Measuring Implicit Stereotypes Controllability During the Resume Screening Process

Another Fight Against Discrimination

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Introduction

As finding a job is often a stressful perspective, students tend to postpone the moment they enter the job market which, indirectly yet substantially, participates in the growth of higher education. However, in this situation, not everyone has similar chances. Besides education, skills, experience, and even promising potential, recruiters consider many other variables that are sometimes complex to determine (Dipboye, 1985). Examples of those variables are networks, recommendations, but also all subconscious actions. With workforce diversity increasing worldwide (Bruna et al, 2017), perceptions change, vary and eventually subjectively impact our beliefs once in a position meeting someone for the first time. And discrimination then becomes a constant reality. Although discrimination has always existed, it is trickier to define than by just making distinctions, exclusions or preferences (de Bruijn, 1993; Davidson and Burke, 2000; Ghirardello, 2005; Colella et al., 2017), or to justify with macro phenomena (Coleman, 2004). As of today, 175 countries have ratified the 1958 Discrimination Convention, which had originally defined seven discriminant criteria: race, colour, gender, religion, political opinion, national extraction, and social origin. But in 2007, two new criteria emerged: genetic differences and lifestyle, soon followed by incivility (Cortina, 2008). As time goes by, criteria increase and diversify to the extent of becoming hyper norms (Mayer and Cava, 1995; Gaiaschi, 2019).

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Often subtle (Laer and Janssens, 2011), the origin of discriminant behaviour is merely subjective (Deitch et al., 2003), generated by thoughts that can be biased, and consequently often not accurate. In 1954, Gordon W. Allport, Kenneth Clark, and Thomas Pettigrew defined the direct impact of discrimination as a prejudice, a pre-judgement, *"an antipathy based on faulty and inflexible generalisation. It may be felt or expressed. It may be directed toward a group as a whole, or toward an individual because he is a member of that group"* (p. 9). Judgements indeed have their roots in stereotypes, *"a socially shared set of* beliefs about traits that are characteristic of members of a social category"* (Greenwald and Banaji, 1995, p. 14). As a matter of fact, stereotyping is of cognitive nature, prejudice is of affective nature, and discrimination is a behavioural response to both (Figure 1). Notwithstanding this emotional chain, and although the deeper root of discrimination is stereotyping, a stereotype doesn't always lead to a prejudice (Janssen and Backes-Gellner, 2015), just like every prejudice will not result in discrimination (Lee et al., 2015). Hence, even if they are closely related and often go together, they need to be differentiated.

Figure 1. From stereotype to discrimination.

Stereotype Cognitive → **Prejudice** Negative attitude → **Discrimination** Exclusion behaviour
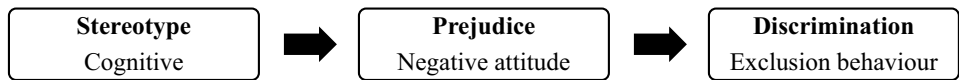
Source: authors.

Whether discrimination is a deep conscious or subconscious stimulus does not forgive related behaviours. When discrimination is the result of a subconscious perception, which is often linked to social changes or evolutions (Lim et al., 2018), it then becomes relevant to seek solutions to what starts misconducts (Cortina, 2008; Ghumman and Ryan, 2013), namely stereotypes.

The literature with articles investigating discrimination at work is plenteous, should it be at a resume screening level, a personal development level or an economical level (Tharenou, 2003; Baert et al., 2015; Warren et al., 2019). However, research so far has mainly dealt with observing discrimination instead of seeking measures to stop it (Brown and Campion, 1994; Baert, 2018; Derous and Ryan, 2018). The few articles studying professional training's effects upon stereotyping activation did not prove to be efficient. In this regard, our article aims at measuring to what extent Schneider Electric's programme can con-

tribute in reducing discrimination when screening work applications. To do so, in this article we explore stereotypes' controllability. With the help of clinical implicit stereotype awareness training, we measure the stereotype engine activation during a recruitment process. After collecting implicit stereotypes theoretical foundations, we perform our experiment, whose results are then empirically discussed.

Stereotypes and discrimination: a wicked couple

Discrimination results from a stereotyped perception (Moskowitz, 2010), which is both a common belief about attributes that a group of people share (Lippmann, 1922), and the mental representation one uses to attribute features to a group (Bordalo et al., 2016). In his book, entitled *Public opinion*, Walter Lippmann describes how our perception of reality is biased, with the direct consequence of making it inaccurate, although being convinced it is real.

Since the psychological functioning of stereotypes is a complex process that impacts our behaviour, it also affects social relations (Bordalo et al., 2016). Applied to an organisational context, stereotypes are seen as influencers of work relations and performance (Colella et al., 2017). If those influenc-

ers are quite powerful, it is mainly because exaggeration often comes with beliefs, just like beliefs come from ignorance (Tosi and Einbender, 2017; Uhlmann and Cohen, 2007). Examples are to consider all Irish as red-haired people, French and Belgians as culturally similar, and Muslims as necessarily Arabs (Ghumman and Ryan, 2013). In 2012, Thomas W.H. Ng and Daniel Feldman explained that such shortcuts mainly come from stereotypes because most of them result from extreme cases' traits that apply to wider categories. For example, with such a biased logic, elderly characteristics concern everyone who is older than 70, which is obviously exaggerated (Geetanjali et al., 2017).

Nowadays, those misperceptions are dominant in many professional environments (Uhlmann and Cohen, 2007). Young women are less likely to be employed because they "risk" becoming pregnant, seniors are expected to have health issues soon (Geetanjali et al., 2017), and STEM-related careers (Science – Technology – Engineering – Mathematics) do not match perceived females' abilities (Schuster and Martiny, 2017). Facing this "Kernel of truth" (Allport et al., 1954; Bordalo et al., 2016), Judith A. Hall and Jin X. Goh proposed different ways to assess the (in)accuracy of such beliefs (2017). The authors defined the stereotype accuracy as the combination of behaviours and traits matching stereotyped beliefs.

Stereotypes: an endless variety

Beside the everlasting race-religion-gender-colour stereotyped considerations or STEM-based discrimination (Schuster and Martiny, 2017), our society has to deal with incongruous sources of discrimination such as women's physical appearance (Ghumman and Ryan, 2013; Kelan, 2014), overweight women (Flint et al., 2016), pregnancy (Morgan et al., 2013), atavistic associations such as women cooking (De Lemus et al., 2013), or men's expected performances (Croft et al., 2015). In this regard, deontological boundaries are porous (Rojot, 2010; Chiu and Hackett, 2017). With such a logic, many believe that Black people are generally hostile (Chen and Bargh, 1997), violent (Ito and Tomelleri, 2017), and less intelligent than White people (Steele and Aronson, 1995). While some researchers would demonstrate that the Black stereotype is rather negative (Devine, 1989; Lepore and Brown, 1997), others would clearly categorise typical Asian behaviour (Gilbert and Hixon, 1995), to the extent of being able to explain why Japanese people have negative attitudes towards Korean people (Greenwald et al., 1998). Health and disability issues are of course also extremely important. Many reduce the latter to wheelchairs, blindness and deafness (Nelissen et al.,

2016). Furthermore, when it comes to making distinctions between the infinite variety of physical or mental discrepancies, stigmatisation is stronger with people suffering from mental disorders because they are held responsible for their emotional reactions (Boysen et al., 2014). These authors managed to prove that people do associate gender with mental disorder.

