Maes 1998), while no such strong support was obtained for the buffer hypothesis.

2.2.2.1. The JDC model in the workplace bullying research

In the context of the work environment hypothesis, a number of recent studies, both cross-sectional (Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012) and longitudinal (Baillien et al. 2011a), have shown a positive association between the perception of adverse psychosocial working conditions, as assessed through the JDC model (Karasek, 1979; Karasek & Theorell, 1990), and being a target of workplace bullying. This testifies that the JDC model represents a useful theoretical approach for capturing work-related psychosocial characteristics that are relevant to the emergence of workplace bullying.

According to Baillien et al. (Baillien et al., 2011a), workplace bullying represents a social behavioural strain signalling the presence of adverse psychosocial working conditions, among which also high job demands and low job control may play a significant role. In particular, these authors maintained that a significant association between the JDC model and a higher probability of being subjected to workplace bullying may occur because high job demands and low job control may impinge on employees' resources, and thus make them more likely to become an "easy target" of negative behaviours. For instance, when confronted with high demands in the form of elevated time pressure, employees may more easily become targets in two ways: their need to raise efforts to keep up with the workload may eventually increase their stress and wear out their personal resources, while also restricting the time they have available to effectively manage emerging conflicts and invest in supportive relations at work. Exposure to workplace bullying may be also more pronounced among employees with low job control, because having poor influence on one's own work may be associated with negative work characteristics, like for instance role conflict (Notelaers et al., 2010), having the potential to increase the individual risk of being subjected to negative behaviour. Besides the "easy target" explanation, Baillien et al. (2011a) put forth also another mechanism possibly underlying the connection between the JDC model and workplace bullying, namely that the strain ensuing from the perception of high job demands and low job control may lead employees to violate existing norms and/or work habits, which in turn may induce co-workers to react negatively toward them. On the opposite side, the experience of positive working conditions may decrease the likelihood of being exposed to workplace bullying. For instance, in line with the buffer hypothesis of the JDC model, one can assume that employees who are equipped with high job control might have more opportunities to effectively cope with elevated job demands, and this reduces the potential impact of these on the probability of ending up as targets of workplace bullying.

2.2.3. A summary of the studies on leadership and workplace bullying

In the second paper I hypothesized that the perception of a poor quality of leadership is prospectively related to the reporting of more workplace bullying.

Leymann (1996), a pioneer in the studies on workplace bullying, argued the importance of factors at organizational level, primarily leadership in the bullying process. In the last decade, the impact of leadership on bullying has been substantiated by empirical findings showing that different styles of leadership are related to bullying (Nielsen, 2013b). To be more precise, autocratic leadership (Hoel et al., 2010), authoritarian leadership (Vartia, 1996), tyrannical leadership (Einarsen et al., 2007), and "petty tyranny" (Ashforth, 1994) can be seen as an abusive style of management having a direct association with workplace bullying. On the other hand, both transformational and authentic leadership styles were found to be negatively related to workplace bullying. These two leadership styles prevent workplace bullying and create conditions that promote trust as well as demonstrate a genuine sense of caring for workers and reduce the potential for frustration among groups and thereby the potential of negative relations (Laschinger & Fida 2014; Nielsen, 2013a). Furthermore, the absence of a leadership, the laissez-faire leadership, described by Skogstad et al. (2007) as a counterproductive leadership style, is associated to bullying at work (Hoel et al., 2010; Hauge et al., 2007; Skogstad et al., 2007). However, all of these studies have a cross-sectional design. The only evidence of a causal link between the perception of authentic leadership and a low level of workplace bullying comes from the longitudinal study by Laschinger & Fida (2014).

2.2.3.1. Quality of leadership

Defining poor leaders who "evidence inadequate leadership abilities for a given context", Kelloway et al. (2005) suggested that this supervisors contribute to the experience of stress in two

ways. First, having a poor quality of leadership is a source of stress itself, as leaders might be unaware of the concerns of the followers. Second, poor leadership quality may create work environment conditions characterized by lack of control and high work demands. Poor quality of leadership has negative consequences for employees and is associated with increased level of stress and retaliation (Kelloway et al., 2005). These described outcomes are widely recognized as precursors of workplace bullying (Skogstad et al., 2011). Furthermore, the satisfaction with leaders' ability to resolve work-related conflict has been found to account for the largest difference between bullied and non-bullied (O'Moore et. al study as cited by Hoel et al., 2010). Lastly, a weak leadership, characterized by a lack of involvement in decision making will be less likely to intervene when workers report bullying. As a consequence, the perpetrator perceived a lower risk of being caught and punished (Sammani & Singh, 2012; Sammani et al., 2014)) and will probably repeat his or her behaviour over time.

2.3. Characteristics of the targets

All the studies on bullying within the framework of the work environment hypothesis neglect the role of personality factors. Also Leymann in the 1980s rejected the idea of a victim personality as a cause of workplace bullying. Nonetheless, individual characteristics have been less comprehensively investigated compared to the organizational antecedents and, to date, the state of art of the literature on personality and interpersonal characteristics is still blurred (Glasø et al., 2009).

2.3.1. Individual antecedents

There is strong evidence, based on cross-sectional studies, for a relationship between negative acts and certain personality traits (Zapf & Einarsen, 2011). The personality of the victims may be important in explaining perceptions and reactions to negative behaviours (Nielsen & Einarsen,

2008). It might be expected that anxious or depressive behaviour produces a negative reaction within coworkers that leads to workplace bullying. Several studies using the Big-five questionnaire[1] found a relationship between bullying and neuroticism and low emotional stability (Coyne et al., 2000; Glasø et al., 2007). Conversely, Balducci et al. (2011b) did not find a significant moderating role of the personal dimension "neuroticism" in the relationship between high job demands and workplace bullying.

Other studies have contradictory results regarding extraversion, conscientiousness and openness for experience (Zapf & Einarsen, 2011), indicating that there might be subgroups of victims with different types of personalities (Glasø et al., 2007;Glasø et al., 2009).

Coyne at al. (2000) found that victims of bullying display a tendency to be easily upset, more anxious, tense, and suspicious with coworkers. Furthermore, a longitudinal study confirms the relationship between negative affectivity and bullying (Bowling N.A. et al., 2010).

While there is some evidence that certain individual characteristics may influence exposure to workplace bullying (Zapf & Einarsen, 2011), little is known (an exception is the study of Balducci et al., 2011b) about how these operate in the relationship between the psychosocial work environment and being a target of workplace bullying.

2.3.2. Sense of coherence

In the first paper we hypothesized sense of coherence (SOC) as a moderator between the adverse psychosocial work characteristics, in terms of high demands and low control, and workplace bullying.

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[1] The Big Five personality dimensions provide a very broad overview of someone's personality. The theory based on the Big Five factors is called the five-factor model (FFM). The five factors are extraversion, agreeableness, conscientiousness, emotional stability and intellect (openness) (Goldberg, 2001).

More than 30 years have passed since the American-Israeli medical sociologist Aaron Antonovsky introduced his salutogenic theory of SOC as one of the personal characteristics and health resources that are assumed to have an emulative function when a person is under stress. SOC explains how people feel, perceive, behave, and cope with demanding and stressful situations. SOC may either alleviate or aggravate stress reactions, and Antonovsky himself used the term "mysteries of health" in the sense that within the same stressful environments we live and work today, some persons appear to more effectively resist the ill effect of stress.

Originally interviewing Israeli women about the adaptation to menopause Antonovsky studied a group with experiences from the concentration camps of the Second World War who despite this stayed healthy (Antonovsky, 1987). He postulated because of the way they reviewed their life. Through research three components emerged: *sense of comprehensibility*, i.e. the ability of people to understand what happens around them (cognitive component); *sense of manageability*, i.e. to what extent are people able to manage the situation on their own or through significant others in their social network (instrumental component); and *sense of meaningfulness*, i.e. the ability to find meaning in the situation (motivational component).

Antonovsky refers to SOC as an enduring and stable personality disposition and provides the following definition:

> *"Sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement"* (1987, p.19).

Central to this construct is that people with a high SOC, because of their tendency to see the world as comprehensible, manageable, and meaningful, tend to display more resistance resources, which in turn may help them to better cope with the demands posed by the external environment (Antonovsky, 1993). Rather than a specific way of coping, SOC reflects a more general individual ability to select appropriate coping strategies in the face of stressors (Antonovsky, 1987). For instance, having a low SOC has been found in association with anxiety, anger, burnout, demoralization, hostility, hopelessness, and an increased perception of stressors in the environment (Eriksson & Lindstrom, 2005).

SOC is hypothesized to be a fairly stable dispositional personality orientation. During the years of childhood and adolescence, consistency in life experience enhances comprehensibility, load balances improve manageability, and participation in social activity valued decision making process. After the age of 30, SOC is expected to remain relatively stable, since the individual has already made major commitments in his or her life, such as job, marriage, style of life, etc. (Antonovsky, 1987, 1993).

To date, the most discussed question concerning SOC is its stability. There is empirical evidence demonstrating that SOC is rather stable (Eriksson and Lindstrom, 2005; Feld et al, 2000), however, even Antonovsky believed SOC to be mutable and he supposed that fluctuation in SOC are possible due to changing life events (Antonovsky 1979, 1987). This assumption has also been confirmed by Kivimaki et al. (2002) and Schnyder et al. (2000) showing that negative life experiences such as victimisation or financial difficulties can weakened SOC, by Høgh and Mikkelsen (2005) in their study on violence, and by Vastamaki et al. (2009), on unemployed individual' SOC. All these studies confirmed that SOC can change over time. Involuntary and dramatic changes in working life can alter an individual's SOC.

Conversely, SOC did not moderate neither the relationship between violence and stress reaction (Hogh & Mikkelsen, 2005) nor the relationship between workplace bullying and symptoms of post traumatic stress (Nielsen et al., 2008). Evidence for a moderating effect of SOC has been rarely observed and for this reason the moderating role of SOC is still not clear compare to the conclusive results of the mediating and direct effect (Albertsen et. al, 2000).

To date only two cross-sectional studies on SOC and workplace bullying demonstrated that SOC can be seen only as possible mediator, and not moderator, in the pathway between workplace bullying and stress reactions (Nielsen et al., 2008; Hogh & Mikkelsen, 2005).

During the last two decades the concept of SOC has been well established not only in the field of health psychology but also in work psychology. In a study, Fourie and colleagues (2008) found that SOC has a significant effect on how individuals perceive the demands and resources in their work. SOC has also been studied in many research hypotheses about direct effects, as mediator and moderator on stress symptoms (e.g. Albertsen et al., 2001; Feldt, 1997; Feldt et al., 2000; etc...). Direct and mediator effects have been identified, for example, in the study of Feldt et al. (2000) and Albertsen et al. (2001).

2.4. Mechanisms explaining workplace bullying

Until now, there is also a dearth of information about the mechanisms underlying the linkage between leadership and bullying (Nielsen, 2013b). Understanding the mechanisms involved in the development of bullying is an important theoretical gap that remains to be filled (Neall & Tuckey, 2014). Focusing the attention toward being able to predict workplace bullying through

mechanisms could lead to more effective prevention strategies and interventions for its removal from the workplace (Einarsen et al., 2011b).

Workplace bullying is a complex and dynamic process, with numerous individual and organizational predictors with many possible causality combinations between them (Mathisen et al., 2012). While so many studies have made significant contributions to explaining the bullying phenomenon in terms of organizational and individual precursors (see sections 2.2 and 2.3 in this chapter), the development of bullying is an important theoretical gap that remains to be filled. For instance, in a study on leadership and bullying, Nielsen (2013b) argued that there is a lack of knowledge about how leadership is related to workplace bullying. In his cross-sectional study, he investigated the role of team cohesion as a potential mediator in the association between leadership styles and workplace bullying. Although Nielsen failed to find a significant mediating role of team cohesion in the association between leadership and workplace bullying, the author argues that the potential importance of group cohesiveness as mediator of this relationship should not be disregarded. Focus on the attention toward being able to predict workplace bullying through mechanisms could lead to more effective prevention strategies and interventions for its removal from the workplace (Einarsen et al., 2011b). In all likelihood, bullying at work can be explained by a combination of organizational and individual factors, and there is a need for empirical studies that measure both simultaneously (Mathisen et al., 2012; Einarsen & Zapf, 2003; Zapf, 1999).

2.4.1. Social antecedent of bullying: a modern perspective

The persons involved in bullying behaviour may work together for months or years, have generally a long-term relationships, and share the same societal norms at work (Neuman & Baron, 2011). To date, possible mediators in the pathway between business practices and bullying have

been identified with the conclusion that bullying may derive from a variety of factors, many with a social nature.

Societal factors are different from *individual causes* of aggression, which focus on personal characteristics of the persons who engage in bullying behaviour. Societal factors "involve the words and/or the deeds of the persons, that is, actions that elicit or condone aggression and the context in which these actions occur" (Neuman & Baron, 2011, p. 202). Neuman and Baron (1997) found dissatisfaction with opportunities for growth and development and the societal conditions significantly correlated with workplace aggression. Qualities of work life, social support, and opportunities for growth have to be considered important organizational outcome that may explain the pathway resulting in workplace bullying. Also, feeling aggrieved, having a perception of being treated unfairly, was found to be the most common cause of workplace aggression in United Kingdom (Hoad, 1993 as cited in Neuman & Baron, 2011). From a social interactionist perspective the escalation of aggression is a process, not a single event, in which situational factors "constrain" individuals involved in aggressive exchanges. Bullying behaviour can be seen as a reaction to social situations. For instance, perception of injustice may produce feelings of frustration, stress, and negative affect that serve as a bridge between organizational factors and escalating social dynamics resulting in bullying. This mechanism might be explained by the role of social relations at work. Having or not having good social relations at work could make a difference in terms of bullying.

2.4.2. Sense of community

Nowadays, there is still a lack of knowledge about how leadership is related to workplace. The aim of the study was to employ the concept of social community at work in order to shed light on the process leading from a poor quality of leadership to workplace bullying.

The term *community,* broadly defined, describes any institution with which a person identifies him or herself and finds meaning (Heller, 1989). Work institutions, second only to family, are central to a person's identity (Mortimer et al., 1986). Workplaces are "relational communities" because people develop mutually supportive relationships (Heller, 1989). In spite of the importance of SOC, a consensus definition does not exist. McMillan and Chavis (1986; p. 9) defined a sense of community as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together". Sense of community rely on four elements designated as Membership, Influence, Integration and Fulfillment of Needs, and Shared Emotional Connection (McMillan & Chavis, 1986). The first sense of community element, *membership,* is concerned with the feeling of belonging, where borders define who belongs to the community and who does not (McMillan & Chavis, 1986). The second element, *influence*, is related to the fact that in a community its members reciprocally influence each other. Furthermore, people may also change their behavior in order to be accepted by others (Aronson et al., 2010) and behave in a conforming way that strengthens group cohesion (McMillan & Chavis, 1986). The third element, *integration and fulfillment of need*, is concerned with the point that communities emerge from certain needs and people become members because they think they can reciprocally satisfy their needs in the community. McMillan (1996) calls this third element *trade*, which assumes that members gradually start to trust each other and find possibilities to benefit from each other. Interpersonal knowledge, including knowledge of personal beliefs, values, personality, and emotions, is a crucial factor of human interaction. The fourth and last element is *shared emotional connection/art*. Via shared experiences a community becomes stronger, and the more often members interact with others in the community, the closer they get. It is important if members identify with the community's history (McMillan & Chavis, 1986). This element is also called *art*

by McMillan as members of the community, identifying themselves with the history of such group, share a repertoire of symbols, music, and stories (McMillan 1996; Lave and Wenger 1991; Wenger 1998).

This feeling of being part of a community comes from one's personal involvement and ability to influence the group (i.e., self-efficacy) and from one's sense of being supported by friends, work group members, and the organization as a whole (Chavis & Wandersman, 1990; Glynn, 1981; Price, 1985). Personal identification and meaning creation are also important aspects of feeling a sense of community (Heller, 1989).

In work organizations, for example, sense of community has been found to increase job satisfaction, organizational citizenship behavior, loyalty, civic virtue, altruism, and courtesy (Burroughs & Eby, 1988). Sense of community leads to satisfaction and commitment and is associated with involvement in community activities and problem focused coping behavior (McMillan & Chavis, 1986). Conversely, low levels of a sense of community at work have been related to increased rates of employee grievances and disharmony (Catano et al., 1993).

2.4.2.1. Sense of community at work

While the social context at work plays an important role in the bullying process, in the second study we set out to investigate whether the relationship between a poor quality of leadership and workplace bullying can be explained by social community at work, i.e. the extent to which a worker feels to be part of a community and experiences a positive atmosphere and cooperation between coworkers in his/her workplace. The concept of social community at work resembles the concept of team cohesion, defined as "the degree to which members are attracted to a group, motivated to remain part of it, and work together to achieve common goals" (Nielsen 2013; p.128).

2.4.2.2. Consequences of a low social community at work

"People react negatively when belongingness needs are unmet" (Derfer-Rozin et al. 2010, p. 140). Socially excluded people are less likely to engage in prosocial behavior, and more likely engage in aggression (Twenge et al. 2001). When there is a threat to one's sense of belongingness, people are less likely to engage in prosocial behaviour such as mutually support giving (Twenge et al. 2007), while they develop a tendency to treat the others in a more harsh and aggressive way (Maner et al., 2007; Twenge et al. 2001). Furthermore, people are more inclined to engage in counterproductive work behaviour as a behavioural response to negative experiences with the psychosocial work environment (Fox et al. 2012). With the term counterproductive work behaviour includes any behaviour that harms an organization (Fox et al. 2001). Several different types of behavior fall under Fox et al.'s (2001) definition of counterproductive work behaviour, such as sexual harassment, violence, gossiping, abusive supervision, and bullying (Fodchuk 2007).

2.4.3. Social Identity Theory

Haslam and Reicher' (2006), with their findings related to participants in a prison study, argued that a failure to develop a sense of shared identity leads to bullying, indicating that the loss of sense of community is apparent in conflicts, isolation, low social support, and lack of respect. This pattern seems to support the idea that workplace bullying is a logical adaptation to an unsupportive and stressed work environment (Wheeler et al, 2010). Underwood (2000) argued that the substantial role of social identity determines social support and a shared social identity has a positive impact on stress because it serves as a basic for the receipt of effective support from group members (as cited in Haslam and Reicher 2006). This is also consistent with both the Social Identity Theory (Tajfel and Turner, 1979).

Tajfel and Turner developed the Social Identity Theory (SIT) in 1979. The theory was originally developed to understand the psychological basis of intergroup discrimination. According to the SIT people do not automatically act the role given to them. Our acceptance of roles depends on how much we internalize the membership of a group and our view of ourselves. For example in a positively valued group (such as guards), members will tend to identify themselves with that group and behave accordingly. Conversely, in a negatively valued group people are less likely to internalize the values.

The social identity approach takes as starting point the assertion that persons' sense of self can be defined along a continuum. At one extreme, their sense of themselves is as a unique individual, and at the other, their sense of self is as a group member, their social identity. The social identity approach argues that whether a person's behaviour is determined by personal or by social identity depends on features of social context. Social identification is thus uniquely implicated in a range of positive organizational processes: in particular, so-called organizational citizenship behaviour which advances the group as a whole but may actually disadvantage the person as an individual. Social identity is also uniquely implicated in a range of negative organizational behaviour including bullying and social exclusion.

3. MATERIAL AND METHODS

3.1. Design and population

The two papers are based on data from a Danish cohort: The Workplace Bullying and Harassment Cohort (WBH; Hogh et al., 2009). WBH was measured by questionnaire in 2006 with a follow-up in 2008 (response rate 60%). At baseline, approximately two thirds of the sample were employed in public organizations such as hospitals (22%), higher education (13.8%), the eldercare sector (8.6%), public administration and services (7.2%), public schools (4.3%), and high schools (3.8%); approximately one third were employed in private workplaces such as transportation (11.6%), industries (10.8%), construction (3%), finance and business service (2.3%) or worked as doctors, dentists, and vets (2.5%) (see Hogh et al., 2012 and Hansen et al., 2011 for further details concerning the study sample).

First paper

The sample used for this study consisted of 3,363 employees (response rate 46%) from 60 workplaces in Denmark, who filled in a questionnaire in 2006 concerning their psychosocial work environment and health status. The sample was composed mostly of women (67.2%), with a mean age of 45.7 years (SD = 10.11) and a mean job seniority in the current workplace of 11.1 years (SD = 10.1).

