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Care-Oriented Occupations' Devaluation and their Relationship with Profit and Production

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Abstract

Healthcare, Early Education and Domestic (HEED) occupations are less socially valued than Science, Technology, Engineering and Mathematics (STEM) occupations. Social psychologists have predominantly focused on HEED occupations being typically female and communal, while STEM occupations are typically male and agentic. We propose that the caring nature of HEED work itself may play a role in its devaluation. With female liberation, this work migrated from the private sphere towards being monetized, while not offering means of production on which modern society is based on. Thus, we suggest that not conforming to profit and production norms may be at the core of the devaluation of HEED occupations. Study 1 aimed at exploring whether the care orientation of HEED occupations readily comes to people's minds. In a free association task, participants ($N = 64$) wrote 3 words related to each of 18 different occupations in HEED, STEM, and filler fields. As expected, HEED occupations elicited more care-related words than the other occupations. In Study 2, we manipulated how the impact of a HEED or STEM occupation was described in a text: economic versus well-being impact. After reading the text, participants ($N = 143$) rated several aspects of the occupation (e.g., ideal income, perceived status, difficulty, professionals' attributes). Results replicated previous findings relating to occupational stereotypes and social perception models. Contrary to our expectations, our manipulation did not lead to more positive ratings or higher compensation. Our findings suggest that care labour may be damaged by heightened perceptions of profit and that general communal orientations benefit both communal workers and society at large. Future research could expand on these findings through exploration of the agentic versus collective efforts in a similar design and through furthering the social perception of communion, emotional expression and emotional intelligence in the workplace.

Keywords: social perception, gender, career status, well-being, economic value, care labour

Resumo

Ocupações de cuidados de saúde, educação primária e domésticas (designadas na literatura como *HEED,* Block et al., 2019) são menos valorizadas socialmente do que ocupações de ciência, tecnologia, engenharia e matemática (comummente chamadas *STEM*). A psicologia social focou-se predominantemente na caracterização de ocupações *HEED* como tipicamente femininas e comunais, por oposição a ocupações *STEM*, tipicamente masculinas e focadas no agente (Block et al., 2019; Croft et al., 2015). Modelos de perceção social (e.g., Koch et al., 2021) identificaram como dimensões fundamentais da perceção social a comunhão e a agência. Tendo em conta que estas dimensões são características respetivamente de *HEED* e *STEM*, estes modelos são fundamentais para entender as mecânicas subjacentes. Os grupos percecionados como competentes são geralmente de estatuto social mais alto, mas são percecionados como emocionalmente frios enquanto os grupos menos competentes tendem a ser interpretados como mais comunais (Elemers & van den Bos, 2012; Yzerbyt, 2018). Os trabalhadores nos campos *HEED* e *STEM* são afetados por estes mecanismos nomeadamente porque as pessoas inferem mais das ocupações das pessoas do que da sua raça ou género (Noyes et al., 2021). A disparidade de género tem gradualmente sido reduzida na área *STEM* mas esta tendência não se verifica em *HEED*, nomeadamente devido à maior presença feminina (Croft et al., 2015). A estagnação em *HEED* também pode estar relacionada com os cuidados serem considerados uma atividade essencialmente feminina (Cancian & Oliker, 2000). É difícil ultrapassar estas barreiras quando socialmente a remuneração apropriada é associada a uma perda de motivação intrínseca e os próprios trabalhadores sentem dificuldade em exigir melhor remuneração uma vez que estão muitas vezes emocionalmente investidos nas pessoas que cuidam (England & Folbre, 2003). O contexto histórico e cultural não incentiva à mudança uma vez que a sociedade moderna está construída sob premissas de valor de produção, por contraposto à reprodução e manutenção (Debord, 2012).

Propomos que a natureza do cuidado em si no trabalho de ocupações *HEED* tenha um papel na sua desvalorização. Com a libertação feminina, este trabalho migrou da esfera privada para uma posição capitalizável, sem capacidade de oferecer meios de produção, nos quais a sociedade moderna se baseia. Desta forma, sugerimos que a inconsistência relativa a normas de lucro e produção seja fulcral para a continuada desvalorização de ocupações *HEED*.

O nosso primeiro estudo foi concebido com o intuito de explorar se a orientação para os cuidados surgia prontamente associada a ocupações *HEED*. Numa tarefa de associação livre, os participantes ($N = 64$) escreveram três palavras relacionadas com cada uma de dezoito diferentes ocupações *HEED*, *STEM* e de uma terceira categoria de profissões não enquadradas nem no campo *HEED*, nem no campo *STEM*. As profissões *HEED* foram selecionadas tendo em conta os ratings de comunhão de Imhoff e colaboradores (2018). As profissões *STEM* foram selecionadas tendo em conta os ratings de orientação para a ciência e a terceira categoria (controlo) foi selecionada a partir de profissões com ratings médios nas duas escalas anteriores. Como esperámos, as ocupações *HEED* produziram mais palavras relacionadas com o cuidado do qualquer uma das outras profissões. As ocupações *HEED* também produziram muito mais palavras relacionadas com grupos sociais do que a categoria de controlo, apesar da natureza social de parte delas. Adicionalmente, as ocupações *HEED* produziram muito mais palavras relacionadas com traços de personalidade e imagem do que as ocupações *STEM*. É possível que isto se deva a estereótipos menos marcados para trabalhadores de *STEM*. Houve uma diferença considerável entre as funções e *appraisals* dentro da categoria de controlo consoante o estatuto social – profissões de baixo-estatuto social produziram mais avaliações externas e profissões de alto-estatuto social produziram mais funções e papéis.

No segundo estudo, manipulámos a descrição do impacto de uma ocupação *HEED* e de uma ocupação *STEM* na informação que os participantes ($N = 143$) leram. Foi pedido aos participantes que imaginassem que esta informação tinha sido publicada num jornal europeu de renome. Este impacto podia ser de natureza económica ou relativo ao bem-estar psicológico. Após a leitura do estímulo, os participantes avaliaram diferentes aspetos da ocupação apresentada, nomeadamente o salário ideal, o prestígio associado, a dificuldade e traços de personalidade dos profissionais. Os traços de personalidade em questão foram adaptados a partir do estudo *bottom-up* de Imhoff e colaboradores (2018). Também incluímos uma avaliação de valores de comunhão e de agência (adaptada de Block et al., 2019) para avaliar a projeção da perceção da ocupação para o estereótipo do profissional e para medir o impacto dos valores dos participantes. Os resultados replicaram investigação anterior relacionada com estereótipos ocupacionais e modelos de perceção social. A ocupação *STEM* foi consistentemente mais valorizada em termos de remuneração, prestígio e competência, enquanto a ocupação *HEED* foi

