



# The roles of cognitive avoidance, rumination and negative affect in the association between abusive supervision in the workplace and non-clinical paranoia in a sample of workers working in France



Catherine Bortolon<sup>a,b,\*</sup>, Bárbara Lopes<sup>c</sup>, Delphine Capdevielle<sup>b,d</sup>, Valéry Macioce<sup>e</sup>, Stéphane Raffard<sup>f,b</sup>

<sup>a</sup> Laboratoire Inter-universitaire de Psychologie: Personnalité, Cognition et Changement Social - Université Grenoble Alpes, Grenoble, France

<sup>b</sup> CHU Montpellier, Epsilon Laboratory, University Department of Adult Psychiatry, Rue du Pr. Henri Serre, 34000, Montpellier, EA 4556, France

<sup>c</sup> Center for Research in Neuropsychology and Cognitive Behavioral Intervention (CINEICC), Faculdade de Psicologia e de Ciências da Educação da Universidade de Coimbra, Apartado 602, 3001-802, Coimbra, Portugal

<sup>d</sup> French National Institute of Health and Medical Research (INSERM), U1061 Pathologies of the Nervous System: Epidemiological and Clinical Research, Montpellier, France

<sup>e</sup> Department of Medical Information, CHU Montpellier, Clinical Research and Epidemiology Unity, Montpellier, France

<sup>f</sup> Univ Paul Valéry Montpellier 3, Univ. Montpellier, EPSYLON EA 4556, F34000, Montpellier, France

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## ABSTRACT

This study examined the relationship between abusive supervision and non-clinical paranoia and explored which cognitive mechanisms are mediating this association (i.e. rumination, cognitive avoidance and negative affect). A sample of two hundred and five French-speaking workers currently in employment in France was recruited to fill in a battery of online questionnaires comprising of the French adaptations of the Abusive Supervision Scale, the State Social Paranoia Scales, the Depression and Anxiety and Stress Scales, the Cognitive Avoidance Questionnaire and the Mini-Cambridge Exeter Repetitive Thought Scale. Mediation analyses showed that the experience of supervisory abuse directly influences state paranoia, however, there were significant mediation effects. Abusive supervision impacted on cognitive avoidance that led to more rumination, which in its turn increased negative affect and this increased state paranoia. Rumination impacted on state paranoia but through the effect of negative affect only. This study showed that abusive supervision works together with cognitive and affective factors to impact on non-clinical paranoia. It is recommended that Cognitive and Behavioural therapy (CBT) is tailored to help workers to cope with experiences of supervisory abuse and associated paranoid thoughts by focusing on replacing rumination and cognitive avoidance strategies for more adaptive cognitive strategies and on how to manage depression.

## 1. Introduction

Although psychotic symptoms including paranoia are mostly associated with psychiatric disorders and more specifically with schizophrenia, researchers have suggested that they can be placed on a continuum with experiences of a non-clinical population (Johns and van Os, 2001; van Os et al., 2000; van Os et al., 2009). Among these psychotic symptoms, paranoia has received a lot of attention in the last few years. Paranoid thoughts range from common ideas pertaining sensitivity to social concerns to ideas of reference (e.g., people talking about you) and then to less common ideas of persecution of different levels of

threat including delusions of a conspiracy (see Freeman et al., 2005 for a hierarchy of paranoid thoughts). Regarding its prevalence in the general population, a review by Freeman (2007) showed that approximately 1–3% of the non-clinical population has severe levels of delusions while 5–6% has delusions of less severity.

Historically, most clinical research on paranoia has focused on experiences of childhood abuse by one's family and peers as situational factors of paranoia (see for example, Lopes, 2013), neglecting the impact that adult experiences of abuse by other relevant individuals such as one's boss and/or workplace colleagues have on paranoia. Therefore, clinical research and therapy has often dismissed the importance of the

\* Corresponding author at: Université Grenoble Alpes - Laboratoire Inter-universitaire de Psychologie : Personnalité, Cognition et Changement Social, 1251 avenue Centrale, CS 40700, 38058, Grenoble, Cedex 9

E-mail addresses: [catherine.bortolon@univ-grenoble-alpes.fr](mailto:catherine.bortolon@univ-grenoble-alpes.fr) (C. Bortolon), [bslopes@protonmail.com](mailto:bslopes@protonmail.com) (B. Lopes).

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workplace environment as a risk factor for the development of serious psychiatric symptoms in adults, including paranoia (Lopes et al., 2018a). In fact, there is an underlying assumption that being employed buffers against the onset of depression and of psychosis. Nevertheless, it is also recognized that the mental health benefits of being at work depend on the quality of work. Work that is low paid, insecure and that poses serious social and physical threats to the employee (i.e. being at risk of suffering from bullying and abuse) can be damaging to the employee's mental health (Lopes et al., 2018a; Stansfeld et al., 2016).

Hence, the workplace environment is an important issue that needs to be researched for different reasons. First, individuals spend a lot of their time and adult life in the workplace. In Europe, for instance, individuals spend on average around 41.4 h per week working and 84.6% of the population are employees (Eurostat, 2016). Consequently, an abusive work environment may affect the quality of the work, the quality of life and mental health of the employee, being an important risk factor for the development of common mental health problems and of more serious psychopathology, such as paranoia. Second, there is literature to suggest that workplace issues are important correlates of paranoia (see Freeman et al., 2011). Third, a recent theoretical model by Chan and McAllister (2014) has proposed that abusive supervision, that is, the perception and experience of abuse by one's supervisor lead to negative workplace outcomes and poor well-being by triggering paranoid thoughts that act as lenses through which the supervisor's behaviour is understood and reacted to.

Although abusive supervision and its outcomes (e.g., poor well-being, job turnover, low job satisfaction, workplace deviance, etc.) have been studied at length in Anglo-Saxonic countries, e.g., the U.S. (see Tepper, 2000, 2007) and the UK (see a recent study by Lopes et al. (2018b)), there is a lack of studies that explore the cognitive and emotional consequences of abusive supervision in other countries, such as in France.