Second paper

The longitudinal data for this study stem from a national sample of the Danish working force. Data were collected at two different time-points (in 2006 and 2008). The samples included 1,664 respondents at T2, who filled in a questionnaire concerning their psychosocial work environment and health status. Using a listwise deletion procedure, we excluded participants with missing

values on any of the study variables considered. This led to a final study sample of 1,586 participants. The sample is composed of a majority of women (67.2%), with a mean age of 45.7 years (SD = 10.1) and an average job seniority in the current workplace of 11.1 years (SD = 10.1).

3.2. Measures

Paper I

Workplace bullying was measured using a slightly modified version (see Hogh et al., 2012) of the 22-item Revised Negative Acts Questionnaire (NAQ-R; Einarsen et al., 2009). Participants were asked to rate how frequently within the past six months they had experienced each negative act listed in the NAQ-R, using a five-point response scale (i.e., "never", "now and then", "monthly", "weekly" and "daily"). Our modified version of the NAQ-R did not include item 22 ("Threats of violence or physical abuse or actual abuse"), because the questionnaire used in the survey on which this study is based already comprised a specific section investigating behaviour such as sexual harassment, threats of violence, and physical violence.

With regard to the JDC model:

Job demands was measured with four items taken from the Copenhagen Psychosocial Questionnaire (COPSOQ II, Pejtersen et al. 2010): "Is your workload unevenly distributed so it piles up?"; "Do you get behind with your work?"; "How often do you not have time to complete all your work tasks?"; "Do you have enough time for your work tasks?"

Job control was measured with four items from the COPSOQ II (Pejtersen et al. 2010), tapping the "decision authority" facet of the job control dimension: "Do you have a large degree of influence concerning your work?"; "Do you have a say in choosing who you work with?"; "Do you have any influence on what you do at work?"; "Can you influence the amount of work

assigned to you?". Items of the job demands and the job control scales were answered on a frequency-based five-point scale, ranging from "always" to "never/hardly ever". Scores of both job demands and job control were based on the mean of the corresponding items. For both scales, scores were not computed for participants with one or more missing items. All scores were linearly transformed so to range from a minimum of 0 (lowest possible job demands and job control) to a maximum of 100 (highest possible job demands and job control).

Sense of coherence (SOC) was measured with nine items developed by Setterlind and Larsson (1995) based on Antonovsky's original questionnaire. The three dimensions of SOC were measured with three items each: *Comprehensibility*: "I think I understand most of what happens in my everyday life", "Things often happen around me that I do not understand", "I find it difficult to see the coherence of my life and understand how things cohere"; *Meaningfulness*: "My life until now has not had any clear goals or purposes", "I find that what I do in my daily life is meaningful", "I think I have very much to live for"; and *Manageability*: "I think I can handle most situations that will happen in my life", "I do not think that I can influence my future to a great extent", "I know what I ought to do in my life, but I do not believe that I am able to do it". The five response options ranged from "precisely" to "not at all" (Hogh and Mikkelsen, 2005). This SOC scale has been translated into Danish, and it showed good reliability in the two samples of the Danish workforce (Albertsen et al., 2001; Hogh and Mikkelsen, 2005). The mean of the nine items was calculated to obtain an overall SOC score. SOC was not computed among those participants with missing values on one or more items. In analogy with the JDC model components, scores for SOC were linearly transformed to range from a minimum of 0 (lowest possible SOC) to a maximum of 100 (highest possible SOC).

Paper II

Workplace bullying

We measured *workplace bullying* with the NAQ-R (Einarsen et al., 2009) adapted to Danish workers. The two dimensions model work-related and person-related negative acts have remained unchanged. In the third model only one item has been removed ("threats of violence or physical abuse or actual abuse"). A total of two items ("direct and indirect threats of layoff" and "all talk stops when you enter a room where your colleagues are sitting") have been added to the NAQ-R. Participants were asked to rate how frequent within the past six months they experienced each negative act listed in the slightly modified NAQ-R, using a five-point response scale from 1 ("never") to 5 ("weekly if not daily"). The NAQ-R scale was computed by calculating the mean of the 23 items. The resulting scores were linearly transformed to range from 0 (no negative acts reported) to 100 (all negative acts reported daily).

Quality of leadership

We measured *quality of leadership* with four items taken from the Copenhagen Psychosocial Questionnaire (COPSOQ II; Pejtersen et al. 2010): "To what extent would you say that your immediate superior... 1) makes sure that the individual member of staff has good development opportunities? 2) gives high priority to job satisfaction? 3) is good at work planning? 4) is good at solving conflicts? ". The five response options ranged from "a very large extent" to "a very small extent". Scores for quality of leadership were computed by averaging the four component items. The scale was reversed so that its range varies from 1 (highest possible quality of leadership) to 5 (lowest possible quality of leadership).

Social community at work

We measured *social community at work* with three items taken from the Copenhagen Psychosocial Questionnaire (COPSOQ II; Pejtersen et al. 2010): "Is there a good atmosphere between you and your colleagues?"; "Is there good co-operation between the colleagues at work?"; "Do you feel part of a community at your place of work?". The five response options ranged from "always" to "never". The score for social community at work were computed by calculating the mean of the three component items. The scores were then reversed, ranging from a minimum of 1 (highest possible social community at work) to a maximum of 5 (lowest possible social community at work).

3.3. Statistical analyses

Chapter 3 describes two ways in which including a third variable (Z or M) in an analysis can change our understanding of the nature of the relationship between a predictor (X) and an outcome (Y). These include moderation or interaction between X and Z as predictors of Y and mediation of the effect of X on Y through M. Moderation should not be confused with mediation (see Baron and Kenny, 1986). When moderation or interaction is present, the slope to predict Y from X differs across scores on the Z control variable; in other words, the nature of the X, Y relationship differs depending on scores on Z. In a mediated causal model, the path model (as shown in Figure 3.2) represents a hypothesized causal sequence. When X is the initial cause, Y is the outcome, and M is the hypothesized mediating variable, a mediation model includes a unidirectional arrow from X to M (to represent the hypothesis that X causes M) and a unidirectional arrow from M to Y (the hypothesis that M causes Y). In addition, a mediation model may include a direct path from X to Y, as shown in Figure 3.3.

Although the terms moderation and mediation sound similar, they imply completely different hypotheses about the nature of association among variables.

3.3.1. Moderation analysis

In Paper I moderated linear regression analyses were used to investigate if sense of coherence moderates the relationship between adverse psychosocial working conditions and workplace bullying.

The simplest form of moderation is where a relationship between an independent variable, *adverse psychosocial working conditions*, and a dependent variable, workplace bullying, changes according to the value of a moderator variable, *sense of coherence*.
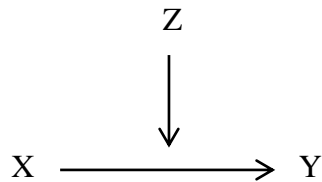

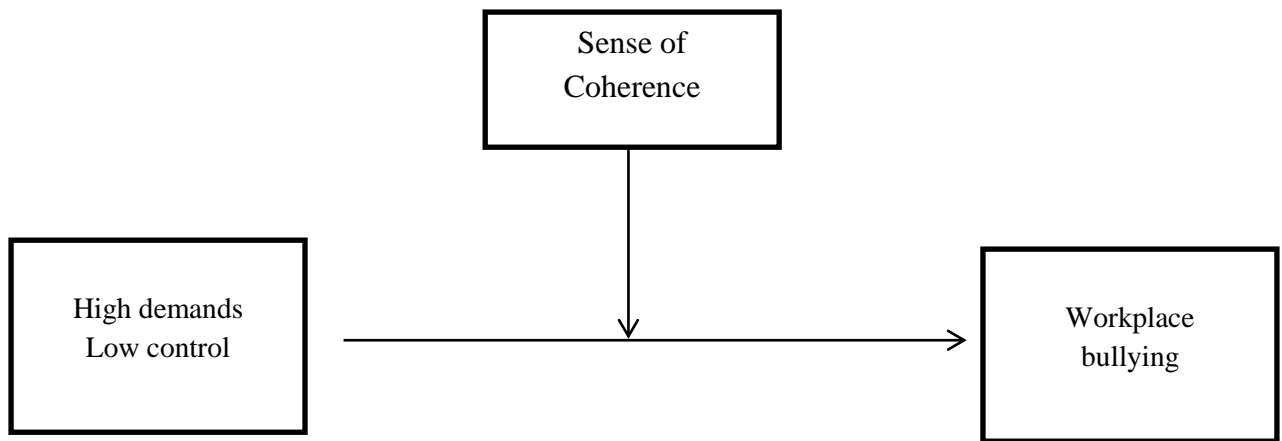Figure 3.1. Moderation of X, Y relationship by Z.

Figure 3.2. Theoretical model. (Paper I)

A straightforward test of a linear relationship between X and Y is given by the regression equation of Y on X:

$Y = b_0 + b_1 X + \varepsilon$

where b_0 is the intercept (the expected value of Y when X=0), b_1 is the coefficient of X (the expected change in Y corresponding to a change of one unit in X), and ε is the residual (error term) (Dowson, 2014).

We conducted two separate regression models (one for work-related bullying and one for person-related bullying as dependent variables), with main and interaction effects entered hierarchically in order to test for their unique contribution in terms of explained variance. In step 1, only the confounders (i.e., gender and age) were included. In step 2, we then entered the three variables job demands, job control and SOC (main effects). In step 3, we added the interaction term 'job demands*job control' to the model. Finally, in steps 4 and 5, we entered the two interaction terms 'job demands*SOC' and 'job control*SOC', respectively. For each type of workplace bullying, we also tested the three-way interaction term 'demands*control*SOC'. However, the regression

coefficients related to the three-way interaction terms were non-significant. As recommended by Aiken and West (1991), all interaction terms were computed by multiplying previously standardized variables. The amount of additional variance (and the corresponding statistical significance, calculated with use of the incremental F-test) explained by the variables entered in each consecutive step is shown as ΔR^2.

3.3.1.1. Statistical significance *vs* practical relevance

In the first paper we analysed sense of coherence as moderator between adverse psychosocial working conditions and workplace bullying. This raises serious questions about how to interpret the results of the moderation analysis.

We built a series of plots to examine the nature of each statistically significant interaction. In line with Aiken and West (1991), we calculated the slopes representing the association between the independent variable (e.g., job demands) and the dependent variable (e.g., work-related bullying) at one standard deviation respectively below and above the mean of the moderator (e.g., SOC).

We also tested the effect sizes of each significant interaction by means of f2 (Aiken and West, 1991), which is defined as the "ratio of variance explained by the interaction term alone to the unexplained variance in the final model" (Dawson, 2014, p.14; see also this study for the formula used to calculate f2). According to Cohen (2003), values of f2 of 0.02, 0.15, and 0.35 correspond to interactions with small, moderate and strong effect size, respectively. Even when significant on statistical grounds, it must be noted that all the interactions observed in this study were very low in magnitude. This is indicated by three elements: (a) the low additional explained variance due to the interactions (ranging from 0.01% to 0.02%), (b) the f2 values that were substantially below a small interaction effect size (i.e., 0.02) as per Cohen (2003), and (c) the plots showing that the slopes corresponding to the association between the predictors and workplace bullying at different

levels of the moderators were almost parallel. The detection of significant but small interaction effects may have resulted from the high statistical power that characterizes our study, namely 3,046 participants. A sample of this width may in fact enable to easy detection of interaction effects with an effect size as low as 0.001 in terms of f2 (Aguinis et al., 2005). Therefore, based on these considerations, and following Dawson (2014) who recently argued that researchers should "focus on the practical relevance of findings rather than their statistical significance alone" (p. 14) when interpreting interactive effects, we conclude that the interactions observed in our study are to be regarded as having poor value seen from a practical angle.

All analyses were conducted by use of the Statistical package for the Social Sciences (SPSS) version 20.0.

3.3.2. Mediation analysis

In Paper II, to investigate the longitudinal relationship between quality of leadership and workplace bullying, a linear regression adjusted for workplace bullying at baseline were carried out. To investigate experienced social community at work as partial or full mediator between quality of leadership and workplace bullying we ran a bootstrap analysis using the SPSS macro produced by Hayes (2012).

Mediation is a hypothesized causal chain in which one variable affects a second variable that, in turn, affects a third variable. The intervening variable, M, is the mediator. It "mediates" the relationship between a predictor, X, and an outcome, Y. Graphically, mediation can be depicted in the following way:

A. Simple Relationship
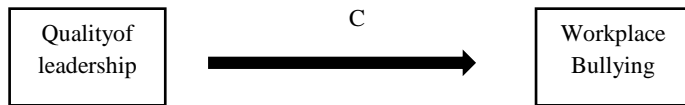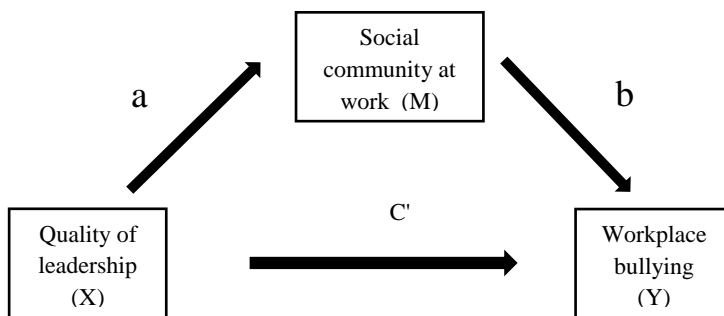

B. Mediated Relationship

 Figure 3.3. A conceptual diagram of a simple mediation model. (Paper II)

The top of Figure 3.3 shows a basic relationship between a predictor and an outcome (*c*). The bottom of the figure shows that these variables are also related to a third variable: the predictor (x) also predicts the mediator (M) through the path called *a;* the mediator (M) also predicts the outcome (Y) through the path denoted by *b.* The relationship between the predictor and outcome will probably be different when the mediator is also included in the model and so is denoted *c'.*

Paths a and b are called direct effects. The mediational effect, in which *quality of leadership* leads to *workplace bullying* through *social community at work,* is called the indirect effect. The indirect effect represents the portion of the relationship between *quality of leadership* and *workplace bullying* that is mediated by *social community at work*.

Each path (a, b, c and c') represent the unstandardized regression coefficient between the variables connected by the arrows; they represent the strength of the relationship between the variables.

There is mediation when the strength of the relationship between the predictor and outcome is reduced by including the mediator (e.g. the regression parameter for c' is smaller than c).

Historically this model was tested through a series of regression analyses, which reflect the four conditions necessary to demonstrate mediation (Baron and Kenny, 1986).

For testing mediation Baron and Kenny (1986) proposed a four step approach in which several regression analyses are conducted and significance of the coefficients is examined at each step. Take a look at the steps below to follow the description (note that path c could also be called a direct effect).

Step 1: Show that the causal variable is correlated with the outcome. Use Y as the criterion variable in a regression equation and X as a predictor (estimate and test path c in the above figure). This step establishes that there is an effect that may be mediated.

Step 2: Show that the causal variable is correlated with the mediator. Use M as the criterion variable in the regression equation and X as a predictor (estimate and test path a). This step essentially involves treating the mediator as if it were an outcome variable.

Step 3: Show that the mediator affects the outcome variable. Use Y as the criterion variable in a regression equation and X and M as predictors (estimate and test path b). It is not sufficient just to correlate the mediator with the outcome because the mediator and the outcome may be correlated because they are both caused by the causal variable M. Thus, the causal variable must be controlled in establishing the effect of the mediator on the outcome.

Step 4: To establish that M completely mediates the X-Y relationship, the effect of X on Y controlling for M (path c) should be zero (see discussion below on significance testing). The effects in both steps 3 and 4 are estimated in the same equation.

The purpose of steps 1-3 is to establish that zero-order relationships among the variables exist. If one or more of these relationships are non-significant, researchers usually conclude that mediation is not possible or likely (although this is not always true; see MacKinnon, Fairchild, & Fritz, 2007).

Many researchers still use this approach to test mediation. However, the method of regression has some limitations. Assuming there are significant relationships from steps 1 through 3, one proceeds to step 4. In the 4-step approach, some form of mediation is supported if the effect of M (path b) remains significant after controlling for X. If X is no longer significant when M is controlled, the finding supports full mediation. If X is still significant (i.e., both X and M both significantly predict Y), the finding supports partial mediation. The above four-step approach is the general approach many researchers use. There are potential problems with this approach, however. One problem is that we do not ever really test the significance of the indirect pathway—that X affects Y through the compound pathways of a and b. A second problem is that the Barron and Kenny approach tends to miss some true mediation effects (Type II errors)

An alternative, and preferred approach, is to calculate the indirect effect and test it for significance. The regression coefficient for the indirect effect represents the change in Y for every unit change in X that is mediated by M.

3.3.2.1. Bootstrap analysis

In Paper II, to test mediation we adopted an alternative approach, a bootstrapping analysis using the SPSS macro produced by Hayes (2012). The bootstrapping procedure allows for a robust test

of the indirect effects of social community at work in the relationship between the quality of leadership and workplace bullying (Preacher and Hayes, 2008). Bootstrapping is a non-parametric approach recommended when testing mediation in the light of the typical non-normal sampling distribution of indirect effects, which may bias confidence intervals and produce incorrect estimates of significance as a result (Preacher and Hayes, 2008). Bootstrapping calculates confidence intervals based on the empirically derived bootstrapped sampling distribution of indirect effects. Test of the mediation effects was based on 5,000 bootstrapped samples, with the level of confidence intervals set to 95%. All analyses were conducted with the Statistical Package for the Social Sciences (SPSS) version 20.0.

4. SUMMARY OF RESULTS

This chapter summarizes the main findings from the two papers.

4.1. PAPER 1: Do personal dispositions affect the relationship between adverse psychosocial working conditions and workplace bullying? A cross-sectional study of 3,046 Danish employees

We examined employees (N=3,363) from 60 Danish workplaces to test whether a personal resource, i.e. sense of coherence (SOC), moderates the relationship between the Job Demand-Control model (JDC) and workplace bullying (WB). All scales showed good internal consistency (table 4.1), with the only exception of work-related bullying (Cronbach's alpha = 0.69), which reliability was slightly below the commonly accepted threshold of ≥0.70 (Nunnally, 1978, p. 245). All the other measures, job demands, job control, and SOC were all significantly related in the expected direction, and to both dimensions of WB.

	Mean	SD	α	1	2	3	4	5	6
1. Male	-	-	-	1					
2. Age	45.8	10.1	-	.07**	1				
3. Job demands	45.6	19.2	0.81	-.03	.05*	1			
4. Job control	48.9	20.9	0.78	.11**	-.00	.03*	1		
5. Sense of Coherence (SOC)	81.9	12.0	0.75	-.09**	-.04	-.04*	.23**	1	
6. Work-related bullying	10.2	2.8	0.69	.04*	-.07**	.37**	-.15**	-.24***	1
7. Person-related bullying	13.7	2.5	0.78	.05*	-.04*	.15**	-.14**	-.29***	.56**

*p<.05; **p<.01; ***p<.001.
For all scales, high scores indicate a high perception of the corresponding construct.

Table 4.1. Means, standard deviations, internal consistencies, and zero-order correlations of the study variables (n = 3046).

As shown in table 4.2, hierarchical linear regression analyses showed that JDC was significantly associated with WB. After adjusting for gender, age, and SOC, job demands and job control (step 2) were both significantly associated, in the expected direction, and with work-related bullying (standardized β coefficients of 0.37, P<0.001 and of -0.13, P<0.001, respectively), lending support to the job strain hypothesis of the JDC model). Job demands were more strongly associated than job control with work-related workplace bullying. High job control was found to statistically significantly reduce the positive association between high job demands and work-related bullying (standardized β coefficients of -0.04, P=0.02; ΔR2=0.001, P=0.02). The *buffer hypothesis* of the JDC model) was supported in terms of statistical significance. However, the f^2 value (i.e., 0.001) for the 'job demand*control interaction' was substantially below what is considered to be a small effect size (0.02) according to Cohen (2003).