consistentemente mais valorizada na maior parte das dimensões avaliadas, mas pior avaliada na hierarquia social. As diferenças de género encontradas na nossa amostra seguem a tendência oposta à previamente reportada na literatura (Block et al., 2019), na medida em que homens e mulheres valorizaram igualmente agência e as mulheres valorizaram consideravelmente mais comunhão. Houve algumas divergências das expetativas de encaixe nos modelos de perceção social, em particular relativamente à ocupação *STEM*, pelo que é possível que esta não fosse tão representativa como desejável. Nomeadamente, foi avaliada como muito menos sociável, confiante e até competente do que o esperado. Apesar disto, não afetou o seu prestígio ou qualquer outro item de aprovação social. Podemos inferir que a sociabilidade não é particularmente valorizada na hierarquia social, o que reflete a análise relativa ao contexto cultural em que estamos inseridos. O mesmo se pode dizer das diferenças relativas à comunhão. Contrariamente às nossas expectativas, a manipulação não provocou avaliações mais positivas ou maior compensação monetária. No entanto, apesar de os participantes serem da opinião que em geral os profissionais *STEM* merecem mais do que os profissionais *HEED*, o aumento percentual foi muito maior para *HEED*, em particular quando os participantes leram sobre o impacto psicológico de uma ocupação *STEM*. Os nossos resultados sugerem que o trabalho do cuidado é prejudicado ao salientar perceções de lucro. De forma geral, orientações de comunhão beneficiam tanto os trabalhadores de ocupações *HEED* como a sociedade como um todo. Estas orientações permitem uma melhor integração de informação contra estereotípica (Olsson & Martiny, 2018).

É possível que a vantagem marginal que observámos se deve a primar a valorização do bem-estar psicológico em si através da associação a uma profissão já valorizada. É possível que a manipulação não tenha tido o efeito esperado porque o impacto económico da profissão *HEED* foi interpretado como proveniente de um coletivo de profissionais enquanto o impacto da profissão *STEM* foi provavelmente interpretado como sendo produto de um só profissional.

Investigação futura pode expandir esta área através da exploração do mesmo *design* experimental comparando o impacto de um agente versus um coletivo. Outra área de possível extensão seria o aprofundamento do conhecimento da perceção social da comunhão, expressão emocional e inteligência emocional no mundo do trabalho. Tendo em conta a avaliação positiva de profissionais *HEED* que vimos, e a forte ligação à

emocionalidade, seria pertinente esclarecer se isto se trata de um estigma pela expressão emocional ou uma valorização do controlo emocional ou inteligência emocional nas áreas científicas. Discutimos ainda implicações para a área de investigação e para a aplicação e ação afirmativa.

Care-Oriented Occupations' Devaluation and their Relationship with Profit and Production

From a young age we teach children how brave and selfless nurses are. We teach them to respect their teachers and entrust them with nannies and babysitters. And when grandfathers and grandmothers are too frail to keep going on their own, we take the mighty task of caring for them in our houses or pour hard earned savings to ensure they are care for with dignity and compassion by aides at nursing homes.

And yet few children dream of taking care of others. Maybe they're too busy being cared for.

But teenagers are told they have to study hard to become engineers or lawyers or doctors.

And the ones who grow up and make a living out of caring for others struggle to make ends meet, earning little more than the minimum wage, made example of why children should keep studying.

In the small amount of research on care-oriented jobs, these fields are usually comprised into Healthcare, Early Education and Domestic occupations (HEED; Block et al., 2019).

Investigation in social psychology has focused on comparing the perceptions people have on HEED and STEM occupations. HEED focus on caring for others, while STEM occupations include Science, Technology, Engineering and Mathematics (STEM). HEED occupations are consistently socially devalued and are characterized by communal values, that is the caring for others and the community and by stereotypically feminine traits and roles, while STEM occupations are socially valued and characterized by agentic values, focusing on the agent, such as being more competitive or independent, and by stereotypically masculine traits and roles (Croft et al, 2015; Block et al., 2019).

While the relation to gender might influence the consistent devaluation of HEED occupations, there is the possibility that the nature of care itself is at the core of its devaluation. Considering that these occupations were originally female labour, such as

caring for infants and the elderly and domestic chores, female liberation might have had an effect on this reality.

To better understand the dynamics at play, we need to understand how social evaluation functions, what dynamics are known of it related to occupations, the occupational stereotypes related to these, the gender dynamics and stereotypes, and theories on care labour.

Social Perception Dimensions

Diving into the social perception literature, we can understand not only the dimensions that affect the perceptions people have of occupations, but also how HEED and STEM are intrinsically related with the fundamental dimensions of social evaluation, across various iconic models.

Social evaluation pertains to the evaluation of social targets, such as the self, other individuals, the ingroup and the outgroup. These evaluations go beyond simple valence, differentiating specific dimensions on task performance, interpersonal interactions, and overall social hierarchy. Social evaluation is context-dependent, such that the way these dimensions interact is never absolute, as will be made clear according to the models (e.g., Abele et al., 2020; Koch et al., 2021; Rucker et al., 2018).

At the level of interpersonal evaluation, Abele and Wojciszke (2007, 2018) developed the Dual Perspective Model (DPM). As with other models, the DPM focuses on *agency* and *communion*, and its universal presence in the perception of the social environment. This approach is both founded in evolutionary and functional aspects. The two fundamental dimensions of content are closely tied to the basic perspectives in social interaction, as the individual, the self that acts (actor), against the recipient (other) perspective. *Agency* is closely connected with masculinity, competence, individualism, independence, dominance and intellectual ability while *communion* is defined by opposing features, with femininity, morality, collectivism, interdependency, warmth, trustworthiness and social ability. From an evolutionary standpoint, *agency* reflects the challenge of achieving individual goals, while *communion* reflects the challenge of initiating and maintaining supportive relations with others. From a functional standpoint, these dimensions also serve the perceiver's goals, *agency* allowing for

identification of facilitating and inhibiting conditions for own goal pursuit, while *communion* serves adequate identification of their intentions. Relating to well-established causal attribution research (Nisbett et al., 1973), actors often make more situational attributions about the causes of their own behaviour than observers. As observers, they make more person-oriented attributions. According to the DPM, this is because, as actors, people pursue their goals and monitor goal achievement by interpreting their own ability and assertiveness (facets of agency in the DPM). As observers, people want to understand the actor's intentions by interpreting trustworthiness and friendliness (facets of communion in the DPM). As such, when evaluating others, *communion* takes priority, since it is a better predictor of the interpersonal impact. Functionally, then, *agency* is sought within the self and *communion* in the other. Relating to the general topic of the current investigation, this furthers our knowledge of the ambivalent depiction of care or HEED workers, who are seen positively for their high level of *communion* but are consistently devalued in the job market, as power and interdependence moderate their perception and importance of *agency* in others.

