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**Can impostors thrive at work? The impostor phenomenon's role in work and career outcomes**

Sarah Hudson\* and Helena V. González-Gómez<sup>■</sup>

\*Department of Management and Organisations  
Rennes School of Business  
2 Rue Robert d'Arbrissel  
35065 Rennes, France  
sarah.hudson@rennes-sb.com

<sup>■</sup>Department of People and Organisations  
NEOMA Business School  
Rouen Campus  
1 Rue du Maréchal Juin  
76825 Mont Saint Aignan, France  
helena.gonzalez@neoma-bs.fr

Imagine that you believe that you are not really up to your job, and any success you experience is due to luck or your charm. Does your perceived inadequacy make you feel ashamed? Will it affect your work performance or have long-term consequences for your career? We address these three research questions in this paper by theorizing and empirically testing the effects of the impostor phenomenon (IP) on shame, the consequent impact on work performance and IP effects on career, respectively.

IP—the feeling that one’s success is due to extraneous factors, rather than one’s competence and qualifications, despite objective evidence to the contrary (Clance & Imes, 1978)—is well known in the psychological literature (Bernard et al., 2002; Clance, 1985; Chrisman et al., 1995). Research has suggested that IP is particularly prominent in individuals with outstanding professional and academic accomplishments (Clance & Imes, 1978; Vergauwe et al., 2015), and it is therefore worth exploring how IP can affect people’s work performance and overall careers. Many articles in the popular press provide examples of internationally recognized figures who report suffering from this phenomenon (e.g., Gray, 2019; The Spinoff, 2020). However, there is little empirical and scientific research examining the effects of IP in a work setting, and none on its role in determining career success.

Studies investigating IP in the workplace have shown that it can influence outcomes such as employee commitment, stress, coping, or job satisfaction directly (Grubb & McDowell, 2012; Hutchins et al., 2018; McDowell et al., 2007; Vergauwe et al., 2015). However, because IP is linked to a fear of being exposed as a fraud, it may affect an individual’s performance and even have effects on career success. In terms of performance, two indicators, creativity and organizational citizenship behavior (OCB), are of particular relevance. Creativity involves a degree of risk-taking and acceptance of failure (Simmons & Ren, 2009), both of which are inconsistent with IP. Conversely, extra-role helping behaviors such as OCB may assuage feelings of failure linked to the impostor phenomenon, because one’s “fraudulent” in-role performance is less at stake. Underlying these effects of IP at work is the emotion of shame. Early psychological research

suggested that IP frequently occurs in tandem with shame (Clance, 1985), because impostors think they are underperforming with respect to others' expectations (Clance & Imes, 1978; Scheff, 1988). The link between IP and shame is also implicit in more recent studies of IP in the workplace (Gardner et al., 2019; Sakulku & Alexander, 2011), yet this aspect of IP has been overlooked in empirical studies. Relatedly, there is considerable research evidence that the workplace environment is key to determining the effects of employee emotions on outcomes such as satisfaction, motivation (Amabile et al., 1996, Amabile & Pratt, 2016), or creativity (González-Gómez & Richter, 2015). In spite of this fact, studies are yet to be developed examining how contextual characteristics may play a role in shaping the effects of IP at work. Finally, the assumption that IP has effects on daily work performance leads us to enquire whether it might have a cumulative effect on career outcomes. Impostors who believe that their current job was obtained due to luck or charm are unlikely to believe that they will get lucky again, with consequences for their beliefs about the likelihood of gaining alternative employment or advancing in their career. Some recent research points to the existence of a link between IP and career planning and exploration activities (Neureiter & Traut-Mattausch, 2017); but none has studied its consequences for employability or objective career outcomes (Blokker et al., 2019).

We draw on the conservation of resources (COR) theory (Hobfoll, 1989) to address our research questions. COR has recently been used to discuss the mechanisms of how the impostor phenomenon relates to work outcomes (Crawford et al., 2016, Gardner et al., 2019; Hutchins et al., 2018). The literature suggests that impostors "overspend" their current resources because of their fear of being exposed as a failure (Gardner et al., 2019; Hutchins et al., 2018). From this perspective, IP depletes the personal resources individuals need to perform effectively in the short term and prevents them from devoting the necessary resources to advancing their careers. COR also suggests that the work environment plays a role in mitigating or enhancing the effects of resource depletion (Halbesleben et al., 2014), and we explore this notion by analyzing the role of organizational structure in the relationship between IP and its outcomes.

In this paper, we first propose and test the hypotheses that social exposure and failure respectively enhance the effect of IP on shame in a work setting. Second, we examine how shame mediates the effect of IP on short-term performance, namely OCB and creativity. We then delve further into this relationship by investigating the moderating role of organizational structure. Finally, we examine the impact of IP on career outcomes and employability. Our results first contribute to and extend recent discussions about the effects of IP at work (Gardner et al., 2019; Hutchins et al., 2018) by demonstrating the role of shame in determining its performance outcomes. Second, we leverage Hobfoll's (1989) COR theory to contribute to research on IP's effects on previously unexamined career outcomes such as employability and career success.

## **Literature Review and Hypothesis Development**

### **Impostor Phenomenon and Conservation of Resources**

Clance and Imes (1978) first reported the impostor phenomenon in people who had "succeeded" both academically and professionally but continued to be plagued by the impression that their accomplishments had occurred due to extraneous factors rather than their own efforts and abilities. The causes of IP are thought to be linked to family dynamics and societal expectations for performance (Clance & Imes, 1978). Research on IP in organizations is fairly limited, but more recent studies have begun examining its effects on various work-related outcomes such as attitudes toward rewards, OCB, affective commitment, job satisfaction, and career decisions (Crawford et al., 2016; Grubb & McDowell, 2012; Hutchins et al., 2018; McDowell et al., 2007; Neureiter & Traut-Mattausch, 2017; Vergauwe et al., 2015). Within this body of literature, scholars are now exploring the mechanisms of how IP relates to such outcomes.

COR theory (Hobfoll, 1989) may provide some insights as to why IP has deleterious effects at work. This theory proposes that individuals tend to protect current resources and seek new resources (Halbesleben et al., 2014). IP involves core negative self-evaluations, where impostors underestimate their abilities, experience low self-esteem, and fear being exposed as failures (Gardner et al., 2019; Hutchins et al., 2018; Vergauwe et al. 2015). These aspects of IP mean that

impostors mispend their resources in the service of protecting themselves and are thus less able to conserve existing resources or seek new ones. Indeed, Neureiter and Traut-Mattauch (2017, p. 59) refer to IP as a “maladaptability resource” that prevents individuals from allocating and investing their personal resources effectively, notably in career decisions. In addition, because of the time and resources spent in hiding their presumed fraudulence, impostors can suffer from emotional exhaustion (Hutchins et al., 2018; Vergauwe et al., 2015), which depletes their ability to perform effectively at work. The role of emotional exhaustion and emotional labor in resource conservation has been widely studied in the COR literature (Hobfoll et al., 2018), but the role of emotions themselves, beyond stress, has largely been overlooked.

### ***IP and Shame: Social Exposure and Failure***

Research into IP has linked it with shame, and the two are often discussed together (Clance & O’Toole, 1988; Gardner et al., 2019; Sakulku & Alexander, 2011). However, no studies have empirically investigated the relationship between them. The closest example of a possible connection is in the work of Cowman and Ferrari (2002), who show a link between IP and the trait of shame-proneness. Drawing on arguments from COR, IP can be considered as a resource depletor linked to emotional exhaustion, thus generating negative emotions such as shame. Academics have defined shame as a moral emotion (De Hooze et al., 2008), a self-conscious emotion (Cohen et al., 2011), and a social emotion (Scheff, 1988). As such, shame is a person’s affective response to one’s violation of social expectations and conventions. Individuals with IP specifically fear being exposed to others who may discover their “fraudulence” and judge them as lacking in ability (Sakulku & Alexander, 2011), and are therefore likely to experience shame. We therefore hypothesize:

**Hypothesis 1.** There is a positive relationship between IP and shame.

In the very first observations of this phenomenon, Clance and Imes (1978, p. 243) note that “the real root of the problem lies in social expectations”. Empirical evidence supports this notion, with early studies establishing the link between IP and social anxiety (Bernard et al., 2002;