		Work-related bullying		Person-related bullying[a]	
		β	*P*	β	*P*
Step 1	Male	0.10	*0.04*	0.10	*0.01*
	Age	-0.07	*0.02*	-0.05	*0.01*
Step 2	Job demands	0.37	*<0.001*	0.15	*<0.001*
	Job control	-0.13	*<0.001*	-0.09	*<0.001*
	SOC	-0.19	*<0.001*	-0.26	*<0.001*
Step 3	Job demands*job control	-0.04	*0.02*	-0.04	*0.01*
Step 4	Job demands*SOC	-0.03	*0.04*	-0.02	*0.22*
Step 5	Job control*SOC	-0.01	*0.36*	0.03	*0.05*
	Total R^2	**0.214**	***<0.001***	**0.119**	***<0.001***
	ΔR^2 step 1	0.007	*<0.001*	0.004	*0.003*
	ΔR^2 step 2	0.204	*<0.001*	0.111	*<0.001*
	ΔR^2 step 3	0.001	*0.02*	0.002	*0.01*
	ΔR^2 step 4	0.001	*0.04*	0.000	*0.22*
	ΔR^2 step 5	0.000	*0.36*	0.001	*0.05*

[a]Log-transformed scores.
For all scales, high scores indicate a high perception of the corresponding construct.
Beta standardized coefficients are based on the unstandardized solution of the regression model (Aiken and West, 1991). The sum of the R^2 obtained in the different steps may not correspond to the total R^2 due to rounding off.

Table 4.2. Moderated linear regressions testing the relationships between the job demand-control model, sense of coherence (SOC), work-related bullying, and person-related bullying (n = 3,046).

SOC displayed a significant, though practically negligible, moderating effect in the relationship between JDC and WB. Such small effect size is also evident in figure 4.1a, showing that the two slopes that represent the associations between job demands and work-related bullying at low and high levels of job control were almost parallel. Figure 4.2a showed a very slight difference in the inclination of the two slopes representing the associations between job demands and work-related bullying at low and high SOC levels. The buffer hypothesis of the JDC model is supported also in relation to person-related bullying, since high job control statistically significantly reduces the

positive association between high job demands and this type of bullying (standardized β coefficients of -0.04, P=0.01; ΔR2=0.002, P=0.01). However, as also mentioned in relation to work-related bullying, both the f2 value (0.002) and the visual representation (Figure 4.1b) of the interaction between job demands and job control on person-related bullying are consistent with job control displaying a buffer effect of a very low magnitude. There is a statistically significant moderating effect of high SOC in the relationship between low job control and person-related bullying (standardized β coefficients of 0.03, P=0.05; ΔR2=0.001, P=0.05). Again, however, both the f2 value (0.001) and Figure 4.2b indicate that the effect size of the interaction between job control and SOC on person-related bullying is very poor.

This suggests that negative psychosocial working conditions are associated with WB independently of personal dispositions, at least in terms of SOC.
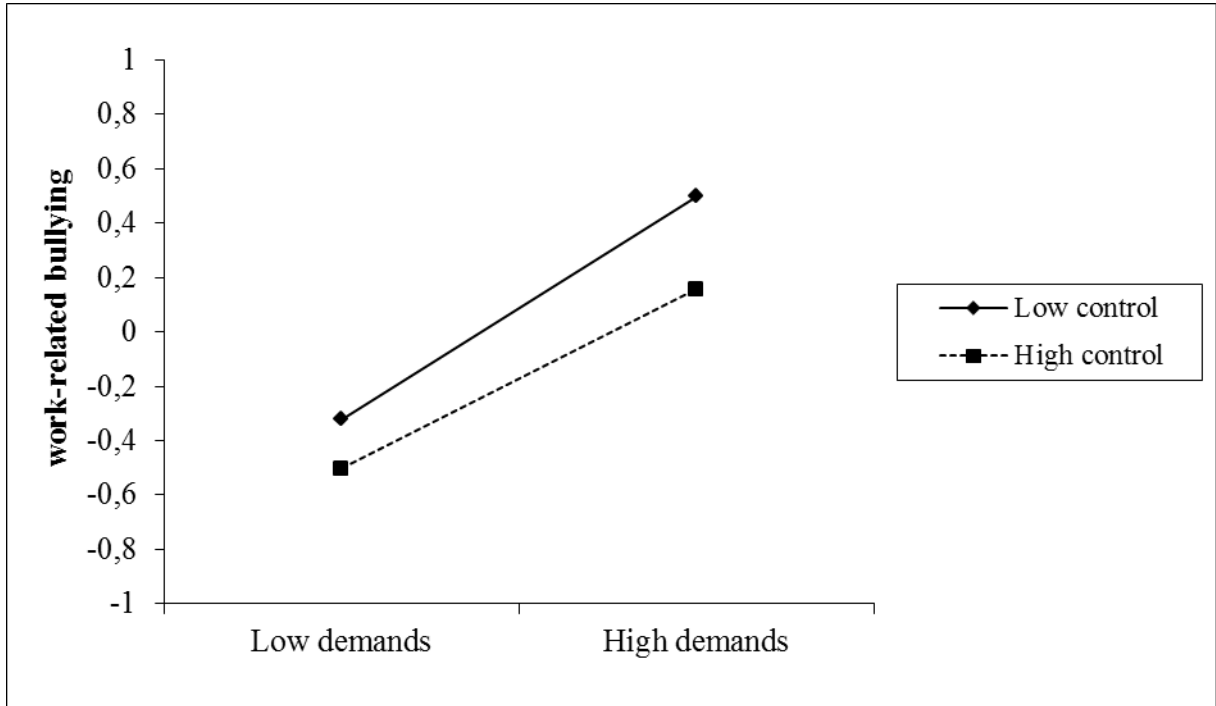
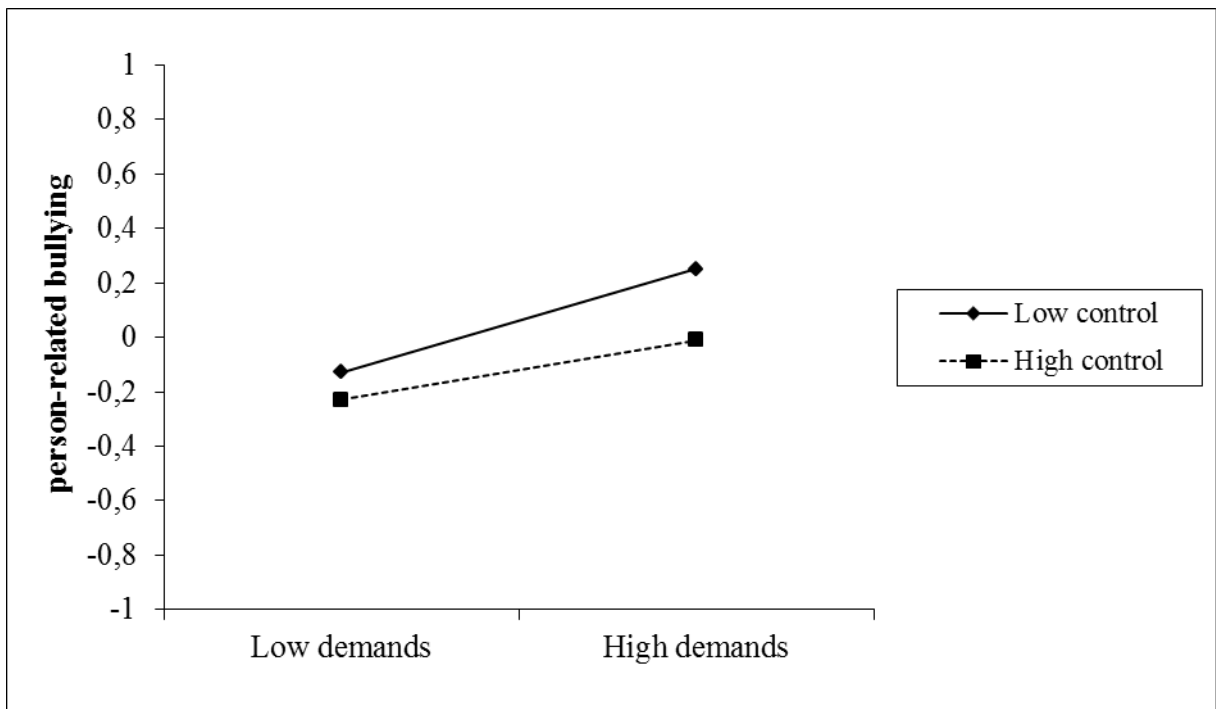Figure 4.1a. Interaction of job demands and job control (±1 SD of the mean) on work-related bullying.

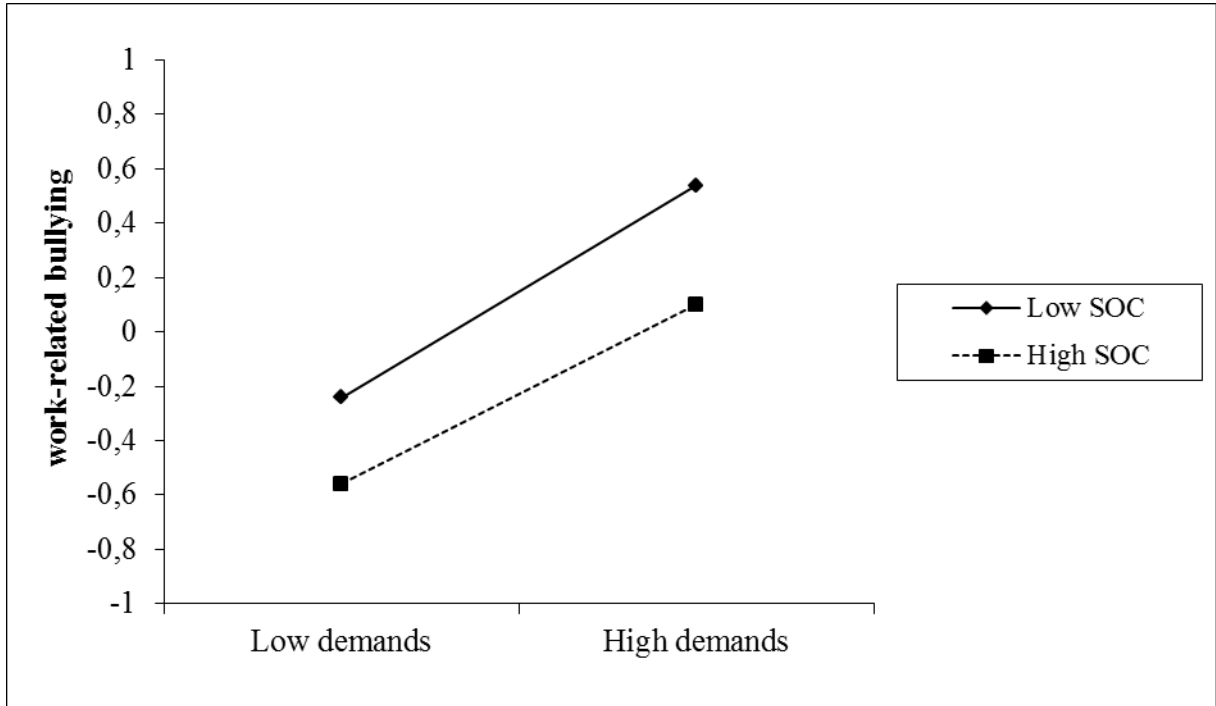Figure 4.1b. Interaction of job demands and job control (±1 SD of the mean) on person-related bullying.

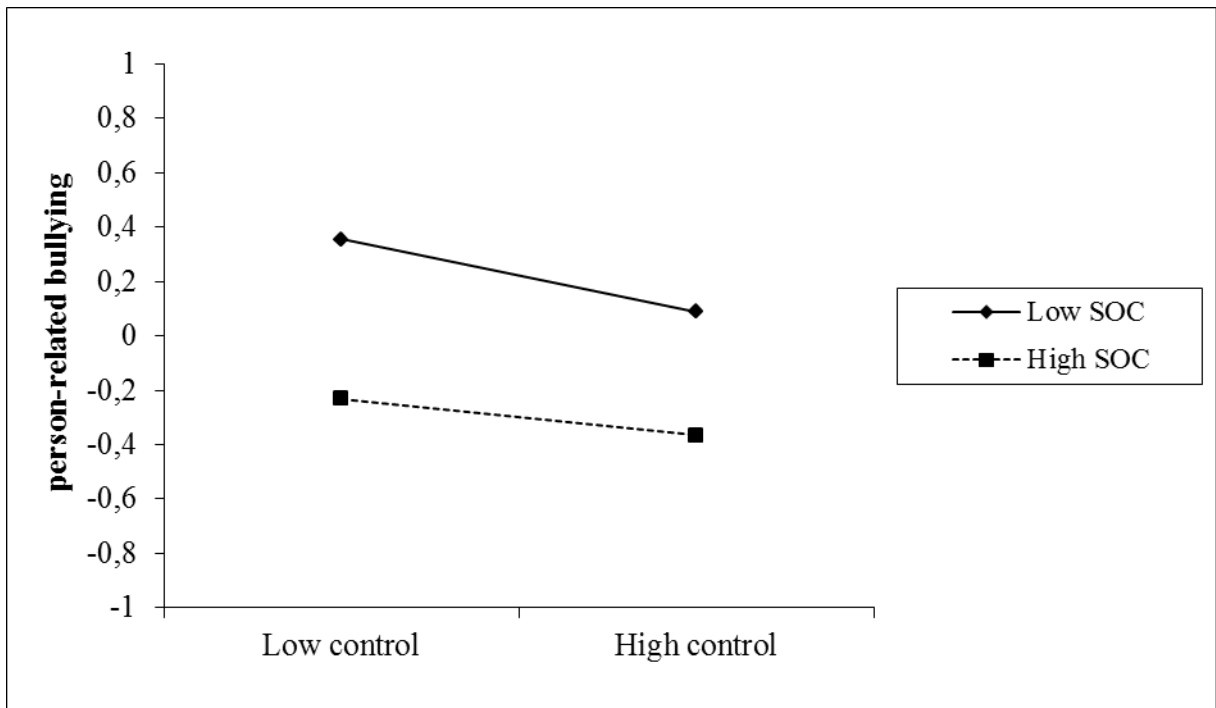Figure 4.2a. Interaction of job demands and SOC (±1 SD of the mean) on work-related bullying.

Figure 4.2b. Interaction of job control and SOC (±1 SD of the mean) on person-related bullying.

4.2. PAPER 2: Is the relationship between quality of leadership and workplace bullying mediated by social community at work?

Survey data were collected at two different time-points (2006 to 2008) among 1,664 employees from 60 Danish workplaces. Means, standard deviations, zero-order correlations, and internal consistencies of the study variables at both T1 and T2 are presented in table 4.3. All scales show good internal consistency, with all variables relevant to our hypotheses being significantly correlated in the expected direction, at the $p<.01$ level.

Results indicate that quality of leadership plays a role in establishing working conditions that lead to workplace bullying. Furthermore, social community at work mediates the effect of poor quality of leadership on bullying. This longitudinal study adds to previous cross-sectional studies on the substantial role played by leaders in the bullying process. Furthermore, within the leadership-bullying relationship, social community at work acts as a full mediator, adding a significant contribution to the discussion of mechanisms involved in the bullying process.

The results of the regression analysis indicate that quality of leadership plays a role in establishing working conditions that lead to workplace bullying (table 4.4). Furthermore, social community at work fully mediates the effect of poor quality of leadership on bullying. Figure 4.4 depicts the research model and the different paths tested. At T1, a poor quality of leadership was significantly associated with a low social community at work (path a; b= 0.15, p<0.001). In addition, a low social community at work at T1is significantly associated with workplace bullying at T2 (path b; b= 0.55, p<0.001). A poor quality of leadership at T1significantly predicts workplace bullying at T2 (path c; b= 0.36, p>0.05; total R^2=0.29, p<0.001), providing support to the relationship between poor quality of leadership and workplace bullying two years later. This longitudinal study adds to previous cross-sectional studies on the substantial role played by leaders in the bullying process. Within the leadership-bullying relationship, after including the mediator, social community at work, a poor quality of leadership is no longer a significant predictor of subsequent workplace bullying (path c'; b= 0.28, p=0.17). This means that perceiving a low social community at work fully mediates the leadership-bullying relationship (path ab; b= 0.08, p<0.05).

	Mean	SD	1	2	3	4	5	6
1.Age	0.30	0.46						
2.Gender	47.01	9.54						
3. Poor quality of leadership (T1)	2.68	0.98	(0.87)					
4. Social community at work (T1)	3.53	0.71	0.35	(0.81)				
5. Workplace bullying (T1)	6.53	7.40	0.39	-0.45	(0.89)			
6. Poor quality of leadership (T2)	2.87	0.97	0.51	0.24	0.26	(0.88)		
7. Social community at work (T2)	4.13	0.65	0.26	0.45	0.29	0.41	(0.85)	
8. Workplace bullying (T2)	5.50	6.83	-0.26	-0.29	0.53	-0.43	-0.49	(0.89)

Note: Cronbach's alpha coefficients are presented on the diagonal in parentheses. Correlations are all significant at the $p<.01$ level; T1 = Time 1; T2 = Time 2.

Table 4.3. Descriptive Statistics, correlations and internal consistency of the study variables

	Mediator		Outcome						
	Social community at work		Workplace Bullying T2						
	Direct effect (path a)		Total effect (path c)		Direct effect (path c' and b)		Indirect effect (path ab)	Bootstrap 95% CI Indirect effect		
	b	SE	b	SE	b	SE	b	SE	LLCI	ULCI
Gender (male)	0.02	0.03	0.02	0.32	0.01	0.32				
Age	0.003	0.001	0.07	0.02	-0.01	0.02				
Workplace bullying T1	0.03**	0.02	0.55**	0.02		0.02				
Poor quality of leadership T1	0.15**	0.013	0.36*	0.16	0.28	0.17	0.08*	0.04	0.005	0.16
Social community at work T1 (Path b)					0.69*	0.30				
R^2		0.25**		0.29**		0.29**				

Note: b, unstandardized regression coefficients; SE, Standard Error; LLCI, Lower Limit 95% Confidence Interval; ULCI, Upper Limit 95% Confidence Interval.

**p<0.001, *p<0.05.

Table 4.4. Multiple linear regression testing the total, direct and indirect (via social community at work at T1) effect of poor quality of leadership at T1 on workplace bullying at T2.

Total effect: .36

Direct effect: .28

| Quality of Leadership (Time 1) | → | Social Community at Work (Time 1) | → | Workplace Bullying (Time 2) |
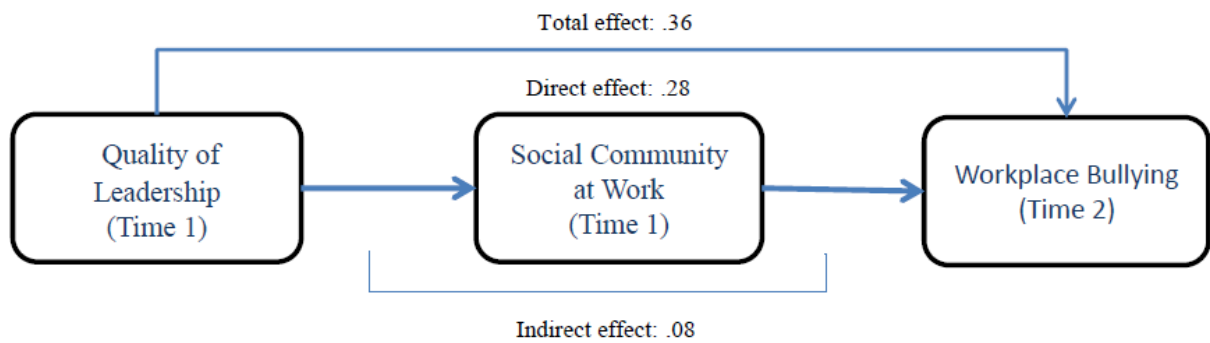
Indirect effect: .08

Note: Unstardardized regression coefficients adjusted for gender, age, and workplace bullying at Time 1.
Indirect effects estimates based on 5,000 bootstrap samples.
All coefficients significant at p>0.001.

Figure 4.3. Direct and by social community at work mediated (indirect) association between poor leadership quality and workplace bullying, n=1592.

5. DISCUSSION

5.1. Main findings

Paper I confirms an association between a poor psychosocial work environment, in terms of high demands and low control, and bullying at work. Furthermore, we do not find a moderated effect of sense of coherence in the relationship between adverse psychosocial working conditions and bullying. This contributes to the blurred picture of the role of personality and individual characteristics as antecedents of bullying in explaining the enactment of workplace bullying. These findings further strengthen the work environment hypothesis of workplace bullying by indicating that perceived adverse working conditions may virtually pose all employees at a higher risk of becoming a target of negative behaviour at work, independently of his/her sense of coherence.