Indeed, they have empirically demonstrated that mental disorders were alternately perceived as typically feminine or typically masculine, this perception resulting in producing different levels of stigmatisation. In the present case, people believe that men are responsible for their negative mental state while women deserve empathy. And people suffering from cancer show more empathy during a job interview than a healthy person; but the latter is obviously more competent (Martinez et al., 2016). Consequently, stereotypes are responsible for making us adhere to generic beliefs such as that the elderly work slower, intelligence varies between professors, secretaries, and hooligans (Dijksterhuis et al., 1998; Geetanjali et al., 2017), as well as between lower-class and higher-class children (Darley and Gross, 1983). Other stereotypes include the position you have in a company forms your character (Snyder and Cantor, 1979), people wearing glasses are introverted (Cohen, 1981), and healthy people are more competent than disabled workers (Croft et al., 2015; Nelissen et al.,

2016). That is such an endless list of categories that no serious indicators can explain discriminatory behaviours in organisations. As previously said, most stereotypes are of subconscious origin. Yet, researchers have also demonstrated that candidates holding facial stigma were less likely to be recruited (Madera and Hebl, 2012). This is explained by the fact that recruiters use more self-regulatory resources to ignore the stigma (Jensen, 2017). This means the energy spent in doing so cannot be used to memorise the relevant information from the interview.

Consequently, the mental picture of the candidate is biased, and such candidates receive a lower evaluation score compared to candidates without any stigma. So, focusing on stereotypes might be sound since attention could eventually be other variables-based (Lee et al., 2015; Posthuma and Campion, 2007).

Stereotyping: a cognitive process

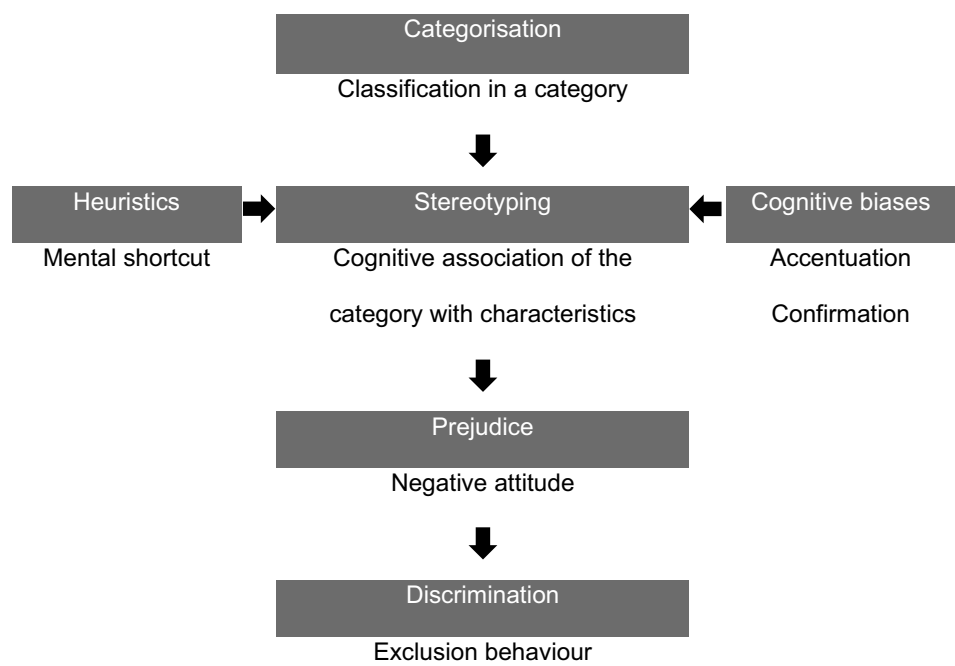### From Categorisation to Discrimination

As far as the understanding of the social world is concerned, stereotyping is a tool which helps the brain to quickly calibrate a series of situations that eventually make sense (Moskowitz, 2010). In this regard, stereotyping

makes people quickly attribute characteristics to someone; this process is called "social categorisation" (Tajfel and Wilkes, 1963; Uhlmann and Cohen, 2007). The problem is that social categorisation is the result of an incomplete process since stereotyping summarises a person from his/her prominent characteristics. Consequently, the final picture is systematically distorted (Darley and Gross, 1983). Heuristics are then responsible for those mental shortcuts; the latter being influenced by dominant traits: stereotypes. All in all, social categories are built upon representative probabilities (Bordalo et al., 2016). At the stereotyping stage, people naturally exaggerate some differences and minimise others, resulting in social representations that eventually fit the contrasts that are expected.

And discrimination appears (Figure 2), which makes recruitment neither relevant nor impartial (Ghirardello, 2005; Priola et al., 2013). Since a social category is opposed to other(s) one(s), when a candidate is discriminated against, it is in favour of someone who belongs to another category. Since stereotypes influence decisions, this might result in choosing a less suitable candidate for the position (Martinez et al., 2016). Indeed, a person having a facial stigma is less likely to be recruited when opposed to all comers (Madera and Hebl, 2012), behavioural traits that were also observed with overweight persons (Flint et al., 2016) or pregnant ladies (Morgan et al., 2013).

Figure 2. How discrimination comes to life.

Categorisation
Classification in a category

⬇

Heuristics		Stereotyping		Cognitive biases
Mental shortcut	➡	Cognitive association of the category with characteristics	⬅	Accentuation Confirmation

⬇

Prejudice
Negative attitude

⬇

Discrimination
Exclusion behaviour

Source: authors.

Behavioural Priming

"Behavioural priming refers to the phenomenon whereby exposure to a stimulus (e.g. words, pictures) or to a set of stimuli (e.g., sentences to unscramble) activates a concept, which in turn influences a subsequent behavioral response without awareness of the links among these elements" (Wheeler et al., 2014, p. 109). In this two-step process, an activation phase gives birth to stereotypical characteristics. This priming condition can be either unconscious (Chen and Bargh, 1997; Lepore and Brown, 1997, Experiment 2 and 3; Walker et al., 2011) or subconscious (Devine, 1989; Gilbert and Hixon, 1991; Steele and Aronson, 1995; Lepore and Brown, 1997, Experiment 1; Dijksterhuis and van Knippenberg, 1998). The priming process can either consist in stereotyping traits that are attributed to an individual within a group (self-stereotype) or traits that are attributed to the whole group (other-stereotype). The reason for it is that, to a certain extent, we all share similar characteristics (Wheeler et al.,

2014). For example, on some occasions even young people can be slow in their actions, decisions or understanding, meaning that they are able to act as an elderly person when primed with this stereotype (Dijksterhuis et al., 1998; Posthuma and Campion, 2007). There are three means of activation: through (1) a social category, (2) a group's stereotypical traits, and (3) an example representing a category. An application phase concludes the process. When the stereotype is activated, the said behaviour occurs.

For example, if an individual was initially put in the "secretary" category, then had to fill in a questionnaire, this person would be faster to complete the task than someone who was not primed as such (Dijksterhuis and van Knippenberg, 1998).

Assimilation *vs.* Contrast

When the priming condition results in a person's change of behaviour that is congruent with the stereotype, the latter is considered assimilated. Whether it is a self- or other-stereotype which is activated, it remains irrelevant since the result is the same in both situations. One assimilation illustration comes from the Threat Theory Stereotype (Steele and Aronson, 1995; Schuster and Martiny, 2017): when performance is measured, it will result risking a negative stereotype about one's own group, that is to say failing to recruit correctly while no element allows us to consider this possibility. This fear leads to self-doubt, thus to reduced performances that eventually make the behaviour consistent with the stereotype. The most flagrant example concerns the stereotype according to which Black Americans would be less smart than White Americans (Rubineau and Kang, 2011).

As a matter of fact, when African Americans students are in conditions of having to prove their intellectual performances, they obtain lower scores than European Americans (Steele and Aronson, 1995). Consequently, assimilation is the most common prime-to-behaviour effect. However, some moderators impact reactions to the extent of behaving in inconsistent ways with the stereotype, a phenomenon that is called the "contrast effect" (Posthuma and Campion, 2007).