Chrisman et al., 1995). Recent research further demonstrates that people with IP will tend to seek social support outside their immediate working group (Gardner et al., 2019), avoiding exposure to their peer group. In terms of COR, this might be to avoid the depletion arising from the effort of hiding their fraudulence from others. One of the (high-achieving) interviewees in Gardner et al.'s (2019) study expresses it neatly: "I have to hide myself from everyone because I can't let them know that I suck" (p. 1). Research evidence therefore favors the idea that social exposure and IP are related. Impostors are averse to violating others' expectations and experiencing negative evaluations (Clance & Imes, 1978). They imagine that their shortcomings are on public display (Clance & Imes, 1978; Cohen et al., 2011) and worry that others may discover their supposed fraudulence and judge them as lacking in ability (Gardner et al., 2019; Sakulku & Alexander, 2011), leading to shame. Hence, we expect that social exposure will exacerbate the emotional effects of IP. Therefore:

**Hypothesis 2.** Social exposure strengthens the positive relationship between IP and shame.

The IP literature abounds with the assumption that fear of failure is closely related to IP. In the first study investigating the impostor phenomenon, Clance and Imes (1978) stated that their patients suffered long-term and persistent fear of failure. While fear of failure or failure itself appears in tandem with most discussions of IP, empirical evidence supporting the link between failure and IP is scant. However, in a recent article, Neureiter and Traut-Mattausch (2016) establish a statistical relationship, modeling fear of failure as an antecedent of IP feelings. Whitman and Shanine (2012) suggest that failure acts as concrete proof in the minds of IP individuals that they are inadequate for their work role. COR predicts that stress arises when an individual fails to achieve following efforts (Hobfoll, et al., 2018). We extend this to a consideration of other emotions and suggest that failure can be linked not only to stress but also to shame in the case of IP. The signal of failure thus reinforces impostors' self-image as undeserving of success (Gardner et al., 2019). In parallel, in situations of perceived failure, shame is a common emotional response (Bagozzi et al., 2003; Smith & Ellsworth, 1985; Tangney, 1995; Tangney & Dearing, 2003).

Because impostors fear failure (Clance & Imes, 1978; Gardner et al., 2019; Neureiter & Traut-Mattausch, 2016) and interpret actual failure as concrete proof of their inadequacy for their work role (Gardner et al., 2019; Whitman & Shanine, 2012), the experience of shame is more likely in these individuals. We therefore hypothesize:

**Hypothesis 3.** Failure strengthens the positive relationship between IP and shame.

***The Indirect Effect of IP on Performance through Shame***

Performance in tasks where there is a risk of failure will be particularly salient for individuals with IP who fear exactly that outcome. Creativity, the generation of novel and useful ideas (Amabile, 1988, 1996), requires acceptance of failure, a desire to have an impact, and a willingness to express ideas (Amabile et al., 2005, Simmons & Ren, 2009). However, research on IP shows that impostors lack these requirements. They tend to fear failure (Gardner et al., 2019; Neureiter & Traut-Mattausch, 2016), do not believe they can affect their environment (Vergauwe et al., 2015), and avoid expressing themselves freely because of a fear of exposure (Clance & Imes, 1978).

COR theory provides a useful lens through which the effects of the impostor phenomenon on creativity can be understood. COR suggests that individuals who possess certain personal resources such as high self-esteem, self-efficacy, and optimism experience positive emotions (Hobfoll, 2002). These resources enable people to capitalize on any resource gains in organizations (Hobfoll et al., 2018) and make them more robust to resource losses. Such personal resources are necessary to deal with job demands and help individuals perform well at work (Schaufeli & Bakker, 2004). Therefore, impostors whose self-esteem and self-efficacy are low (Chrisman et al., 1995; Neureiter & Traut-Mattausch, 2016, 2017; Vergauwe et al., 2015) will have fewer personal resources to draw on, and experience more negative emotions such as shame when facing challenging work situations. Thus, the resource depletion which occurs in impostors experiencing shame will have a negative effect on creativity, which is a function of an individual's investment of cognitive resources (Nijstad et al., 2010; Shalley, 1991). This is in accordance with research on



creativity, which suggests that negative emotions generally decrease creativity (Amabile et al., 2005; Davis, 2009). We therefore hypothesize:

**Hypothesis 4.** There is a negative indirect effect of IP on creativity through shame.

One of the principles of COR theory is that if individuals' resources are depleted, they enter a defensive mode to conserve resources and tend to withdraw (Hobfoll et al., 2018), leading to reduced work performance. However, some evidence has shown that in situations of resource depletion and emotional exhaustion, employees may display increased citizenship behavior even though other in-role performance outcomes such as job performance decline (Halbesleben & Bowler, 2007). The reason given for this counterintuitive effect is that individuals attribute higher weight and relevance to the relatively small gain obtained from helping behaviors. Engaging in extra-role performance enables employees to recover short-term resources through reciprocity when other resources are depleted (Halbesleben et al., 2014; Hobfoll et al., 2018).

In the IP literature, scholars have also found contradictory effects of IP on OCB. Vergauwe et al. (2015) find that IP has negative effects on OCB, suggesting that this is due to a scarcity of personal resources, where employees are unable to deploy the necessary resources needed to engage in extra-role performance behavior. In contrast, McDowell et al. (2007) find that IP is positively related to OCB, because impostors may engage in helping behaviors to compensate for their perceived inadequacy or to conceal their self-doubt. We advance the idea that shame will play a role in the effect of the impostor phenomenon on OCB. While shame often leads to withdrawal behaviors, a body of research suggests that that negative affect alerts employees to the fact that a problem exists and motivates them to reduce the unpleasant feeling through positive behavior (Amabile & Pratt, 2016; George & Zhou, 2007). For the emotion of shame in particular, De Hooge et al. (2010) found that while shame led to withdrawal behaviors in risky situations, it had the opposite effect when individuals perceived that they could restore their damaged self-image and resolve the negative feeling through cooperative behaviors in less risky situations. While we expected a negative effect on in-role performance such as creativity where one's own professional

performance is on the line, we suggest that the opposite may be true for less risky extra-role performance such as OCB. Thus, impostors experiencing shame may engage in more extra-role helping behaviors, where their core competences are not implicated, in order to assuage their feelings of shame and restore their threatened self. Thus, we hypothesize that the experience of shame resulting from IP will lead to increased OCB:

**Hypothesis 5.** There is a positive indirect effect of IP on OCB through shame.

### *Organizational Structure*

There has been a call for greater understanding of the role of environmental cues on resource preservation and development in COR theory, incorporating the notion that different types of work environments might modify the effect of resource depletion (Halbesleben et al., 2014; Hobfoll, 2018). COR suggests that features of organizational structure such as autonomy and decision authority are positive resources (Halbesleben et al., 2014), offering environments supporting employees' emotional wellbeing and performance. Amabile and Pratt (2016) suggest that negative emotions can be reduced, and creativity enhanced, in an environment where it is acceptable to make mistakes, to experiment, and to fail. These creativity-supporting environments possess open communication styles, decentralized decision-making and are less formal about the rules. We therefore used the organizational structure construct to examine the effects of work environment on our model. Organizational structure conceptualizes organizations as existing on a continuum from mechanistic to organic (Burns & Stalker, 1961). The former type is characterized by formalized rules and centralized decision-making (Pfeffer & Salancik, 2003). The organic type is more flexible concerning rules and regulations, with informal decision-making structures, thus enabling greater individual initiative and creativity. Organic structures require greater group interaction and mutual helping behavior, suggesting that higher levels of OCB should be seen in such contexts. In mechanistic structures, decisions are made at the top, with little or no input from the employee, thus experimentation and inter-employee interaction are less likely. In such environments individuals experiencing shame would be less likely to overcome the shame-related

withdrawal and avoidance tendencies, and would simply conform to the social norm of rule-bound behavior, displaying reduced creativity and OCB.

**Hypothesis 6.** The indirect effect of IP on a) creativity and b) OCB through shame is moderated by organizational structure such that more mechanistic structures strengthen the negative effect of shame.

### **IP and Career Outcomes**

Drawing on arguments from COR theory, we have so far argued that IP has effects on performance, and that these effects are partially explained by shame. We now propose that, insofar as a hallmark of IP is the depletion of resources by individuals trying to cope with this feeling of inferiority, this continued expenditure of a person's emotional and cognitive reservoir may not only affect their performance, but also end up penalizing their career. When individuals experience depleted resources, COR theory posits that they enter a resource loss spiral (Halbesleben et al., 2014; Hobfoll, 1989; Hobfoll et al., 2018), whereby over time the negative effect of resource loss outweighs resource gains. These negative cycles gain speed and magnitude, with detrimental effects on performance at work and career outcomes. Recent research (Neureiter & Traut-Mattausch, 2016; 2017) demonstrates that impostors are less likely to possess adaptive responses, leading to a reduced tendency to plan, explore, or make decisions regarding their career (Neureiter & Traut-Mattausch, 2017). Their repeated failure to engage in career planning may suck impostors into a resource loss spiral. Consequently, negative effects on employability and objective career outcomes such as performance appraisals, promotions, and salary are likely to occur.