Paper II confirms the role of a poor quality of leadership as antecedent of workplace bullying two years later. Furthermore, within this well documented link, social community at work acts as a full mediator that contributes significantly to the discussion of mechanisms involved in the bullying process.

5.2. Discussion

Paper I

The association we find between the JDC model and workplace bullying is in line with recent studies (Baillien et al., 2011a; Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012). However, the results provide a more specific picture by showing that the relationship between the two components of the JDC model and workplace bullying may differ depending whether the latter is directed to the employee as person or to his/her work role. In line with the work

environment hypothesis of workplace bullying, these results have two main implications. Perceiving high demands is crucial in creating conditions of vulnerability that make workers more likely to risk being bullied. Furthermore, workers who experience high job demands may behave in ways that lead other workers to engage in negative acts (e.g. persistent criticisms, withholding information, etc...).

This study only supports the strain hypothesis where job demands and job control combine additively to explain workplace bullying. We do not find a buffer effect where job control moderates the effect of job demands on workplace bullying. A buffer effect is found in cross-sectional studies (Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012) using a general negative acts score as measure of workplace bullying. However, in the only longitudinal study (n=320) Baillien et al. (2011a) did not find support for the buffer hypothesis of the JDC model.

To the best of our knowledge, no published studies exist focusing of the role played by SOC in the relationship between the psychosocial work environment and workplace bullying. Contrary to our expectation, SOC does not act as a moderator in the relationship between the JDC model and workplace bullying; this hypothesis is not supported in terms of practical relevance. Notwithstanding, a significant moderation can be suspected on the basis of the transactional theory of stress, which emphasizes the role of personal characteristics in shaping the effects of the work environment on health and well-being (Lazarus and Folkman, 1984). People with a weak SOC are expected to show poor coping abilities and a less resistant personality (Nel et al., 2004), leading them to be particularly subjected to the impact of high job demands-low control conditions as for becoming a target of bullying at work. Previously, SOC was found to buffer the relationship between exposure to adverse psychosocial working conditions (also when measured with the Karasek's model) and strain outcomes other than bullying at work (Albertsen et al., 2001; Soderfeldt 2000; Feld, 1997). The results demonstrate that having a low SOC is linked *per se* to a

high probability of reporting both work-related and person-related bullying, which is in line with previous studies on the role of personal characteristics within the bullying process (e.g. Zapf and Einarsen, 2011; Bowling et al., 2010). However SOC does not act as a moderator suggesting that perceiving a stressful psychosocial work environment, in terms of high demands and low control, leads to workplace bullying irrespective of individual characteristics, at least in terms of SOC. This conclusion finds support also in the study of Balducci et al. (2011), who were not able to observe a significant moderating effect of neuroticism on the relationship between job demands and bullying at work.

Paper II

In the second study, quality of leadership is related to workplace bullying two years later. This result is in line with the working environment hypothesis of workplace bullying (e.g. Agervold and Mikkelsen, 2004; Hoel and Salin, 2003; Einarsen, 2000; Leymann, 1996), which emphasizes the important role of work related factors in the enactment of the bullying process. This study is in line with previous studies on leadership-bullying relationship.

However, with only the exception of the study of Laschinger and Fida (2014), previous studies on leadership and workplace bullying have been cross-sectional (e.g. Nielsen 2013, Hoel et al., 2010; Hauge et al., 2007; Skogstad et al., 2007). Although, in theory there is a strong case for arguing a causal relationship between leadership styles and bullying, one cannot exclude that reverse causation may explain the observed statistical associations. Possibly the workers that are bullied are more likely to make negative evaluations of their work environment and report less favorable leadership characteristics (Nielsen 2013, Aasland et al. 2009, Hauge et al. 2007). By finding a significant longitudinal relationship between poor quality of leadership at baseline and workplace bullying at follow-up, after controlling for initial levels of workplace bullying, we are able to provide more robust evidence to support a causal link. Leadership represents a unique factor

within the psychosocial work environment. As such, leadership practise may create a poor work environment characterised by for instance high workload and role conflict. Conversely, high leadership quality may moderate the negative effects of various work environment factors.

A lack of adequate leadership may lead to frustrations and stress within coworkers, and thus result in interpersonal tensions and conflicts (Einarsen, 1999). Furthermore, workers who feel ignored by leaders may engage in social loafing (e.g. lack of efforts) and then yield a poor performance (Wang and Howel, 2010). Colleagues may respond to the lack of effort of coworkers and to poor performers with stress perceptions and counterproductive work behaviours. Furthermore, in two meta-analyses (Le Pine et al., 2002; Organ & Ryan, 1995) leaders' support was found to be a significant predictor of organizational citizen behavior. Leaders' supportive interactions with workers create conditions that can facilitate organization citizen behavior (Fodchuk, 2007). All these described outcomes are consistent with an escalation of the bullying process determined by the perception of quality of leadership.

In our second study, we also find a significant mediating effect of low social community at work (full mediation) in the relationship between poor quality of leadership and workplace bullying. In particular, this study sheds light on a mediating variable underlying the process leading to bullying, thus expanding existing research on workplace bullying. A poor leadership quality may provide a fertile ground through a weakening of social community at work. Social community at work has been rarely investigated within the workplace bullying literature, with the only exception of the study by Nielsen (2013). In his study, team cohesion, a concept close to social community at work, was not found to mediate the relationship between leadership and bullying. Nevertheless, the author sustains the role played by team cohesion in the understanding of the bullying process. The question arises as to which are the possible mechanisms involved in the relationship between a low social community at work and a high probability of being exposed to workplace bullying?

Workers who perceive a poor quality of leadership will encounter a deteriorated social community, where the access to social support is denied (Kelloway et al., 2005). Furthermore, when social community at work is compromised, coworkers who experience a negative atmosphere, without cooperation and a weak sense of community will be more at risk to report bullying. In line with the mediation hypothesis, we assume that social community at work acts as an intervening variable in the relationship between poor quality of leadership and workplace bullying. This entails the assumption that social community at work can be modified by the employees' experience of the quality of leadership. We hypothesize four conditions that may attract workplace bullying from co-workers.

Firstly, a deficit in belongingness may affect performance (Baumeister et al., 2002) and low performers are more likely to be bullied (Einarsen, 1999). In specific, they are more likely to perceive a direct form of workplace bullying (e.g. hostile body language, threats) and likely to enter a vicious circle where coworkers victimize them for violating norms of job performance and where being bullied is associated with further decreases in performance (Jensen et al, 2014). In the eyes of potential perpetrators, inadequate performance may be taken as a justification for the enactment of bullying (Einarsen, 1999).

Secondly, a behaviour that decreases sharply when people do not feel to be part of a community is a prosocial behaviour (Twenge et al., 2007). Such as helping and cooperation, prosocial behaviour is encouraged by the culture and is performed to benefit others in real time and the self in the long run, providing immense rewards (Twenge et al., 2007). These acts are vital for the community system. Therefore, when there is not a culture that encourages such acts, or when being part of a community is not experienced, people's willingness to perform prosocial behaviour may decrease. In essence, being in a community offers the individual mutual support and cooperation, and in exchange the individual conforms his or her behaviour to the society's rules. When a society

withholds belongingness, the individual will not be motivated to conform to these rules anymore because they will be more focused to cope with threats rather than cooperate with others. The damage from this compromised social community at work should permeate the workplace leading to a stressful work environment characterized by poor interpersonal relationship between coworkers. Low levels of social climate and poor interpersonal relationship are the strongest precursors of workplace bullying (Skogstad et al., 2011), and this supports the idea that workplace bullying is a logical adaptation to an unsupportive and stressed work environment (Wheeler et al, 2010).

Furthermore, people tend to do onto other people what other people actually did onto them. This norm of reciprocity has been found to "exert a powerful influence upon various social behaviours ranging from altruism and assistance on the one hand through aggression and violence on the other" (Baron et al., 1974, p. 374). The importance of reciprocity has a long history. Cicero says, "There is no duty more indispensable than that of returning a kindness" (as cited in Neuman and Baron, 2011, p. 205). In a similar but opposite vein, with a negative form of reciprocity there is a return of injuries (Goulder, 1960 as cited in Neuman and Baron 2011) and it is also a biblical feature like "an eye for an eye and a tooth for a tooth". The relevance of reciprocity in the social context led Becker in 1956 to view the human species as "Homo Reciprocus", because "All contacts among men rest on the schema of giving and returning the equivalence (Simmel 1950 as cited in Neuman and Baron 2011).

Thirdly, when the sense of community is compromised, people often tend to engage in behaviour that may preclude social acceptance (De Wall et al., 2008). Overt behaviour in order to gain social acceptance, for instance prosocial efforts to impress someone, may be perceived as insincere and therefore elicit negative responses by others, which may lead to social exclusion (DeWall et al., 2008). Social exclusion and isolation are examples of workplace bullying behaviour used to

humiliate or intimidate the victims (Einarsen, 2003). In addition, people who show inappropriate behavioural styles may be stigmatized by coworkers as "outsider" (Zapf and Einarsen, 2011). In accordance with the social identity theory (Tajfel and Turner, 1986), people that are perceived as outsider may be easily singled out as targets in the context of bullying-prone workplaces.

Fourthly, if hurt feelings and other negative emotions (Leary, 2002) due to perceiving a poor social community at work result in work barriers, such as impeding the achievement of the desired goals, the person will experience anger with consequences at the interpersonal level, including the enactment of antisocial behaviour (Buckley et al., 2004). Previous researchers, on consequences of threatened of sense of community, demonstrated that this may lead to aggression, anger, hurt and sadness (Buckley et al., 2004). Supporting a link between people who act aggressively and report negative acts, several studies have argued that aggressive behaviour provoke observers to either behave in an aggressive way to counterattack or to control this behaviour using coercive force (Tedeschi and Felson, 1994). This constellation is in agreement with the profile labeled "provocative victims" of bullying by Olweus (1978) where others perceive an individual characterized by aggression reaction patterns as annoying, irritating, and as a source of tension. Provocative victims risk social isolation, a form of bullying (Matthiesen and Einarsen, 2007).

5.3. Strengths and limitations

Regarding paper I, I first focus on the role of SOC in the relationship between the JDC model and being a target of workplace bullying. We use a well-established theoretical framework, i.e. the JDC model, to gauge the psychosocial work environment, and also to distinguish between two forms of workplace bullying, i.e., work- and person-related bullying.

To my knowledge the mechanisms explaining the relationship between leadership quality and workplace bullying has not previously been investigated. The strength of paper II is that it focuses

into a mechanism, the mediation of social community at work, which can explain the phenomenon of WB. A further strength is the use of a longitudinal design.

For both paper I and II, analyses were conducted on a large sample of workers with heterogeneous occupational characteristics, which increased the potential of generalizing these results beyond specific occupational groups.

However, these two studies also present a number of limitations.

For the first study we employed a cross-sectional design, and we cannot draw any causal conclusion about the hypothesized relationship between the psychosocial work environment and bullying. Reverse causation may be an issue because the victims of bullying are most likely to report their work environment as poor (Bowling & Beehr, 2006). We argue that the link between the poor psychosocial work environment, in terms of high demands and low control, and bullying at work operates most likely in the hypothesized direction of the study. In line with this hypothesis, a study of Baillien et al., (2011a) confirms that the JDC model acts as a significant antecedent of workplace bullying, while a reverse causation effect is not found.

Furthermore, we only use two work dimensions (job demands and job control) to describe the work environment.

For both paper I and paper II, a limitation may stem from the self-report measures, raising questions about common method bias (Podsakoff et al., 2003).

For paper II both leadership quality and social community at work are measured at baseline, which may increase spurious relationship the variable, because my aim was to investigate if there is an effect of poor social community at work on workplace bullying two years later. However, since the relationship between the antecedent and the mediator was tested simultaneously, this

does not allow us to draw causal conclusions concerning the relationship between quality of leadership and social community at work. Since we could only rely on a two-wave study, we decided to model the mediator at T1 given the primary need to temporally separate social community at work and workplace bullying. Theoretically, these two variables may considerably overlap given that typically targets of workplace bullying appraise their work environment as poorly supportive (Notelaers et al., 2012). A re-run of the same mediation model using social community at work at T2 confirmed the full mediation (path ab; b= 0.25, p<0.001; Bootstrap SE=0.08; 95%LLCI=0.08, 95%ULCI=0.42). Despite this, in order to provide more definite conclusions concerning the hypothesized mediation, future studies should use a three-wave study design to allow temporal separation when measuring the predictor, the mediator, and the outcome.

Another limitation is that we examined social community at work within a population of Danish workers. Denmark is a high individualistic culture (Nielsen & Daniels 2012) and this can be a limitation as findings are not generalizable.

5.3.1. Time lag

In the first chapter of this thesis I mentioned the need for prospective evidence in order to establish the causality, as most of the empirical evidence about the effects of leadership on workplace bullying has been based on cross-sectional designs. (e.g. Ertureten et al., 2013; Nielsen 2013; Hoel et al. 2010; Stouten et al., 2010; Hauge et al. 2007, 2011; Skogstad et al. 2007, 2011; Nielsen et al. 2005). All these studies propose strong theoretical consideration for the explanation of the hypothesized link between leadership and bullying, but no firm conclusion about the hypothesized causal relationship can be drawn. With a longitudinal study design and a large sample size (N=1,664), we demonstrate the causal relationship between quality of leadership and bullying. However, as longitudinal studies are not without potential pitfalls, I propose the following

discussion regarding the time lag. In occupational research there is not a clear recommendation concerning the length of time interval between two measurements.

Selecting too short time intervals the risk is to conclude that there is a not a causal effect, instead too long time intervals the risk is an underestimation of the true causal path (Zapf et al., 1996). Aligning with the European perspective, workplace bullying occurs over a period of time of at least six months (Einarsen et al. 2011, p. 20); a follow-up study should not be shorter than this period of time. A time lag should be rigorously planned to best correspond with the "causal interval" (e.g. De Lange, 2003). Selecting social community at baseline we argue that within a two-year time lag this mediator will have a necessary time course to influence workplace bullying.

6. CONCLUSIONS, PERSPECTIVES AND PRACTICAL IMPLICATIONS

6.1. Conclusion

This thesis has been designed with the main purpose of testing organizational antecedents of workplace bullying, inclusive of individual and social characteristics as possible moderators and mediators, since this has never been investigated in any previous studies. At the beginning of this thesis, I include a literature review of the most important articles within the framework of the work environment hypothesis of workplace bullying. The studies I cite, especially those that examine the organizational antecedents, comment on the lack of mechanisms that explain the relationship between a poor psychosocial work environment and the bullying process. I believe that my findings are significant enough to add to this field of study.

Paper I confirms the previous research finding that the perception of a poor psychosocial work environment, according to the JDC model, is positively associated with self-reported exposure to workplace bullying, and that individual characteristics, in the term of SOC, moderate the relationship between high job demands and low job control and the probability of being a target of workplace bullying. However, the interaction effect is small and therefore the practical relevance of the moderation is limited, since the way individuals appraise and cope with their work surroundings may not play a substantial role in modulating the probability of exposure to workplace bullying. The conclusion of the study is that perceiving a stressful psychosocial work environment, in terms of high demands and low control, lead to workplace bullying irrespective of individual characteristics, such as SOC.

In paper II, we found that the perception of a poor quality of leadership is prospectively related to higher reporting of workplace bullying. This finding is in keeping with the work environment hypothesis of workplace bullying (e.g. Agervold and Mikkelsen, 2004; Hoel and Salin, 2003;

Einarsen, 2000; Leymann, 1996), which emphasises the crucial role played by work-related factors in the aetiology of workplace bullying. More specifically, the results show that, among factors connected with the psychosocial work environment, a poor quality of leadership plays an important role with regard to workplace bullying. It has been also found that low social community at work has a significant mediating effect in the relationship between poor quality of leadership and workplace bullying. This finding contributes to shed light on the poorly understood mechanisms underlying the link between leadership and workplace bullying (Nielsen, 2013). In particular, this study provides new knowledge by establishing, within a longitudinal study framework, the significant mediating role played by social community at work, a factor that to date has received scarce attention in this line of research.

6.2. Perspective

In Paper I, SOC is connected *per se* to a higher probability of reporting both work-related and person-related negative acts, but does not moderate the relationship between high job demands/low control and workplace bullying. Further studies testing the role of SOC in other populations and a broader array of work-related psychosocial characteristics not considered in this study, such as role conflict and role ambiguity, are needed in order to expand the understanding of potential role of SOC. The recommendation is to test this relationship in a longitudinal study.

Regarding paper II, future researchers should test the second hypothesis using a three-wave study design, so that the antecedent, the mediator and the outcome are measured at different time points, in order to better estimate the temporal aspects of the meditational process.

The sample used for the second study consists of Danish employees. Denmark is a high individualistic culture (Nielsen & Daniels, 2012) and, in order to plan targeted strategies for

prevention of bullying at work, future research in both individualistic and collectivistic cultures is needed.

Further future studies would probably also gain from measuring leadership with questions that capture more aspects of leadership behaviour. In addition, it is clear that the operational definition of quality of leadership focuses on how a specific individual perceive the leader to perform. It cannot be excluded, however, that employee's evaluation of the quality of their leaders may be colored by other factors, for example, how often a person has the possibility to interact with the leader and under which circumstances.

Finally, the results support calls for research aimed to understand the mechanisms that link leadership to workplace bullying, by examining other potential mediating variables, such as trust, justice, and salient human values in the workplace.

6.3. Practical implications

With regard to practical implications, the results from paper I suggest that improving the psychosocial work environment is a very important point for a bullying free workplace.

This study points to the importance of bullying prevention by designing jobs in the way that employees are given reasonable job demands and an adequate degree of influence on how they carry out their work tasks (Baillien et al., 2011a).

Findings from paper II, which shows that the perception of poor quality of leadership is prospectively related to higher reporting of workplace bullying, suggest that training programs for leaders should be planned in order to increase awareness of how their behaviour affects others (Avolio and Gardner, 2005). Furthermore, the fact that workplace bullying can be explained by poor social community at work (full mediation) must to be taken into consideration when planning strategies of prevention or interventions. Experiences of disconnectedness and isolation could

potentially be reduced or even eliminated if employees are provided with opportunities to engage in meaningful interaction with colleagues and supervisors.

The conclusion is to encourage organizations and management to strongly invest in creating good social relations at work in order to promote a bully free workplace.

SUMMARY

Background

Broadly recognized to be one of the major stressors in organizations, with a global estimate of about 15%, workplace bullying has detrimental consequences for victims, witnesses, organizations, and the society at large. Within the work environment hypothesis of bullying, which emphasizes the important link between a stressful and poorly organized work environment and bullying, a large number of antecedents have been identified, such as workload, low level of autonomy, role conflict, role ambiguity, and leadership. In particular, the role of leadership as antecedent of bullying is a relatively recent research area, although Leymann - the pioneer in the study of bullying - has recognized its importance since the origins of research on the phenomenon. Despite the existence of a solid theoretical basis for the relationship between leadership and workplace bullying, almost all empirical studies conducted so far are based on a cross-sectional study design, thereby limiting the possibility to draw causal inferences. In addition, to date there is scarce evidence concerning the possible mechanisms (moderators and mediators) involved in the relationship between the psychosocial work environment and workplace bullying.

Aims

In light of the current state of the art in the research on workplace bullying, the aim of this thesis is twofold. The first objective is to investigate the relationship between some important characteristics of the psychosocial work, such as work pressure and lack of autonomy (Paper I) and poor quality of leadership (Paper II), and the occurrence of bullying at work. The second objective is to examine moderators and mediators of the relationship between the psychosocial work environment and workplace bullying and identify possible mechanisms underlying this phenomenon. In particular, my thesis examines sense of coherence - an individual feature - as a

potential moderator (Paper I), and social community at work - a characteristic of the work environment - as a potential mediator (Paper II).

Methods

The thesis is based on the Workplace Bullying and Harassment Cohort (WBH). This cohort consists of 3,363 employees at baseline (2006) (Paper I and Paper II) and 1,664 employees at follow-up (2008) (Paper II). At baseline, the sample was composed mostly of female employees (67.2%); the mean age was 45.7 years (SD = 10.11) and the mean job seniority in the current workplace 11.1 years (SD = 10.1). Approximately two thirds of the sample were employed in public organizations such as hospitals (22%), high education (13.8%), the eldercare sector (8.6%), public administration and services (7.2%), public schools (4.3%), high schools (3.8%), etc.; approximately one third were employed in private workplaces such as transportation (11.6%), industries (10.8%), construction (3%), finance, and business service (2.3%) or as doctors, dentists, vets (2.5%) etc.