For this effect to occur, the stereotype needs to be concrete, and/or inconsistent with the individual's self, education, values, and/or experience (Wheeler et al., 2014). Figure 3 presents stereotypes' activation steps.

According to its prime, a stereotype will then be activated in various ways, all depending on its activation mean.

However, people with contrasted behaviours will be able to resist assimilation when their own history will have proven them wrong in similar past con-

Figure 3. Stereotype activation scheme.
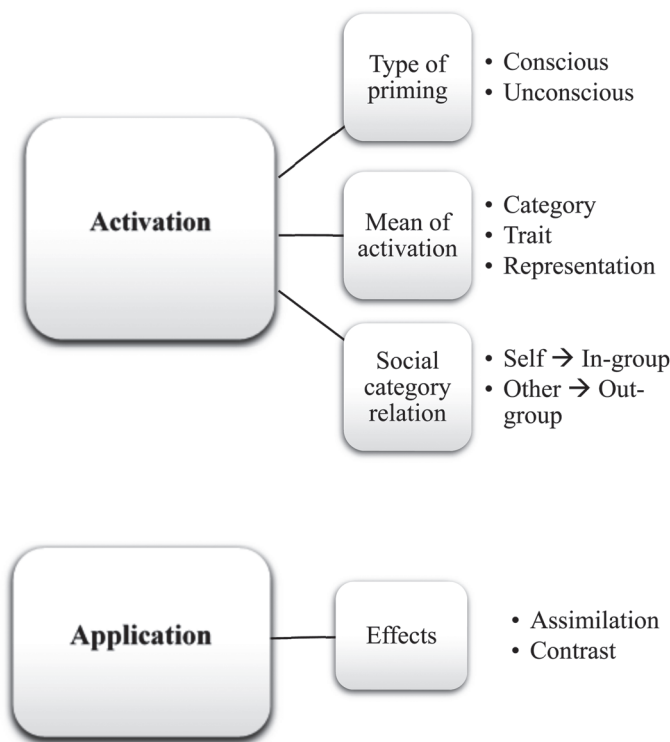
Source: authors.

ditions, or when developing exceptional narcissistic, empathetic, nonconformist, or even spiritual traits, which make them naturally go against the tide. But above all, it raises the question of stereotype inhibition, or put another way, stereotype controllability.

Stereotype Controllability

Literature in stereotyping-linked references is plenteous. The topic is fully cross-disciplinary, which has resulted in numerous publications, and an impressive production of experimentations. Yet, since stereotypes also impact organisations, the question of their versatility deserves questioning, especially in terms of clinical modification. The purpose of such research question lies in the possibility of reducing discrimination at work, or more precisely at the recruitment stage. Although past research has tackled how to prevent triggering stereotypes

(Moskowitz, 2010), as of today no method has been proved to work. Indeed, although stereotypes' activation and application are quite automatic, responses are not (Gilbert and Hixon, 1991).

Stereotype's application controllability does not reach consensus among researchers. Some believe that although activation cannot be removed (Devine, 1989; Ito and Tomelleri, 2017), its applications can be prevented (Lee et al., 2015). But others argue that the application phase can only be controlled under two conditions, low- and high-prejudice people (Lepore and Brown, 1997).

Here, the nuance comes from the fact that the latter react differently whether they are primed with the category or the stereotype, low-prejudice subjects being less sensitive to activation stimu-

li. Stereotypes are then complex structures because they are of diverse origins and meanings; but the biggest challenge remains that they mostly function unconsciously. Moreover, there are endless possible stereotyping classifications as they evolve over time and space. Among those categories, the ones which are stereotyped as warm but not competent are the most likely to be discriminated against at work, which is evidenced by the literature review (Deitch et al., 2003; Posthuma and Campion, 2007; Laer and Janssens, 2011; Lim et al., 2018). Despite multiple regulations, discrimination is still both an HR and a managerial issue. To try and overcome it while remaining compliant with the law, organisations act by raising awareness about stereotypes, particularly the unconscious biases they produce (Figure 4).

Figure 4. Google search evolution for "Unconscious bias training" over the past three years.

Source: https://trends.google.fr/trends.
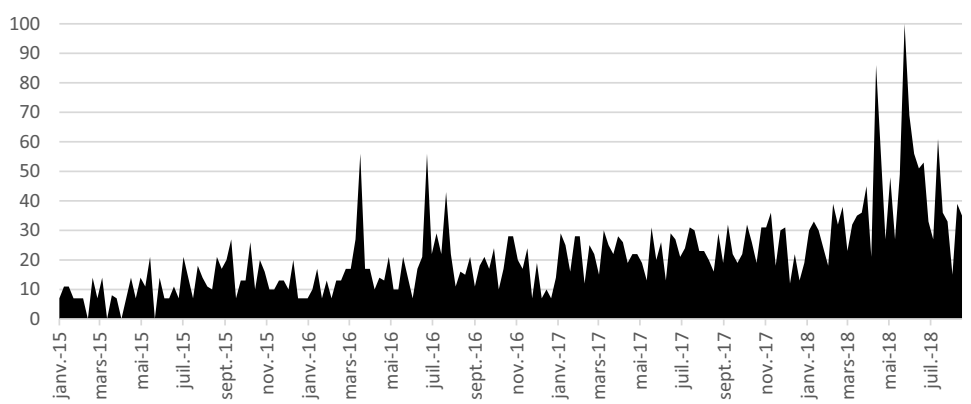
Stereotype activation being the first phase of the process, it seems relevant to attempt to inhibit it. Here, we will focus on the effectiveness of implicit stereotype awareness to try and reduce stereotype activation during the resume selection (Galindo et al., 2015; Derous et al., 2016). We have defined three hypotheses. Stereotyping is one of the possible responses that exist after categorising someone. Consequently, having a goal that is incompatible with a stereotype prevents its activation. Indeed, *"egalitarianism is defined by a lack of stereotyping"* (Moskowitz, 2010, p. 149). Professional training explaining the discrimination mechanism aims at making participants conscious of their own biases during a resume screening operation (Derous et al., 2016). We can then consider that such information leads to having an egalitarian goal when set up in a recruitment context.

Hypothesis 1_a: *Awareness training prevents gender-linked stereotype activation during the resume selection step.*

Categorisation is a cognitive shortcut which is a normal and necessary process used to simplify information and quickly form impressions of others. However, stereotyping is only a possible response among many others (Gilbert & Hixon, 1991). If stereotyping is inhibited, judgment is then more likely to be non-biased.

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Hypothesis 1_b: *Preventing stereotype activation prevents discrimination.*

Since stereotypes are unconscious and deeply anchored in our cognitive processes, having an incompatible goal in a specific situation will be efficient. But this cannot be reliable in the long run. To prevent stereotype activation from occurring, it is necessary to set chronic egalitarian goals (Moskowitz, 2010). This means having a recurrent reminder of what a stereotype is and how to prevent it.

Hypothesis 2: *A working environment composed by diversity-related training and regular inclusive communications is strong enough to inhibit stereotype activation.*

Methodology

Cultural Environment

Since stereotyping is somehow linked to cultural beliefs and behaviours, our first methodological step consisted in determining the cultural model we would use as a preliminary filter. After comparing the existing models, we came up with the decision to use the latest GLOBE approach. Culture is a system of meanings that a group share (Geertz, 1973). This group can be a country, an organisation or any other structure, whose boundaries are stable throughout time. Groups' cultural differences influence the individuals who

belong to the said group. Cultures of large groups, such as a country for example, cannot be homogeneous and do not reflect in every individual the same way. Nevertheless, and despite globalisation, nations remain relevant analytical units for anyone who intends to mobilise culture in research (Chevrier, 2009). Culture is then made of a series of components that are more or less visible. Behaviours and artefacts are easily observable. They anchor values and norms, which, in return, contribute to building social life fundamentals (Trompenaars, 1993; Hall & Hall, 1990).