#### ***Perceived Employability***

In the context of career, Rothwell and Arnold (2007, p. 25) define employability as the "ability to keep the job one has, or to get the job one desires". This construct incorporates an individual's ability and willingness to find and keep a job within an organization, termed internal employability and also in the job market namely, external employability (Akkermans et al. 2013;

Forrier & Sels, 2003). The two dimensions reflect the idea that people take into account both individual and contextual factors when assessing their employability.

Forrier et al. (2015) show that bundles of individual characteristics ranging from self-awareness to the ability to form social networks combine to determine a person's "movement capital", which has a positive effect on both internal and external perceived employability. Other research shows that career competencies such as being aware of one's motivations and qualities (reflective competencies), effectively communicating one's skills and abilities (communicative competencies), and proactively exploring and planning one's career (behavioral competencies) positively impact perceived employability (Blokker et al., 2019). COR classifies such competences and characteristics as personal resources upon which individuals depend to achieve their career goals (Halbesleben et al., 2014). Individuals with high IP do not estimate their skills accurately (Clance & Imes, 1978) because they self-handicap (Cowman & Ferrari, 2002) and feel inadequate in their role (Gardner et al., 2019), failing to leverage their personal resources adequately. Impostors believe that they have obtained their job due to luck or charm, and therefore they may avoid pushing their "luck" further by seeking a different position within or external to their organization. Relatedly, as impostors' self-esteem and self-efficacy are usually low (Chrisman et al., 1995; Neureiter & Traut-Mattausch, 2016, 2017; Vergauwe et al., 2015), they have lower resources to rely on, and are thus less likely to self-profile in a positive light and tend to avoid negative evaluations (Clance & Imes, 1978; Gardner et al., 2019). In this sense, Neureiter and Traut-Mattausch (2017) conceptualize IP as a "maladaptability" career resource and show that it prevents people from exploring, planning, and making decisions about their career, both within and outside their organization. We therefore propose that IP will have a negative effect on perceived employability.

**Hypothesis 7:** There is a negative relationship between IP and a) perceived external employability; and b) perceived internal employability.

### ***Objective Career Outcomes***

In addition to perceived employability, which is a subjective measure of whether one is able to keep and find a job, we look at a more objective measure of career success comprising an external perspective, which includes more or less tangible aspects of an individual's career situation (Arthur et al., 2005; Guan et al., 2019). These involve indicators such as promotions, salary or positive performance appraisals. Early IP literature proposed that impostors may seek positions below their abilities and will not search for advancement in their career (Clance & O'Toole, 1988). This is line with the portrayed profile of impostors as individuals with low self-esteem and self-efficacy (Chrisman et al., 1995; Neureiter & Traut-Mattausch, 2016, 2017; Vergauwe et al., 2015), who refrain from taking advantage of work opportunities to move forward or demonstrate their value in their career. Moreover, recent studies suggest that the impostor phenomenon acts as a barrier to planning or making decisions concerning one's career (Gardner et al., 2019; Neureiter & Traut-Mattausch, 2016, 2017). We would therefore expect that the reduced adaptive responses to new opportunities and the tendency to avoid career planning should be observable in the form of decreased indicators of career success. In line with COR theory, because impostors have depleted personal resources, they regularly avoid making career decisions or working toward advancement. Thus, the repeated avoidance of career planning can have effects on tangible career outcomes such as promotions, performance appraisals, or salary.

**Hypothesis 8:** There is a negative relationship between IP and objective career outcomes.

Figure 1 presents a model illustrating the hypotheses tested in our four studies.

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INSERT FIGURE 1 ABOUT HERE  
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### **Overview of Studies**

In this paper, we investigate the effects of IP on performance and career outcomes. In Studies 1–3, we examine two relevant contexts (failure and social exposure) that may influence the

emotional expression (shame) and performance outcomes of IP, namely creativity and OCB. Study 1 adopts an experimental design to explore the role of failure and social exposure in the IP–shame relationship, with a European sample of 184 employees. Study 2 uses an online vignette with 155 UK employees, and investigates the IP–creativity relationship and the mediating role of shame. In Study 3, we aim to replicate and extend findings from Studies 1 and 2 by means of an online experiment, with a sample of 205 US employees. In so doing, we test the indirect effect of the impostor phenomenon on both creativity and OCB through shame, and the moderation effect of organizational structure. Study 4 then uses a cross-sectional survey of 104 working US adults to investigate the effects of IP on career outcomes.

Table 1 presents the hypotheses, design, and results of our four studies.

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INSERT TABLE 1 ABOUT HERE  
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## **Study 1**

### **Methods**

#### ***Sample and Procedure***

We conducted an online experiment with 249 employees in the UK and Germany through the services of a provider of respondents. The study had a 2 (failure vs. success) × 2 (social exposure vs. no social exposure) experimental design. Participants were told that the main purpose of the study was to understand some management practices that influenced their work. Next, we informed participants that their answers would be used for research purposes only and asked them for consent before proceeding. Participants were then randomly assigned to one of the four experimental conditions. They were primed with the instruction to “think of a time when you have had to work with colleagues, management or customers and when a group of people could potentially judge your work” (social exposure, code = 1) versus “think of a time when you have

had to do some work on your own” (no social exposure, code = 0). The text then read, “and when you did a good job” (success, code = 0) versus “and when you did a bad job” (failure, code = 1). We then asked them to report the context in which the event took place and to describe it with three keywords. Following this priming, participants completed a survey measuring the manipulation check questions and all the variables.

Out of the original total sample, 65 participants did not provide reliable responses or stated that they could not recall any situation with the characteristics we asked for, so we excluded them from the study. The final sample therefore consisted of 184 participants. Of these, 78 were female (42%). The average age was 43.71 years old ( $SD = 11.32$ ), and participants had on average 22.01 years of work experience ( $SD = 12.51$ ).

### ***Measures***

**IP.** We used the 20-item scale created by Clance (1985) to measure IP with a five-point Likert scale from “strongly disagree” (1) to “strongly agree” (5). The scale was preceded by the instruction “Please select the appropriate answer about your feelings and attitudes as naturally as possible”. A sample item is “I’m afraid people important to me may find out that I’m not as capable as they think I am” ( $\alpha = .91$ ).

**Shame.** We measured shame with three items from the scale developed by González-Gómez and Richter (2015). Participants responded to the questions with a five-point Likert scale from “not at all” (1) to “very much” (5). A sample item is “To what extent did you feel any of the following in the event you described?” “Ashamed because something went different from what I expected” ( $\alpha = 0.84$ ).

**Controls.** We controlled for the emotions of guilt and confidence, as well as for gender, as all these variables are related to IP in the literature (Bernard et al., 2002; Clance & Imes, 1978). For guilt and confidence, we asked participants “To what extent did you feel any of the following emotions in the event you described?”. We used single items with a five-point Likert scale from “not at all” (1) to “very much” (5). Gender was coded as male (0) and female (1).

## Results

### *Manipulation Checks*

To measure the efficacy of the social exposure manipulation, we asked respondents: “Please think back to the work situation you remembered and mark your degree of agreement with the following statements:”. We used four items on a five-point Likert scale from “definitely false” (1) to “definitely true” (5). The items were “I was exposed to the judgement of others”, “I was in a situation where the opinions of others were important”, “I had to put myself on the line during this event”, and “I was plainly visible to others” ( $\alpha = .81$ ). Participants in the social exposure condition reported significantly more social exposure ( $M = 3.87, SD = 0.74$ ) than participants in the non-social-exposure condition ( $M = 3.56, SD = 0.96; t(182) = -2.37, p = .019$ ).

To assess the efficacy of the failure manipulation, we asked “What is your opinion of your performance in the event you remembered?”, followed by four items measured on a five-point Likert scale from “strongly disagree” (1) to “strongly agree” (5). The items were “I succeeded brilliantly” (reverse-coded), “I failed miserably”, “I performed up to expectations” (reverse-coded), and “I fell below expectations” ( $\alpha = .91$ ). Participants in the failure condition reported significantly more failure ( $M = 3.06, SD = 1.14$ ) than participants in the non-failure condition ( $M = 1.76, SD = 0.62; t(182) = -9.84, p < .001$ ). The means and correlation results appear in Table A1, Appendix A. Unsurprisingly, IP was positively correlated with failure ( $r = .30, p < .001$ ), social exposure ( $r = .19, p < .05$ ), and shame ( $r = .35, p < .001$ ).