This study will address these gaps and consequently advance the literature in clinical psychology and abusive supervision by considering how rumination interacts with cognitive avoidance strategies including thought suppression (often neglected in the abusive supervision literature) and negative affect to impact on paranoia in the context of abusive supervision. Consequently, this study reinforces the argument in favour of tailored Cognitive and Behavioural Therapy that takes into account workplace issues (Lopes et al., 2018a). As such, this is one of the first studies to couple clinical and organizational theories of paranoia to uncover how these cognitive and affective mechanisms work together to explain paranoia in a workplace context.

### 1.1. Experiences of abuse and paranoia: the role of abusive supervision in the workplace

Regarding the environmental factors associated with paranoia, one context that has not been much explored in the clinical literature is the work environment. For instance, less perceived social support, stress at work and less social cohesion have been associated with paranoia in the general population (Freeman et al., 2011). Those experiences may be even heightened under the context of abuse in the workplace perpetrated by one's supervisor.

Abusive supervision can be defined as the supervisor's tendency to consistently adopt hostile verbal and non-verbal behaviors without physical contact (Tepper, 2000). Employees whose supervisors are perceived to be more abusive were found to experience more often emotional exhaustion (Aryee et al., 2007), burnout (Carlson et al., 2012) and reduced job satisfaction (Lin et al., 2013). Moreover, perceived abusive supervision negatively affects the employees' performance (Aryee et al., 2007) and willingness to make efforts (Harris et al., 2011). Finally, the impact of perceived abusive supervision goes beyond the work environment and affects family satisfaction at home by increasing the levels of work-related conflicts, especially in those employees that ruminated about their negative experiences at work

(Carlson et al., 2012; Haggard et al., 2011).

According to the *Institute National de la Statistique et des Études Économiques* (2013), in 2013, 13% of employees reported that they have already experienced conflict or harassment (verbal, physical or sexual assault) by their colleagues or their superiors. Likewise, 35% of employees did not think they were respected and that they received the respect that their work deserves and 24% of employees were afraid of losing their jobs and felt insecure as a result of abusive supervision. These figures clearly show that the problem of harassment is present in society and more particularly in workplaces.

Besides emotional exhaustion, burnout and reduced satisfaction, abusive supervision has also been associated with paranoia. One recent theoretical model of abusive supervision proposed by Chan and McAllister (2014) attempts to cross over organizational science with clinical psychology to try to explain the relationship between paranoia and abusive supervision in the workplace. They proposed that the experience and perception of abusive supervision lead to paranoid ideation (thoughts about the malevolence of the supervisor). They argue that workers cope with abusive supervision by activating paranoid thoughts and associated cognitive mechanisms that justify allocating more resources to scan the workplace environment for threat-related information in order to deal with the distress provoked by these thoughts. The cognitive mechanisms associated with paranoia include hypervigilance, sinister attributions and cognitive strategies e.g., rumination, which are described as ways of dealing with experiences of abuse. More precisely, individuals would ruminate uniquely on threat-related issues and on ways of explaining the consequences and the causes for the abuse. This will then prevent individuals from shifting their focus of attention to innocuous situations reinforcing instead their perception of threat. Ultimately, the negative affect associated with these experiences and thoughts will help to maintain paranoid ideation.

Subsequently, Lopes et al. (2018b) provide initial empirical evidence for the Chan and McAllister's (2014) model with two samples of UK workers. They showed that perceived abusive supervision was associated with increased paranoid thoughts and consequently with decreased well-being and with more sinister attributions being made (defined by workers' erroneously attributing malevolent intentions to others where there is no evidence to support this attribution). The effect of abusive supervision on paranoid thoughts was moderated by perceived organizational support, where the more organizational support the less abusive supervision fed into paranoia, which led to an increase of workers' well-being. In their second study, paranoia was triggered by viewing a video of a supervisor shouting at the employee that then provoked an increase of intentions to engage in aggressive and workplace deviant behaviours as ways of retaliation towards the perceived abuse and as coping behaviours associated with the paranoia.

In sum, research has shown that perceived abuse in the workplace has an important impact on the professional and personal lives of individuals, especially in those who ruminate. Likewise, individuals will develop paranoid thoughts when faced with abusive supervision, which will ultimately lead to poor mental health and issues in the workplace (Lopes et al., 2018a and 2018b). This then calls for research on how cognitive and affective mechanisms interact to explain paranoia in the context of supervisory abuse.

### 1.2. Cognitive models of paranoia: the roles of cognitive processes and negative affect

Several cognitive processes have been associated with the development and persistence of paranoia in both clinical and non-clinical populations (Freeman and Garety, 2014; Freeman et al., 2005; Freeman et al., 2012). This study will focus on two cognitive strategies: cognitive avoidance and persistent negative thinking and more specifically on rumination.

Cognitive and emotional avoidance also known as experiential avoidance can be defined as a refusal to experience unpleasant thoughts

and feelings together with attempts to avoid them (Hayes et al., 2004). The paradox of experiential avoidance is that attempting to suppress and avoiding undesirable thoughts only increases their frequency and their distress (Gross, 2002; Najmi and Wegner, 2008). As a matter of fact, Goldstone et al. (2011) suggested that experiential avoidance is a coping strategy that is used to deal with stressful life experiences, which increases the tendency to experience more frequent and distressful delusional ideas.

Apart from cognitive avoidance, evidence in the clinical literature has also pointed towards the role of rumination and more specifically an abstract style of rumination on paranoia (Martinelli et al., 2013; McKie et al., 2017). An abstract style of rumination is defined as a way of thinking characterized by keeping focus on the causes and consequences of a psychological state (Nolen-Hoeksema, 1991). Rumination prevents individuals from shifting their attention from self-related information and from negative appraisals of the self, emotions and situations to non-self-related information, which will then feed the negative psychological state (McKie et al., 2017).