In this research, we have chosen to adopt Philippe D'Iribarne's approach (1989), which gives the priority to a detailed description of behavioural specificities within organisations and mobilises contextual elements to explain the said specificities.

This is the reason why we have decided to use the GLOBE study filter: from a macro perspective, it summarises previous models, and from a micro perspective, it adopts a philosophy that is dominantly anchored in people's behaviours within the organisations, which is what our experimental field suggests. The project GLOBE Team (House et al., 2004) has studied the influence of cultural variables on leadership and organizational processes. Since it is founded on previous models, similarities exist. The GLOBE sample was made up of managers from over 60 countries, and working in different organisations. In addition, the nine GLOBE dimensions focus on societal values, which can be linked to stereotyping. Another interesting feature is that it differentiates cultural dimensions in terms of practices (actual practices) and values (expected practices). For all those reasons, we have considered this model the most appropriate one. As far as country selection was concerned, we decided to select an area where cultural behaviours would suggest the existence of possible stereotyped discriminations. The nine GLOBE dimensions are: performance orientation, assertiveness, future orientation, human orientation, institutional collectivism, in-group collectivism, gender egalitarianism, power distance, and uncertainty avoidance. They all have their importance, but gender egalitarianism especially caught our attention because the literature often makes it the spearhead of discrimination representativeness (Powell, 1990; Pichler et al., 2008; Brescoll, 2016; Kim et al., 2016; Pondorfer et al., 2016; Vial et al., 2016).

When looking at the Latin Europe cluster (see figure 5 for score details), which is composed of France, Israel, Italy, Portugal, Spain, and the French speaking part of Switzerland, the GLOBE analysts notice that the latter are somewhat male-dominated, not particularly humane-oriented, and experience an unequal distribution of power and status among citizens. We

considered those three indicators strongly suggest potential presence of discriminant behaviours. In this research, an important gap between group practices and group values regarding gender egalitarianism can also be noticed, with the group practice obtaining the lowest score. Finally, the difference between reality and expectation suggests a desire to change the current state and to reduce inequality between men and women.

Figure 5. Cultural practices and values in the Latin Europe cluster.
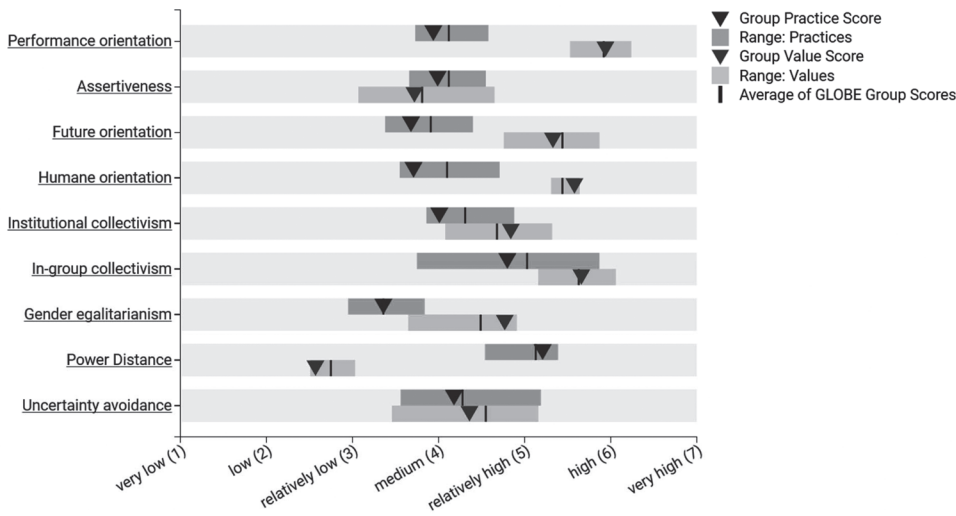
Source: House et al., 2004.

After deciding to focus on Latin Europe, we chose to perform our study with the French Republic using the legal environment filter. Since discrimination is legally forbidden, we considered the legislation and how the laws were built to dissuade people from discriminating. Within the Latin Europe countries group, France clearly stands out from this perspective because employment law involves several bodies: the European legislation, the national Labour Code, collective bargaining agreements, employment contracts, and organisations' internal regulations. In addition, the French labour code is very protective toward employees, especially regarding discrimination, as 25 discrimination criteria exist. Another interesting aspect of the French labour code is the obligation for companies to train their HR employees in non-discrimination practices (Figure 6).

Figure 6. Cultural practices and values of France.
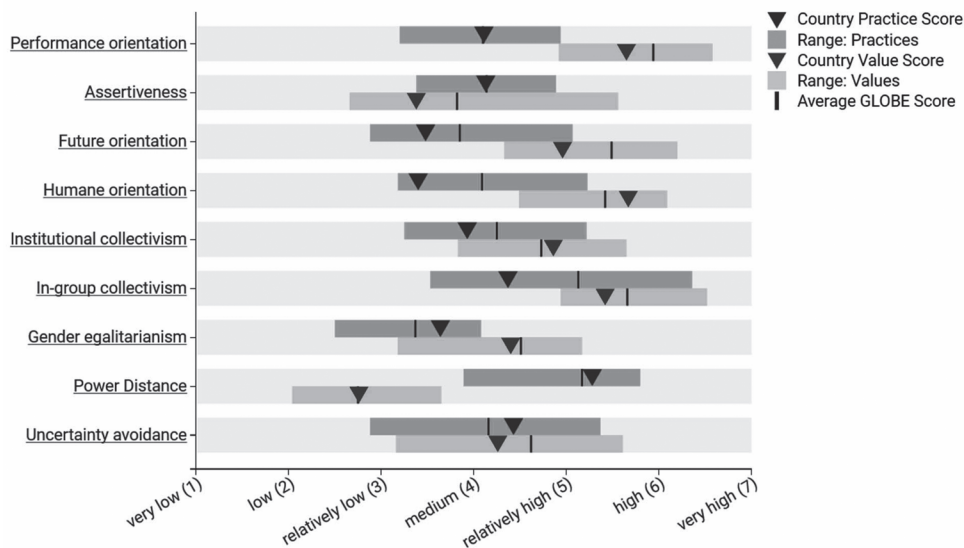
Professional Environment

As the purpose of our research is to assess the outcomes of one specific stereotypes awareness training, we conducted our experiment within a single organisation. We chose the industrial sector because of its gender diversity weakness, and the present company because it represented our constraints: it is a French industrial organisation, with a strong commitment to support diversity and inclusion, that is to say to struggle against discrimination and stereotypes. The multiple external recognitions as well as the global and local commitments, actions and initiatives prove this.

Examples include the fact that diversity and inclusion are part of the HR strategy, the group is one of the Impact Champion 10x10x10 of the HeForShe movement, and an employee is seconded at the United Nations Women organisation. Other examples include Schneider Electric's multiple partnerships and sponsoring programmes on both global and local levels to fight discrimination and stereotypes (hidden bias training; International Women Day, e-learnings (Overcoming Hidden Bias and HeForShe Gender IQ), or recruiting without discrimination training). In such an atmosphere, we considered it interesting to verify if all of those communication initiatives and

training did actually play a role on reducing stereotypes, as well as the scope of the discrimination possibly still resulting from it.