### *Confirmatory Factor Analysis*

Prior to hypothesis testing, we performed a confirmatory factor analysis to establish discriminant validity among the self-report measures. We tested a model with the two-factor model, IP and shame ( $\chi^2 = 388.52, df = 219, RMSEA = .07, CFI = .90$ ), against the alternative one-factor model collapsing both scales ( $\Delta\chi^2 = -34.09, df = 1, p < .001$ ). This analysis provides evidence of the discriminant validity in our measures.

### *Hypothesis Testing*



We used the PROCESS macro developed by Hayes (2017) in Studies 1 to 3 to test Hypotheses 1-5. The PROCESS macro was convenient for our purposes given the relatively small sample sizes of our various studies that made the use of SEM options less reliable (Wolf et al., 2013). For this study, we used Model 2, entering IP as the independent variable; shame as the outcome variable; failure and social exposure as moderators; with guilt, confidence, and gender as controls. Our results show that IP has a positive relationship with shame ( $b = .28, t = 3.60, p < .001$ ), in support of Hypothesis 1. Hypotheses 2 and 3 propose that the positive effect of IP on shame is moderated by social exposure and failure, respectively. The effect of the interaction term between IP and failure on shame was significant ( $b = 0.45, t = -3.04, p = .003$ ) and in the expected direction. Further simple slopes analysis (Aiken & West, 1991) confirmed that only the slopes for failure (irrespective of the level of social exposure) were significant ( $\gamma_{failure\_no\ social\ exposure} = .50, t = 3.81, p < .001$ ;  $\gamma_{failure\_social\ exposure} = .55, t = 4.25, p < .001$ ;  $\gamma_{success\_no\ social\ exposure} = .05, t = 0.31, p = .758$ ;  $\gamma_{success\_social\ exposure} = .10, t = 0.91, p = .365$ ). Thus, Hypothesis 3 was supported. Contrary to our expectations, however, the interaction between IP and social exposure on shame was not significant ( $b = 0.06, t = 0.39, p = .699$ ). Thus, Hypothesis 2 was not supported. Table 2 and Figure A1 in Appendix A display the full moderation results.

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INSERT TABLE 2 ABOUT HERE  
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## **Discussion**

The results from Study 1 show that IP leads to increased shame and that failure and IP interact to heighten shame; unexpectedly, social exposure had no interaction effect. These findings provide initial evidence for the role of failure in generating the emotional effects of IP. In Study 2 we aimed to test the performance effects of IP by testing the hypothesis that IP reduces creativity through increased shame.

## **Study 2**

## **Method**

### ***Sample and Procedure***

We conducted a study with an online vignette, collecting data from 161 UK employees through the same provider of respondents as in Study 1, ensuring that the same participants were not used in both studies. Out of the 161 respondents, 6 failed to respond to a quality check question, and thus only 155 responses were usable (96.3% response rate). Of the total sample, 75 (48%) were female. Participants' average age was 44.67 years old ( $SD = 12.05$ ), and they had an average 9.02 years ( $SD = 8.93$ ) of tenure in their current company. We informed participants that their answers would be used for research purposes only.

Participants first provided demographic details and completed the IP scale. They then read a hypothetical scenario (see Appendix B) intended to provide a context in which IP is triggered. We wrote this vignette aiming to present a situation where social exposure and fear of failure occurred. We asked them to imagine themselves as a newly promoted manager who is going to make an important presentation to 25 colleagues (social exposure) and that it is fundamental that this goes well (fear of failure). We subsequently measured their emotions and asked them to engage in a creativity task related to the scenario. Participants then responded to a series of additional demographic questions and were thanked for their participation.

### ***Measures***

**IP.** We used the same 20-item scale as in Study 1 to measure IP ( $\alpha = .92$ ), anchored by strongly disagree (1) to strongly agree (7).

**Creativity.** We used an adaptation of the creativity task developed by González-Gómez and Richter (2015) by asking participants to develop ideas for a slogan for a new customer, which they had to present to all of their colleagues. They were informed that the slogan should be original and useful. Participants were given two minutes to write down as many ideas as they could think of for the slogan (see Appendix B). We used two measures to rate the creativity of each slogan. First, we calculated *fluency* as the number of ideas generated per participant (Barbot et al., 2019).

Fluency is a count variable and did not show normal distribution. We therefore transformed the variable by applying a logarithmic function before entering it in the model. Second, two coders independently rated the *level of creativity* based on the definition of ideas that are both novel and useful (Amabile, 1988). Thus, each coder rated each slogan from 1 to 5 according to (a) its novelty and (b) its usefulness. For each respondent, an average score of novelty and usefulness was calculated and transformed into a scale from “not at all creative” (1) to “extremely creative” (5). For example, the slogan “burn today—remember tomorrow!” scored highly on novelty but lower on usefulness, whereas the slogan “London will be Rocking this summer” scored more highly on usefulness and lower on novelty. Inter-rater reliability was satisfactory at  $\alpha = .90$ , and we used the average of the two coders’ creativity scores in the subsequent analysis.

**Shame.** We measured shame with a single item asking participants the extent to which they would feel ashamed about the prospect of this first meeting with their team. The anchors were “not at all” (1) and “extremely” (7).

**Controls.** We used the same set of controls as in Study 1, namely guilt, confidence, and gender. We used a single-item measure for guilt and confidence anchored with “not at all” (1) to “extremely” (7).

## Results

Descriptive and correlational data are presented in Table A2, Appendix A. As expected, IP correlated positively with shame ( $r = .40, p < .001$ ), and both measures of creativity were negatively correlated with shame (*fluency*:  $r = -.17, p < .05$ ; *novelty-usefulness*:  $r = -.21, p < .01$ ).

### *Hypothesis Testing*

To test Hypotheses 1 and 4, we applied the procedure developed by Preacher and Hayes (2008) and calculated bias-corrected bootstrap confidence intervals (with 10,000 bootstrap samples) for the direct effect of IP on shame and the indirect effect of IP on creativity through shame, while controlling for the effects of guilt, confidence, and gender. Results show that IP increases feelings of shame ( $b = 0.20, 95\% CI [.041, .361]$ ), lending further support to Hypothesis

1. Unexpectedly, we found a positive direct effect of IP on creativity ( $b = 0.29$ , [.068, .520]).

However, the overall mediation results show that IP has a negative indirect effect on creativity through shame ( $b = -0.06$ , [-.142, -.003]). There was no indirect effect of IP on fluency through shame ( $b = -0.01$ , [-.011, .000]), and no direct effect either ( $b = 0.02$ , [-.003, .051]). Thus, Hypothesis 4 is partially supported. Full results appear in Table 3.

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INSERT TABLE 3 ABOUT HERE  
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## **Discussion**

The results from Study 2 show that the impostor phenomenon is positively related to shame. We further show that shame mediates the link between IP and lowered creativity in terms of novelty and usefulness but not fluency, i.e. the number of ideas. We believe that our findings of a direct and positive effect of IP on creativity, while surprising, can be reconciled with our theoretical framework. That is, individuals high in IP tend to work harder to compensate for their self-perceived lack of skills and abilities for the job, and this is reflected in higher levels of creativity. However, when impostors experience shame, there is a negative effect on creativity. We conducted Study 3 to replicate this finding in more realistic work conditions and to extend the model to incorporate OCB as an additional dependent variable and organizational structure as a moderator.

## **Study 3**

### **Methods**

#### ***Sample and Procedure***

To test Hypotheses 1–5, we conducted an online experiment with 215 employees in the US using the services of an online provider of respondents. Ten participants failed to follow instructions appropriately and were dropped from the analyses. Our final sample thus consisted of

205 participants. Of the total sample, 129 (63%) were female, the average age was 46 years old ( $SD = 14.32$ ) and the average work experience was 24.27 years ( $SD = 14.05$ ).

All participants first read that the main purpose of the study was “understanding some management practices and elements of your team that influence your work”. Next, we informed participants that their answers would be used for research purposes only and asked them for consent before proceeding. After ensuring that all participants were of age, we randomly manipulated them with failure (vs. success) by means of a recall task. Afterwards, they rated their levels of shame. Subsequently, all participants were asked to engage in a creativity task. We finished the study by asking them some demographic questions and assessing all other variables.

### ***Failure Manipulation, Social Exposure and Creativity Task***

We used a recall event for the failure manipulation. To use a more conservative approach than in Study 1, we asked participants to remember a general situation of failure or success. In the failure condition they read: “Think of your work during the last 6 months. Please think of a time when you have had to work with colleagues, management or customers, when you have felt that things did not go as planned” (failure, code = 1). In the success condition, participants read, “Think of your work during the last 6 months. Please think of a time when you have had to work with colleagues, management or customers, when you have felt that things went as planned” (success, code = 0). We then asked them to describe what happened during that event.