Results

In Paper I, based on a cross-sectional study design, hierarchical linear regressions revealed that the two dimensions of the job demand-control model, i.e. high work pressure and low decision latitude, are significantly associated with an increased presence of bullying at work. Moreover, a higher sense of coherence was found to significantly moderate the relationship between higher job demands and higher work-related bullying, and that between lower job control and higher person-related bullying. However, the effect size of these interactions was very low. This suggests that negative psychosocial conditions in the workplace are likely to be associated with bullying regardless of the personal characteristics of the targets, at least in terms of sense of coherence. In Paper II, based on a longitudinal study design, the results of hierarchical linear regressions showed

that poor quality of leadership plays a significant role in the creation of conditions favouring bullying. Furthermore, the mediation analysis showed that social of community at work operates as a full mediator of the effect exerted by poor quality of leadership on workplace bullying.

Conclusions/practical implications

My first conclusion is that adverse psychosocial working conditions may lead to an increased risk of bullying at work. Paper I highlights in particular the importance of designing jobs so that workers are assigned reasonable workloads and an appropriate degree of autonomy in their work tasks. Paper II, confirming the role of poor quality of leadership in creating working conditions that favour bullying, indicates the importance of planning training programs for leaders so as to increase their awareness of how their behaviours may affect subordinates. In addition, the full mediation of social community at work in the relationship between poor quality of leadership and workplace bullying suggests that organizations should improve social relations at work in order to promote work environments with a low risk of workplace bullying.

Originality of the study

Paper I gives an original contribution to the existing literature on workplace bullying since there are no previous studies on the role of sense of coherence as a moderator of the relationship between the psychosocial work environment and bullying. Moreover, the methodological problem concerning the statistical *vs* practical value of the moderating effect has been rarely addressed and discussed in the literature. Paper II, based on a longitudinal study, gives a substantial new contribution by supporting, through the adoption of a robust design, previous cross-sectional studies on the important role played by leaders in the process of workplace bullying. Moreover, the finding that social community at work acts as full mediator of the relationship between quality of leadership and workplace bullying contributes significantly to the scientific debate over the

poorly known mechanisms involved in the generation of bullying.

RIASSUNTO

Introduzione

Il fenomeno del mobbing, la cui frequenza si stima essere di circa il 15% a livello mondiale, è ampiamente riconosciuto come uno dei maggiori fattori di stress nelle organizzazioni di lavoro. Il mobbing comporta una serie di conseguenze negative per chi ne è vittima ma anche per i testimoni ed i colleghi, con costi rilevanti per le organizzazioni lavorative e la societa' nel complesso. Alla luce della "work environment hypothesis" del mobbing - un approccio teorico che enfatizza lo stretto legame tra la presenza di un ambiente di lavoro psicosociale sfavorevole e l'emergere del mobbing -diversi studi hanno identificato una serie di antecedenti lavorativi del fenomeno quali ad esempio il carico di lavoro eccessivo, lo scarso livello di autonomia, il conflitto e l'ambiguità di ruolo e la qualita' della leadership. In particolare, il ruolo di quest'ultima quale fattore antecedente il mobbing costituisce un' area di indagine molto recente, sebbene Leymann - il precursore nello studio del mobbing - gia' ne avesse riconosciuta l'importanza fin dagli albori della ricerca sul fenomeno. Nonostante il substrato teorico alla base della relazione leadership-mobbing sia solido, tutti gli studi empirici condotti sinora si sono basati su un disegno di studio cross-sectional, limitando in tal modo la possibilita' di effettuare inferenze causali. Inoltre un importante gap nella letteratura corrente è costituito da una scarsa conoscenza dei possibili meccanismi (moderatori o mediatori) alla base della relazione tra ambiente di lavoro psicosociale e mobbing.

Obiettivo

Alla luce dello stato attuale della ricerca sul mobbing, l'obiettivo di questa tesi è duplice. Il primo obiettivo è quello di studiare la relazione tra alcune caratteristiche rilevanti dell'ambiente psicosociale di lavoro, ossia pressione lavorativa e mancanza di autonomia (primo articolo) e scarsa qualita' della leadership (secondo articolo), e presenza di mobbing sul posto di lavoro.

Il secondo obiettivo è quello di indagare la presenza di moderatori o mediatori nella relazione tra ambiente psicosociale di lavoro e mobbing, al fine di individuare alcuni possibili meccanismi alla base di questo fenomeno. In particolare, viene esaminato il senso di coerenza - una caratteristica individuale - come potenziale moderatore (primo articolo) e il senso di comunità sociale sul posto di lavoro - una caratterstica del contesto lavorativo - come potenziale mediatore (secondo articolo).

Metodi

La tesi si basa su dati raccolti nell'ambito di uno studio prospettico a due tempi di misura (2006-2008) denominato Workplace Bullying and Harassment Cohort (WBH), condotto tramite questionario autosomministrato su un campione di lavoratori impiegati in diverse organizzazioni di lavoro in Danimarca. Il campione utilizzato e' costituito da 3363 lavoratori nel 2006 (primo articolo) e da 1664 lavoratori nel 2008 (secondo articolo). Il campione e' composto per lo più da donne (67,2%), con un'età media di 45,7 (SD = 10.11) e una anzianità media nel posto di lavoro attuale di 11,1 anni (SD = 10.1). Circa due terzi del campione risulta impiegato in organizzazioni pubbliche come ospedali (22%), istruzione superiore (13,8%), settore assistenza agli anziani (8,6%), pubblica amministrazione e servizi (7,2%), scuole pubbliche (4,3%), scuole superiori (3,8%), ecc.; circa un terzo risulta invece impiegato in ambienti di lavoro privati, quali trasporti (11,6%), industria (10,8%), edilizia (3%), finanza e servizi alle imprese (2,3%); all'incirca il 2,5% lavora infine come medico, dentista o veterinario.

Risultati

Nel primo articolo, basato su un disegno di studio cross-sectional, regressioni lineari gerarchiche hanno rivelato che le due dimensioni del modello job demand-control, ossia elevata pressione lavorativa e scarsa autonomia decisionale, sono significativamente associate ad una maggiore

presenza di mobbing. Sebbene dal punto di vista statistico livelli piu' elevati di senso di coerenza siano risultati ridurre significativamente la relazione tra ambiente psicosociale di lavoro sfavorevole (elevata pressione lavorativa e scarsa autonomia sul lavoro) e mobbing, tale effetto di moderazione si e' rivelato di scarso impatto a livello pratico. Cio' suggerisce che condizioni psicosociali negative sul posto di lavoro possano essere associate al mobbing indipendentemente dalle caratteristiche personali dei soggetti target, almeno in termini di senso di coerenza. Nel secondo articolo, basato su un disegno di studio longitudinale, i risultati delle regressioni lineari gerarchiche mostrano che la scarsa qualità della leadership svolge un ruolo significativo nella creazione di condizioni di lavoro favorenti il mobbing. Inoltre, l'analisi di mediazione ha mostrato che il senso di comunita' sociale sul posto di lavoro opera come mediatore totale dell'effetto esercitato dalla scarsa qualità della leadership sul mobbing.

Conclusioni/implicazioni pratiche

Una prima conclusione è che condizioni di lavoro psicosociale sfavorevoli portano ad un maggiore rischio di mobbing sul posto di lavoro. Il primo studio sottolinea in particolare l'importanza di progettare posti di lavoro in modo tale che ai lavoratori siano assegnati carichi di lavoro ragionevoli e un adeguato grado di autonomia nello svolgimento dei compiti lavorativi. Il secondo studio, confermando il ruolo di una scarsa qualita' della leadership nel creare condizioni di lavoro favorenti il mobbing, indica l'importanza di pianificare programmi di formazione per i leader in modo da aumentare in questi la consapevolezza di come i loro comportamenti possano avere influenza sui subordinati. Inoltre, la mediazione totale del senso di comunita' sociale sul posto di lavoro rilevata in questo studio nella relazione tra scarsa qualità di leadership sul mobbing, suggerisce che le organizzazioni di lavoro dovrebbero operare forti investimenti nel miglioramento delle relazioni sociali sul posto di lavoro allo scopo di promuovere un ambiente di lavoro a ridotto rischio mobbing.

Originalità dello studio

Il primo articolo contribuisce in maniera originale alla ricerca sul mobbing in quanto non esistono studi precedenti sul ruolo del senso di coerenza come moderatore della relazione tra ambiente psicosociale di lavoro e mobbing. Inoltre, il problema metodologico relativo alla significativita' statistica *vs* valore pratico dell'effetto di moderazione è stato raramente affrontato e discusso in letteratura. Il secondo studio, essendo di natura longitudinale, porta un sostanziale contributo alla letteratura sul mobbing in quanto conferma, mediante un disegno di studio robusto, precedenti studi cross-sectional sul ruolo sostanziale svolto dai leader nel processo di mobbing. Inoltre, nella relazione tra leadership e mobbing, il senso di comunità sociale sul posto di lavoro agisce come mediatore totale, risultato che contribuisce significativamente al dibattito scientifico attuale sui meccanismi - a tutt'oggi poco noti - coinvolti nel processo di generazione del mobbing.

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APPENDIX 1: PAPER I

Do personal dispositions affect the relationship between psychosocial working conditions and workplace bullying?

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ABSTRACT

There is scarce research on the interaction between psychosocial working conditions and being a target of workplace bullying with individual characteristics as a moderator. We therefore examined 3046 employees from 60 Danish workplaces to test whether sense of coherence moderates the relationship between the job demand-control model and bullying. This work is exploratory in nature, as no previous study to assess this moderation was found. Hierarchical linear regressions showed that demand-control model was significantly associated with bullying. Sense of coherence displayed a significant, though practically negligible moderating effect. This suggests that negative psychosocial working conditions are associated with bullying independently of personal characteristics, at least in terms of sense of coherence.

KEYWORDS

Workplace bullying; sense of coherence; job demand-control model

Workplace bullying is broadly recognized to be a serious problem nowadays, with devastating consequences for the employees, the organizations and the society at large (e.g. Einarsen et al., 2011; Hogh et al., 2011). This phenomenon is reported to occur on a regular basis in workplaces, with a prevalence estimated at 11-18% (Nielsen et al., 2010). Throughout the literature, there are two prevailing approaches to the understanding of workplace bullying. The first, known as the "work environment hypothesis" (Leymann, 1996), considers workplace bullying to be the result of poor psychosocial working conditions (Salin and Hoel, 2011). The second approach regards employees' individual characteristics to be factors playing a prominent role in the aetiology of workplace bullying (Einarsen et al., 2011).

Specifically, the work environment hypothesis has received substantial empirical support in the last decade. For instance, in their largely cited meta-analysis, Bowling and Beehr (2006) demonstrated the importance of occupational stressors as antecedents of workplace bullying. Furthermore, recent studies using Karasek's (1979) job demand-control model (JDC; Tuckey et al., 2009; Baillien et al., 2011a; Baillien et al, 2011b; Notelaers et al., 2012) or Demerouti et al.'s (2001) job demands-resources model (Van den Broeck et al., 2011; Baillien et al., 2011c) found significant associations between adverse work characteristics and workplace bullying. Among possible explanations for this relationship, Baillien et al. (2011a) argued that stressful working conditions may lead exposed employees to become "easy target" of workplace bullying and/or violate

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existing organizational norms and habits, which may induce co-workers to enact negative behaviours toward them.

All the studies on bullying within the framework of the work environment hypothesis neglect the role of personality factors (Balducci et al., 2011). Also Leymann in the 1980s rejected the idea of a victim personality as a cause of workplace bullying. To date, individual characteristics have been less comprehensively investigated compared to the organizational antecedents and the state of art of the findings is still blurred (Glasø et al., 2009).

Individual characteristics affect the way persons typically appraise external stimuli and cope with them (Semmer, 2003). As such, they also influence the way employees perceive and deal with their psychosocial work environment, as well as the outcomes resulting from this experience. A better understanding of how individual differences impact on the relationship between the psychosocial work environment and exposure to workplace bullying may have important implications from both the theoretical (which are the mechanisms underlying the link between a poor psychosocial work environment and being a target of workplace bullying?) and the practical (how interventions contrasting workplace bullying should be designed?) standpoints.

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The aim of this study is to address new aspects, in terms of SOC, that can contribute shedding light on the controversial topic of personal characteristics in the association between the job demand-control model and bullying. To contribute bridging this research gap, in the present study we aim to investigate whether a specific individual characteristic, i.e., sense of coherence (SOC; Antonovsy, 1979; Antonovsky, 1987), which represents a personal disposition influencing how a person will appraise and cope with external demands, plays a role in the relationship between the perception of the psychosocial work environment and exposure to workplace bullying. In the workplace literature, no study has investigating the moderating role of SOC in the relationship between job stressors and workplace bullying was found.

SOC is a stress resistance resource and is assumed to have an emulative function when individuals are under stress (Pahkin et al., 2011). According to Louw and colleagues, SOC explains how people feel, perceive and cope with stressful situations (Harry and Coetzee, 2013). Rather than a specific way of coping, SOC reflects a more general individual ability to select appropriate coping strategies in the face of stressors (Antonovsky, 1987). For instance, having a low SOC has been found in association with bullying risk factors, such as anxiety, anger, burnout, demoralization, hostility, hopelessness, and an increased perception of stressors in the environment (Eriksson and Lindström, 2005).

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More specifically, we hypothesized that perceiving poor psychosocial working conditions, in terms of the JDC model, is positively related to the probability of reporting oneself as a target of workplace bullying, and that SOC acts as a moderator of this relationship.

The relationship between the JDC model and workplace bullying

According to Einarsen et al. (2011; p. 22), workplace bullying is defined as "harassing, offending, socially excluding someone or negatively affecting someone's work. In order for the label bullying (or mobbing) to be applied to a particular activity, interaction or process, it has to occur repeatedly and regularly (e.g., weekly) and over a period of time (e.g., about six months). Bullying is an escalating process in the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts. A conflict cannot be called bullying if the incident is an isolated event or if two parties of approximately equal strength are in conflict". Bullying behaviours at work may take the form of both person-related acts, such as spreading rumours or threatening a person (Cowie et al., 2002; Notelaers et al., 2011), and work-related acts, including for instance illegitimate changes in one's tasks, unreasonable deadlines and dangerous working conditions (Einarsen and Nielsen, 2014). Verbal and/or non-verbal negative and aggressive behaviours toward targets as individuals and/or their work situation may seriously threaten employees' self-esteem and

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professional competence (Einarsen et al., 2011). Victims will in fact typically experience these acts as extremely offensive, degrading and unfair. Employees may show a variety of symptoms of reduced health as a result of being exposed to workplace bullying (see Hogh et al., 2011 and Nielsen and Einarsen, 2012 for recent reviews), including anxiety and depression, sleep problems and burnout, with also evidence of altered physiological responses (e.g. Hansen et al., 2011) and post-traumatic stress (e.g. Nielsen et al., 2008; Hogh et al., 2012).

In the context of the work environment hypothesis, a number of recent studies, both cross-sectional (Baillien at al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012) and longitudinal (Baillien et al., 2011a), have shown a positive association between the perception of adverse psychosocial working conditions, as assessed through the JDC model (Karasek, 1979; Karasek and Theorell, 1990), and being a target of workplace bullying. This testifies that the JDC model represents a useful theoretical approach for capturing work-related psychosocial characteristics that are relevant to the emergence of workplace bullying. The JDC model posits that experiences of work-related stress are more likely occurring in those work situations characterized by high psychological demands (e.g., time pressure and task concentration) and low job control (decision authority and skill utilization). Two main hypotheses have been formulated on how the two model components, i.e. job demand and job control, combine in affecting health and well-being. The *strain hypothesis* assumes that high job demands and low job

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control exert additive effects on stress-related outcomes, while the *buffer hypothesis* postulates that higher job control acts as a moderator by reducing the negative impact on health and well-being produced by high job demands (multiplicative effects) (de Lange et al., 2003; Häusser et al., 2010). The additive effects of high job demands and low job control on various outcomes related to health and well-being are well established, while there is scarce empirical support with regard to the buffer hypothesis of the JDC model (see Häusser et al., 2010).

According to Baillien et al. (2011a), workplace bullying represents a social behavioural strain signalling the presence of adverse psychosocial working conditions, among which also high job demands and low job control may play a significant role. In particular, these authors maintained that a significant association between the JDC model and a higher probability of being subjected to workplace bullying may occur because high job demands and low job control may impinge on employees' resources, and thus make them more likely to become "easy target" of negative behaviours. For instance, when confronted with high demands in the form of elevated time pressure, employees may more easily become targets because their need to raise efforts to keep up with the workload may eventually increase their stress and wear out their personal resources, while also restricting the time they have available to effectively manage emerging conflicts and invest in supportive relations at work. Exposure to workplace bullying may be also more pronounced among employees with low job control, because having

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poor influence on one's own work may be associated with negative work characteristics, like for instance role conflict (Notelaers et al., 2010), having the potential to increase the individual risk of being subjected to negative behaviours. Besides the "easy target" explanation, Baillien et al. (2011a) put forth also another mechanism possibly underlying the connection between the JDC model and workplace bullying, namely that the strain ensuing from the perception of high job demands and low job control may lead employees to violate existing norms and/or work habits, which in turn may induce co-workers to react negatively toward them. On the opposite side, the experience of positive working conditions may decrease the likelihood of being exposed to workplace bullying. For instance, in line with the buffer hypothesis of the JDC model one can assume that employees who are equipped with high job control might have more opportunities to effectively cope with elevated job demands, reducing the potential impact of these on the probability of ending up as targets of workplace bullying.

As both the strain and the buffer hypotheses have been supported in studies examining the association between the JDC model and workplace bullying (Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012), the first two hypotheses of this study were thus formulated as follows:

H1a. Higher job demands and lower job control are associated with a higher probability of reporting oneself as target of workplace bullying (strain hypothesis).

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H1b. Higher job control reduces the relationship between higher job demands and a

higher probability of reporting oneself as target of workplace bullying (buffer

hypothesis).

The role of sense of coherence (SOC) in the relationship between the JDC model and

workplace bullying

Despite some authors argued that bullying at work can be explained by a combination

of organizational and individual factors (Mathisen et al., 2012; Einarsen et al., 2003;

Zapf, 1999) and that the personality of the victims may be important in explaining

perceptions and reactions to negative behaviours (Nielsen et al., 2008), the state of art

of the findings is contradictory. Researches on the individual antecedents of bullying

have not revealed a clear picture on how personality or dispositional factors are related

to exposure to workplace bullying. Several studies, using the Big-five questionnaire

have found a relationship between bullying and neuroticism and low emotional stability

(e.g. Coyne et al., 2000; Glaso et al., 2007). Conversely, Balducci and colleagues (2011)

did not found a significant moderating role of the personal dimension "neuroticism" in

the relationship between high job demands and workplace bullying. Other studies have

contradictory results regarding extraversion, conscientiousness and openness for

experience (see Zapf and Einarsen, 2011 for a review).

Gaining more insight into how individual characteristics act in this relationship may improve theoretical knowledge about the poorly understood mechanisms linking adverse psychosocial working conditions to workplace bullying. In addition, it may provide useful elements to the design of interventions aimed at combating the phenomenon.

To contribute in this respect, in this study we focused on sense of coherence (SOC; Antonovsky, 1987), assuming that this individual orientation may operate as a significant moderator of the relationship between the psychosocial work environment, as conceived in the light of the JDC model, and the probability of becoming a target of workplace bullying.

Antonovsky (1987) defines SOC as a *"global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement"* (p. 19). Therefore, SOC encompasses three interrelated dimensions: *sense of comprehensibility*, i.e. the ability of people to understand what happens around them (cognitive component); *sense of manageability*, i.e. to what extent they are able to manage the situation on their own or through significant others in their social networks (instrumental component); and *sense of meaningfulness*, i.e. the ability

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to find meaning in the situation (motivational component). Central to this construct is that people with a higher SOC, because of their tendency to see the world as comprehensible, manageable and meaningful, tend to display more resistance resources, which in turn may help them to better cope with the demands posed by the external environment (Antonovsky, 1993).