Even though rumination and more specifically an abstract style of rumination has been mostly explored in depression, it is also thought to be involved in the onset, maintenance, or recurrence of multiple disorders, including paranoia. Indeed, Martinelli et al. (2013) found in a non-clinical sample that rumination was associated with an increase of state paranoid ideation following a paranoia induction task whereas a distraction task led to a decrease of paranoid ideation. In addition, a more recent study of McKie et al. (2017) supports previous research by Martinelli et al. (2013) by suggesting that ruminative self-focus helps to maintain paranoid ideation. They speculate that the mechanisms through which rumination maintains paranoia may have to do with the increased retrieval of negative memories involving others and with difficulties of problem-solving on how to respond to the paranoid ideas. Finally, a study by Vorontsova et al. (2013) showed that depression in patients with persecutory delusions was found to be associated with both experiential avoidance and rumination. Nevertheless, only depression directly predicted paranoia.

In organizational literature, previous research has found workplace-related rumination (thoughts directed to issues related to work) to be intrusive and disruptive to concentration, to impair problem-solving skills and to cause decreased motivation and depression (Lyubomirsky and Tkach, 2003; Rachman et al., 2000). Further research on workplace-related rumination has found that rumination is often a negative response to trauma (e.g., workplace violence) that becomes maladaptive because it focuses only on negative emotions and thoughts about the event, it is also passive and obstructs effective problem solving, with the self-referential nature of ruminative thoughts tending to over-generalise (Niven et al., 2012).

More recently, a theoretical model of abusive supervision through the lens of paranoia proposed by Chan and McAllister (2014) argues that rumination is a prototypical paranoid cognition that is shown by employees because employees have a paranoid schema that excessively monitors the workplace environment for threatening information to confirm their perceptions of abuse and associated paranoid explanations. It is argued that employees develop a sense of false “preparedness” that confirms their paranoid thinking by keeping focus on the negative consequences of abuse and by thinking constantly about the abuse (i.e. rumination).

Nevertheless, the organizational literature has failed to examine other cognitive mechanisms that work together with rumination to impact on non-clinical paranoia. This is important to research since there is evidence from the clinical literature to suggest that cognitive mechanisms such as cognitive avoidance and thought suppression are also associated with paranoia (e.g., Goldstone et al., 2011). These mechanisms have been neglected in the abusive supervision literature and only have been studied in the clinical literature as cognitive mechanisms that are used as responses to general stress and not specifically to stress generated by the experience of abusive supervision in a

workplace context. As such, this study will advance the current literature by examining how both cognitive avoidance strategies and work-related rumination work together to impact on non-clinical paranoia in the context of abusive supervision.

While the first would lead to a rebound effect resulting in more intrusive thoughts that will then prevent individuals from gathering data that disconfirm their beliefs, the second would impact on paranoia by keeping focus on negative information and by constantly thinking about the negative consequences of paranoid ideas (e.g., being criticised by a malevolent supervisor). Moreover, those two maladaptive cognitive strategies may interact in a way that attempts to suppress and avoid unpleasant and unwanted thoughts. Unfortunately, these attempts to suppress and avoid unpleasant thoughts will increase depression that in its turn will foster paranoia.

### 1.3. Objectives and hypothesis

Given that there is literature to suggest that abusive supervision may be an important phenomenon to study in relationship with paranoid ideation, the aim of this study is to advance the literature in this area by exploring: (1) how experiences of abuse in the workplace perpetrated by one's supervisor are associated with non-clinical paranoia and (2) which cognitive mechanisms are mediating this association. For the purpose of this study, clinical and organizational literature will be coupled to produce a cognitive model (see Fig. 1) to understand how workers that work in France can develop non-clinical paranoia in the presence of abusive supervision. Therefore, the standard cognitive model of persecutory delusions (Garety et al., 2001) that has been applied into clinical contexts looking at family and peer bullying as situational factors of paranoia and at how certain cognitive factors (e.g., experiential avoidance and abstract rumination) and negative affect (e.g., depression) develop and maintain paranoia will be coupled with the organizational literature i.e. Chan and McAllister's (2014) model of abusive supervision to produce a cognitive model (see Fig. 1) to understand how workers that work in France can develop non-clinical paranoia in the presence of abusive supervision.

Following previous literature, we hypothesized that abusive supervision would impact on paranoia both directly and through the effect of three mediator variables that were found in the previous literature to be impacting both on paranoid ideation and on persecutory delusions. These variables are cognitive avoidance, rumination, and negative affect. Following previous research, we also expect that cognitive avoidance would have an impact on rumination, negative affect, and paranoia. Subsequently, rumination would have an impact on negative affect, and finally, negative affect would also have an impact on paranoia.

## 2. Method

### 2.1. Participants

Two hundred and five participants from the general population in France were included in the present study. Three participants were excluded due to missing data. Participants were recruited through social media platforms and through an invitation email to participate in the study that was divulged to acquaintances who were currently working in public and private companies in France. Acquaintances were requested to divulge this email to their colleagues that worked in companies in France. Moreover, we contacted some job-related associations located in France (through email or social media) and requested them to distribute our study to their collaborators and affiliated companies located in France so that their employees could also take part in our research. Mean age, gender and education level of participants, as well as their job characteristics (type of job, type of company, and years in the job), are presented in Table 1.