After the conclusion of the failure manipulation, we measured the level of shame and other emotions and then gave all participants a creativity task unrelated to the manipulation. We used an Unusual Uses Test, which captures idea generation (Torrance, 1974). Following previous creativity studies (Paulus & Yang, 2000; Sacramento et al., 2013), we asked participants to “think of and list as many uses of a ‘paperclip’ as possible”. Participants were stopped after two minutes.

In addition, an independent rater naïve to the research question read all of the narratives and categorized them into situations of social exposure (code = 1) versus no social exposure (code = 0). Of the total, participants reported 147 cases of social exposure.

## *Measures*

**IP.** We used the same scale as in Study 1 to measure IP ( $\alpha = .91$ ).

**Creativity.** Following previous studies using similar creativity tasks (Benedek et al., 2012; Chua, 2013; De Dreu & Nijstad, 2008), we used originality as the core component of creativity. Two coders independently rated the level of originality of each idea on a scale from “not at all original” (1) “to extremely original” (5). Inter-rater reliability was satisfactory ( $ICC(2,2) = .96$ ). We thus used the average of the two coders’ originality scores in the subsequent analysis. To keep the gestalt of the creativity measurement across studies, we also calculated fluency as in Study 2 and applied a logarithmic function before entering this variable into the model.

**OCB.** We measured OCB with the seven-item scale developed by Goodman and Svyantek (1999). It uses a seven-point Likert scale from “never” (1) to “always” (7). A sample item is “I help others with their work when they have been absent, even when I am not required to do so” ( $\alpha = .90$ ).

**Shame.** We measured shame with the same scale used in Study 1 ( $\alpha = .80$ ).

**Controls.** We used the same set of controls as in Study 1 and thus assessed guilt and confidence with a single-item measure each, and gender as a binomial variable.

## **Results**

The means and correlation results appear in Table A3, Appendix A. As in the previous studies, IP was positively correlated with shame ( $r = .29, p < .001$ ), although it was uncorrelated with failure ( $r = -.01, p = .995$ ).

### *Manipulation Check*

To assess the efficacy of the failure manipulation, an independent rater unfamiliar with the research question graded the level of failure for each of the narratives using a Likert scale from “no failure” (1) to “extreme failure” (5). The manipulation check indicated that participants in the failure condition reported significantly more situations of failure ( $M = 3.67, SD = 1.03$ ) than participants in the control condition ( $M = 1.59, SD = 0.90; t(198) = 15.33, p < .001$ ).

### ***Confirmatory Factor Analysis***

We performed a confirmatory factor analysis prior to hypothesis testing to establish discriminant validity among the self-report measures. We tested a four-factor model with IP, shame, organizational structure, and OCB ( $\chi^2 = 1,040.28$ ,  $df = 602$ ,  $RMSEA = .06$ ,  $CFI = .90$ ), against various alternative models collapsing the scales on a theoretical basis (compared with the three-factor model collapsing shame and OCB into one factor;  $\Delta\chi^2 = -53.56$ ,  $df = 1$ ,  $p < .001$ ). This analysis provides evidence of the discriminant validity in our measures.

### ***Hypothesis Testing***

To test hypotheses 2 and 3 to investigate the moderating effects of social exposure and failure respectively on the IP–shame link, we ran an ordinary least squares regression using Model 1 in PROCESS (Hayes, 2017), entering IP as the main predictor, shame as the outcome variable, and failure as the moderating variable. Contrary to our predictions, the interaction between IP and failure on shame was not significant ( $b = 0.178$ ,  $t = -1.11$ ,  $p = .269$ ). Thus, Hypothesis 3 was not supported. The same analysis with social exposure as a moderator showed a non-significant IP–social exposure interactive effect on shame ( $b = -0.27$ ,  $t = -1.51$ ,  $p = .133$ ), thus Hypothesis 2 was not supported.

We tested hypotheses 1, 4, and 5 with Preacher and Hayes' (2008) procedure for indirect effects. Hypothesis 1 proposes a positive and direct effect of IP on shame. Hypothesis 4, in turn, proposes an indirect negative effect of IP on creativity through shame. IP had a positive and significant effect on shame ( $b = 0.29$ , 95% CI [.122, .450]), replicating and lending further support to the results in studies 1 and 2 for Hypothesis 1. We also found a significant negative indirect effect of IP on both measures of creativity through shame (for originality,  $b = -0.08$ , [-.152; -.016]; for fluency,  $b = -0.01$ , [-.0316, -.0003]). Thus, Hypothesis 4 is supported.

Hypothesis 5 states that IP has an indirect and positive effect on OCB through shame. Results show that the coefficient for the indirect effect was positive and significant, in support of Hypothesis 5 ( $b = 0.08$ , [.018, .151]). Full results appear in Table 4.

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INSERT TABLE 4 ABOUT HERE  
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### ***Moderation Analysis: Organizational Structure***

We included perceptions of organizational structure in the survey given to participants at the end of the creativity task. We used the seven-item measure developed by Covin and Slevin (1991), with a seven-point Likert scale from “strongly disagree” (1) to “strongly agree” (7). A sample item is “In general, the operating management philosophy in my firm in the last 6 months favors ...” “Highly structured channels of communication and a highly restricted access to important financial and operating information” ( $\alpha = .87$ ).

We examined the moderating role of organizational structure in our model (see Figure 1). Using Model 14 in Hayes’ (2017) PROCESS software, we entered IP as independent variable; originality, log fluency, or OCB as the dependent variable; shame as the mediator; and organizational structure as the moderator on the shame–creativity/OCB path on the mediated model, with guilt, confidence, and gender as controls. The results show that organizational structure significantly and negatively moderates the mediated IP–shame–originality link, with a significant shame  $\times$  organizational structure interaction ( $\gamma_{org.struct \times shame} = -.15, p < .001$ ) and a significant index of moderated mediation ( $b = -0.04, 95\% CI [-.024, -.096]$ ). Further simple slopes analysis shows that the interaction is significant at high levels (i.e. mechanistic) of organizational structure only ( $b = -0.354, [-.585, -.116]$ ). We observed the same pattern for fluency, with a significant shame  $\times$  organizational structure moderation coefficient ( $\gamma_{org.struct \times shame} = -.04, p = .02$ ), index of moderated mediation ( $b = -.01, [-.024, -.002]$ ), and simple slopes, which were significant for highly mechanistic organizational structures only ( $b = -0.07, [-.119, -.018]$ ). However, there was no moderating effect on the shame-OCB path ( $\gamma_{org.struct \times shame} = -0.05, p = .714$ ) and a non-significant index of moderated mediation ( $b = -0.01, [-.022, .065]$ ). Thus, Hypothesis 6 is partially



supported whereby mechanistic, more centralized structures increase the mediated negative effect of IP on creativity but have no effect on OCB.

## **Discussion**

This study replicated our findings from Study 2 concerning the negative indirect effect of the impostor phenomenon on short-term performance in the form of creativity through shame and found a positive indirect effect of IP on OCB. In addition, we provide evidence that when impostors experience shame, organizational structure plays a moderating role in determining creativity. More mechanistic structures have a detrimental moderating effect on creativity. Unlike the results of Study 1, we did not find failure to be a moderating factor of the IP–shame link in this study. We suggest that this is due to the different prime used for failure (an event at work not going “as planned”), allowing respondents to attribute failure to an external cause, rather than to themselves. Attribution theory (Weiner, 1985) states that individuals assess whether an outcome is a result of their own actions (internal) or due to another person or context (external). Because IP is a negative evaluation of one’s personal deservingness and abilities, only internally directed causal attribution (“my failure”) is relevant for IP. Conversely, external attributions of responsibility (“someone else’s” failure, or a failure for organizational reasons) may be less relevant to impostors.

We also found further evidence for a null effect of social exposure as in Study 1, even though social exposure is a common theme in the IP literature (Bernard et al., 2002; Chrisman et al., 1995; Clance & Imes, 1978; Gardner et al., 2019; Sakulku & Alexander, 2011). This finding may warrant further study, as we used an externally assessed measure of social exposure on the basis of respondents’ narratives of a work event; however, an external assessment does not necessarily correspond to the internal perceptions relevant to IP. Impostors may interpret social exposure differently from the way we measured it in this study. We observed a positive correlation between IP and subjectively experienced social exposure in Study 1, in line with this explanation.