The hypothesis that SOC moderates the relationship between the psychosocial work environment and being a target of workplace bullying is grounded in the transactional theory of stress (Lazarus and Folkman, 1984). This theory emphasizes the importance of individual characteristics in shaping the way people appraise external demands and judge their ability to cope with them. In this respect SOC, reflecting a personal orientation to one's life context, may be viewed as a factor modifying the quality of the transactions people have with their work environment, including the way they appraise and cope with potential job stressors (Feldt, 1997). In particular, in line with the "easy target" mechanism illustrated above, employees with a weaker SOC, being equipped with a less resistant personality and poorer coping repertoires (Nel et al., 2004), may possess a restricted pool of resources to deal with adverse psychosocial working conditions, which may increase their probability of becoming subjected to workplace bullying. In addition, while attempting to cope with distressing work circumstances, due to their poor resistance resources low-SOC employees may be more inclined to adopt norm violating behaviours leading co-workers to enact negatively toward them

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(Notelaers et al., 2012). A moderating role of SOC has been previously observed in studies focusing on the relationship between the psychosocial work environment and outcomes other than workplace bullying. These studies found that, among employees with a poorer SOC, there was a stronger association between the perception of adverse psychosocial working conditions and various psychological and physical strain outcomes (Albertsen et al., 2001; Soderfeldt et al., 2000; Feldt, 1997; Malinauskiene et al., 2009). Such a moderating potential of SOC may also be extended to the association between the psychosocial work environment and workplace bullying, since the latter, as mentioned above, may be regarded as a socio-behavioural type of strain the emerges in reaction to negative psychosocial working conditions (Baillien et al., 2011a). Furthermore, having a low SOC has been found in association with individual risk factors for bullying such as anxiety, anger, burnout, demoralization, hostility, hopelessness, and an increased perception of stressors in the work environment (Eriksson and Lindström, 2005). It might be expected that all these behaviours produce a negative reaction within coworkers which leads to workplace bullying.

Hence, the second and last hypothesis of this study was formulated as follows:

H2. Higher sense of coherence reduces the positive association of higher job demands and lower job control (according to both the strain and the buffer hypotheses of the JDC model) and being a target of workplace bullying.

METHODS

Participants and procedure

The sample used for this study consisted of 3363 employees (response rate 46%) from 60 workplaces in Denmark, who filled in a questionnaire in 2006 concerning their psychosocial work environment and health status. The sample was composed mostly of women (67.2%), with a mean age of 45.7 (SD = 10.11) and a mean job seniority in the current workplace of 11.1 years (SD = 10.1). About two thirds of the sample were employed in public organizations such as hospitals (22%), higher education (13.8%), the eldercare sector (8.6%), public administration and services (7.2%), public schools (4.3%), high schools (3.8%), etc.; approximately one third were employed in private workplaces such as transportation (11.6%), industries (10.8%), construction (3%), finance and business service (2.3%) or as doctors, dentists and vets (2.5%), etc. (see Hogh et al., 2012 and Hansen et al., 2011 for further details concerning the study sample).

Using a listwise deletion procedure, we excluded from this study participants (a) with missing values on any of the study variables considered and (b) with significant outliers on the scales adopted to measure the study variables. This led to a final study sample of 3046 participants.

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Measures

Workplace bullying was measured using a slightly modified version of the 22-item Revised Negative Acts Questionnaire (NAQ-R; Einarsen et al., 2009). Participants were asked to rate how frequently they had experienced within the past six months each negative act listed in the NAQ-R, using a five-point response scale (i.e., "never", "now and then", "monthly", "weekly" and "daily"). Our modified version of the NAQ-R did not include item 22 ("Threats of violence or physical abuse or actual abuse"), because the questionnaire used in the survey on which this study is based already comprised a specific section investigating behaviours such as sexual harassment, threats of violence and physical violence. Due to the exclusion of this item, we were unable to compute both the overall NAQ-R score (one-dimension model), requiring all 22 items to be answered, and the score of the NAQ-R's "physically intimidating bullying" dimension, which is based on item 22 in addition to items 8 and 9 (Einarsen et al., 2009). Hence, in order to adhere to the validated version of the NAQ-R (Einarsen et al., 2009), in this study we adopted the two-dimension model of the scale, consisting of a "work-related bullying" (7 items) and a "person-related bullying" component (12 items). This two-dimension model showed a good fit in the validation study performed by Einarsen et al. (2009), and has been adopted in recent studies on workplace bullying (e.g., Escartin et al., 2013). The two scales work-related bullying and person-related bullying were calculated by summing up the scores obtained on the respective items. Scale scores

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were not computed for participants who did not answer one or more items. The work-related bullying and the person-related bullying scores may range from 7 to 35 and from 12 to 60, respectively, with higher scores indicating higher perceived exposure to negative acts.

With regard to the JDC model, the component *job demands* was measured with four items taken from the Copenhagen Psychosocial Questionnaire (COPSOQ II, Kristensen et al., 2005): "Is your workload unevenly distributed so it piles up?"; "Do you get behind with your work?"; "How often do you not have time to complete all your work task?"; "Do you have enough time for your work tasks?". The component *job control* was measured with four items from the COPSOQ II (Kristensen et al., 2005), tapping the "decision authority" facet of the job control dimension: "Do you have a large degree of influence concerning your work?"; "Do you have a say in choosing who you work with?"; "Do you have any influence on what you do at work?"; "Can you influence the amount of work assigned to you?". Items of the job demands and the job control scales were answered on a frequency-based five-point scale, ranging from "always" to "never/hardly ever". Scores of both job demands and job control were based on the mean of the corresponding items. For both scales, scores were not computed for participants with one or more missing items. All scores were linearly transformed so to range from a minimum of 0 (lowest possible job demands and job control) to a maximum of 100 (highest possible job demands and job control).

Sense of coherence (SOC) was measured with nine items developed by Setterlind and

Larsson (1995) based on Antonovsky's original questionnaire. The three dimensions of

SOC were measured with three items each: *Comprehensibility*: "I think I understand

most of what happens in my everyday life", "Things often happen around me that I do

not understand", "I find it difficult to see the coherence of my life and understand how

things cohere"; *Meaningfulness*: "My life until now has not had any clear goals or

purposes", "I find that what I do in my daily life is meaningful", "I think I have very

much to live for"; and *Manageability*: "I think I can handle most situations that will

happen in my life", "I do not think that I can influence my future to a great extent", "I

know what I ought to do in my life, but I do not believe that I am able to do it". The five

response options ranged from "precisely" to "not at all" (Hogh & Mikkelsen, 2005).

This SOC scale has been translated into Danish, and it showed good reliability in two

samples of the Danish workforce (Albertsen et al., 2001; Hogh and Mikkelsen, 2005).

The mean of the nine items was calculated to obtain an overall SOC score. SOC was not

computed among those participants with missing values on one or more items. In

analogy with the JD-C model components, scores for SOC were linearly transformed so

to range from a minimum of 0 (lowest possible SOC) to a maximum of 100 (highest

possible SOC).

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Statistical analysis

Prior to testing the study hypotheses, we inspected the study variables by checking for the presence of both outliers and problematic variable distributions, by means of standardized scores ($|z| \geq 3.00$) and skewness and kurtosis indices, respectively. We then calculated means, standard deviations and zero-order correlations between the study variables, as well as their internal consistencies (Table 1).

To check for problematic common method variance, we conducted a Harman's one-factor test (Podsakoff et al., 2003) by entering all items making up the dimensions included in the regression models (i.e., job demands, job control, SOC, work-related and person-related bullying) into a principal component analysis. This analysis revealed that a common factor was not able to explain the majority of the total variance (50.6%) explained in the items entered; indeed, the highest proportion of variance accounted for by a single factor was 16.5%. Accordingly, common method variance does not seem to represent a serious threat to the validity of the present study.

The study hypotheses were tested using moderated linear regression analyses (Table 2). In all, we conducted two separate regression models (one for work-related bullying and one for person-related bullying as dependent variables), with main and interaction effects entered hierarchically in order to test for their unique contribution in terms of explained variance. In step 1, only the confounders (i.e., gender and age) were included

In step 2, we then entered the three variables job demands, job control and SOC (main effects). In step 3, we added the interaction term job demands*job control to the model. Finally, in step 4 and step 5, we entered the two interaction terms job demands*SOC and job control*SOC, respectively. For each type of workplace bullying, we also tested the three-way interaction terms demands*control*SOC. However, the regression coefficients related to the three-way interaction terms were non-significant, and thus not shown in Table 2. As recommended by Aiken and West (1991), all interaction terms were computed by multiplying previously standardized variables. The amount of additional variance (and the corresponding statistical significance, calculated using the incremental F-test) explained by the variables entered in each consecutive step was shown as ΔR^2. We finally built a series of plots to examine the nature of each statistically significant interaction. In line with Aiken and West (1991), we calculated the slopes representing the association between the independent (e.g., job demands) and the dependent variable (e.g., work-related bullying) at one standard deviation below and above the mean of the moderator (e.g., SOC). We also tested the effect sizes of each significant interaction by means of f^2 (Aiken and West, 1991), which is defined as the "ratio of variance explained by the interaction term alone to the unexplained variance in the final model" (Dawson, 2014, p.14; see also this study for the formula used to calculate f^2). According to Cohen (2003), values of f^2 of 0.02, 0.15 and 0.35 correspond to interactions with small, moderated and strong effects size, respectively. All analyses

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were conducted using the Statistical package for the Social Sciences (SPSS) version 20.0.

RESULTS

Preliminary inspection of the study variables revealed the presence of potentially influential outliers ($|z|\geq3.00$) in relation to work-related bullying (n=38), person-related bullying (n=66) and sense of coherence (n=40). Participants with these outliers were excluded from the analyses. We applied a logarithmic transformation to normalize the person-related bullying dimension, which was the only one showing potentially problematic skewness (2.00) and kurtosis (3.96).

[Insert Table 1 about here]

As shown in Table 1, all scales showed good internal consistency, with the only exception of work-related bullying (Cronbach's alpha = 0.69), whose reliability was slightly below the commonly accepted threshold of ≥0.70 (Nunnally, 1978, p. 245). Job demands, job control and SOC were all significantly related, in the expected direction, to both dimensions of workplace bullying.

[Insert Table 2 about here]

Table 2 shows the results of the two hierarchical linear regression analyses conducted to test the study hypotheses. After adjusting for gender, age and SOC, job demands and

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job control (step 2) were both significantly associated, in the expected direction, with work-related bullying (standardized β coefficients of 0.37, $P<0.001$ and of -0.13, $P<0.001$, respectively), lending support to H1a (i.e., job strain hypothesis of the JDC model). Job demands were more strongly associated than job control with work-related workplace bullying. In step 3, higher job control was found to statistically significantly reduce the positive association between higher job demands and work-related bullying (standardized β coefficients of -0.04, $P=0.02$; $\Delta R^2=0.001$, $P=0.02$). Hence, H1b (buffer hypothesis of the JDC model) was supported in terms of statistical significance. However, the f^2 value (i.e., 0.001) for the job demand*control interaction was substantially below what is considered to be a small effect size (0.02) according to Cohen (2003).

[Insert Figures about here]

Such small effect size is also evident in Figure 1a, showing that the two slopes representing the associations between demands and work-related bullying at low and high levels of job control were almost parallel. In step 4 of the regression model, SOC significantly moderated the positive association between higher job demands and work-related bullying (standardized β coefficients of -0.03, $P=0.04$; $\Delta R^2=0.001$, $P=0.04$), but not that between job control and work-related bullying (step 5), lending partial statistical support to H2. However, also in this case the f^2 value (i.e., 0.001) for the job demands*SOC interaction was substantially below the Cohen's small effect size.

Further supporting this, Figure 2a showed a very slight difference in the inclination of the two slopes representing the associations between job demands and work-related bullying at low and high SOC levels. No significant three-way interaction effect could be observed between job demands, job control and SOC. As a whole, the regression model explained some 21% of the total variance in work-related bullying.

In the second regression analysis (Table 2), we found that, after adjustment for gender, age and SOC, job demands and job control (step 2) were both significantly related, in the expected direction, with person-related bullying (standardized β coefficients of 0.15, $P<0.001$ and of -0.09, $P<0.001$, respectively), again supporting H1a. Job demands were more strongly (but only slightly) associated with person-related workplace bullying than job control. Moreover, the two regression coefficients, particularly the one for job demands, were somewhat lower in strength than those obtained when work-related bullying was entered as dependent variable. We found support for the buffer hypothesis of the JDC model (H1b) also in relation to person-related bullying, since higher job control statistically significantly reduced the positive association between higher job demands and this type of bullying (standardized β coefficients of -0.04, $P=0.01$; $\Delta R^2=0.002$, $P=0.01$). However, as also mentioned in relation to work-related bullying, both the f^2 value (0.002) and the visual representation (Figure 1b) of the interaction between job demands and job control on person-related bullying were consistent with job control displaying a buffer effect of a very low magnitude. Finally, step 5 revealed a

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statistically significant moderating effects of higher SOC in the relationship between lower job control and person-related bullying (standardized β coefficients of 0.03, $P=0.05$; $\Delta R^2=0.001$, $P=0.05$). Again, however, both the f^2 value (0.001) and Figure 2b indicated that the effect size of the interaction between job control and SOC on person-related bullying was very poor. No statistically significant interaction was observed between SOC and job demands on person-related bullying (step 4). Overall, these results lent partial statistical support to H2 also when it comes to person-related bullying. We could not observe any significant three-way interaction effect between job demands, job control and SOC. The overall model was able to explain 12% of the total variance in person-related bullying.

DISCUSSION

In this study, we found that SOC statistically significantly moderated the relationship between job demands and work-related bullying and between job control and person-related bullying. We hypothesized that the perception of a poor psychosocial work environment, in terms of the JDC model, was positively related to being a target of workplace bullying, and that a higher SOC reduced such association. Our findings supported a statistically significant relationship between the JDC model, according to both the job strain and the buffer hypotheses, and the two forms of workplace bullying examined (i.e., work-related and person-related bullying).

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However, while significant on statistical grounds, it must be noted that all the interactions observed in this study were very low in magnitude. This is indicated by three elements: (a) the low additional explained variance due to the interactions (ranging from 0.01% to 0.02%), (b) the f^2 values that resulted to be substantially below a small interaction effect size (i.e., 0.02) as per Cohen (2003), and (c) the plots showing that the slopes corresponding to the associations between the predictors and workplace bullying at different levels of the moderators were almost parallel. The detection of significant but small interaction effects could have resulted from the high statistical power that characterizes our study, which is based of 3046 participants. A sample of this width may in fact enable to easily detect interaction effects with an effect size as low as 0.001 in terms of f^2 (Aguinis et al., 2005). Therefore, based on these considerations, and following Dawson (2014) who recently argued that researchers should "focus on the practical relevance of findings rather than their statistical significance alone" (p. 14) when interpreting interactive effects, we conclude that the interactions observed in our study are to be regarded as having poor value from the practical angle. Hence, we consider both H1b (buffer hypothesis of the JDC model) and H2 (SOC as moderator) to be not supported in the present study. Study findings will be discussed accordingly.

The JDC model and workplace bullying

The association we found between the JDC model (additive effects of job demands and job control) and workplace bullying aligns with recent studies (Baillien et al., 2011a; Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012). However, adding to these studies, which adopted a general negative acts scale or a single self-labelling item to gauge workplace bullying, our findings provide a more specific insight by showing that the relationship between the two components of the JDC model and workplace bullying may differ depending on whether the latter is directed to the employee as person or to his/her work role. Indeed, while both high job demands and low job control were significantly related to both types of negative acts, the results obtained in this study pointed to an especially strong association between job demands and the reporting of bullying behaviours perpetrated in the form of work-related negative acts. From the perspective of the working environment hypothesis, this result has two main implications. First, that perceiving high job demands may be of primary importance in creating conditions of vulnerability that make employees more likely to become targets of negative behaviours. Second, that employees, when perceiving high job demands, may behave in ways that lead co-workers to engage in negative acts (e.g., persistently criticizing an employee's work and efforts or withholding information in order to affect his/her performance) that are mainly intended to undermine the targets' work role.

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The present study supported an association between workplace bullying and the JDC model only under the strain hypothesis (i.e., additive effects of job demands and job control). Previously, a buffer effect was observed in cross-sectional studies (Baillien et al., 2011b; Tuckey et al., 2009; Notelaers et al., 2012) using a general negative acts score as measure of workplace bullying. However, in the only longitudinal study (n = 320) testing the job demands*job control interactive effect on being a target of workplace bullying, Baillien et al. (2011a) could not find support for the buffer hypothesis of the JDC model. Accordingly, the current state of the art is such that the question of whether high job control is able to reduce the positive relationship between high job demands and exposure to workplace bullying is still open, suggesting that further investigations are needed to shed more light onto this issue.

The moderating role of SOC in the relationship between the JDC model and workplace bullying

As far as we know, no published studies exist focusing on the role played by SOC in the relationship between the psychosocial work environment and being a target of workplace bullying. A moderating role of SOC was previously observed in the occupational stress literature, where it was found to buffer the relationship between exposure to adverse work-related psychosocial characteristics (also when measured through the JDC model) and outcomes other than workplace bullying (Albertsen et al.,

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2001; Soderfeldt et al., 2000; Feldt, 1997). However, contrary to our expectations in this study the hypothesis that SOC acts as a moderator of the relationship between the JDC model and self-reported exposure to workplace bullying was not supported in terms of practical relevance. We assumed such a moderation to occur in the light of the transactional theory of stress, which emphasizes the role of personal characteristics in modulating the effects of the environment on health and well-being (Lazarus and Folkman, 1984). People with a weak SOC are indeed expected to possess poorer coping abilities and a less resistant personality (Nel et al., 2004), which would lead them to be particularly prone to become targets of workplace bulling when they perceive adverse psychosocial working conditions. In this study we found that having a lower SOC was connected *per se* to a higher probability of reporting both work-related and person-related bullying, which aligns with studies observing that personal dimensions play a significant role in the occurrence of workplace bullying (Zapf and Einarsen, 2011; Bowling et al., 2010). However, the fact that SOC did not exert a practically relevant moderating effect suggests that perceiving a poor psychosocial work environment (according to the JDC model) may relate to being a target of workplace bullying irrespective of inter-individual differences, at least in terms of SOC. A comparable result was obtained by Balducci et al. (2011), who did not observe a significant moderating role of the personal dimension "neuroticism" in the relationship between high job demands and workplace bullying.

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Overall, these findings may have implications from both the theoretical and the practical points of view. From the theoretical standpoint, they further strengthen the work environment hypothesis of workplace bullying (Laymann, 1996), by indicating that perceiving negative psychosocial working conditions may virtually pose every employee at a higher risk of becoming a target of negative behaviours at work, independently of his/her habitual ways of appraising and coping with the external environment. In practical terms, our results mean that, as far as the prevention of workplace bullying is concerned, implementing actions aimed to improve the psychosocial work environment may represent the most effective way to generally decrease the risk of being bullied in a work organization, given that even those employees with more resistance resources may not be more capable than the weaker ones to contrast the negative effects of exposure to adverse psychosocial working conditions.

Study strengths and limitations

Our study has some strengths worth noting. First, it was the first focusing on the role of SOC in the relationship between the JDC model and being a target of workplace bullying. Second, analyses were conducted on a large sample of workers with heterogeneous occupational characteristics, which increased the potential of generalizing our results beyond specific occupational groups. Third, we used a well-

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established theoretical framework, i.e. the JDC model, to gauge the psychosocial work environment, while also distinguishing between two forms of workplace bullying, i.e., work- and person-related bullying.

However, this study also presents a number of limitations. First, as we employed a cross-sectional design, no causal conclusions about the hypothesized relationships can be drawn. The assumed causal direction of the relationship between the psychosocial work environment and workplace bullying was inspired by the work environment hypothesis as well as by earlier empirical evidence (see for instance Baillien et al., 2011a). Despite this, we are unable to rule out alternative interpretations of our findings. For instance, reverse causation may be at issue because the bullied are most likely to report their work environment as poor (Bowling and Beehr, 2006). While this can be the case, we believe that the causal link between the JDC model and workplace bullying operates most likely in the direction hypothesized in our study. To support this view, in the previously cited prospective study of Baillien et al. (2011a), it was found that the JDC model acted as a significant precursor of workplace bullying, while a reverse causation effect was not observed. In addition, also other studies, not based on the JDC model, provided support for a causal relationship between various negative psychosocial work characteristics and workplace bullying (see for example the meta-analysis of Bowling and Beehr, 2006).