Participants were included in the study if they were currently

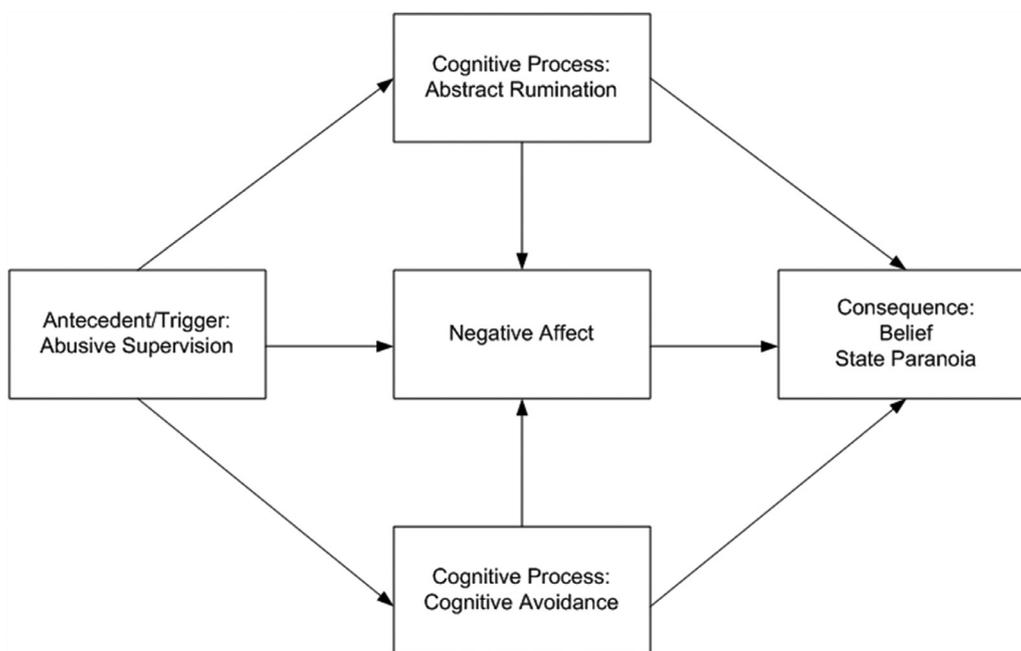


Fig. 1. Cognitive model of Abusive Supervision and Paranoia based on features of Chan and McAllister’s model (2014) with abusive supervision as an antecedent of paranoia and Garety et al.’s (2001) cognitive model of persecutory delusions with cognitive processes and negative affect influencing paranoia.

Table 1  
Socio-demographic and job-related variables.

	M	SD
Age	37.10	11.68
Years in the job	8.57	9.44
	N	%
Gender – Male	46	22.5
Gender - Female	157	77
Gender – Prefer not to answer	2	1
Education - Higher Education	153	75
<b>Type of Job</b>		
Administrative	30	14.6
Communication/Sales	12	5.9
Teaching	21	10.2
Technical	8	3.9
Intermediary Management	27	13.2
Restoration	8	3.9
Police/Security	19	9.3
Transport/Distribution	7	3.4
Health	49	23.5
Other	24	11.7
<b>Type of Company</b>		
Associations	12	5.9
Public	81	39.5
Private	79	39
Other	32	15.6

working in a company or organization located in France, in which they had to answer to and follow orders of a hierarchical superior that was their supervisor. This follows recent literature that showed that being of a lower job rank to a supervisor poses serious risks to the mental health of the lower rank employee and is also a risk factor for paranoia due to power asymmetries and social rank issues in the workplace (Lopes et al., 2018a).

Other exclusion criteria included reporting taking psychiatric medication for bipolar and psychotic disorders. We decided not to exclude those participants taking medication for anxiety and depression in light of previous literature showing that abusive supervision is positively associated with poor mental health including higher levels of anxiety and depression (Lopes et al., 2018a; Qian et al., 2015). Based on the self-report data, two individuals were excluded from the analysis

due to reporting taking psychiatric medication for bipolar disorder.

Participants could access the survey through a web-link and then they were directed to the introductory page. The survey guarantees the anonymity of data handling by assigning a random numeric code to participants. No identifying data were requested. Participants' consent was obtained by asking them to click “yes” to continue. Participants could drop out of the study at any time by simply closing the web browser. Participants were told that the goal of the present study was to investigate the impact that some negative experiences in the workplace would have on their thoughts, feelings, and behaviours. The questions on the first page asked for socio-demographic and mental health information. This was then followed by the battery of questionnaires present in the survey.

The study was carried out according to the code of ethics of the World Medical Association (Declaration of Helsinki). The study took approximately 30 min to complete and participants were fully debriefed at the end.

## 2.2. Instruments

### 2.2.1. State social paranoia scale (SSPS)

The SSPS is a scale composed of 20 items measuring state social paranoia. Ten items measure the presence of paranoid ideas and the other ten measure positive or neutral interpretations of the social environment. Each item is scored on a 5-point scale (dot not agree – totally agree). Higher scores indicate greater levels of persecutory ideas. This scale was developed and validated by Freeman et al. (2007) showing good reliability (Cronbach's alpha = 0.91). The French version was translated following the steps described by Sousa and Rojjanasrirat (2011). Scores range from 10 to 50. In this study, the Cronbach's alpha coefficient for this scale was 0.94, indicating good reliability.

### 2.2.2. Depression, anxiety and stress scale (DASS-21)

The DASS-21 is a scale measuring negative affect including depression, anxiety, and stress. Each item is scored on a 4-point scale (never – all the time). Higher scores indicate greater levels of negative affect. The scale was developed and validated by Parkitny and McAuley (2010). The French version of this scale was validated by

Ramasawmy (2015) showing good internal reliability (Cronbach alphas ranging from 0.72 to 0.79). In this study, we used only the depression score to measure negative affect ( $\alpha = 0.92$ ). Scores on the DASS-21 need to be multiplied by 2 to calculate the final score. Thus, depression scores range from 0 to 42.

### 2.2.3. Mini Cambridge-Exeter repetitive thought scale (Mini-CERTS)

This scale was developed and validated by Barnard and colleagues (2007) and measures both an abstract-analytical and concrete-experiential way of thinking. Each item is scored on a 4-point scale (almost never – almost always). The Abstract Rumination score ranges from 9 to 36. The French version was validated by Douilliez et al. (2014) and presents good reliability (Abstract Thinking  $\alpha = 0.72$  and Concrete Thinking  $\alpha = 0.74$ ). In this study, the Cronbach alpha for Abstract Thinking/Rumination was 0.77. Participants were requested to think specifically about the work environment while completing the scale.