Finally, our results for OCB suggest that the expression of shame in impostors at work translates into higher performance in extra-role helping behaviors. In line with research into shame effects (De Hooge et al., 2010), engaging in cooperative performance such as OCB enables repair of damaged self-image and assuages shame. Similarly, this result supports the principle in COR theory (Halbesleben, 2014; Hobfoll et al., 2018) that engaging in OCB that is unrelated to core in-role performance provides a safer opportunity to replenish resources in situations of resource depletion (i.e., high IP and shame).

## **Study 4**

### **Methods**

#### ***Sample and Procedure***

We conducted a cross-sectional survey administered to 238 full-time US employees, of whom 50 were eliminated for failing the attention check questions. We removed a further five outlier cases whose tenure or number of promotions fell well outside the normal range of the rest of the sample, resulting in 183 respondents. We carried out two waves of data collection. In the first wave, participants provided demographic information, then completed the questionnaire measuring the career-related variables of interest in this study. To address common methods bias (Podsakoff et al., 2003), we contacted the respondents again three weeks later and asked them to complete the IP scale. We obtained 107 responses, of which 3 were incomplete, leaving 104 complete responses. Of the total final sample, 45 (43%) were female. Participants' average age was 49.14 years old ( $SD = 12.91$ ) and they had on average 25.07 years ( $SD = 14.17$ ) of work experience. A professional survey service in the US collected the data.

#### ***Measures***

**IP.** We used the same scale as in Study 1 to measure IP ( $\alpha = 0.94$ ).

**Perceived Employability.** We used the eight-item scale used by Akkermans et al. (2013), based on De Cuyper and De Witt (2008) measuring perceptions of internal (four items,  $\alpha = .87$ ) and external (four items,  $\alpha = 0.88$ ) employability. An example item for internal employability is

“In my current job, I would be able to advance to other jobs”, and for external employability, “I would easily find another job if I lost my current job”, anchored by “completely disagree” (1) and “completely agree” (5).

**Objective Career Success.** We used three self-report measures based on the approach used by Blokker et al. (2019). The first consisted of average monthly salary after taxes in US\$ in 15 categories at \$500 intervals ranging from \$1–\$500 to >\$7,000 (median salary = \$4,000–\$4,500). Second, we asked them to report the number of promotions received over their career, which ranged from 0 to 15 ( $M = 3.57$ ,  $SD = 3.48$ ). Third, we asked respondents to estimate the number of positive performance appraisals they received during their career ( $M = 16.05$ ,  $SD = 1.35$ ).

**Control Variables.** Because data collection occurred during the COVID-19 pandemic in June 2020, employability prospects may have been affected by concerns about the external employment market conditions. We therefore use one item to assess worry about job stability: “How often do you think about your job stability, especially due to the current situation of the Covid-19?” (1 = “Never”, and 5 = “All the time”). We also controlled for gender in all models as well as for organizational tenure where appropriate.

## Results

### *Confirmatory Factor Analysis*

Prior to hypothesis testing, we performed confirmatory factor analysis to establish discriminant validity among the self-report measures. We tested a model with the three independent factors—internal employability, external employability, and IP—against two alternative models where we collapsed scales to create one- and two-factor models on theoretical grounds. The three-factor model had the following fit statistics:  $\chi^2 = 509.29$ ,  $df = 337$ ,  $p < .001$ ,  $RMSEA = .07$ ,  $CFI = .90$ ,  $TLI = .89$ ,  $SRMR = .07$ . Overall, these results show that the three-factor model provides good model fit as well as superior fit relative to alternative models (comparing the three-factor model with a model collapsing the factors into two factors,  $\Delta\chi^2 = 174.53$ ,  $df = 2$ ,  $p <$

.001). These analyses provide evidence that the perceptual measures we used have discriminant validity.

### ***Analytic Strategy***

To test our hypotheses, we used simple linear regression to evaluate the relationship between IP and internal and external employability. Promotion and appraisal were count variables and did not follow a normal distribution. We therefore used a Poisson log-linear regression for these two outcome variables. Finally, to test the link between IP and salary, we used an ordinal logistic regression, as this variable was ranked and highly skewed to the right limit.

### ***Hypothesis Testing***

Table A4, Appendix A shows the means and correlations between variables. IP was negatively correlated with external employability ( $r = -.28, p < .01$ ) and number of promotions ( $r = -.21, p < .05$ ). The regression analysis showed a significant relationship between IP and external employability ( $\beta = -.23, p = .026$ ), in support of Hypothesis 7a. Contrary to our expectations in Hypothesis 7b, no link between IP and internal employability appeared ( $\beta = -.12, p = .206$ ). Hypothesis 8 states that IP has a direct and negative relationship with objective career success. As we expected, IP had a significant negative link with number of promotions ( $b = -0.25, p < .001$ ) and number of positive appraisals ( $b = -0.11, p < .001$ ), but not with salary ( $b = -0.12, p = .593$ ). Thus, Hypothesis 8 was partially supported. Full results are in Tables 5 and 6.

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INSERT TABLE 5 ABOUT HERE

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INSERT TABLE 6 ABOUT HERE  
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### **Discussion**

Our analysis shows that the impostor phenomenon has a negative link with external employability but not with internal employability. In other words, although impostors believe that

they do not possess the abilities required to get a job outside their current organization, IP is not relevant to perceptions about keeping their current job. It is possible that other factors, such as their real skills and qualifications, determine internal employability more strongly than IP. In terms of external employability, research suggests that individuals with negative self-concept have lower psychological resources (Rodrigues et al., 2019) and are worse at coping with the uncertainty involved in seeking a new job. Neureiter and Traut-Mattausch (2017) find specifically that IP is linked to lower career exploration and planning. Because impostors have negative perceptions of their abilities and fear failure and exposure of their supposed fraudulence, our results support the idea that they are unlikely to wish to venture forth to explore and face the uncertainties of the job market, resulting in lower overall external employability. In view of the negative relationship between IP and perceived positive performance appraisals and promotions, we suggest that impostors, through their repeated non-engagement with career planning and exploration (Neureiter & Traut-Mattausch, 2017), enter into a resource-loss spiral (Halbesleben et al., 2014; Hobfoll, 1989; Hobfoll et al., 2019). By failing to present themselves in a positive light or explore and plan their careers, over time impostors suffer the effects of such tendencies on career success.

### **General Discussion**

This work set out to discover how impostors feel and perform in the workplace and determine whether IP can be linked to career outcomes. Drawing on COR theory (Hobfoll, 1989), we posited those impostors would suffer from resource depletion, generating shame with subsequent effects on work outcomes. Studies 1–3 reveal that in both simulated and recalled work situations, impostors are likely to feel shame, particularly when they attribute failure to themselves, but not in cases where they can attribute failure to external causes. The finding that social exposure did not increase the effect of IP on shame was surprising and may be due to the fact that social exposure is in the “eye of the beholder”. That is, externally assessed social exposure is not the same as internally experienced exposure.

The impostor phenomenon then has an indirect negative effect on creativity and a positive impact on OCB through shame. The detrimental effect on creativity is worsened in mechanistic organizational structures, which have less flexibility in work processes, rules, and regulations. Interestingly, we see that organizational structure does not hinder or encourage OCB, suggesting that the IP-shame-OCB relationship might be based on individual level factors, rather than organizational structure. This fits with the argument that impostors engage in OCB to replenish internal resources and repair self-image.

Study 4 further demonstrates that IP is positively related to external employability but has no relationship with internal employability. The latter null finding may occur because when impostors stay within the comfort zone of their present job, their internal employability relates more to their actual performance rather than their self-attributed fraudulence. Finally, IP also links to lower career success in terms of number of positive appraisals and promotions over one's career, with no significant relationship with salary. Taken together, these findings support COR theory (Hobfoll, 1989), indicating that IP and its expression of shame deplete the personal resources necessary to perform effectively at work, and to achieve career success.

### **Theoretical Implications**

Over the first three studies, we consistently found a relationship between shame and IP. This is an interesting finding, providing empirical support for theoretical discussions in the IP literature implying that the two tend to coincide in the same individual (Clance, 1985; Sakulku & Alexander, 2011; Gardner et al., 2019). There is a large body of research on emotions in the workplace (Brief & Weiss, 2002; Elfenbein, 2007), and there have been recent calls for more work on discrete emotions and employee outcomes (Gooty et al., 2009). By focusing on shame as a mediator between IP and short-term performance, we respond to these calls by providing robust evidence that shame plays a relevant role in reducing creativity and increasing OCB in employees with IP. Furthermore, our research supports the finding in the shame literature that the effects of

this emotion can be shaped by external factors (González-Gómez and Richter, 2015) such as organizational structure.