At the intragroup level, Ellemers and van den Bos (2012) developed the Behaviour Regulation Model (BRM). The BRM is closely related to the social identity approach, considering a group-based self. People's groups afford them a sense of collective self-esteem and offer guidelines for individual beliefs, attitudes and behaviours. Groups are evaluated in terms of their ability of affording a positive identity to their members, through characteristic features that help them decide how similar or different they are from the ingroup or outgroup. The distinctive characteristics of these groups guide individuals in the behavioural choices they make to communicate their loyalty and set themselves apart from the outgroup. These in turn impact individual behavioural choices. People want to be respected by ingroup members, making them tend towards altruistic dispositions. This is visible in displays of attraction, identification and pride with the group. More importantly, individuals are primarily guided to seek inclusion and social respect from groups that can validate and approve their moral values. As such, the BRM defines three dimensions of social evaluation: *competence*, *morality* and *sociability*. *Competence* is close to the concept of agency previously identified, focusing on task performance, capability, intelligence, and skill. *Sociability* emulates communion, here identified as surface level demeanour while *morality* encompasses

deep level intentions. According to the BRM, *morality* is the key indicator of people's worth in social interactions, trumping the other two dimensions. It's decisive for group pride and identification. The lack of *morality* is more threating to the positive identity of the group than the lack of *competence* or *sociability*. Despite not being considered an isolated dimension in the DPM (or the following models), it is generally associated or integrated with *communion*. HEED workers are perceived and defined by communion. For our purposes it is worth noting that this puts a bigger emphasis on how *communion* in others affects the self, as it is linked with one's own social identity. HEED workers are perceived as both sociable and moral, and according to the BRM this makes them also perceived as worthy in social interactions.

At the intergroup level, Yzerbyt (2018) developed the Dimensional Compensation Model (DCM). The DCM encompasses two dimensions: *competence*, composed of ability and assertiveness and *warmth*, composed by friendliness and morality. According to the DCM these dimensions operate at the intergroup and interpersonal level in comparative contexts, particularly when status is at stake. Social identity is achieved by securing a positive view of themselves and the ingroup. While this comes naturally for high-status groups, it's less immediate for low-status groups. According to this model, groups will not claim superiority or accept inferiority on every aspect but define themselves through positive distinctiveness in one of the two fundamental dimensions. The main argument of the DCM is that these dimensions are attributed in a compensatory manner. In an experiment by Judd and collaborators (2005), two groups' behaviours differed on one of these dimensions while being equivalent and non-diagnostic for the non-manipulated dimension. Group ratings showed compensation on the non-manipulated dimension. For example, the group that performed high-competence behaviours was perceived as less warm than the group that performed low-competence behaviours. This is the pattern we observe in the general characterization of HEED and STEM groups. The first is perceived as warm, but not competent, while the second is perceived as competent, but not warm (Block et al., 2019). Group characterizations are context-dependent, but *warmth* and *competence* are not equally malleable. In a study by Yzerbyt and Cambon (2017), high status groups manifested a strong ingroup bias on *warmth*, while the lower status groups proved unable to claim superiority in *competence*. This mechanism is still dependent on context. First, conflict and absence of status differences preclude compensation. Cross-national and cross-

cultural studies (Durante et al., 2013) revealed compensatory stereotypes preferentially in societies with unequal incomes and in nations with intermediate level of conflict, presumably because they provide stability to the system. Different positions in the social hierarchy not only translate onto differences on perceived *competence*, but the roles and norms associated with each position also shape the perceived *warmth* of each group. Given their position in the social hierarchy, high status groups demand certain behaviours from low status groups. Compliance constitutes evidence for collaboration, and therefore further proof of warmth. When high status groups resist asserting superiority and low status groups accept their situation by claiming communal qualities, this possibly sets the stage for continued exploitation. In the context of the groups of the current research (i.e., HEED and STEM professionals) this constitutes a possible explanation for the continued devaluation of HEED occupations. Given the nature of care labour, this group will tend to embrace and claim communal qualities, which is perceived as a message for compliance from the norms demanded from high status groups. Care workers are inhibited from fighting for their rights, conflict is avoided and exploitation is perpetuated by a social hierarchy that provides social identity within the confinements of compensation.

Fiske (2018) developed the Stereotype Content Model (SCM) at the several group level. The SCM focuses on the societal images of several groups. Distinct groups appear to have distinct images, evoke particular emotional and receive systematic patterns of discrimination, all resulting from perceived social structure. The SCM also considers *warmth* and *competence* as the two fundamental dimensions of social perception, with the first reflecting seemingly benign or hostile intent, friendliness and trustworthiness and the latter reflecting apparent ability to enact their intent, capability and effectiveness. Along these lines, Ambivalent Sexism Theory (Glick & Fiske, 1996) pioneered the concept of mixed stereotypes, such as the competent but cold career woman, or the incompetent but warm traditional woman. The dimensions here, rather than taking a compensatory approach like the DCM, evoke different perceptions without being compared to each other. Societal ingroups who seem both warm and competent evoke pride. Outgroups perceived as low on both dimensions (e.g., homeless people) evoke contempt. Outgroups perceived as incompetent but warm (e.g., old people) evoke pity. Outgroups perceived as competent but cold (e.g., rich people) evoke envy. Further, these mechanisms are functional, as at low-income end, societies

differentiate those who deserve help as incompetent but warm, and those who do not deserve help as lacking both competence and warmth. Perceived interdependence predicts warmth while perceived status predicts competence. In a study by Fiske and North (2015), status items measure prestigious jobs and economic success. The Status-Competence correlations were reliably high. Additionally, belief in meritocracy (competence earning status) was found worldwide, so seemingly the beliefs of most people align with these functional mechanisms. It is also expected given people's needs to believe in a just world (Lerner, 1980), in which status should be earn. However, the same cannot be said of former communist countries, in which people are sceptical of meritocracy. Considering the aim of the present research, the latter finding points out the effect of a shared cultural past in the most fundamental social cognitive functions and should be noted when considering the evolution of societies and occupational perceptions. Women were seemingly perceived as warm but not competent, and cultural and political progress have come to change these views gradually. Typical feminine careers have not accompanied this change, and so it benefits us to both consider the social cognitive functions that determine perception of HEED occupations and the contexts in which they are in.

The last of the five models reviewed here, the Agency-Beliefs-Communion (ABC) model (Koch et al., 2016) focuses on the many-group level of evaluation. This model describes social perception under minimal constraints, considering the self in relation with the groups that form society. The first dimension of this model concerns *agency* and socioeconomic success, differentiating among the powerless and the powerful, low-status and high-status, dominated and dominant, poor and wealthy, unconfident and confident, unassertive and competitive. The second dimension concerns conservative-progressive *beliefs*, from tradition to modern, from religious to science oriented, from conventional to alternative and from conservative to liberal. The third and final dimension, *communion*, concerns the untrustworthy and trustworthy, the dishonest and sincere, the threatening and benevolent, the repellent and likable, the cold and warm, the egoistic and altruistic. This model proposes that people spontaneously perceive groups on these dimensions. As such, the perceived beliefs are either opportunities for exploitation or for exploration. Similarly to previous models, *agency* and *communion* reflect the evolutionary goals of getting ahead and getting along, essential group dynamics in society. Recently (Koch et al., 2021), the ABC model focused on the

potential for the dimension of *beliefs* also serving a fundamental purpose, such as to optimize exploitation of available resources and exploration of riskier but possibly better alternative resources. Conservative beliefs are functionally useful for the optimization of the status quo while progressive beliefs imply an orientation for change, which is riskier but potentially more rewarding. They found that perceived self-group similarity on *agency* and *beliefs* independently predict perceived *communion* of groups and consequential prosocial behaviour. The dimension of communion was less consensual than the other dimensions, which makes sense since others determine both social hierarchy and ideological alignment, while communion stems from similarity and collaboration. This is the only model of social evaluation that considers a potential difference in nature of the mechanisms that operate within this dimension of evaluation. The lack of consensus in communion perception could explain how it is substantially less valued in status than the other dimensions. Seeing as it operates at a more personal level and is harder to communicate in objective terms, compared with agency and beliefs, it could also be harder to assign a consensual value.