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A second limitation is that self-reports may be at fault when it comes to gaining insight into the properties of environmental conditions, because they make it difficult to distinguish between actual exposures and individual reactions to these exposures (Persson and Kristiansen, 2012; Nixon et al., 2011; Theorell and Hasselhorn, 2005). The use of measures not based on self-reports (e.g., assessments of psychosocial working conditions made by external raters) may allow to better grasp objective characteristics of the psychosocial work environment.

A third limitation, related to the previous, is that the exclusive reliance on self-reports may produce common method variance, inflating the true associations between the study variables (Podsakoff et al., 2003). However, the results of the Harman's test showed that common method variance should not be regarded as a serious concern in our study. It must be also noted that the actual impact of common method variance on the associations observed in the field of occupational health psychology is far from obvious and still under debate (Spector, 2006). Furthermore, job demands and job control were significantly related to workplace bullying also after adjustment for SOC, suggesting that the association between both the reporting of work characteristics and of negative acts cannot be totally attributed to the influence of personal dispositions. Notwithstanding this, only the use of longitudinal designs and different sources of data collection may allow to effectively rule out a potentially biasing effect of common method variance on the results of our study.

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A fourth limitation relates to the fact that measurement error in the variables examined may have deflated correlations between the constructs, leading to effect underestimation. This may apply mostly to interaction terms, which tend to be affected by measure unreliability even more than main effects.

The fifth and final limitation is that we used only two work dimensions, i.e., job demands and job control, to characterize the psychosocial work environment. However, in order to expand the understanding of the potential moderating role of SOC, further studies are needed that include a broader array of work-related psychosocial characteristics. It might be that a practically relevant moderating effect of SOC could be observed when examining the relationship between psychosocial dimensions not considered in this study (such as for example role conflict and role ambiguity) and workplace bullying.

Conclusions and practical implications

Two main conclusions can be drawn from this study: (a) in line with previous research, the perception of a poor psychosocial work environment, according to the JDC model, is positively associated with self-reported exposure to workplace bullying, and (b) individual characteristics, at least in terms of SOC moderated the relationship between high job demands and low job control and the probability of being a target of workplace

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bullying. However, the interaction effect was small and therefore the practical relevance of the moderation was limited.

With regard to practical implications, as already mentioned above our findings suggest that improving the psychosocial work environment may be particularly effective in covering the highest possible proportion of the risk of being bullied among employees in a work organization, since the way the individuals appraise and cope with their work surroundings seems not playing a substantial role in modulating the probability of exposure to workplace bullying. Related to our specific findings about the role of the JDC model in explaining the phenomenon, this study points to the importance, in order to reduce workplace bullying, to design jobs in ways that employees are assigned, in the first place, reasonable job demands, and, in the second place, an adequate degree of influence on how they carry out their work tasks (Baillien et al., 2011a).

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Table 1. Means, standard deviations, internal consistencies and zero-order correlations of the study variables (n = 3046).

	Mean	SD	α	1	2	3	4	5	6
1. Male	-	-	-	1					
2. Age	45.8	10.1	-	.07**	1				
3. Job demands	45.6	19.2	0.81	-.03	.05*	1			
4. Job control	48.9	20.9	0.78	.11**	-.00	.03*	1		
5. Sense of Coherence (SOC)	81.9	12.0	0.75	-.09**	-.04	-.04*	.23**	1	
6. Work-related bullying	10.2	2.8	0.69	.04*	-.07**	.37**	-.15**	-.24***	1
7. Person-related bullying	13.7	2.5	0.78	.05*	-.04*	.15**	-.14**	-.29***	.56**

*p<.05; **p<.01; ***p<.001.
For all scales, higher scores indicate a higher perception of the corresponding construct.

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Table 2. Moderated linear regressions testing the relationships between the job demand-control model, sense of coherence (SOC), work-related bullying and person-related bullying (n = 3046).

		Work-related bullying		Person-related bullying[a]	
		β	P	β	P
Step 1	Male	0.10	0.04	0.10	0.01
	Age	-0.07	0.02	-0.05	0.01
Step 2	Job demands	0.37	<0.001	0.15	<0.001
	Job control	-0.13	<0.001	-0.09	<0.001
	SOC	-0.19	<0.001	-0.26	<0.001
Step 3	Job demands*job control	-0.04	0.02	-0.04	0.01
Step 4	Job demands*SOC	-0.03	0.04	-0.02	0.22
Step 5	Job control*SOC	-0.01	0.36	0.03	0.05
	Total R^2	0.214	<0.001	0.119	<0.001
	ΔR^2 step 1	0.007	<0.001	0.004	0.003
	ΔR^2 step 2	0.204	<0.001	0.111	<0.001
	ΔR^2 step 3	0.001	0.02	0.002	0.01
	ΔR^2 step 4	0.001	0.04	0.000	0.22
	ΔR^2 step 5	0.000	0.36	0.001	0.05

[a]Log-transformed scores.
For all scales, higher scores indicate a higher perception of the corresponding construct.
Beta standardized coefficients are based on the unstandardized solution of the regression model (Aiken and West, 1991).
The sum of the R^2 obtained in the different steps may not correspond to the total R^2 due to rounding off.

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Figure 1a. Interaction of job demands and job control (±1 SD of the mean) on work-related bullying.
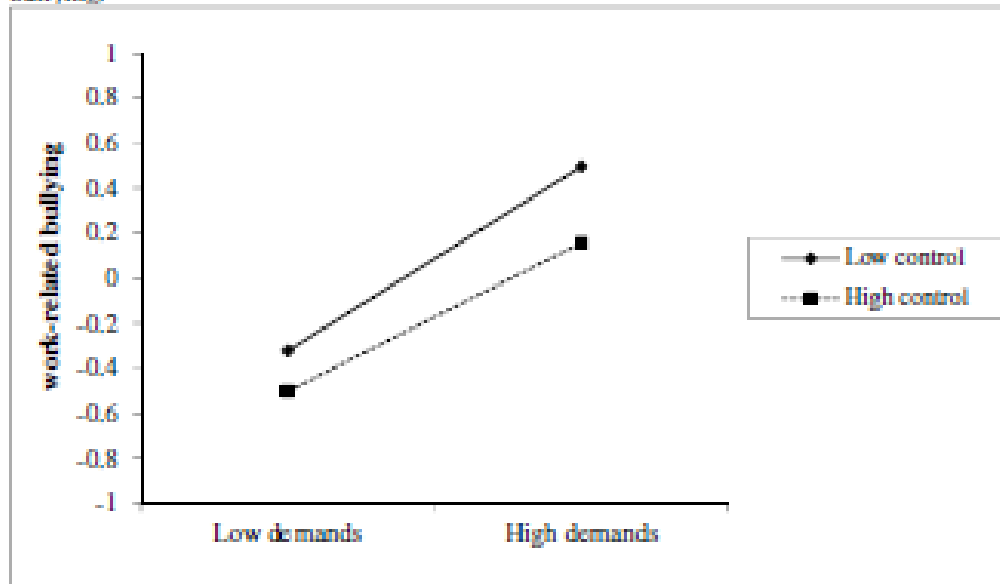
Figure 1b. Interaction of job demands and job control (±1 SD of the mean) on person-related bullying.
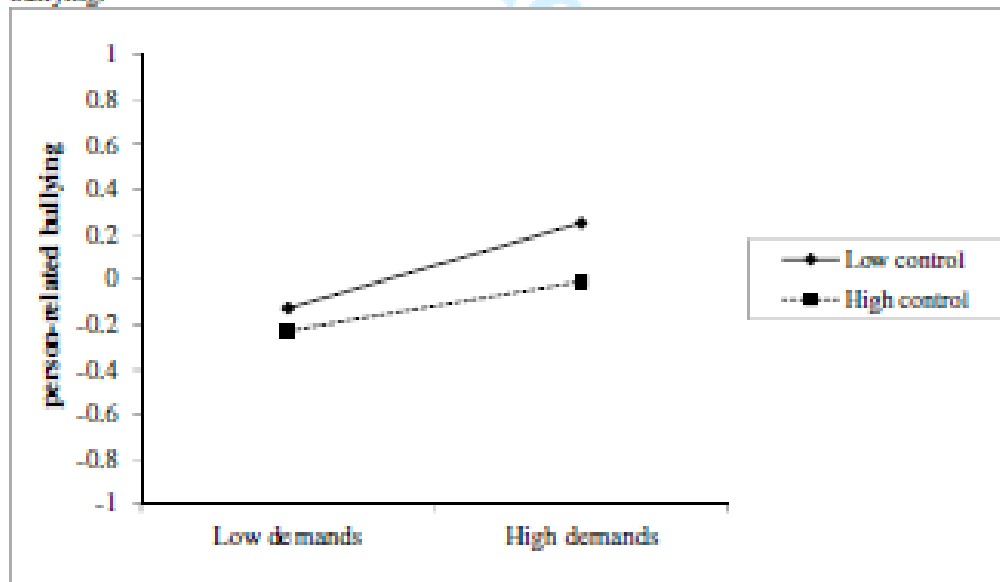
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Figure 2a. Interaction of job demands and SOC (±1 SD of the mean) on work-related bullying.
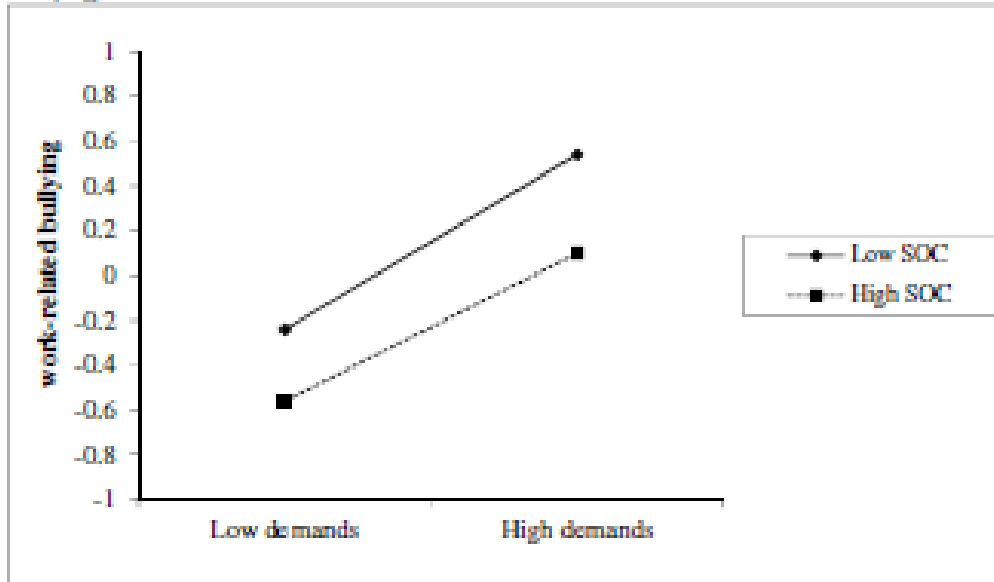
Figure 2b. Interaction of job control and SOC (±1 SD of the mean) on person-related bullying.
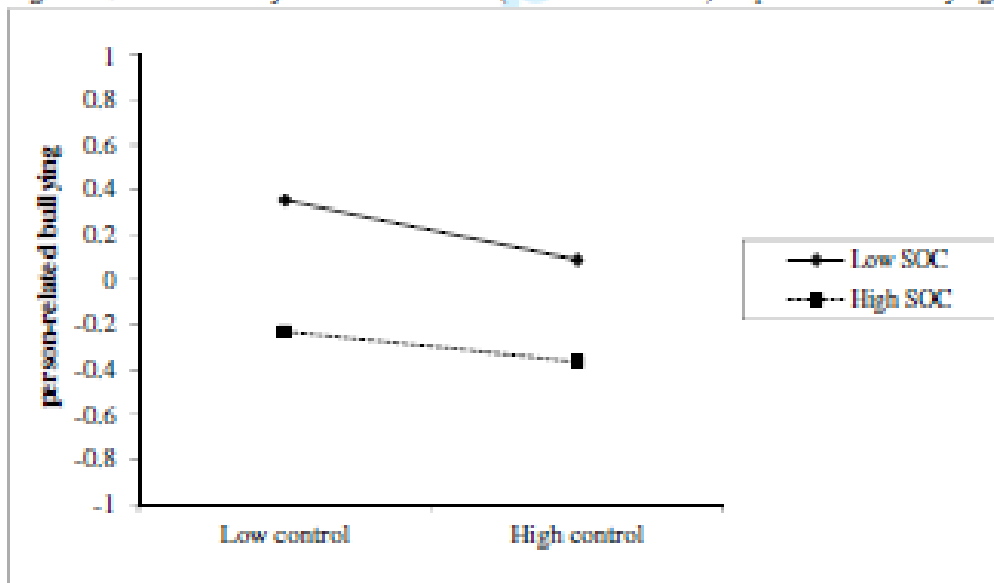
APPENDIX 2: PAPER II

Journal of Business Ethics

Quality of leadership and workplace bullying: The mediating role of social community at work in a two years follow-up study
--Manuscript Draft--

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	organizational antecedents of workplace bullying (such as leadership), negative behavior at work, interpersonal and intergroup conflict.
Additional Information:	
Question	**Response**
Is the manuscript currently submitted anywhere else?	I confirm that this manuscript has not been published elsewhere and is not under consideration by another journal. All authors have approved the manuscript and agreed with its submission to the Journal of Business Ethics.

TITLE PAGE

Manuscript title

Quality of leadership and workplace bullying: The mediating role of social community at work in a two years follow-up study

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Acknowledgments

Introduction

Workplace bullying is an unethical behavior representing a major stressor that
organizations have to face nowadays. With a global prevalence rate ranging from 11%
to 18%, bullying at work has been linked to a number of detrimental consequences for
victims, witnesses, organizations, and the society at large (Nielsen et al. 2010).
Workplace bullying is usually defined as a form of social interaction in which
perpetrators enact verbal and/or non-verbal negative and aggressive behaviors
directed towards targets as individuals and/or their work situation, constituting a
major threat to their self-esteem and professional competence (Einarsen et al. 2011).
According to the work environment hypothesis of workplace bullying (e.g., Agervold
and Mikkelsen, 2004; Hoel and Salin, 2003; Einarsen, 2000; Leymann, 1996), a
perspective highlighting the prominent role of work-related factors in the aetiology of
this phenomenon, workplace bullying is the result of a complex and dynamic process
with causes to be found at various levels, including job design, organization of work,
organizational cultures and climate, reward systems, organizational changes, and
leadership (Salin & Hoel 2011). In particular, since leadership is strongly tied to
organizational culture (Block 2003), organizational citizen behaviors (Wang et al.
2005, Ilies et al. 2007), and counterproductive work behaviors (Spector & Fox 2010),
it is not surprising that leadership is among the factors that have attracted attention
from researchers interested in investigating the antecedents of workplace bullying.
Although a significant link between leadership and workplace bullying has been
repeatedly observed in the literature (e.g., Hoel et al. 2010; Hauge et al. 2007;
Skogstad et al. 2007), the fact that most of the available studies are cross-sectional
(see Laschinger and Fida 2014 as a rare exception) sets a limit to the possibility of
drawing firm causal conclusions about this relationship. For instance, based on

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current evidence one cannot exclude that reverse causation explains the observed associations. It may in fact be that an employee, when exposed to workplace bullying, tends to generate more negative evaluations of the psychosocial work environment, also affecting his/her perception of the quality of leadership (Nielsen 2013; Aasland et al. 2009; Hauge et al. 2007). Hence, in order to provide a stronger empirical case for the role of leadership as a significant antecedent of workplace bullying, there is a need for further studies adopting longitudinal designs. Therefore, the present study makes use of a longitudinal design while testing the relationship between poor quality of leadership and workplace bullying.

Although there are compelling theoretical reasons for expecting that a poor quality of leadership has a direct impact on workplace bullying, it might be also assumed that this effect is transmitted - at least partially - through work-related factors on which quality of leadership may exert a significant effect (Nielsen 2013). However, current research offers limited empirical evidence of the work-related mechanisms potentially operating in this relationship. Given that the social context has been suggested as a significant antecedent of workplace bullying (Newman & Baron 2011), the present study investigates whether the link between a poor quality of leadership and workplace bullying is mediated by social community at work, defined as the extent an employee feels he/she is part of a community and experiences a positive atmosphere and cooperation between coworkers in his/her workplace.

Workplace bullying

According to Einarsen et al. (2011; p.22) workplace bullying is defined as ''harassing, offending, socially excluding someone or negatively affecting someone's work. In

order for the label bullying (or mobbing) to be applied to a particular activity, interaction or process, it has to occur repeatedly and regularly (e.g., weekly), and over a period of time (e.g., about six months). Bullying is an escalating process in the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts. A conflict cannot be called bullying if the incident is an isolated event or if two parties of approximately equal strength are in conflict."

Workplace bullying, being an extreme stressor at work (Zapf 1999), is linked to negative consequences for both the individuals and the organizations. Consequences for victims' health include anxiety, depression, burn-out, sleep problems, altered physiological response (Nielsen & Einarsen 2012, Hogh et al. 2011a), and post-traumatic stress symptoms (Nielsen et al. 2008, Hogh et al. 2012). Consequences for the organizations include job dissatisfaction, lowered organizational commitment, frequent turnover, sickness absence, less creativity and innovation, costs due to tribunals (Escartin et al. 2013, Nielsen & Einarsen 2012; Hogh et al. 2011b), as well as damaged reputation, negative publicity, and loss of customers or job applicants (Hoel et al. 2011).

In empirical research, the phenomenon of workplace bullying is typically assessed using two alternatives approaches. On the one hand, the "self-labeling" method (see (Nielsen et al. 2011) consists of an employee providing a subjective evaluation of whether he/she has been a target of workplace bullying (usually during the previous six months). On the other hand, according to the "behavioral approach" the phenomenon is measured by asking participants to indicate how frequently they are exposed to a series of behaviors commonly associated with workplace bullying. Within the second approach, the *Negative Acts Questionnaire-Revised* (NAQ-R;

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(Einarsen et al. 2009), which we employed in the present study, represents one of the most commonly adopted instruments. Since the negative acts involved in bullying may differ from country to country (Giorgi et al., 2013), we used a version of the NAQ-R that was slightly adapted to the Danish context (Hogh et al., 2012).

Poor quality of leadership as an antecedent of workplace bullying

Already in the 1990s, Leymann (1996) suggested the importance of inadequacies in leadership practices in the aetiology of workplace bullying. However, only recently studies have started to empirically examine the relationship between leadership and workplace bullying (Nielsen 2013). In more detail, styles of leadership including autocratic (Hoel et al. 2010), authoritarian (Vartia 1996), tyrannical (Einarsen et al. 2007), and laissez-faire (Hoel et al. 2010; Hauge et al. 2007; Skogstad et al. 2007) leadership have been linked to increased levels of workplace bullying, whereas positive leadership styles such as authentic leadership have been found to promote trust and provide a genuine sense of caring for subordinates, thus lowering the potential for the occurrence of negative relations at work (Laschinger & Fida 2014).

A significant link between poor leadership characteristics and negative outcomes has been shown by several studies (Kellerman, 2004; Kelloway et al., 2005). Kelloway et al. (2005) suggested that poor leaders may create stress in workplaces both directly, e.g., by showing low consideration for their subordinates' needs, and indirectly, by deteriorating the psychosocial work environment. The presence of work-related stress and/or psychosocial risk factors at work may increase the probability of workplace bullying to occur (e.g., Hauge et al., 2007). For instance, workplace bullying was found to happen more frequently in high demand/low control situations (Notelaers et

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al., 2012; Baillien et al., 2011). A poor psychosocial work environment may also endanger the relationships among employees and lead to conflicts (Hershcovis et al., 2007), which, if managed ineffectively, are more likely to result in workplace bullying (Strandmark and Hallberg, 2007).

Despite several indications of a significant relationship between quality of leadership and workplace bullying, given the widespread use of cross-sectional designs current studies cannot provide sound evidence in support of a causal relation between the two. As an exception, in their recent longitudinal study Laschinger and Fida (2014) found a significant 1-year lagged effect of authentic leadership on workplace bullying, supporting the notion of workplace leadership operating as an antecedent of workplace bullying. As a contribution to current research into quality of leadership as a potential precursor of workplace bullying, in this study with thus aimed to test the following first hypothesis:

Hypothesis 1: The perception of a poor quality of leadership is prospectively related to the reporting of more workplace bullying.