### 2.2.4. Cognitive avoidance questionnaire (CAQ)

This questionnaire assesses the degree of cognitive avoidance through five dimensions: avoidance, distraction, substitution, transformation, and suppression of negative thoughts. It is composed of 25 items. Each item is scored on a 5-point scale (not at all – totally). A high score means a high degree of cognitive avoidance. Scores range from 25 to 125. The questionnaires were developed and validated by Gosselin et al. (2002). In this study, the Cronbach alpha suggests good internal consistency ( $\alpha = 0.95$ ). Participants were requested to think about their work environment while completing the scale.

### 2.2.5. Abusive supervision scale (ASS)

This scale was designed to assess the degree of abusive supervision perceived by the employee in his / her professional environment. It is composed of 15 items. Each item is scored on a 5-point Likert scale evaluating the frequency of the perceived behaviour. A high score demonstrates a high perception of abusive supervision. Mean scores range from 0 to 5. The English version of the scale was developed and validated by Tepper (2000) and demonstrated good internal consistency coefficients (higher than 0.67). The French version was translated following the steps described by Sousa and Rojjanasrirat (2011). In this study, the Cronbach alpha was suggesting good reliability ( $\alpha = 0.94$ ).

## 2.3. Statistical analysis

Data analyses were performed using SPSS software (version 20). Exploratory data analyses revealed that all variables presented a non-normal distribution, as verified by Kolmogorov–Smirnov Tests. Transformations resulted in normal distributions for Age, Cognitive Avoidance, and Rumination and reduced kurtosis and skewness for the remaining variables (Abusive Supervision, Depression and Paranoia). Although a normal distribution is not a requirement for neither regression nor mediation analyses, we decided to move forward with the analyses using the transformed version of the variables. Regression and mediation analyses request errors to be normally distributed. Besides, assumptions for these analyses also include linearity (Normal Probability Plot), homoscedasticity (Plot of residuals versus predicted value), independence (Durbin-Watson statistic) of Residuals, the presence of outliers (Cook's distance  $< 1$  except for one value which was excluded;  $N = 204$ ) and multicollinearity ( $VIF < 2$ ). All of these assumptions were tested and no major problems were found.

Spearman Rho's Correlation analyses were performed to verify whether our main variables were significantly correlated to each other. We also considered the associations between these variables and both age and gender. Mediation analyses were conducted with the SPSS macro PROCESS developed by Hayes (2012). As mentioned above, mediation analysis using PROCESS does not have the assumption regarding normality of the distributions. Nevertheless, it is assumed that “the errors in estimation meet the standard assumptions of OLS

regression (normality, independence, and homoscedasticity)” (Hayes 2012, page 3). In this study, a bootstrapping procedure based on 5.000 resamples was used to calculate a 95% percentile bootstrapping confidence interval (BCCI) around the total indirect effect. Comparisons between males and females and between the types of company: public vs. private for the key variables were performed using the Mann–Whitney test.

Post-hoc power analyses were performed using the R Studio Software and the Package ‘bmem’ (Zhanz, 2014). We entered the effect sizes from previous studies evaluating the associations between: (1) Abusive Supervision and Paranoia (Lopes et al., 2018b); Rumination and Depression (Haggard et al., 2011); (2) Paranoia and Cognitive Avoidance (Goldstone et al., 2011); Rumination, Depression and Persecutory delusional ideation (Vorontsova et al., 2013); and (3) Cognitive Avoidance, Rumination and Depression (Maurage et al., 2017; Moulds et al., 2007). We set the power analyses at two hundred participants because power analysis' results showed that 200 was an adequate sample size that demonstrated for all the mediation effects a power higher than 0.8 except for one (Abusive Supervision -> Rumination -> Depression -> Paranoia). This was not surprising considering that: (1) non-significant  $p$  values will always correspond to low observed power due to the one-to-one relationship between  $p$  values and observed power (O' Keefe, 2007); and that (2) in the study by Haggard et al. (2011) they did not find a significant correlation between rumination and abusive supervision ( $N = 148$ ). We can therefore conclude that a sample of 200 participants that we obtained for this study is sufficient in terms of power for the mediation effects that are observed in the mediation analyses of this study, enabling us to reject the null hypothesis and to avoid a Type II error, in particular in regards to the pathway between abusive supervision, rumination, depression and paranoia that suggests that rumination needs depression to impact on paranoia.

An additional analysis based on structural equation PLS models is presented as supplementary data supporting the results we obtained with the SPSS Macro PROCESS mediation software.

## 3. Results

### 3.1. Socio-demographic and clinical variables

Means and standard deviations for the main variables (State paranoia, Depression, Cognitive Avoidance, Abstract Rumination and Abusive Supervision) used in the present study are presented in Table 2. As it can be observed in Table 2 the mean for abusive supervision is slightly higher to what was observed by Tepper (2000, 2007). In addition to this, the mean scores for depression and abstract rumination are very similar to the mean scores found in large U.S., U.K. and French samples from the general population, thus suggesting that the clinical data of this study are reliable (see supplementary data).