Targeted Stereotype

So many stereotypes exist that it would not make sense to try and measure implicit awareness for all at the same time. Consequently, we decided to focus on gender, both because it is probably one of the most recurrent ones (Powell, 1990; Brescoll, 2016; Kim et al., 2016; Pondorfer et al., 2016; Vial et al., 2016), and because our experimental environment was industrial. At Schneider Electric, the gender distribution is 70/30, the 30% of women being even less represented in technical and managerial positions. This is not a surprise since the literature review has confirmed that there was a strong stereotype about women planning to work in STEM-linked careers (Bosak and Sczesny, 2011; Hancock, 2011). Moreover, the cultural model set up by House et al. (2004) shows that French gender inequality was comparable to other countries, but that there was a noticeable gap between the current and the desired state (Suddaby et al., 2018). In other words, French people would like more gender equity. There is still no parity at Schneider Electric, and this study aims at measuring the recruitment contribution to reducing this gap.

Method and Material

Stereotypes and discrimination are psychology-based sensitive areas.

In this regard, we believe that qualitative techniques would probably not be accurate enough since interviewees might not dare tell the whole truth about their own beliefs and mental images of what is both beyond and below their discriminative frontiers.

This is the reason why we have chosen to turn to a quantitative approach to verify our three hypotheses (Bell et al., 2018). The French Law states that all HR staff dealing with recruitment need to attend non-discrimination practices training programmes every five years. Schneider Electric abides by the law with the help of 3-part interactive training. The latter is designed and facilitated by an external organisation specialised in discrimination concerns. The sessions delivered by video conference with one facilitator last 3,5 hours and are limited to a dozen participants from the HR community. The training concerns (1) implicit stereotypes and cognitive biases reinforcing them, (2) how to overcome our stereotypes, and (3) legal framework, including what is considered discriminatory in France from a legal perspective, and which sanctions people are exposed to if they break the law. During this training scheme, collective exercises help participants face their own stereotypes and biases. The partici-

pants are then provided with four methods to prevent such subjective influences: (1) being aware that stereotypes and biases are part of each one of us, (2) undergo Harvard's Implicit Association Test to understand to what extent such influences can affect us, (3) multiply the use of other decision-making tools in order to cross-check our own (biased) judgment, (4) and avoid rushing since such habits boost using shortcuts.

From this perspective, one can suppose that Schneider Electric's staff dealing with recruitment procedures are inhibited to stereotype activation. However, there is no indicator that this training meets its objective; indeed, preventing discrimination, since it hasn't been evaluated so far. The purpose of our experiment was therefore to test if this training course really enabled those concerned to prevent stereotype activation during the resume screening process (Galindo et al., 2015; Derous et al., 2016). Although inspired by the testing method, the present study aims at evaluating the effectiveness of a particular professional training programme session, which is only one measure among others within a single organisation. Indeed, instead of having organisations compared to each other, we will evaluate employees' practices according to their level of inclusiveness and discrimination awareness. The latter consists in replying to a job offer with two comparable resumes from both experience

and skills perspectives, but with one changing variable, indeed, the discrimination criteria that needed to be tested, gender, to which we have added the parenthood-linked conditioning (Pondorfer et al., 2016). Recruiters never scrutinise resumes. They perform a quick first assessment before shortlisting potential candidates; then they go (or not) deeper into details before proceeding to the set of structured interviews (Pogrebtsova et al., 2019). This process is prone to stereotyping because assessors need to quickly get an idea of an applicant's skills without relying on detailed information. As previously seen, the purpose of a stereotype is precisely to promptly and instinctively attribute characteristics to a category. Hence, discrimination can start during the resume selection phase.

As this study aims at measuring subconscious or unconscious behaviours, participants could not be aware of the experiment's objective. According to the French Paris1-Sorbonne University Discrimination Observatory, where own judgements can be measured, there is no minimum sample size to reach a statistically valid study for such a testing. Notwithstanding this information, the minimum size is only rarely discussed in the literature. What matters the most is the significance of the difference observed. Consequently, our sample is made of Schneider Electric's HR Department employees who have attended at least one of the com-

pany's non-discrimination training sessions. As the latter is quite a new policy (one pilot plus two sessions), only 24 employees had attended the seminar at the time of our experiment. Considering that everyone could not take part in the study, we have determined our experimental sample size n=8 participants, one third of our available sample. To be able to compare the subjects' results, we considered a control group of a similar size, and made up of junior HR employees. The latter had some experience in recruitment but they did not have recent non-discrimination training. In order to respect Schneider Electric's population diversity, not all participants were French natives, but they all spoke fluent French as this is one of the requirements to work in HR in France. Participants had to assess the suitability of a candidate in response to a job advertisement (these are all French language documents, available upon request). All documents provided to the subjects were in French to make sure that the directions were clearly understood.

The job advertisement concerned a plant director, a position that no woman currently holds at Schneider Electric. We chose this position because it requires the candidate to possess both technical and managerial skills, two typical male-dominated areas (Powell, 1990; Vial et al., 2016). Stressing those two components was important because taking into consideration the

lack of gender diversity at Schneider Electric, recruiters tend to "positively discriminate", *i.e.* compensate by favouring women for technical positions when competences exist. This is especially true in entry level positions (our literature review has already stressed the underrepresentation of female students in STEM education). Consequently, we chose a position requiring managerial skills to eliminate this bias.

In addition, leadership abilities are stereotypically more masculine since most recruiters suspect *"a lack of fit perspective wherein the stereotypes associated with women are inconsistent with the expectations of good leaders or good workers in masculine positions"* (Colella et al., 2017, p. 507).

At the time of our study, there was no current employment opportunity for a plant director at Schneider Electric. So, we built the job advertisement from a compilation of employment offers for a similar position in other comparable companies. We divided it into the standard categories [title – job description – responsibilities – qualifications]. Then, we built four resumes – a man, a woman, a father, and a mother (Pondorfer et al., 2016) – from the LinkedIn profile of someone currently holding a plant director position at Schneider Electric (all documents are in French, and available upon request). This method ensured that experience and education were relevant for

this job offer, and that the candidates were qualified for the position.

The four resumes' style was sober, information being displayed in the two classical "experience" and "education" categories. In order to match the French standards, it fit one page. Although it could be guessed from both the number of years of experience and the education period, the age was not mentioned; and there was no photo. Candidates also were attributed typical French names for the gender to remain the only source of differentiation.

So, in order to indicate the gender, we selected the applicants' names from the INSEE list of the most common male and female French names given between 1968 and 1988, the period matching the birthdate range of eligible candidates for the position (all are French language documents, available upon request). The same strategy was used to select their family names. It resulted in having candidates being either Nathalie Martin or Christophe Martin. Additionally, we chose to include the parenthood criterion in addition to gender because, at this stage of the career, it is quite probable. And maternity leave is one of the discrimination criteria women have to cope with during recruitment processes (Kurland, 2001; Morgan et al., 2013), just like being a stay-at-home dad is considered incongruent with a male role (de Lemus et al., 2013). Thereby, both genders were likely to be discrim-

inated against from the leadership skills perspective. Subjects were asked to evaluate the candidates by completing an evaluation grid (French language document, available upon request). They had to rate the candidate on technical and personal skills. We determined the criteria according to the qualifications that were required for the position. The requested technical competences were: engineering knowledge, experience in maintenance, production and quality, and French and English fluency.

The expected personal abilities were: autonomy, listening ability, communication and negotiation skills, and team management. There were three possible marks per criteria, [0 – 1 – 2] to be allocated according to the following key: 0 = does not meet the criteria at all / 1 = partially meets the criteria / 2 = fully meets the criteria.

The subjects would not be provided any specific instruction in case some data was considered lacking to properly assess the applications.