Leadership, social community at work and workplace bullying

Broadly defined, the term *community* refers to any institution with which a person identifies and in which he/she finds meaning (Heller 1989). McMillan & Chavis (1986) defined sense of community as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). Specifically, work organizations can be regarded as "relational communities" as they

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represent contexts where people develop relationships (Heller 1989). Therefore, we define social community at work as "the extent to which an employee feels he/she is part of a community at his/her workplace and experiences a positive atmosphere and cooperation between coworkers." The concept of social community at work resembles that of team cohesion, characterized as "the degree to which members are attracted to a group, motivated to remain part of it, and work together to achieve common goals" (Nielsen 2013; p.128). In his cross-sectional study, Nielsen (2013) has investigated the role of team cohesion as a potential mediator in the association between leadership styles and workplace bullying. Although Nielsen failed to find a significant mediating role of team cohesion in the association between leadership and workplace bullying, he argues that the potential importance of group cohesiveness as mediator in this relationship should not be disregarded. Our study follows this line of research by examining such potential mediating role of social community at work.

In a systematic review and meta-analysis, Kuoppala et al. (2008) found that positive leadership is related to organizational citizenship behaviors, which in turn lead to positive outcomes for both the individual and the organization. In particular, leadership plays a substantial role in establishing a supportive work climate (Laschinger & Fida 2014), with employees being inclined to display organizational citizen behaviors as a way to reciprocate adequate leadership (Fodchuk 2007). These behaviors, such as helping and cooperating, are enacted to the benefit of others as well as, in the long run, to the benefit of the self (Twenge et al. 2007). By contrast, a poor quality of leadership may lead to reduced social support and isolation (Kelloway et al. 2005). Baumeister and Leary (1995) posited that social support is connected to sense of belongingness because it is based on favorable social interactions. These authors argued that the need to belong is a fundamental need that reflects "a pervasive

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drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationship" (p.497), with deprivations of belongingness leading to a variety of negative outcomes. When there is a threat to one's sense of belongingness, people are less likely to engage in prosocial behaviors such as mutual support giving (Twenge et al. 2007), and they develop a tendency to treat the others in a more harsh and aggressive ways (Maner et al., 2007; Twenge et al. 2001). Furthermore, people are more inclined to engage in counterproductive work behavior as a behavioral response to negative experiences with the psychosocial work environment (Fox et al. 2012). The conditions described above seem to support the idea that workplace bullying is a logical adaptation to an unsupportive and stressful work environment (Wheeler et al, 2010). This pattern is consistent with both the Social Identity Theory (Tajfel and Turner 1979), according to which social identity of the in-group is a powerful motivator of social behaviors, and with Haslam and Reicher (2006) findings that a failure to develop a sense of shared identity leads to bullying, indicating that the loss of sense of community is apparent in conflicts, isolation, low social support, and lack of respect. Hence, it can be expected that a poor quality of leadership has the potential to erode social community at work through a reduction of the level and quality of interactions between coworkers, therefore enhancing the risk of workplace bullying. Hence, as second hypothesis of our study we set out to test the following:

Hypothesis 2: The relationship between the perception of poor quality of leadership and the reporting of more workplace bullying is partially or fully mediated by the perception of low social community at work.

The conceptual framework of the present study is summarized in Figure 1.

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[Insert Figure 1 about here]

Methods

Participants

The present study relies on data from a two-year prospective cohort study of workplaces in Denmark. At T1 (Autumn of 2006), a total of 90 companies were recruited through public advertising. Out of 7,358 invited, a total of 3,363 employees (response rate 45.7%) from 60 workplaces completed a questionnaire concerning their psychosocial work environment and health. At T2 (autumn of 2008), all T1 respondents were approached with a second questionnaire, with 1,664 employees (49.5% of the total T1 respondents) participating at both assessments (cfr. Hogh et al. 2012 for more details regarding the study). Using a listwise deletion procedure, we excluded participants with missing values for any of the study variables considered. This led to a final study sample of 1,586 participants. The sample was composed of a majority of women (67.2%); the mean age and job seniority in their current workplace were 45.7 (SD = 10.1) and 11.1 years (SD = 10.1), respectively. Approximately two thirds (63.3%) of the participants were employed in public organizations, while roughly one third (36.7%) came from private workplaces.

Paper-and-pencil questionnaires were sent to the employee's home address to be filled-in at the employee's discretion. It was clearly pointed out that participation in the survey was voluntary and confidential. The study protocol was approved by the local ethics committee (KF 01 302955).

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Measuring workplace bullying

We measured *workplace bullying* with a Danish adaptation (Hogh et al, 2012) of the Negative Act Questionnaire-Revised (NAQ-R; (Einarsen et al. 2009). The adaptation entailed that one item (i.e., "threats of violence or physical abuse or actual abuse") was removed from and two items (i.e., "direct and indirect threats of layoff" and "all talk stops when you enter a room where your colleagues are sitting") were added to the original NAQ-R. Participants were asked to rate how frequently, within the past six months, they had experienced the listed negative acts using a five-point response scale ranging from 1 ("never") to 5 ("daily"). The NAQ-R scale was computed by calculating the mean of the 23 items. The resulting scores were linearly transformed so to range from 0 (no negative acts reported) to 100 (negative acts reported daily).

Quality of leadership

We measured the quality of leadership with four items from the Copenhagen Psychosocial Questionnaire (COPSOQ II; Pejtersen, 2010). Specifically, employees were asked to rate: "To what extent would you say that your immediate superior: 1) makes sure that the individual member of the staff has good development opportunities?; 2) gives a high priority to job satisfaction?; 3) is good at work planning?; 4) is good at solving conflicts?". For each of these items, the five response options ranged from 1 ("a very large extent") to 5 ("a very small extent"). Scores for quality of leadership were computed by averaging the four component items. The scale score is therefore a measure of poor leadership quality with 1 indicating the highest possible quality of leadership and 5 the lowest possible quality of leadership.

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Social community at work

We measured social community at work with three items taken from the COPSOQ II (Pejtersen, 2010), i.e.: "Is there a good atmosphere between you and your colleagues?"; "Is there good co-operation between the colleagues at work?"; "Do you feel part of a community at your place of work?". The five response options ranged from 1 ("always") to 5 ("never"). The score for social community at work were computed by calculating the mean of the three component items. The scale score is therefore a measure of poor social community with 1 indicating the highest possible social community at work and 5 the lowest possible social community at work.

Statistical analyses

To examine the study hypotheses, we tested the total, direct and indirect (via social community at work at T1) effect of the quality of leadership at T1 on workplace bullying at T2 by means of linear regression analyses. All relationships were controlling for gender, age and workplace bullying at T1.

To test whether social community at work at T1 acted as a significant mediator we adopted the recommended bootstrap procedure (Preacher and Hayes, 2008) as implemented in PROCESS (Hayes 2012). PROCESS adopts a non-parametric approach while testing mediation in the light of the typical non-normal sampling distribution of indirect effects, which may bias confidence intervals and provide incorrect estimates of significance as a result (Hayes, 2012). Bootstrapping calculates confidence intervals based on the empirically derived bootstrapped sampling distribution of indirect effects. The test of the mediation effects was based on 5000

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bootstrapped samples, with the level of confidence intervals set to 95%. All analyses were conducted with the IBM SPSS Statistical package, version 20.0.

Results

Table 1 shows means, standard deviations, zero-order correlations, and internal consistencies of the study variables at both T1 and T2. All scales showed good internal consistency, with all variables relevant to our hypotheses being significantly correlated in the expected direction, at the $p < .01$ level.

[Insert Table 1 about here]

Table 2 shows the results of the regression analysis conducted to test the two study hypotheses.

[Insert Table 2 about here]

[Insert Figure 2 about here]

Figure 2 depicts the research model and the different paths tested. At T1, a poorer quality of leadership was significantly associated with a lower social community at work (path a; b= 0.15, p<0.001). In addition, a lower social community at work at T1 was significantly associated with workplace bullying at T2 (path b; b= 0.55, p<0.001). A poor quality of leadership at T1 significantly predicted workplace bullying at T2 (path c; b= 0.36, p>0.05; total R^2=0.29, p<0.001), providing support to the first hypothesis of our study. However, after including the mediator, i.e., social community at work at T1, a poor quality of leadership was no longer a significant predictor of

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subsequent workplace bullying (path c'; b= 0.28, p=0.17). This means that social community at work fully mediated the relationship between a poor quality of leadership and workplace bullying two years later (path ab; b= 0.08, p<0.05). The bootstrap estimate supported the statistical significant of the indirect effect of social community at work at T1 (SE=0.04; 95%LLCI=0.005, 95%ULCI=0.16). Therefore, the second hypothesis of our study was also supported.

Discussion

In our study, we found support for the first hypothesis, stating that the perception of a poor quality of leadership is prospectively related to higher reporting of workplace bullying. This finding is in keeping with the work environment hypothesis of workplace bullying (e.g., Agervold and Mikkelsen, 2004; Hoel and Salin, 2003; Einarsen, 2000; Leymann, 1996), which emphasises the crucial role played by work-related factors in the aetiology of workplace bullying. More specifically, our study shows that, among psychosocial work environment factors, a poor quality of leadership plays and important role with regard to workplace bullying. From the empirical point of view, most previous studies (an exception is Laschinger and Fida, 2014) were unable to establish the causal nature of the relationship between leadership and workplace bullying as they were based on cross-sectional designs (e.g., Nielsen 2013, Hoel et al., 2010; Hauge et al., 2007; Skogstad et al., 2007). By finding a significant prospective relationship between a poor quality of leadership and workplace bullying, after controlling for initial levels of workplace bullying, we were able to provide more robust evidence in support of a possible causal link between quality of leadership and workplace bullying.

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We also found support for the second hypothesis, pointing to a significant full mediating effect of low social community at work in the relationship between poor quality of leadership and workplace bullying. This finding contributes to shed light onto the poorly understood mechanisms underlying the link between leadership and workplace bullying (Nielsen, 2013). In particular, our study provides new knowledge by establishing the mediating role of social community at work, a factor that to date has received scarce attention in this line of research. This result, based on a large sample consisting of several occupations, contrasts with the cross-sectional findings of Nielsen (2013), who found, in a smaller sample covering only one occupational group, i.e., workers in the maritime sector (n=817), that team cohesion – a factor resembling the concept of social community at work – did not play the hypothesized mediating role in the relationship between leadership styles and workplace bullying.

The significant link between a poorer quality of leadership and a lower social community at work may be explained by the fact that employees tend to respond to inadequate leadership with frustration and stress, which may potentially engender interpersonal tensions and conflicts among co-workers (Einarsen, 1999). For example, employees who feel ignored by leaders may decrease their work efforts as a form of disengagement (Wang and Howel, 2010). Co-workers may thus react adversely to the employees displaying such behaviors, initiating a negative spiral that ultimately undermines the quality of the social climate at the workplace. Furthermore, as demonstrated by two meta-analyses (Le Pine, Erez and Johnson, 2002; Organ and Ryan, 1995) managerial support is a significant predictor of organizational citizenship behavior, which may strongly favor the creation of collaborative relations at work.

We put forth basically four possible explanations for the positive link between a low social community at work and workplace bullying. An employee's reduced sense of

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belongingness to his/her workplace associated with the presence of a poor social community at work operates as a common denominator for all these four explanations. First, a low sense of belongingness may adversely impact on performance (Baumeister et al. 2002). Low performance has been shown to increase the risk of becoming a target of workplace bullying (Einarsen, 1999), one reason being that peers respond with hostility to coworkers who withhold their contributions (LePine & Van Dyne 2001). Second, a low sense of belongingness may also decrease an employee's tendency to engage in prosocial behaviors such as helping and cooperating with his/her colleagues (Twenge et al. 2007). This may lead to poor interpersonal relationships, which is a well-known antecedent of workplace bullying (Skogstad et al. 2011), supporting the idea that workplace bullying represents a logical adaptation to an unsupportive and stressed work environment (Wheeler et al, 2010). Third, as a result of a low sense of belongingness employees may tend to engage in behaviors aimed to generate social acceptance (DeWall et al. 2008). However, overt attempts to gain social acceptance, e.g., an employee making efforts to impress a colleague, may be perceived as insincere and therefore elicit negative responses from others. Coworkers may stigmatize individuals showing inappropriate behaviors as "outsiders" (Zapf & Einarsen 2011), who, in accordance with the social identity theory (Tajfel & Turner 1986), may be singled out as targets for bullying behaviors. Fourth, a poor sense of belongingness may lead to aggression and anger (Buckley et al. 2004). This agrees with the "provocative victim" profile described by Olweus (1978), indicating an individual whose aggressive reaction patterns may be perceived by others as annoying, irritating, and a source of tension. As a result, provocative victims may be under a higher risk of social isolation, which represents a crucial characteristic of the bullying experience (Matthiesen & Einarsen 2007).

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Strengths, limitations and future research

The major strengths of this study are its longitudinal design, the large and occupationally heterogeneous sample of employees, and the fact that it responds to the call of delving into the poorly understood mechanisms of the relationship between leadership and workplace bullying.

However, this study also presents some limitations that should be considered while interpreting our findings. A first limitation relates to the use of self-report measures only, raising questions about common method bias (Podsakoff et al. 2003). However, the potential impact of this kind of bias is considerably reduced by the adoption of a longitudinal study design (Podsakoff et al. 2003).

A second limitation is that the relationship between quality of leadership (i.e., the hypothesized predictor) and social community at work (i.e. the hypothesized mediator) was tested simultaneously, preventing us from drawing firm causal conclusions about this link. Since we could only rely on a two-wave study, we decided to model the mediator at T1 given the primary need to temporally separate social community at work and workplace bullying. Theoretically, these two variables may considerably overlap given that typically targets of workplace bullying appraise their work environment as poorly supportive (Notelaers et al., 2012). A re-run of the same mediation model using social community at work at T2 confirmed the full mediation (path ab; b= 0.25, p<0.001; Bootstrap SE=0.08; 95%LLCI=0.08, 95%ULCI=0.42). Despite this, in order to provide more definite conclusions concerning the hypothesized mediation, future studies should use a three-wave study design to allow temporal separation when measuring the predictor, the mediator, and the outcome.

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A third limitation is that a time lag of two years might be sub-optimal for testing the relationships under investigation here. In the course of the study, some participants may have been bullied as a result of poor quality of leadership and poor social community at work, while not being bullied anymore at the T2 assessment two years later. If this had occurred, it would have resulted in an effect underestimation. Hence, this study should be replicated using shorter time intervals so as to ascertain the strength of the causal effects.

As a fourth limitation, our operational definition of quality of leadership clearly taps how an individual employee perceives the leader to behave. It cannot be excluded, however, that this appraisal may be colored by other factors, for example, how often a person has the possibility to interact with the leader and under which circumstances. Moreover, the number and types of behaviors tapped by the measure of quality of leadership we used are limited; future studies might therefore be carried out using measures that capture more and diverse aspects of leadership behavior.

A final limitation is that we only tested the potential mediating effect of one factor, i.e., social community at work. Future research may be conducted with the aim to elucidate other possible mechanisms linking leadership to workplace bullying, by examining the role of other potential mediating variables such as trust and justice, which are salient human values in the workplace.

Practical implications

By showing that a poor quality of leadership is related to workplace bullying, our study points out the need for work organizations to implement training programs to increase leaders' awareness of how their behaviors may affect others in the workplace (Avolio & Gardner 2005). Furthermore, the fact that the social community at work

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fully mediates the effect of poor quality of leadership on bullying must also be taken into consideration when planning strategies of prevention or intervention. We therefore encourage organizations and managers to strongly invest in maintaining and increasing good social relations at work in order to promote a bully free workplace.

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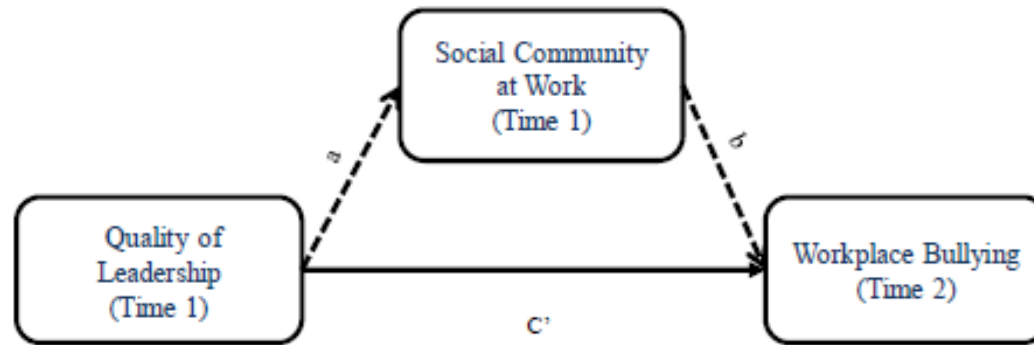
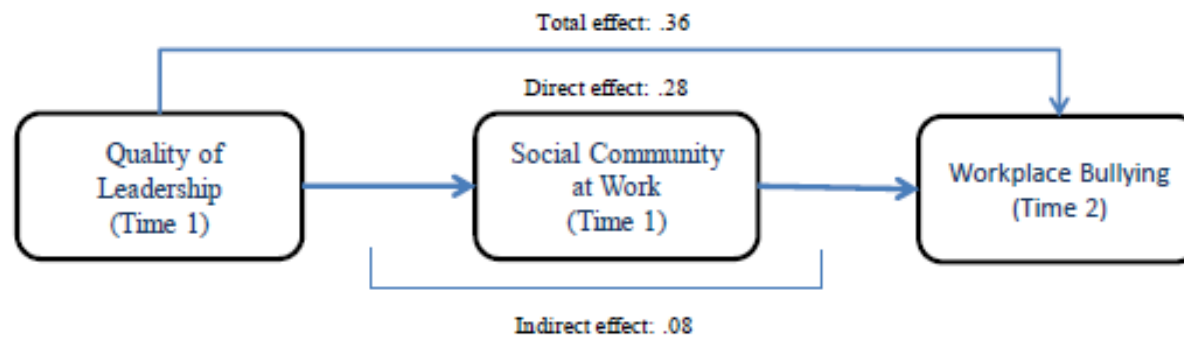**Figure 1.** Research model

Figure 1. Direct and by social community at work mediated (indirect) association between poor leadership quality and workplace bullying, n=1592.
Note: Unstardardized regression coefficients adjusted for gender, age and workplace bullying at Time 1.
Indirect effects estimates based on 5000 bootstrap samples.
All coefficients significant at $p > 0.001$.

TABLE 1

Descriptive Statistics, correlations and internal consistency

	Mean	SD	1	2	3	4	5	6
1.Age	0.30	0.46						
2.Gender	47.01	9.54						
3. Poor quality of leadership (T1)	2.68	0.98	(0.87)					
4. Social community at work (T1)	3.53	0.71	0.35	(0.81)				
5. Workplace bullying (T1)	6.53	7.40	0.39	-0.45	(0.89)			
6. Poor quality of leadership (T2)	2.87	0.97	0.51	0.24	0.26	(0.88)		
7. Social community at work (T2)	4.13	0.65	0.26	0.45	0.29	0.41	(0.85)	
8. Workplace bullying (T2)	5.50	6.83	-0.26	-0.29	0.53	-0.43	-0.49	(0.89)

Cronbach's alpha coefficients are presented on the diagonal in parentheses. Correlations are all significant at the $p<.01$ level; T1 = Time 1; T2 = Time 2.

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Table 2. Multiple linear regression testing the total, direct and indirect (*via* social community at work at T1) effect of poor quality of leadership at T1 on workplace bullying at T2.

| | Mediator Social community at work | | Outcome Workplace Bullying T2 | | | | | | | |
| | Direct effect (path a) | | Total effect (path c) | | Direct effect (path c' and b) | | Indirect effect (path ab) | Bootstrap 95% CI Indirect effect | | |
	b	SE	b	SE	b	SE	b	SE	LLCI	ULCI
Gender (male)	0.02	0.03	0.02	0.32	0.01	0.32				
Age	0.003	0.001	-0.07	0.02	-0.01	0.02				
Workplace bullying T1	0.03**	0.02	0.55**	0.02		0.02				
Poor quality of leadership T1	0.15**	0.013	0.36*	0.16	0.28	0.17	0.08*	0.04	0.005	0.16
Social community at work T1 (Path b)					0.69*	0.30				
R^2		0.25**		0.29**		0.29**				

Note: b, unstandardized regression coefficients; SE, Standard Error; LLCI, Lower Limit 95% Confidence Interval; ULCI, Upper Limit 95% Confidence Interval.
**$p<0.001$, *$p<0.05$.