**Table 2**  
Means and standard deviations for the clinical variables.

	<i>M</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
<b>State paranoia</b>	19.49	8.32	10	40
<b>Abusive supervision</b>	1.82	0.94	1	5
<b>Depression</b>	12.70	5.14	2	28
<b>Cognitive avoidance</b>	46.26	18.48	25	116
<b>Abstract rumination</b>	20.11	5.05	10	32
	<i>N</i>	%		
<b>Depression category</b>				
Normal	67	32.7	–	–
Mild	62	30.2	–	–
Moderate	59	28.8	–	–
Severe	17	8.2	–	–

### 3.2. Preparatory analyses for mediation

All correlations were significant suggesting positive and strong relationships between abusive supervision, rumination, and cognitive avoidance strategies, negative affect and state paranoia (all  $p \leq 0.001$ ; correlation coefficients ranging from 0.49 to 0.68). Moreover, age was significantly negatively associated with abstract rumination ( $r = -0.19, p < 0.01$ ) and cognitive avoidance ( $r = -0.15, p < 0.05$ ), suggesting that as age increases both abstract rumination and cognitive avoidance decrease. We also considered the effect of gender. Mann-Whitney tests showed that there were statistically significant effects of gender on depression ( $p = 0.018$ ), cognitive avoidance strategies ( $p = 0.014$ ), and abstract rumination ( $p = 0.015$ ). These results suggested that women showed statistically significantly more depression, cognitive avoidance and abstract rumination than men. As such, both age and gender were included in the model as co-variables.

### 3.3. Mediation analysis

Following the previous correlation analyses, we used the model 6 proposed in the PROCESS macro of the mediation analysis. Abusive supervision was entered as the independent variable and state paranoia as the dependent variable. Cognitive Avoidance strategies, abstract rumination, and negative affect were entered as mediators. Finally, age and gender were entered as co-variables.

Fig. 2 shows the regressions presented in the mediation model. Abstract rumination did not impact directly on state paranoia, but only through the effect of depression. The indirect effects found to be significant were:

- (1) Abusive Supervision -> Cognitive Avoidance -> State Paranoia (Fig. 2;  $\beta = 0.882, SE = 0.343, \text{BootCI } 95\% \text{ } 0.261\text{--}1.587$ );
- (2) Abusive Supervision -> Negative Affect -> State Paranoia ( $\beta = 0.586, SE = 0.275, \text{BootCI } 95\% \text{ } 0.129\text{--}1.208$ ).
- (3) Abusive Supervision -> Abstract Rumination -> Negative Affect -> State Paranoia ( $\beta = 0.13, SE = 0.072, \text{BootCI } 95\% \text{ } 0.021\text{--}0.305$ ),
- (4) Abusive Supervision -> Cognitive Avoidance -> Abstract

Rumination -> Negative Affect -> State Paranoia (Fig. 2;  $\beta = 0.098, SE = 0.052, \text{BootCI } 95\% \text{ } 0.018\text{--}0.219$ ),

### 3.4. Comparisons between types of companies concerning paranoia and abusive supervision

In order to explore the effects of the type of company on paranoia and abusive supervision, we considered two types of company: public and private. Results showed that those individuals working in a private company reported higher levels of abusive supervision ( $p = 0.003$ ) than those that work in a public company in France, suggesting therefore that people working in private companies seem to perceive being more frequently abused by their supervisor than people who work in public companies in France. In contrast to this, there was no statistically significant difference between people who work in private companies vs. those who work in public companies in France in regards to their levels of paranoia ( $p = 0.081$ ).

## 4. Discussion

The aim of this study was to understand the association between abuse perpetrated by one's own supervisor and paranoia in a non-clinical population of French-speaking workers working in France. Following previous literature on the cognitive model of persecutory delusions (Garety et al., 2001) and the cognitive behavioural model of abusive supervision proposed by Chan and McAllister (2014), we explored the mediation roles of cognitive avoidance strategies, rumination and negative affect in the association between abusive supervision and state paranoia in a sample of workers working in France. We first hypothesized that abusive supervision would impact on paranoia both directly and indirectly. Second, we expected to find that cognitive avoidance, rumination, and negative affect would mediate this association. Thus, different pathways were tested by taking into account these three mediator variables and their interactions.

First, our results showed that abusive supervision is present in a sample of French-speaking workers currently working in France, suggesting that on average these workers report to some degree experiences