Recently, the integration and interaction of these models has been extended (Koch et al., 2021; Abele et al., 2021) and the overlap of several models analysed. Comparing the SCM and ABC, both models refer to multiple outgroups, with the SCM referring to contexts that cue interpersonal relations with few proximal groups, while the ABC cues for more analytic abstract contexts at societal level. In a study by Nicolas and collaborators (2021), goals moderated what people wanted to know about a novel group. Participants focused on *communion* aspects when their instructed goal was interpersonal interactions, while social economic status and *beliefs* had higher priority when their goal was to understand the group in a societal context. However, above these, *morality* was a priority and did not differ by goal. As such, the priorities established by both models still hold in comparison, with the exception of *morality*, which people consider in a more private sphere. For our purposes, this aligns with the societal devaluation of HEED occupations. However, in comparison with STEM occupations or most other fields, HEED occupations should be salient in *morality* and therefore generally likable or appreciated.

In Koch and colleagues' (2021) integration of the ABC, DCM and SCM, the researchers address how *competence/agency* is more salient, as differences between groups on *competence* tend to be larger than their differences on *warmth*, even when

mechanisms of compensation are at play. The social evaluation of HEED occupations and workers are then affected by this salience bias, especially given that, at a larger level (ABC), higher differences make spontaneous selection of the dimension in question as characteristic of the perception of said group.

People infer various characteristics from others from their occupation. For generalizing rights and obligations, functional behaviours, personality traits and skills, people favour occupational roles over race or gender (Noyes et al., 2021). The reviewed models refer to individuals and social groups in general, which lay groundwork for all social perception. However, the predominance of occupations in societal functioning and structure merits a more detailed review of the social perceptions of occupations to understand how HEED occupations and workers are perceived.

Social Perception of Occupations

Imhoff and colleagues (2018), in their data driven study concerning occupational stereotypes, came across clusters that dominate occupation discrimination that reflect the presented social evaluation literature. People predominantly judge occupations based on *agency*, *progressiveness* and to a lesser extent *communion*. Additionally, they found that proximity of occupations predicts valence for their neighbours. This pattern of social perception is relevant and valid when understanding the mental representations that dominate HEED and STEM fields.

Causes for Gender Disparity in Occupations

Diekman and Steinberg (2013) determined that the gender disparity in STEM fields can be accounted for with gender differences found in self-efficacy and differential encouragement for science and math. It is also important to consider how social roles mediate our expectations. A social role is a set of shared expectations and realities that correspond with a particular social position (Biddle, 2013). Our psychological characteristics mediate our choices about social roles, and social roles in turn produce differentiated goals according to one's gender. These goals influence the kinds of work and family roles that women and men are attracted to or avoid. In order to maintain goal congruity, communal goals endorsed by women influence their career decisions. They are then less likely to select STEM careers since they believe these impede communal goals.

As the previous section has shown, communal goals and cooperation are essential for humans. Cooperation requires and rewards being oriented to others, as the need to belong is both universal and a core social motive (Baumeister & Leary, 1995; Fiske, 2018). In impression formation, being oriented for others is considered more important than competence (Wojciszke, Bazinska & Jaworski, 1998). Additionally, both men and women who are described as communal are evaluated positively (Diekman, 2007).

However, because women predominate in caretaking roles in both the public and private spheres, communal traits are central to the female gender role (Diekman & Eagly, 2008). As there is a centrality of communal characteristics to women's self-descriptions and gender norms despite social progress, as well as a bigger endorsement difference for communal goals than agentic goals, women's roles are more affected. Consistent with social role theory (Eagly & Steffen, 1984), these gender disparities in chosen roles are mirrored by gender disparities in self-perceived attributes. From infancy, girls and women indicate a desire for a job that allows them to spend time with their family (Diekman et al., 2015; Weisgram et al., 2010), a value endorsement that negatively predicts their interest in masculine occupations. It's possible that the cultural perception of masculine occupations affects this, other than goal congruity, seeing as these jobs traditionally were the only source of income for families, and required competitive mentality in order to progress.

We should also consider that the job market reality has changed considerably in the past decades, with considerable efforts of economic, sociological and technological value being put into access to STEM occupations for women, enabling women to enter the paid workforce in unprecedented numbers. HEED fields, however, have not received the same concern when it comes to gender disparity. This might be due to the fact that people don't feel this disparity to be unjust. Block and collaborators (2019) make the argument that the perceived legitimacy and malleability of one group's underrepresentation is tied to how they are explained. Group differences that are attributed to external factors are more likely to be seen as both illegitimate and malleable, promoting social change (e.g., Weiner, Perry, & Magnusson, 1988). According to Status Value Theory (Ridgeway, 1991), men's higher status in society means men's roles and careers are given higher status than those of women. This might contribute to the disproportionate evolution of occupational stereotypes.

Seemingly, it is possible that the underrepresentation of men in low-status HEED jobs might be attributed to internal factors such as motivation or skill. Additionally balancing the scale in this scenario doesn't constitute in most cases a potential benefit for men going into these occupations, since they probably aren't being better paid or rising in status. In Block and collaborators' (2019) studies, participants reported, as expected, stronger support for increasing women's representation in male-dominated occupations than men's representation in female-dominated occupations. More importantly, for female-dominated careers, participants attributed men's underrepresentation to both prohibitive norms and men's lack of motivation rather than lack of ability. A lack of motivation was the primary factor perceived to prevent men from entering female-dominated careers. Even though lack of ability wasn't a primary factor for either set of occupations, the women's underrepresentation in male-dominated careers was more related to perceived lack of ability than for men in female-dominated careers, consistent with previous literature (e.g., Heilman, 2012). This alludes to the pervasive nature of gender stereotypes affecting the perceptions of need for social action. Participants were also much more willing to allocate substantial funds to promote gender balance in male-dominated fields. It seems that gender distribution is the main factor, not earning potential, as the potential increase in the latter did not affect budget allocations. These results are consistent with Croft and collaborators' (2015) review, in which the lower status of communal roles makes men less likely to be socialized so that they internalize communal traits and values.

Even so, there is little research focused on HEED fields exclusively, outside of the duality with STEM fields. Given that various theories point to the lower status in female-dominated jobs being partly attributed to female presence, it is also important to understand men's role in the HEED field in more detail. Croft and collaborators (2015) highlight how women's traditional roles of caregiving and domestic responsibility have expanded to include agentic pursuits whereas men's involvement in communal roles has not been expanding in a complementary fashion. Women have begun to see themselves as possessing increasingly agentic traits over the past few decades while men have exhibited very little if any increase in their self-ratings of communal traits (Twenge et al., 2012).