Considering that there were four criteria in each category (technical and personal), the overall maximum score was 16, and each category could reach an 8. Consequently, a low score could either express a lack of suitability or a cautious rating. There was deliberately not enough information in the resume to properly assess personal skills. From the available data, the sub-

jects could only make assumptions. Consequently, the four candidates were supposed to receive the same rating on their technical competencies, but marks were likely to vary on their soft skills. Indeed, since the diploma or the amount of experience are quite factual data whereas personal abilities are more subjective, the latter was more prone to stereotypes apparition.

In 1983, John M. Darley and Paget H. Gross have highlighted that when people must assess a person, they do it regardless of the relevance of the information that is provided (Lee, 2015). Hence, even if the elements provided are insufficient to accurately evaluate personal skills, participants have a natural tendency to rate them from their stereotypical beliefs. In order to see if our subjects would make a judgement from insufficient elements, the English level was specified in the technical skills part without any further proof of it in the resume.

Since this criterion isn't prone to create stereotypes, if subjects actually marked personal skills, this would indicate that the stereotype had been activated. Moreover, because communication and training courses can constitute an incompatible goal to stereotype activation (Moskowitz, 2010), participants were also asked to quote any diversity training they had attended, as well as past company's communications about diversity they could recall. We actually asked one of the HR managers to send

an email to our subjects with the guidelines, resumes, job advertisement, and evaluation grid (all are French language documents, available upon request), asking them to screen one application. In order to know which training they had attended, and the internal corporate communications they had been exposed to, the subjects were also asked if they had ever attended a diversity and inclusion training at Schneider Electric, and if they could name any company's diversity and inclusion communication from the past year.

Results and discussion

Results

In our experiment, we considered several items: conditions, groups, time taken to complete the exercise, number of communications remembered, and number of training sessions attended.

We used a two-variable ANOVA method (gender and parenthood) to measure statistical differences. We divided the candidate's final mark into two parts: a technical score and a personal score. As previously stated, technical skills are easy to assess thanks to facts in the resume. On the other hand, there isn't enough information to properly judge personal abilities.

When the subjects specified in the comment part that there was not enough information to properly screen the resume, or that a skill should be verified during an interview, even though they had put a number in the grid, we decided to leave a blank in order to indicate that this item had not been marked. In the calculations, those items were excluded from the variance analysis to differentiate them from a 0 given purposely.

Among the 17 people we had contacted – 8 from the test group and 9 from the control group –, 14 replied (all participants' evaluations are in French language but available upon request). Table 1[1] presents the candidates' consolidated scores. From this data, we first calculated the total scores' Chi Square (Table 2). Considering the sample size (n=14), we chose a confidence interval of 0.10. Chi Square calculation showed that the variables were dependent, suggesting the presence of data variances (Tables 3 and 4). We then performed further analyses to compare the results per group and per condition.

As a reminder, the highest mark possible was 16 in total, and 8 for each category (technical and personal). As predicted, technical skills marks were very similar, regardless of the group, or of the condition (M = 5,93; SD = 0,46). However, we could observe differences in personal abilities (M = 4,64; SD = 2,12). Table 5 presents detailed calculations. Figure 7 displays those disparities on the left.

Figure 7. Conditions and groups' scores comparison.
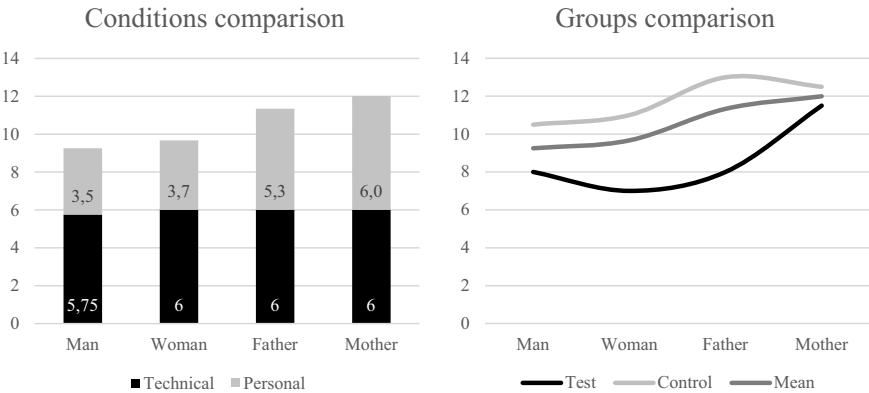
Source: authors.

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[1] Tables can be found in appendices at the end of this paper (page 174).

Another interesting finding from the data is that the overall score rises as the stereotype gets stronger ("motherhood" being the most discriminated condition and "manhood" the least). However, when comparing the mean for each item, we observe no significant difference between the conditions (variance < 0,18) because this increase is attributed to more graded items and not to superior marks, translating as a greater activation of the stereotype for parents' conditions.

We found no significant gender difference; however, "father" and "mother" conditions received a higher score. Therefore, participants seemed more prone to mark a candidate when they are parents even if the information to justify it is too weak. One of the participants who was assigned the "mother" condition from the control group justified her rating of one point for the listening ability arguing that *"A mother of children so listening skills should be okay. To check during the interview"*. Although this participant had activated her stereotype, she remained able to balance her thoughts after specifying that there was a need for further investigation to validate this point.

Figure 6's right side (*cf. supra*) shows that the test group, made up of HR employees who attended the non-discrimination training, gave a lower score to their candidate (M = 10,57; SD = 2,35). When looking at their evaluation grid in more details (all are French

language documents, available upon request), we can notice that this lower score comes from a more prudent rating. Indeed, they didn't consider the candidates were less suitable; they only considered that the information provided was insufficient to give a mark. Since having an egalitarian goal prevents stereotype activation (Moskowitz, 2010), we can conclude that if test group participants unconsciously mobilised stereotyping traits, they consciously controlled them since they expressed fewer non fact-based judgements. Figure 8 displays the differences between technical and personal skills rating. While technical scores are very similar, there is an obvious contrast of personal abilities marks. It also confirms the previous statement about score disparities between the two groups.

Only 3 participants marked the English skill; all were part of the control group. Among the 11 participants who didn't rated the English level, 4 gave a mark for each personal skill (3 from the test group and 1 from the control group). For those, we can suppose their stereotype had been activated since the lack of information should have prevented them from assessing the candidates' English level but not their personal skills. Yet, there was no evidence that people who attended diversity training or remembered diversity communications had a different rating than whose who didn't.

Figure 8. Personal and technical score comparison.
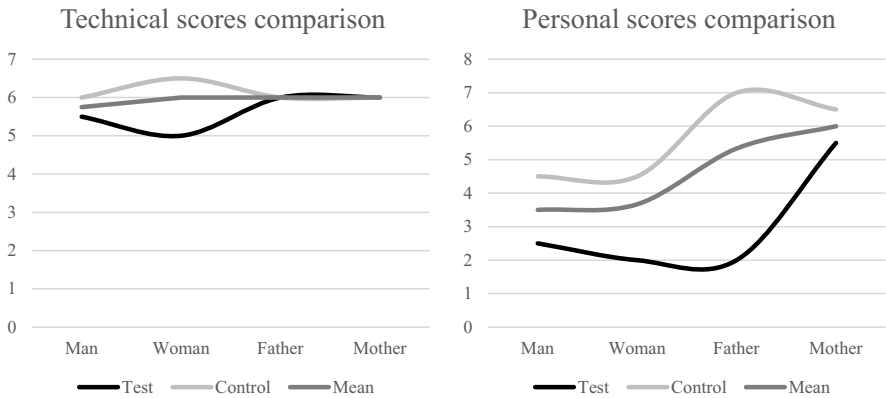
Source: authors.