Our research also contributes to the literature on IP and performance outcomes. Previous work showed that the impostor phenomenon has negative effects on employee commitment, stress, coping, or job satisfaction directly (Grubb & McDowell, 2012; Hutchins et al., 2018; McDowell et al., 2007; Vergauwe et al., 2015). We extend this body of work by showing that IP has a detrimental effect on a previously overlooked variable, namely creativity, and also that shame plays an important role in this relationship. The lower creativity we consistently observed in impostors experiencing shame can be explained because their beliefs of fraudulence make them reluctant to go out on a limb and show their creative side, as they risk exposing their failure. In addition, we shed light on the previously contradictory findings regarding the IP-OCB relationship by showing that shame underpins this relationship. In contrast to creativity, OCB is less risky as it is unrelated to the core requirements of the job, and thus accompanied by lower risks of failure and feelings of shame. The finding that impostors tend to engage in more OCB is in accordance with COR's proposition that individuals tend to replenish their resources through extra-role performance following emotionally depleting experiences (Halbesleben et al., 2014; Hobfoll et al., 2018). We thus offer an explanatory framework and confirm previous results about the role of OCB as an effective way to cope with impostor feelings (McDowell et al., 2007).

Our study also offers new insights into COR theory by including considerations of shame as a negative emotional resource. Recent research on IP in the workplace (Gardner et al., 2019; Hutchins et al., 2018, Neureiter & Traut-Mattausch, 2017) has suggested that the impostor phenomenon is a negative personal resource with detrimental effects. We extend this notion to propose that IP operates together with its emotional expression as shame to deplete resources. That is, negative emotions—in this case, shame—are a fundamental factor in the depletion of the personal resources needed to cope effectively at work. COR theory (Halbesleben, 2014; Hobfoll, 1989; Hobfoll et al., 2018) emphasizes that low personal resources include or result in emotional

exhaustion, and that positive emotions such as optimism help form positive personal resources. The other side of the coin might be to consider negative emotions such as shame as a negative emotional resource, a “subtype of personal resources” (Liu et al., 2008, p. 2411), which determines the effects of IP in the workplace.

Finally, our findings regarding the largely negative relationship between IP and career outcomes also provide support for the notion that the impostor phenomenon depletes resources (Gardner et al., 2019; Neureiter & Traut-Mattausch, 2017), leaving impostors unable to leverage their skills and talents to advance their careers. These novel findings indicate that because impostors struggle with their perceived inadequacies in everyday work settings, they may enter a negative resource spiral (Halbesleben, 2014; Hobfoll et al., 2018) with a tangible decline in career success.

### **Practical Implications**

Our results are of interest to organizations and managers wishing to harness the talent of individuals with IP. Because impostors are prone to self-directed assessments of failure, managerial or supervisory feedback that avoids direct attributions of personal failure and rather focuses on how to improve performance in a more neutral manner is likely to increase creativity in individuals with IP. Managers can also foster opportunities for inter-employee helping behaviors, for example by enabling organic rather than mechanistic unit or team structures as our results indicate that this might enable impostors to cope with their fears of not living up to the expectations of others. Finally, managers could use appraisal and promotion tools that are more strongly weighted towards externally assessed qualifications and performance, including extra-role performance, rather than towards self-assessment. Because impostors tend to underestimate their abilities, these tools could be a useful basis for fostering a higher sense of employability and enabling more successful career advancement for individuals with IP.

### **Limitations and Future Research**



One of the limitations of this study is in its design, which used different approaches to understand the impostor phenomenon and its effects in the workplace. One of the studies asked individuals to recall an event at work that was either successful or a failure. This was followed by a measurement of creativity that was unrelated to the participant's job, and may not have provided a very realistic measure of their creativity at work. Future research could carry out investigations in a single company or department with a creativity task that relates directly to respondents' work environment.

Relatedly, our studies used experimental or cross-sectional designs, which did not allow the examination of the effects of IP over time. Longitudinal designs would enable future study of the long-term effects of IP on career outcomes, which may vary along the professional life of an employee. Our finding that IP did not influence internal employability also warrants further investigation as the sample size for Study 4 was relatively small. Future research could investigate whether IP has less effect for individuals who remain within a familiar environment, but heightens its effect when they are removed from their comfort zone. In a similar vein, we did not find conclusive results for social exposure in relation to IP, despite the fact that fear of failing after being exposed to social judgement is a feature of IP. Researchers are encouraged to look further into this, and to try alternative ways of measuring social exposure that could disentangle how it relates to IP. We also found a positive correlation between IP and worry about the COVID pandemic, indicating that impostors may be more sensitive to external crises. Thus, future research could usefully look at whether career shocks may play a role in explaining career outcomes for impostors. Regarding COR theory, the important role of shame in the IP-performance link offers the perspective that discrete emotions could be considered a type of personal resource that shapes an individual's ability to perform and to manage their career effectively. Future work studying emotions as a resource in COR could provide fresh insights into the investigation of employee performance and career. In summary, the impostor phenomenon remains an under-researched area,

and there is much scope for future work to understand and develop these high-potential individuals in the workplace.

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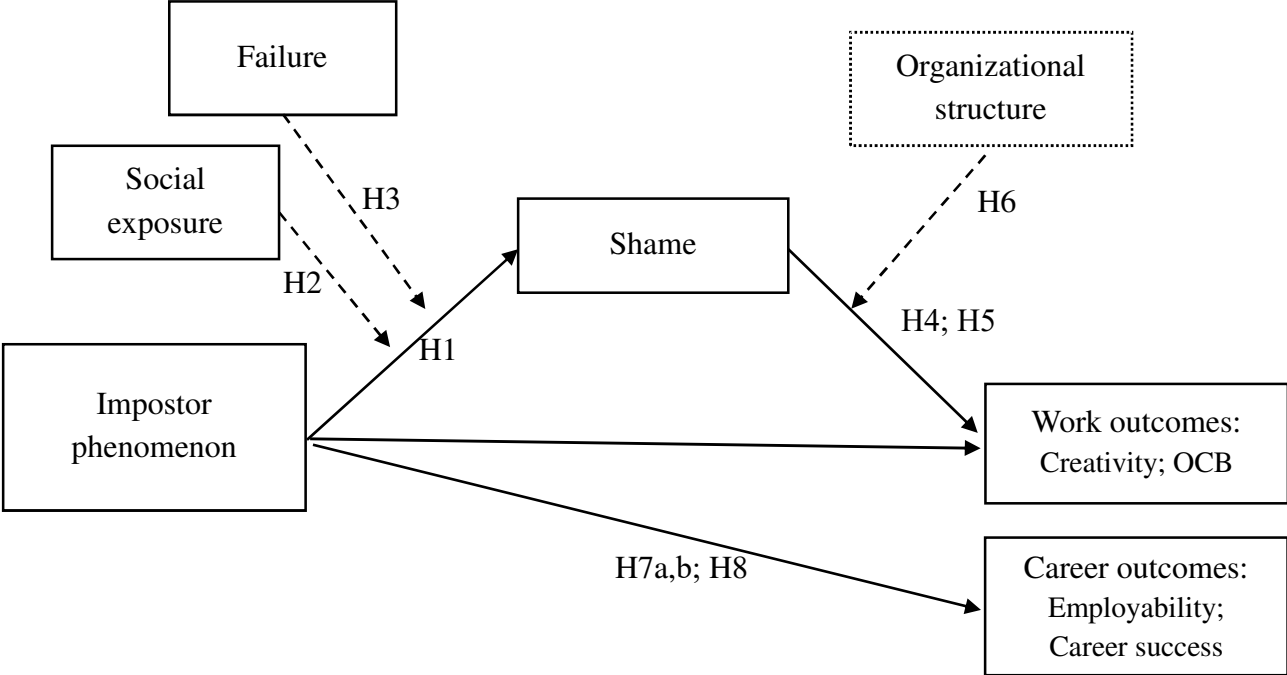