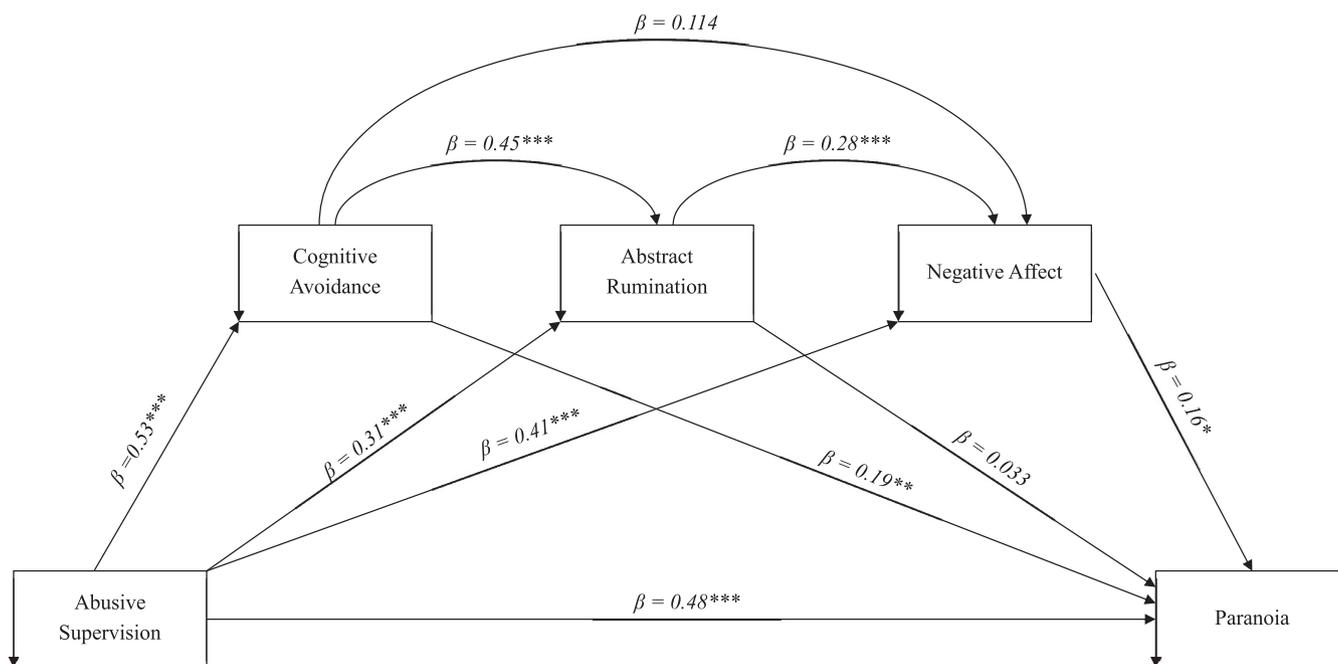


Fig. 2. Mediation Model: The mediator effects of Cognitive Avoidance, Abstract Rumination and Depression on the association between Abusive Supervision and State Paranoia.

\*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ .

of abusive supervision. Moreover, the mean for abusive supervision in a French-speaking sample of workers working in France is slightly higher than the means for abusive supervision that have been observed in large samples of U.S. workers (see [Tepper, 2000, 2007](#); see Table 3 of supplementary data). This may be because abusive supervision may be perceived to be higher in European countries. Previous studies found that the mean for abusive supervision in a second sample of UK workers ([Lopes et al., 2018b](#)) was also higher than the mean obtained for abusive supervision by [Tepper \(2000, 2007\)](#) in his samples of US workers. In fact, there is now evidence from a recent European report that violence at work affects a significant number of European workers. At a more general level, the European legislation on harassment, bullying, and mobbing at work is very similar between European countries. However, regarding the prevalence of work-related violence, it is difficult to compare statistics or study results about the prevalence or exposure to different forms of third-party violence and harassment between different countries, mainly due to the use of different definitions and classifications to delimit the concepts. The highest levels of concern regarding bullying or harassment were observed in Turkey, Portugal, Romania, and Norway, and the lowest concern was observed in countries such as Italy, Estonia, and Hungary. Concerning specifically France, workplace bullying is in the average.

The means for depression and for abstract rumination in this sample of French-speaking workers working in France are similar to those observed in other large samples from the general population in France/Belgium and in the U.S. ([Douilliez et al., 2014](#); [Lovibond and Lovibond, 1995](#)). Mean state paranoia in our sample was higher than the mean reported in a previous study by [Freeman et al. \(2007\)](#) probably due to the fact that in Freeman and colleagues' study individuals were requested to complete the scale while considering their 5 min' experience in a virtual environment. In our study, individuals were requested to consider their current state paranoid beliefs while thinking about their "real and actual" experience in their workplace. Hence, it is not surprising that the mean for state paranoia is higher in our study. Participants were reporting feelings and thoughts that are linked to their "actual and real" and not virtual workplace experiences.

Second, abusive supervision impacts on non-clinical paranoia directly as well as through its effect on cognitive avoidance strategies, rumination, and negative affect. This effect is mediated through different pathways. Indeed, we found that individuals who perceive their supervisor as being abusive might employ cognitive avoidance as an initial strategy to cope with the negative consequences of abusive supervision (e.g., feeling undermined, dejected, rejected, etc.). This will then create a "rebound effect" that will lead to increased rumination. Also, rumination as a self-focus strategy will most likely cause increased access to past memories of more bullying and abuse (see [McKie et al., 2017](#)), which will then lead to more negative affect that in its turn will induce and maintain non-clinical paranoia. Therefore, these results are in agreement with our hypothesis and corroborate previous studies showing the impact that each one of these different variables have separately on paranoia ([Chan and McAllister, 2014](#); [Lopes et al., 2018b](#); [Martinelli et al., 2013](#); [McKie et al., 2017](#); [Vorontsova et al., 2013](#)).

Furthermore, results also suggested that cognitive avoidance prevents individuals from gathering and processing new information that may contradict their paranoia thoughts. Moreover, attempting to suppress or avoid a thought or even trying to distract oneself from a thought often leads to more unwanted and unpleasant thoughts ([Gross, 2002](#); [Najmi and Wegner, 2008](#)). Therefore, cognitive avoidance may actually "backfire" by provoking increased rumination. Indeed, it has been suggested that avoidance or suppression of unwanted thoughts use both intentional distraction and monitoring of intrusive thoughts ([Wegner and Wenzlaff, 1996](#)). While the second demands less mental effort, the first is more effortful. Therefore, increased rumination happens because when distraction is disrupted (due to cognitive demands or interference) the monitoring process remains active thus resulting in the intrusion of unwanted thoughts. This might be true particularly in

the work environment where the cognitive demands and pressures associated with work might disrupt the distraction processes. In other words, given that the workers' ability to distract their mind from negative thoughts at work is disrupted by other work-related cognitive tasks that demand cognitive resources (e.g., problem-solving), this will cause more intrusive thoughts and paranoid ideas to pop into the workers' minds (e.g., the supervisor is talking about me, actively plotting against me or even that he/she is trying to cause harm). Consequently, workers start to ruminate on those experiences.

Moreover, results also showed that rumination and more specifically the tendency to shift the attention to the causes and consequences of a negative psychological state was found to be associated with negative affect, which in its turn is associated with the presence of non-clinical paranoia. Therefore, our results showed that when faced with perceived abusive supervision, workers' attempt to do thought suppression actually backfires by increasing the tendency for workers to ruminate on the causes, consequences and more generally on the experiences of abusive supervision (e.g., "Why is this happening to me?", "What is the meaning of this and what does this say about myself?" or "How can I feel better?"). This results in workers being unable to shift their focus of attention from negative self-appraisals, which will then lead to increased negative affect. Subsequently, increased negative affect induces self-depreciative ideas, feelings of vulnerability as well as an increased anticipation of danger, which will further contribute to paranoid ideas (i.e. "my supervisor is out to get me") in employees that perceive being victims of abusive supervision ([Chan and McAllister, 2014](#)).