It's important to consider that there is a gendered division of labour in our evolutionary past, given inherent propensities and abilities. Women invest a greater

amount of time and physical resources in pregnancy, birthing and childrearing and so have assumed a primary caregiving role for young children out of biological necessity, whilst men typically had a greater physical strength and size that allowed them to protect and provide for the family (Buss & Kenrick, 1998). When considering modern society, these roles have changed considerably, and men's stagnation in communal goals' endorsement cannot be attributed exclusively to evolutionary needs or constraints as women's agentic presentation nowadays developed in too short of a time period to be a result of natural selection and fit.

Croft and collaborators (2015) analyse the cultural evolution of status differences in gender roles, as this will be the primary factor of influence given the time constraints mentioned. Research shows that men enjoy high-status more than women (e.g., Ridgeway & Correll, 2004), and that gender gaps in status are reflected in the relative levels of power, economic advantage and professional success that men and women achieve. Along with social role theory (Eagly et al., 2000) people came to expect men to possess agentic qualities and higher status and women to possess communal qualities associated with their more subordinate and caregiving roles. Perceivers automatically use gender when making social judgements (Lenton et al., 2009), and therefore these roles are perpetuated. Ambivalent gender stereotypes, which advantage men in competence and women in warmth, allow both men and women to accept gender inequality. Similarly, nations with greater ambivalent sexism scores also have greater gender inequality (Glick et al., 2004).

The Socialization of Men

Early learning of gender-stereotypic associations are one of the mechanisms to internalizing communal self-attributes. The tendency to automatically learn from and conform to the behaviour of same-sex peers is key in inhibiting males from internalizing communal traits, values or possible selves (Martin & Ruble, 2004). Likewise, men's sense of self is mostly connected with work while women's is connected with home life as much as with work (Devos et al., 2008). With a weaker self-concept connected to communal self-constructs, the motivation to embody communal roles is also likely to be weaker in men. Boys are also often discouraged from feeling or expressing sadness and fear (Eisenber, Cumberland & Spinrad, 1998), stumping men's socio-emotional skills development. The lack of emotional displays furthers men from warmth and communal roles feel incongruent. There is also a lack of role models reflecting communal values

that males can readily identify with. According to the Gender Schema Theory (Martin & Halverson, 1981), observing same-sex role models triggers learning processes whereby observers internalize gender stereotypical knowledge of roles and act accordingly, which results in gender-congruent aspirations and behaviour.

Men's conceptions of themselves as workers and parents are more highly overlapping than they are for women. For men both roles are defined to some degree in terms of competence, whereas for women motherhood is defined in terms of communal attributes rather than competence (Hodges & Park, 2013). With cultural evolution, agentic internalization was facilitated for women and makes a career pursuit more accessible, while for men taking on communal roles causes gender conflict, which in turn makes them less satisfied with their jobs and report overall lower well-being (Wolfram, Mohr & Borchert, 2009).

Outside of these mechanisms there are both financial and social costs for men in communal roles, as these are considered threats to a masculine identity. Because masculine identity needs to be reaffirmed and validated (Vandello, Bosson, Cohen, Burnafor & Weaver, 2008), men suffer social sanctions and discrimination more heavily when compared to women (Blakemore, 2003; Levy et al, 1995) and even within the private sphere through maternal gatekeeping (which is also dependent on goal congruity with the female gender role).

Social Change

Yuen and collaborators (2020) follow up with their analysis regarding support for social change in HEED remuneration. There are various factors for differential pay. According to the feminization theory (England, 1992), the wages and prestige of a career decrease as the percentage of women increases, while on the other hand a lack of females in STEM jobs and top leadership positions may signal to women that members of their gender lack the skills necessary to be successful in these domains (Eagly et al, 2000). Other factors include the incidence of communal values, cultural collectivism and egalitarianism. Despite the motivations linked to communal values and cultural collectivism, support for pay equality between HEED and STEM occupations is best predicted by how much people in each country value egalitarianism.

Stereotypes will only change when there is an incentive for citizens to adopt roles outside traditional gender norms, as we can see in women's rights history: the right to

vote allowed for a voice in political decision making; the necessity of labour during WWII let women enter the paid workforce into jobs vacated by men fighting in the war; birth control enabled women to engage in planned parenthood and invest in educational and occupational goals (Bailey, 2006). No necessity has existed for men to fill in gaps in women's roles yet, and male-dominated environments have more value and status just for being male-dominated. People assume an unknown trait has more value or utility when men score higher than women on that trait (Schmader, Makor, Eccleston & McCoy, 2001). Given the status quo, this constitutes a considerable barrier to men's engagement in communal roles.

In research of stereotypes and gender dynamics, Twenge (1997) showed that communion has remained higher in women than in men, agency has continuously become higher for both sexes and the difference between genders is getting smaller. Abele (2003) has shown that, congruent with social-role theory (Eagly & Wood, 2016) communal traits are important predictors of family roles, but not necessarily occupational roles. Abele's results also show a stronger tie of gender with communal traits than agentic traits, possibly because of social values. These findings support the tendency in the job market between STEM and HEED jobs, and while the communion aspect of STEM has been previously highlighted to combat gender disparity (Weisgram & Diekman, 2017), there is no data on initiatives on resolving the disparity in HEED jobs. Abele (2003) also concluded that there is a longitudinal influence of agentic traits on careers success, both in women and men, which might imply that both the disparity and the devaluation of HEED occupations could be lessened by incentivizing agentic perceptions of these jobs.

Olsson and Martiny (2018) studied the exposure to counter stereotypical role models. As stereotypes are dynamic, when people perceive a non-traditional division of labour, they associate men and women with counterstereotypic characteristics, creating the potential to change aspirations and career choices. The effect of these observations is varied depending on time and timing of exposure, but research suggests that including time for discussion outside of the specific observed role can help to internalize the observation (Trepanier-Street & Romatowski, 1999), especially seeing as family and work roles share common goals for gender-based roles (Nhundu, 2007).

Having analysed both the complex nature of agency and communion, of HEED and STEM perceptions and their relationship with gender, we can see that the social environment hasn't created opportunities for changes in these stereotypes and consequently for a more just situation for HEED professionals. The literature reviewed so far has shown how the social climate has changed how women are perceived and how it hasn't for men, seemingly based on how views of communal values, despite being valued, haven't changed in terms of labour practice. It would serve this review and the purpose of this thesis to dive deeper into the communal dimension of HEED occupations: care labour.

Care and Affective Labour

Currently, the global pandemic has demonstrated how human well-being should be at the centre of policy, instead of economic growth (Bahn et al., 2020). We are faced now with the foundational role of care work, both paid and unpaid, and how the focus on production devalues care work and workers. This is also a crisis that is differentiated in gender impact, as women are often the low-wage worker on the front line, whether as home health aides or nurses or other (Himmelstein & Venkataramani, 2019). Caregiving and support for families are essential, and their importance has been highlighted without the access of schools, nurseries and other institutions. Even without occupying care jobs, women bear responsibility for social reproductions, and face increased pressure during times like these to substitute unpaid work for lost income, taking care of relatives at home (ILO, 2018, cited by Bahn et al., 2020).