Discussion

To a certain extent, communication is an awareness tool, it is difficult to measure to which extent communication channels have impacted participants and created biases during our experiment. Even if the subjects remembered only part of the company's message, it neither means they understood it, nor that they agreed with it. Work experience might also be a determinant factor. The control group was made of junior managers while the test group's subjects were older. Indeed, the average age for the test group was 38 years old compared to 29 for the control group (M = 33; SD = 10,3). The test group was also more experienced (12 years compared to 4 years). But we did not determine the impact of such elements unless we ourselves were in the position of activating stereotyped judgements. Consequently, we can say that H1$_a$ and H1$_b$ are confirmed, and that H2 is rejected.

In the case of Schneider Electric, awareness training sessions prevents gender-linked stereotype activation and implicit discrimination. Indeed, we observed that participants in this training course were more less likely to concede to stereotyping; instead, they had control over their initial beliefs. Nevertheless, subjects recalling diversity-related communications do not have weaker stereotypical opinions, indicating that Schneider Electric's actions against discrimination do not constitute a recurrent objective that is strong enough to inhibit stereotype activation. Employees exposed to those

training schemes are not provided with new perspectives enabling them to activate egalitarian goals instead of stereotypes (Moskowitz, 2010).

However, these results should obviously be interpreted cautiously because the number of participants was not big enough to be truly representative of the company's diversity; moreover, the variance was not highly significant. Another important factor is that the training programmes was carried out recently (a few months ago). After a longer period of time, some elements might be forgotten or recalled differently, which can impact behaviour. But we can say that even if there are discriminations at the resume screening stage, this result is not sufficient to explain gender disparities at Schneider Electric, especially in higher technical positions requiring comprehensive complementary managerial skills. Evolving in those positions is conditioned by the recurrent male-typical traits (Powell, 1990; Vial et al., 2016). Beyond this obstacle, even when women eventually master such skills, they will still be perceived as warmer but less competent than men (De Lemus et al., 2013). For this discrimination to be overcome, organisations should consider changing their internal and external recruitment practices. Video resumes have proven to be less discriminating against female *versus* male (Galindo et al., 2015) and the use of algorithms is both less biased and subjective (Derous et al.,

2016). Of course, there is no perfect method so each of them needs to be used for specific situations, and certainly deserves to be coupled with other tools. Another consideration is that the busier our mind, the more likely we activate stereotyping mental processes (Gilbert and Hixon, 1991). Any activity requiring making a judgment should therefore be performed with a minimum of cognitive load. Finally, exposure influences career aspirations (Schuster and Martiny, 2017).

Spotlighting women in positions where there are shortages should certainly help more junior profiles to consider such career paths.

Conclusion

The purpose of this research was to measure to what extent Schneider Electric's Training Programme could contribute in reducing discrimination when screening work applications. To do so, we explored stereotypes' controllability. With the help of clinical implicit stereotype awareness training, we measured the stereotype engine activation during a recruitment process. After collecting implicit stereotypes theoretical foundations, we performed our experiment, whose results were then empirically discussed. In the case of Schneider Electric, our findings suggest that awareness training programmes prevent gender-linked stereo-

type activation and implicit discrimination, but that the company's professional training content did not constitute a recurring objective, which was strong enough to inhibit stereotype activation.

From our results, we believe that organisations should keep communicating and educating their staff about the risks of stereotyping and discriminating. But they should also reinforce their models with regular daily tasks in order to measure the gaps that still exist between theory and practice. Our results join the already numerous publications that stand up against discrimination.

In this regard, our contribution might strongly be of benefit to both the cause and the organisations that are involved in such policies, which, in turn, could improve their non-discrimination policies and eventually increase stereotype awareness more effectively.

When companies decide to hire a candidate, the approach can either result from the creating a position, or to cope with someone leaving. In the industrial sector, the second case is a much more frequent situation as the employment rate is quite low. Consequently, recruiters often naturally compare the candidates with the ex-employee without updating the job description, a practice leading to implicitly discriminating. In addition, HR employees are not the only decision

makers. They work closely with managers who also participate in the resume selection. Therefore, even if people who attend non-discrimination training schemes are theoretically more objective, discrimination can still occur due to someone else's influence, opinion, network or lobbying behaviour. Pursuing research in this direction is then highly justified. In this regard, future investigation could focus on comparing stereotyping activation before and after non-discrimination practices training courses have been delivered. It would help determine if the scores' variances come from the training schemes or from other factors. Samples should also be extended to managers, the latter having an important influence on recruitment and career evolution. Stereotype activation could then be measured at other stages of the recruitment process.

Finally, although the gender stereotype is one of the strongest ones explaining many corporate behaviour, such as the glass ceiling resistance, other strong stereotypes do exist and limit diversity efforts.

It is important to note that stereotyping cannot be fully avoided; such an objective would be utopian. Indeed, control over stereotypes requires more cognitive resources, which is not the most natural process (Moskowitz, 2010). Culture also plays an important part in building those mental constructions, and organisations have no

power over it. But Eva Derous, Roland Pepermans and Ann Marie Ryan (2016) propose several methods for organisations to prevent some biases: standardisation, personalisation, and decision making. For organisations to measure the effectiveness of taken measures, it is then important to follow KPI observing discrimination.

Notwithstanding the fact that discrimination can appear at all stages of the recruitment process, the interview remains the moment that is the most prone to stereotyping, sometimes even coming from candidates themselves, as in people who apply to jobs with low confidence since they are convinced that the company will finally not give them a chance because of discrimination. Such an observation might be a good starter for all: tolerance should start with oneself.

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Appendices

Table 1. Subjects' consolidated scores.

Raw scores													
Group	T	T	T	T	T	T	C	C	C	C	C	C	C	C
Condition	M	M	W	F	Mo	Mo	M	M	W	W	F	F	Mo	Mo
Maintenance, production and quality experience	1	2	1	2	2	2	2	2	2	2	2	2	2	2
Engineering knowledge	2	2	2	2	2	2	2	2	1	2	2	2	2	2
French (fluent)	2	2	2	2	2	2	2	2	2	2	2	2	1	2
English (fluent)									1	1			1	
Technical skills	5	6	5	6	6	6	6	6	6	7	6	6	6	6
Autonomy	2		2		2	2	2	2		2	2	2	2	1
Listening				1			1		1,5	2	1	1	1	
Communication et negotiation				1	1		1		1,5	2	1	2	2	
Team management	2	1		2	2	2	2	1	2	2	2	2	2	2
Personal skills	4	1	2	2	6	5	4	5	2	7	8	6	7	6
TOTAL	9	7	7	8	12	11	10	11	8	14	14	12	13	12

T = Test   W = Woman
C = Control   F = Father
M = Man   Mo = Mother

Scores consolidation								
Participants	Group	Condition	Technical	Personal	Total	Time	Communication(s) remembered	Training(s) attended
C1.	Test	Man	6	1	7	20	5	4
K.	Test	Man	5	4	9	10	2	2
P1.	Test	Woman	5	2	7	10	4	3
E1.	Test	Father	6	2	8	15	2	1
E2.	Test	Mother	6	5	11	15	4	1
C2.	Test	Mother	6	6	12	14	0	1
A.	Control	Man	6	4	10	15	1	0
E3.	Control	Man	6	5	11	15	0	0
J1.	Control	Woman	6	2	8	15	0	0
P2.	Control	Woman	7	7	14	2	1	0
C3.	Control	Father	6	6	12	10	3	2
J2.	Control	Father	6	8	14	15	3	1
S1.	Control	Mother	6	7	13	30	4	0
S2.	Control	Mother	6	6	12	12	2	1

Mean calculation									
	Test			Control			Overall		
n=14	Technical	Personal	Total	Technical	Personal	Total	Technical	Personal	Total
Man	5,5	2,5	8,0	6,0	4,5	10,5	5,8	3,5	9,3
Woman	5,0	2,0	7,0	6,5	4,5	11,0	6,0	3,7	9,7
Father	6,0	2,0	8,0	6,0	7,0	13,0	6,0	5,3	11,3
Mother	6,0	5,5	11,5	6,0	6,5	12,5	6,0	6,0	12,0

Table 2. Chi Square analysis.