Also, our results showed that the impact of cognitive avoidance on paranoia is not dependent on rumination. We found that rumination only impacts on state paranoia through its effect on depression. This supports what was found by [Vorontsova et al., \(2013\)](#) in a clinical population. Rumination only has an effect on paranoia if it leads to increased negative affect.

Besides depression, rumination may also contribute to paranoia through other associated symptoms such as problem-solving difficulties and negative self-beliefs ([Lyubomirsky and Nolen-Hoeksema, 1995](#); [Vorontsova et al., 2013](#)). Subsequently, our results highlight that although rumination is a negative response to trauma ([Niven et al., 2012](#)), its negative effects are dependent on the cognitive strategies that are employed to avoid thinking about the negative experiences, in this case, the experience of abusive supervision.

In addition to this, we also found that negative affect by itself mediated the effect of abusive supervision on paranoia and this provides further support to the model proposed by [Freeman and Garety \(2003\)](#) that postulates that emotional and affective processes are directly associated with the onset and maintenance of paranoia in clinical and non-clinical populations. Indeed, depression has been suggested to impact on paranoia through the presence of depressive ideas about the self, and reduced self-esteem that contribute to the content of delusions as well as to the presence of poor problem-solving ([Vorontsova et al., 2013](#)). As such, the perception of being constantly humiliated at the workplace, sometimes in front of colleagues and friends and of not having one's abilities and competence being appreciated can have a negative impact on self-esteem ([Ashforth, 2009](#)), leading to emotional distress ([Aryee et al., 2007](#)). Therefore, the feelings of vulnerability that employees have when facing an abusive supervisor may reinforce the idea of being persecuted by him/her and that he/she wants to cause harm.

Finally, our results showed as well that perceived abusive supervision by itself has a great impact on non-clinical paranoia. Even though we are measuring perceived and not factual abusive supervision, the mere perception of abuse has a strong impact on non-clinical paranoia. This supports the notion that it is adaptive to hold paranoid ideas in an environment where we believe that a supervisor ridicules us, tells us that our thoughts are stupid or even is aggressive towards us, but ultimately this type of thinking is detrimental because it is

associated with unhelpful coping strategies and negative affect.

#### 4.1. Limitations

This study presents some limitations. Most of our sample was composed of women. However, we entered the variable of gender as a co-variate as an attempt to control for the differences between genders for cognitive avoidance, abstract rumination and depression and gender did not present a statistically significant effect in the model. Also, the cross-sectional design of our study does not allow us to make clear inferences of causality. Moreover, our sample was recruited online through social networks and other work-related associations, which might bias our sample towards those individuals who have internet access. Nevertheless, previous studies have found that there are no differences between Internet and laboratory-based studies in terms of validity and reliability (Chinman et al., 2004).

Finally, our sample prevents us from analysing in more detail the presence of psychiatric disorders. In spite of this, we tried to overcome this bias by excluding those participants that are currently taking psychiatric medication for bipolar disorder and schizophrenia and we did present the depression levels ranging from mild to moderate and severe for this sample.

#### 4.2. Clinical implications within the workplace context

Negative experiences in the work environment such as experiences of abusive supervision have been often neglected within the clinical literature, even though they have an important impact on the mental health of employees. On one hand, our findings support previous studies (e.g. Chan and McAllister, 2014; Lopes et al., 2018a and 2018b) and reinforce the importance of training managers and supervisors on how to deal with employees' difficulties, associated distress and state paranoia with empathy and altruism and with appropriate strategies that are positive instead of destructive and abusive (Lopes et al., 2018b). On the other hand, employees should be assessed for paranoia and abusive supervision so that they can be offered confidential and tailored clinical psychological support that will enable them to learn to implement adaptive cognitive, emotional and behavioural strategies to deal with work-related distress and paranoid thoughts. Interventions based on cognitive, emotional and behavioural therapy can be used as preemptive strategies that would provide adaptive strategies to deal with thought suppression and cognitive avoidance strategies, rumination, and symptoms of depression, which would consequently help employees manage their paranoid ideas, causing an increase in their well-being. This is rather important given that in Europe, work-related issues are one of the main correlates of extended sick leave due to mental health problems (Lopes et al., 2018a) and hopefully this study will be an important starting point for research in France looking at how abusive supervision may impact on paranoia, which will then decrease workers' well-being and have a negative impact on workers' job performance and behaviours e.g., workplace incivility (Lopes et al., 2018b).

#### 4.3. Conclusions and future research

In summary, our results explored the cognitive and affective processes that mediate the association between perceived abusive supervision and non-clinical paranoia. More precisely, we showed that individuals who perceive their supervisor as being abusive might tend to avoid thinking about those work-related issues, however this attempt to suppress these thoughts rebounds and increases instead the frequency of rumination of experiences of supervisory abuse. Both cognitive avoidance strategies and abstract rumination would then further lead to negative affect and finally impact on non-clinical paranoia. Nevertheless, cognitive avoidance strategies and negative affect have independent effects from abstract rumination on state paranoia since

their mediating effects were also significant when considered alone in the model. Future research should be longitudinal and could explore the role of other cognitive and affective factors associated with paranoia (e.g., worry) to better understand how experiences and perceptions of abuse in the workplace may lead to paranoid thoughts that are very detrimental to one's mental health, well-being and workplace performance (Freeman et al., 2011; Lopes et al., 2018b). This is rather pressing to research since there is increasingly an underlying recognition in the clinical literature that workplace issues such as abusive supervision may be associated with the onset of serious psychological problems such as paranoia. This calls for tailored cognitive and behavioural interventions that would focus on particular cognitive mechanisms and associated negative affect that are triggered by workplace-related issues (Freeman et al., 2011; Lopes et al., 2018a).

#### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.psychres.2018.11.065](https://doi.org/10.1016/j.psychres.2018.11.065).

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