England (2005) comprises emerging theories of care work. Consistent with literature on occupational stereotypes, England (2005) attributes devaluation of care work through its association with women, especially women of colour. This association leads to heuristics in which policy makers underestimate the contribution of female jobs to organizational goals and its profits. Within this framework, Cancian and Oliker (2000) consider that female-dominated jobs involving care are especially devalued because care itself is the essential female-identified activity. This work is highly dependent on social skills that are in turn less rewarded (England, 2005). Inequality is visible both in the fact that care work pays less than should be expected by educational requirements and in the fact that welfare distribution does not consider unpaid care labour. There is

still the assumption that men will support their families and thus the forms of economic insecurity that need addressing are those of men, such as disability, economic downturns or retirement. Benefits are conditioned on prior employment and so stay-at-home mothers receive little to no help, and their retirement benefits are based on marriage rather than enacted care work.

Considering care as public good production, some argue that whether paid or unpaid, care work has indirect social benefits, such as education whose spill-over encourages economic growth. Care helps recipients develop skills, values and habits that benefit society (England & Folbre, 2000). Marxist feminists Dalla Costa and James (2017) argued that homemakers were among those exploited by capitalists seeing their caretaking made current and future generations more productive, and so capitalists extract surplus value. As the standard economic argument is that public goods will be underprovided by markets because there is no way to capture and turn these benefits into profit, the low wages of care workers fit this theoretical framework.

Expanding on the penalties of care work, feminist writings contain a concern for the negative consequences for society if we lose truly caring motivations for care work, as this activity encompasses both instrumental tasks and affective relations, as caregivers are expected to provide love as well as labour (Abel & Nelson, 1990). Considering the compensating differentials theory (Jacobs & Steinberg, 1990), in which differences between jobs in their intrinsic rewards or penalties affect who is willing to accept it, there is no policy problem with the low wages of care work. It assumes that if women did not find intrinsic rewards to make up for the low pay, they would simply enter other jobs. However, if this is made impossible because of hiring discrimination, the problem becomes addressable by form of policy. According to this logic, the trajectories STEM and HEED fields have taken seem to move accordingly. England and Folbre (2003) propose that this makes care workers prisoners of love, as their caring motives decrease pay. These workers may become attached to the people they care for, which makes it more difficult for them to demand higher remuneration. The nature of care and its emotional bonds put care workers in a vulnerable position of emotional hostage, just as men's failure to pay child support comes from knowledge on the mother's willingness to care for the child either way (England & Folbre, 2003).

Hochschild (2010) considers that selling one's own emotions is harmful and unethical to workers. Not only are these workers in a vulnerable position, but the expectations within the labour itself exploit their psyche.

However, Zelizer (2001) rejects the dichotomy between love and money or its psychologic distress. Raising pay from an already paid position wouldn't have an adverse impact on intrinsic motivation, as the terms have already been established. Care work is possible and the economics of compensating differentials ignores the fundamental role of care, as well as the assumption that care work, as partly affective labour, damages intrinsic motivation.

England and colleagues (2002) highlight how people need care the most when they are least able to work to pay for care (e.g., disabled people, the elderly). This creates an inherent dependency, in which there is a need for a third party to fund their care. With social differentiation these functions are done less in the family and more through government institutions. But despite the emergence of these occupations, the skills required for care work are associated with mothering and therefore more likely to be seen as "natural" and thus not deserving of remuneration (Steinberg, 1990). This reality is additionally complex and hard to solve seeing as mothers are revered, and there is a social expectation that such work should be done out of love, in order to keep it sacred. It encouraged the idea that commodifying care makes it profane (Nelson, 1999; Zelizer, 2002). This paradoxical thinking leads to respect for the sanctity of care work, as one might even come to need it, but results in denying decent income for these professionals (England & Folbre, 1999; Folbre & Nelson, 2000)

Malherbe (2020) considers the political and ethical crises of care. On a structural level, global capitalism, following Marx's works predictions, has relegated out being into having (Debord, 2012). Most cultural value is placed on production and consumption rather than reproduction of the lives that produce. Under patriarchal capitalism, reproductive labour is most often undertaken by women who are increasingly expected to perform both productive and reproductive labour, turning the latter into a site of exploitation. Graeber (2018) states that systemic justice is dependent on a revolt of the caring classes, as capitalist ideology recasts their labour as an act of love and not deserving of regular remuneration. Collectivising this struggle allows embracing of the psychological consequences of care work. Lopez (2006), in relation to

emotional labour and organized emotional care, states that the requirements of social justice and dignity for the recipients who are institutionalized cannot be realized without genuinely caring and nurturing relationships between nursing home aides and residents. Cancian (2000, cited by Lopez, 2006) suggests that it is possible to create rules and standards for emotional care just as there are for physical care. Emotional care should be part of care work as it consists of organizational attempts to create hospitable conditions for the development of caring relationships between service providers and recipients with emotional honesty.

The Present Investigation

As care labour is inherently reproductive labour, and not productive labour, it has remained in the shadow of both policy and affirmative action. While society's views on women and their capability have improved, traditional female labour hasn't, and men still encounter substantial backlash when performing communal roles. Given the capitalist structure our society is built on, profitable activities are valued along with the ability to produce. Taking on from emerging theories of care and both economical and political analysis of the current social climate, the present investigation aims at exploring whether the nature of care itself is at the core of the devaluation of HEED occupations and if that nature's perceived value can be manipulated by association with profit and production, that is, creation of value in a more immediate fashion.

As such, we ran two studies to explore this thesis. A first study, of exploratory nature, with qualitative methodology, to allow us to analyse what associations are spontaneously prompted by care jobs. Our second study aimed at testing eventual impacts of a manipulation of highlighting profits produced by a HEED occupation and a STEM occupation on social perceptions about the occupations and their workers.

More specifically, in our first study, we explored whether HEED occupations elicited more care-related word associations than STEM and filler occupations. In our second study, we hypothesized that a HEED occupation's perceived worth (e.g., in terms of ideal income) would increase when economic gain of this occupation was highlighted, compared to when psychological or wellbeing gains were highlighted. Similarly, we expected HEED workers to be perceived as more agentic and competent when economic versus psychological gains were salient. We did not predict the same effects

for a STEM occupation, for it already has a clear economic gain associated. The comparison between HEED and STEM serves the aim of this investigation best as it's well documented in the literature in terms of social evaluation, occupational stereotypes and gender disparity. We expected that the HEED occupation would not be significantly affected by highlighting the psychological benefits for society, as those are already salient.

Study 1

Method

Study 1 was a pilot study with an exploratory character, allowing us to explore the associations that people naturally make with different types of occupations. Our purpose was to compare the associations people come up with relating to HEED occupations and STEM occupations, given that STEM occupations are systematically opposed to HEED occupations (e.g., STEM are considered agentic and masculine while HEED are considered communal and feminine).