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**Figure 1**

Overall model and hypotheses tested in the four studies



**Table 1.** Overview of Studies

Design and Sample	Results
<b>Study 1.</b> Establishes the IP→shame relationship, moderated by social exposure and failure.	
<p>Online experiment: Independent variable <i>IP</i> (scale); dependent variable <i>shame</i> (scale). Moderators recall of previous work event (dummy variable) involving <i>failure</i> (successful=1; failed = 0); or <i>social exposure</i> (exposure =1; no exposure = 0). European employees. N=184</p>	<p><b>H1.</b> There is a positive relationship between IP and shame. (<i>Supported</i>) <b>H2.</b> Social exposure strengthens the positive relationship between IP and shame. (<i>Not supported</i>) <b>H3.</b> Failure strengthens the positive relationship between IP and shame. (<i>Supported</i>)</p>
<b>Study 2.</b> Tests the indirect effect of IP on creativity through shame, IP→shame→performance (creativity).	
<p>One-shot case-study pre-experimental design with online vignette evoking risk of being exposed as a failure. Independent variable <i>IP</i> (scale); Mediator <i>shame</i> (scale, 1 item); Dependent variable: <i>creativity</i> (idea generation task: rated on scale of 1=not creative to 5=very creative by authors) Sample: UK employees N=155</p>	<p><b>H1.</b> There is a positive relationship between IP and shame. (<i>Supported</i>) <b>H4.</b> The negative influence of IP on creativity is mediated by shame. (<i>Supported</i>)</p>
<b>Study 3.</b> Replication and extension of study 2 IP→shame→performance (OCB and creativity) model plus further analysis of moderation effects of organizational structure.	
<p>Online experiment: Independent variable <i>IP</i> (scale); Dependent variables <i>OCB</i> (scale) and <i>creativity</i> (task rated 1 to 5); Mediator <i>shame</i> (scale). Moderator 1 primed with recall of previous work event (dummy variable) involving <i>failure</i> (successful=1; failed = 0); Moderator 2 (dummy) <i>social exposure</i> (coded manually exposure =1; no exposure = 0). Moderator 3 <i>Organizational Structure</i> (scale) European employees N=205.</p>	<p><b>H1.</b> There is a positive relationship between IP and shame. (<i>Supported</i>) <b>H2.</b> Social exposure strengthens the positive relationship between IP and shame. (<i>Not supported</i>) <b>H3.</b> Failure strengthens the positive relationship between IP and shame. (<i>Not supported</i>) <b>H4.</b> The negative influence of IP on creativity is mediated by shame. (<i>Supported</i>) <b>H5.</b> The positive influence of IP on OCB is mediated by shame. (<i>Supported</i>) <b>H6:</b> Mechanistic organizational structure (centralized decision-making) strengthens the negative effect of IP mediated by shame on creativity (<i>Supported</i>) and on OCB (<i>Not supported</i>)</p>
<b>Study 4.</b> Testing long-term effects IP→career outcomes(employability and objective career success).	
<p>Survey design: Independent variable <i>IP</i> (scale); Dependent variables <i>employability</i> (scale) and <i>career success</i> (number of positive appraisals, promotions and salary) Sample: 104 US employees</p>	<p><b>H7</b> IP has a negative effect on: <b>a)</b> perceived external employability (<i>Supported</i>) and <b>b)</b> perceived internal employability. (<i>Not supported</i>) <b>H8.</b> IP has a negative effect on objective career outcomes. (<i>Partially supported: IP has a negative effect on number of promotions and number of positive appraisals but no effect on salary</i>)</p>

**Table 2**Moderation of IP→shame by failure and social exposure, Study 1 ( $N = 184$ )

Predictor	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	
Controls:					
Gender	-0.2	0.11	-1.83	.069	
Guilt	0.39	0.06	6.53	.000	
Confidence	-.13*	0.05	-2.41	.017	
Main effects:					
IP	0.28	0.08	3.6	.000	
Failure	0.59	0.13	4.69	.000	
Social Exposure	0.24	0.1	2.31	.022	
Interaction effects:					
IP x Failure	0.45	0.15	3.04	.003	$\Delta R^2 = .02$
IP x Social Exposure	0.06	0.15	0.39	.699	$\Delta R^2 = .00$
Model Statistics	$R^2 = .60$ $F(8,175) = 33.21^{***}$				

Unstandardized coefficients reported.

**Table 3**Effects of IP on fluency and creativity through the mediating effect of shame, Study 2 ( $N = 155$ )

Predictor	Model 1. Fluency				Model 2. Creativity			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Partial effect of control variables on dependent variable								
Gender	0.01	0.03	0.24	.810	-0.05	0.22	-0.22	.824
Guilt	-0.02	0.01	-1.44	.153	-0.04	0.09	-0.41	.682
Confidence	0.01	0.01	0.74	.460	0.01	0.07	0.14	.886
Direct and total effects								
IP→shame	0.20	0.08	2.48	.014	0.20	0.08	2.48	.014
Shame→DV <sup>a,b</sup>	-0.02	0.01	-1.50	.136	-0.30	0.11	-2.64	.009
IP→DV	0.02	0.01	1.76	.080	0.29	0.11	2.57	.011
Bootstrapping results								
	<i>Estimate</i>	<i>SE</i>	<i>95% CI</i>		<i>Estimate</i>	<i>SE</i>	<i>95% CI</i>	
			<i>LL</i>	<i>UL</i>			<i>LL</i>	<i>UL</i>
IP→shame→fluency	-0.004	0.003	-0.011	0.000	-0.06	0.036	-0.142	-0.003

Unstandardized coefficients reported.

<sup>a</sup>Fluency: Log transformation of number of ideas;<sup>b</sup>DV: Dependent variable: Fluency (Model 1), Creativity (Model 2).

**Table 4**Effects of IP on fluency, originality and OCB through the mediating effect of shame, Study 3 ( $N = 205$ )

Predictor	Model 1. Fluency				Model 2. Originality				Model 3. OCB			
	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Partial effect of control variables on dependent variable												
Gender	0.08	0.04	1.99	.048	0.26	0.18	1.44	.152	-0.29	0.17	-1.68	.094
Guilt	0.05	0.04	1.16	.249	0.11	0.18	0.58	.564	0.02	0.18	0.11	.915
Confidence	-0.03	0.01	-2.44	.015	-0.21	0.06	-3.39	.001	0.22	0.06	3.68	.000
Direct and total effects												
IP→shame	0.29	0.08	3.43	.001	0.29	0.08	3.43	.001	0.29	0.08	3.43	.001
Shame→DV <sup>a,b</sup>	-0.05	0.02	-2.23	.027	-0.28	0.11	-2.64	.009	0.27	0.10	2.69	.008
IP→DV	-0.01	0.03	-0.37	.709	0.05	0.13	0.36	.716	0.09	0.12	0.70	.487
Bootstrapping results for indirect effects												
	<i>Estimate</i>	<i>SE</i>	<i>95% CI</i>		<i>Estimate</i>	<i>SE</i>	<i>95% CI</i>		<i>Estimate</i>	<i>SE</i>	<i>95% CI</i>	
			<i>LL</i>	<i>UL</i>			<i>LL</i>	<i>UL</i>			<i>LL</i>	<i>UL</i>
IP→shame→DV	-0.01	0.01	-0.032	0.000	-0.08	0.03	-0.152	-0.016	0.078	0.03	0.018	0.151

Unstandardized coefficients reported.

<sup>a</sup>Fluency: Log transformation of number of ideas;<sup>b</sup>DV: Dependent variable: Fluency (Model 1), Originality (Model 2).

**Table 5**Effects of IP on employability, Study 4 ( $N = 104$ )

Predictors	<i>Internal Employability</i>			<i>External Employability</i>			Standardized coefficients reported
	$\beta$	$t$	$p$	$\beta$	$t$	$p$	
Constant	4.45	11.70	.000	4.51	12.55	.000	
Control variables							
Gender	-.09	-0.91	.367	.02	0.22	.827	
Tenure	-.13	-1.38	.170	-.00	-0.02	.987	
COVID 19	-.32	-3.22	.002	-.22	-2.15	.034	
Main variable							
IP	-.12	-1.27	.206	-.23	-2.26	.026	
Model Statistics	$R^2 = .16$ $F(4,99) = 4.55$ , $p = .002$			$R^2 = .12$ $F(4,99) = 3.35$ , $p = .013$			

**Table 6**Effects of IP on career success variables: Promotions, appraisals and salary, Study 4 ( $N = 104$ )

Predictors	<i>Promotions</i>				<i>Appraisals</i>				<i>Salary</i>			
	<i>b</i>	<i>SE</i>	<i>Wald</i> $\chi^2$	<i>p</i>	<i>b</i>	<i>SE</i>	<i>Wald</i> $\chi^2$	<i>p</i>	<i>b</i>	<i>SE</i>	<i>Wald</i> $\chi^2$	<i>p</i>
Constant	2.00	.21	87.85	.000	2.74	.10	718.39	.000	-	-	-	-
Gender	-0.24	.11	4.67	.031	-0.07	.05	1.71	.191	-1.23	.37	11.13	.001
Tenure	0.00	.01	0.05	.831	0.03	.00	135.95	.000	0.01	.02	0.28	.597
IP	-0.25	.07	13.20	.000	-0.11	.03	12.60	.000	-0.12	.23	0.29	.593

Unstandardized coefficients reported