Participants scores			
Actual			
	Test	Control	TOTAL
Man	16	21	37
Woman	7	22	29
Father	8	26	34
Mother	23	25	48
TOTAL	54	94	148

Theoretical			
	Test	Control	TOTAL
Man	13,50	23,50	37
Woman	10,58	18,42	29
Father	12,41	21,59	34
Mother	17,51	30,49	48
TOTAL	54	94	148

Chi² calculation		
	Test	Control
Man	0,46	0,27
Woman	1,21	0,70
Father	1,56	0,90
Mother	1,72	0,99

Khi² calculation	
X^2	8,08
Degrees of freedom	3
Confidence interval	0,10
Chi² value	6,25

Conclusion	**Dependence**

Table 3. Subjects' age and seniority.

Age average			
Condition \ Group	Control	Test	Total
Father	39	32	37
Man	24	44	34
Mother	21	40	33
Woman	29	26	28
Total	29	38	33

Seniority average			
Condition \ Group	Control	Test	Total
Father	11	10	11
Man	1	17	9
Mother	0	11	5
Woman	2	4	3
Total	4	12	7

Age variances			Seniority variances		
X	X-µ	(X-µ)²	X	X-µ	(X-µ)²
23	-10	100	0	-6,93	48,01
45	12	144	18	11,07	122,58
52	19	361	31	24,07	579,43
26	-7	49	0	-6,93	48,01
53	20	400	21	14,07	198,01
32	-1	1	10	3,07	9,43
24	-9	81	2	-4,93	24,29
31	-2	4	1	-5,93	35,15
33	0	0	4	-2,93	8,58
36	3	9	3	-3,93	15,43
27	-6	36	3	-3,93	15,43
26	-7	49	4	-2,93	8,58
21	-12	144	0	-6,93	48,01
429		**1378**	0	-6,93	48,01
			97		**1208,93**

n	13		n	14
Average	33		Average	6,93
Variance	114,83		Variance	92,99
Standard deviation	10,30		Standard deviation	9,29

Note: Age average is based on 13 participants because the age of one participant couldn't be obtain

Table 4. Variance analysis.

Total		
X	X-μ	(X-μ)²
7	-3,57	12,76
9	-1,57	2,47
7	-3,57	12,76
8	-2,57	6,61
11	0,43	0,18
12	1,43	2,04
10	-0,57	0,33
11	0,43	0,18
8	-2,57	6,61
14	3,43	11,76
12	1,43	2,04
14	3,43	11,76
13	2,43	5,90
12	1,43	2,04
148		**77,43**

n	14
Average	10,57
Variance	5,96
Standard deviation	2,35

Technical abilities		
	X-μ	(X-μ)²
6	0,07	0,01
5	-0,93	0,86
5	-0,93	0,86
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
7	1,07	1,15
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
6	0,07	0,01
83		**2,93**

n	14
Average	5,93
Variance	0,23
Standard deviation	0,46

Personal abilities		
	X-μ	(X-μ)²
1	-3,64	13,27
4	-0,64	0,41
2	-2,64	6,98
2	-2,64	6,98
5	0,36	0,13
6	1,36	1,84
4	-0,64	0,41
5	0,36	0,13
2	-2,64	6,98
7	2,36	5,56
6	1,36	1,84
8	3,36	11,27
7	2,36	5,56
6	1,36	1,84
65		**63,21**

n	14
Average	4,64
Variance	4,86
Standard deviation	2,12

Table 5. Detailed calculation.

	Proportion of area									
df	0,995	0,990	0,975	0,950	0,900	0,500	0,100	0,050	0,025	0,010
1	0,00	0,00	0,00	0,00	0,02	0,46	2,71	3,84	5,02	6,63
2	0,01	0,02	0,05	0,10	0,21	1,39	4,61	5,99	7,38	9,21
3	0,07	0,12	0,22	0,35	0,58	2,37	6,25	7,81	9,35	11,34
4	0,21	0,30	0,48	0,71	1,06	3,36	7,78	9,49	11,14	13,28
5	0,41	0,55	0,83	1,15	1,61	4,25	9,24	11,07	12,83	15,09
6	0,68	0,87	1,24	1,64	2,20	5,35	10,64	12,59	14,45	16,81
7	0,99	1,24	1,69	2,17	2,83	6,35	12,02	14,07	16,01	18,48
8	1,34	1,65	2,18	2,73	3,49	7,34	13,36	15,51	17,53	20,09
9	1,73	2,09	2,70	3,33	4,17	8,34	14,68	16,92	19,02	21,67
10	2,16	2,56	3,25	3,94	4,87	9,34	15,99	18,31	20,48	23,21
11	2,60	3,05	3,82	4,57	5,58	10,34	17,28	19,68	21,92	24,73
12	3,07	3,57	4,40	5,23	6,30	11,34	18,55	21,03	23,34	26,22
13	3,57	4,11	5,01	5,89	7,04	12,34	19,81	22,36	24,74	27,69
14	4,07	4,66	5,63	6,57	7,79	13,34	21,06	23,68	26,12	29,14
15	4,60	5,23	6,26	7,26	8,55	14,34	22,31	25,00	27,49	30,58
16	5,14	5,81	6,91	7,96	9,31	15,34	23,54	26,30	28,85	32,00
17	5,70	6,41	7,56	8,67	10,09	16,34	24,77	27,59	30,19	33,41
18	6,26	7,01	8,23	9,39	10,86	17,34	25,99	28,87	31,53	34,81
19	6,84	7,63	8,91	10,12	11,65	18,34	27,20	30,14	32,85	36,19
20	7,43	8,26	9,59	10,85	12,44	19,34	28,41	31,41	34,17	37,57
21	8,03	8,90	10,28	11,59	13,24	20,34	29,62	32,67	35,48	38,93
22	8,64	9,54	10,98	12,34	14,04	21,34	30,81	33,92	36,78	40,29
23	9,26	10,20	11,69	13,09	14,85	22,34	32,01	35,17	38,08	41,64
24	9,89	10,86	12,40	13,85	15,66	23,34	33,20	36,42	39,36	42,98
25	10,50	11,50	13,10	14,61	16,47	24,34	34,38	37,65	40,65	44,31
26	11,16	12,20	13,84	15,38	17,29	25,34	35,56	38,89	41,92	45,64
27	11,81	12,83	14,57	16,15	18,11	26,34	36,74	40,11	43,19	46,96
28	12,46	13,56	15,31	16,93	18,94	27,34	37,92	41,34	44,46	48,28
29	13,12	14,26	16,05	17,71	19,77	28,34	39,09	42,56	45,72	49,59
30	13,79	14,95	16,79	18,49	20,60	29,34	40,26	43,77	46,98	50,89
40	20,71	22,16	24,43	26,51	29,05	39,34	51,81	55,76	59,34	63,69
50	27,99	29,71	32,36	34,76	37,69	49,33	63,17	67,50	71,42	76,15
60	35,53	37,43	40,48	43,19	46,46	59,33	74,40	79,08	83,30	88,38
70	43,28	45,44	48,76	51,74	55,33	69,33	85,53	90,53	95,02	100,40
80	51,17	53,54	51,17	60,39	64,28	79,33	98,58	101,90	106,60	112,30
90	59,20	61,75	65,65	69,13	73,29	89,33	107,60	113,10	118,10	124,10
100	67,33	70,06	74,22	77,93	82,36	99,33	118,50	124,30	129,60	135,80