Participants

The sample ($N = 64$) was made up of psychology undergraduates of the Faculty of Psychology of the University of Lisbon ($n = 44$) and external participants recruited by the Experimental Laboratory of the Faculty of Psychology ($n = 20$). The sample included both male ($n = 13$) and female (n = 51) participants with ages spanning from 19 years old to 46 years old ($M = 22.39$, $SD = 5.37$). All participants were native Portuguese speakers, with both Portuguese ($n = 58$) and Brazilian ($n = 6$) participants.

Psychology undergraduates were compensated with course credit for their participation while external participants were compensated with gift cards, for an hour-long session of different studies. All data collection occurred remotely online.

Procedure

First, participants read that they would see various occupations' names. They saw 18 different occupations: six HEED, six STEM, six filler (explained in more detail in the following section).

Their task was to type the first three words that came to mind upon seeing the occupation name. After completing the task for all 18 occupations, participants filled out demographic questions (age, gender, occupation, language, nationality).

Finally, they filled out a self-reported measure of contact frequency with children, as this study was integrated in a project concerning occupations that relate with children. At the end of the survey, participants read a short debriefing text and were given the opportunity to leave a comment concerning the study or their participation.

Materials

For the purpose of this study, we meant to compare the associations people make when they think of HEED occupations with the associations people make when they think of STEM occupations. We also included occupations that were neither HEED nor STEM as fillers to minimize the likelihood that responses were affected by direct contrasts between HEED and STEM occupations and to explore the specificity of eventual effects.

In our selection, our first criterium was to select two occupations for each of the fields included in HEED occupations. HEED occupations were selected from the database developed by Imhoff and collaborators (2018), according with the occupations that produced the highest ratings of the communal scale, that ranged from 0 to 100, as this was the closest proxy to a care-oriented nature. We selected six HEED occupations: nurse (*enfermeira*: $M = 79.83$) and social worker (*assistente social*; $M = 73.30$) for health care; preschool teacher (*educadora de infância; M = 82.47*) and special education teacher (*professora de educação especial; M = 82.88*) for early education; personal care aid (*auxiliar de geriatria; M = 74.29*) and housekeeper (*empregada doméstica*) for the domestic sphere. This last item was not included in the database and therefore has no reference value, but we considered it to be one of the clearest representatives of domestic labour.

The selection of STEM occupations followed the same process with the selection of the occupations that produced the highest ratings of the science-orientation scale, also ranging from 0 to 100 and maintaining the criteria of representation of its fields. We aimed at one representative of each domain and included an additional occupation for the science field and for the engineering field so that the number of occupations presented would be equal for all occupational groups. The only exception to the previous criteria was the inclusion of systems analyst, which was not in the original database and therefore doesn't have a comparable rating in the chosen attribute but is currently one the most common STEM occupations (Fayer et al., 2017). We selected six STEM occupations: astrophysicist (*astrofísico*; $M = 95.46$) and biologist (*biólogo*; $M = 89.81$) for science; computer programmer (*programador de computador; M = 81.50*) and systems analyst (*analista de sistemas informáticos*) for technology; nuclear engineer (*engenheiro nuclear; M = 94.88*) for engineering; mathematician (*matemático; M = 87.08*) for mathematics.

To further isolate the findings related to the previous fields, the filler occupations were selected from the same database but with no defined field. Instead, to assure their neutral position compared to the previous selection, all filler occupations had ratings close to the midpoint in the determining scales for HEED and STEM: communal and science-oriented, respectively.

Additionally, given the tendency for a higher status within STEM occupations and a lower status within HEED occupations, half of our filler selection had low status scores while the other half had high status scores. The filler occupations then also allow us to determine if any differences found could be attributed to status and not defining features of HEED occupations. We selected three low-status filler occupations: dishwasher (*lavador de pratos*, status $M = 15.53$; communal $M = 58.84$; science-oriented $M = 49.50$); parking lot attendee (*funcionário de parque de estacionamento*; status $M = 21.72$; communal $M = 54.36$; science-oriented $M = 50.73$); call center employee (*funcionária de atendimento ao cliente*; status $M = 43.44$; communal $M = 56.67$; science-oriented $M = 55.35$). For the high-status filler occupations, we selected the following occupations: judge (*juíz*, status $M = 79.19$; communal $M = 50.04$; science-oriented $M = 51.00$); actor (*ator*, status $M = 71.44$; communal $M = 47.69$; science-oriented $M = 54.85$); athlete (*atleta*, status $M = 70.50$; communal $M = 48.18$; science-oriented $M = 49.38$).

Results & Discussion

We collected on average 190 written words for each occupation. We compiled all words for each occupation according to frequency. A list of the most frequent words that were written by participants for each occupation of the three fields can be seen in Table 1.

Table 1

The three most Frequent Words for each Occupation Presented

	most frequent free associations		
	#1	#2	#3
HEED occupations			
Enfermeira	hospital	bata	cuidado / prestável
Assistente social	crianças / ajuda	mulher	idosos
Educadora de infância	crianças	paciente	simpática
Professora de educação especial	paciente	paciência	crianças
Auxiliar de geriatria	idosos	paciente	cuidadoso / paciência
Empregada doméstica	trabalhadora	limpeza	limpar
STEM occupations			
Astrofísico	inteligente	espaço / estrelas	planeta
Biólogo	animais	ciência / curioso / natureza	vida
Programador de computador	inteligente	computador	óculos
Analista de sistemas informáticos	computador	inteligente	informática
Engenheiro nuclear	inteligente	bomba	matemática

Matemático	inteligente	números	professor
Filler occupations			
Juiz	tribunal	imparcial / justiça / justo	martelo
Actor	teatro	cena	carismático / criativo
Atleta	corrida	esforço / músculo / saudável	pista / treino
Lavador de pratos	cozinha / restaurante	água	loiça / trabalhador
Funcionário de parque de estacionamento	carros	aborrecido / paciente / simpático	atento
Funcionária de atendimento ao cliente	paciente / telefone	paciência	simpática

After familiarization with the data, we decided to classify words according to: (i) words relating to characterization of the worker, divided into *personality traits* (non-physical characteristics of the worker; e.g., *paciente/*patient for special education teacher) and *image* (physical characteristics or other aspects that paint a picture of the worker; e.g., *músculos/*muscles for athlete) (ii) words relating to what the worker interacts with, divided into *objects* (material things which the worker contacts with at work; e.g., *seringa/*syringe for nurse) , *social groups* (categories of people which the worker contacts with at work that do not include the worker; e.g., *idosos*/elderly for care aide) and *abstract entities*(non-material things which the worker contact with at work; *código*/code for computer programmer); (iii) words that refer to the work site, constituting the category of *settings* (places where the worker works; e.g., *cozinha*/kitchen for dish washer); and (iv) words that characterize the occupation itself,

divided in *functions/roles* (activities or purposes of the work; e.g., *representar*/acting for actor), *values* (principles or standards important for the work; e.g., *inteligência*/intelligence for nuclear engineer), and *appraisals* (assessments or evaluations of the work, e.g., *difícil/*difficult for mathematician). Additionally, we defined there should be a category for words that do not fit into any of these categories (i.e., miscellanea).

We aimed at exploring whether care related concepts are readily prompted when people think of HEED occupations to a greater extent than other occupations. Care is a transitive action as it implies taking care of someone or something. As such, we focused on three aspects: 1) mentions of other people (coded as *social groups*); 2) frequency of words directly related to care; 3) frequency of words more loosely related with care.

No instances of *social groups* emerged in STEM occupations, as would be expected, since these fields aren't generally based on working with other people. However, most of the filler occupations are dependent on social interactions (i.e., judge, actor, call center employee), but there was a considerable difference between the frequency of social group words between HEED occupations ($M = 12.68\%$) and filler occupations ($M = 1.27\%$). Only half of the filler occupations produced social group references, but even excluding the ones that did not produce these references, the difference is considerable ($M = 2.53\%$). This might imply that it is not merely the social nature of the occupation that explains the high number of social group words related to HEED occupations, but the nature of the work itself or the salience of the groups they attend to.

To understand the weight of care as a dimension of these occupations, we first approached the frequency of words directly related to care (such as caring/*cuidar;* one who provides care/*cuidadora* and care/*cuidado*). Neither STEM nor filler occupations produced directly related words, while HEED occupations produced a considerable portion even within this conservative approach ($M = 5.73\%$).

In a wider scope, considering words that allude to care, such as helpful/*prestável*, loving/*carinhosa*, empathetic/*empática*, support/*apoio* or protector/*protetora*, these words constituted on average almost a fifth of the words produced for HEED occupations ($M = 19.20\%$). This analysis unfortunately can't effectively separate physical and traditional domestic labour from affective labour, not only from the subjective nature of the data, since these are so often intrinsically tied. However, it is

clear that the care dimension is fundamental in the social perception of these occupations, as we expected.

Additionally, we verified that STEM jobs were the least characterized by personality traits (e.g., *inteligente*; $M = 36.86\%$) while HEED jobs were the most characterized by personality traits (e.g., *paciente*; $M = 42.64\%$). This might indicate a tendency for a more defined perception of HEED workers due to their profession. People might have a clearer picture of these groups, or of groups often predominant in these occupations (e.g., Black women). In turn, the fact that the defining features of an occupation are those of the people who usually practice them, makes the stereotypical association more salient, both for views of the occupations and of the worker interchangeably. This salience might contribute for their continuous devaluation and difficulty in accompanying other occupational sectors' path to equity. Likewise, STEM occupations produced the least amount of words related to the workers' image (e.g., *óculos*; $M = 4.90\%$), while both HEED (e.g., *bata branca*, $M = 7.07\%$) and filler occupations (e.g., *músculos, $M = 7.89\%$) produced similar results. It's possible that this reveals that STEM professionals are either less damaged or benefited by their physical appearance than other occupations and that the higher social status of STEM occupations doesn't make their appearance salient. It's also possible that STEM workers are still damaged by physical appearance, and this disparity emerges more from the fact that the appearance of low-status occupations is more fundamental for their stereotypes, as they might be under more scrutiny.

While there were no fundamental differences between STEM and HEED occupations in words related with function or appraisals, there was a considerable difference between low status filler occupations and high-status filler occupations. Low-status filler occupations produced a lower number of function related words (e.g., *arrumador*; $M = 5.07\%$) compared to high-status (e.g., *corrida*; $M = 12.56\%$), and low-status occupations produced a high number of appraisal words (e.g., *cansaço*; $M = 12.86\%$) while high-status occupations produced a reduced number of appraisal words (e.g., *interessante*; $M = 5.93\%$). These reflect the difference in status, seeing as low status occupations are usually in less need of qualified work, and the social perceptions of these jobs are more salient.

There was also a considerable difference in words related to values, with HEED (e.g., *paciência*; $M = 13.96\%$) producing a higher percentage than STEM occupations (e.g., *inteligência*; $M = 5.15\%$). The ethical nature we observed here aligns with the paradox related to HEED occupations, both being valued in theory and devalued in revenue consequences.

The characterization provided by this exploratory study shows both the personal characteristics people attribute to HEED occupations and their association with care, tending to a positive view. This view, however, is highly charged with principle demands, and this might make their economic value less apparent or necessary (see Appendix A for an extended construction of prototypes of the evaluated occupations with most frequent words).

Study 2

Method

  The purpose of this study was to assess whether highlighting the economic benefits of HEED occupations would increase their perceived worth and the perceived competence of HEED workers. For this purpose, we constructed a 2 x 2 experimental design based on a hypothetical scenario in which a scientific journal highlights either the economical or psychological benefits of a specific occupation, either personal care aides (HEED) or computer engineers (STEM), resulting in four different conditions, as to compare the impact of these dimensions in the value and perception of these fields.

Participants

  The sample ($N = 143$) was made up of a diverse group of people. First, participants ($n = 82$) were recruited through sharing the study in social media with the following message: "My name is Sofia Narciso and I'm a 5th year student in the Psychology Integrated Masters course, specializing in Applied Social Psychology in the Faculty of Psychology of the University of Lisbon. For my masters' thesis I'm studying the social perceptions of some occupations, and therefore ask for your collaboration in this initial study. The filling of this questionnaire has an approximate estimate of 10 minutes. To participate you must be above 18. Your participation is very important to allow the development of this investigation and the progress of my project. If any doubt emerges, you can contact me."

  To complement the sample necessary for a 2 x 2 experimental design, additional participants ($n = 61$) were recruited by the experimental laboratory of the Department of Psychology, who were compensated with a gift card for a one-hour long session with multiple studies.

  The sample included both male ($n = 33$) and female ($n = 95$) participants, with 14 participants not reporting their gender and one identifying as "other". The sample included participants with ages spanning from 18 years old and 69 years old ($M = 26.5$, $SD = 10.26$).

  All participants were native Portuguese speakers, with Portuguese ($n = 121$), Brazilian ($n = 7$), Cape Verdean ($n = 1$) and Angolan ($n = 1$) participants. Fourteen participants did not report their nationality or native language. All data collection occurred remotely online.

The study was approved by the ethics and deontology commission of the Faculty of Psychology of the University of Lisbon.

Procedure

Participants read a short description of a real scientific journal (European Journal of Public Health) that focuses on public health across various domains of study (see Appendix B for the verbal transcript of the experiment). Then they were asked to imagine they would read an article from the previously described journal concerning the impact of an occupation in public health. The presented transcript highlighted either the economic or well-being impact of a personal care aide or a computer engineer (for more detail see Materials & Measures).

Participants were then asked to estimate the actual monthly income of the professionals they read about before, what they thought were the average weekly hours these professionals worked and what they thought their monthly income should ideally be. They also answered how difficult and how prestigious they thought that occupation was. Participants answered a memory check question about the manipulated information in the text.

Participants saw then various pairs of opposing attributes on each pole of a slider and asked to move the indicator to the position that best indicated what they thought related more with the occupation they have read about. They were presented with the following opposing attributes: low status/high status; poor/wealthy; unintelligent/smart; unconfident/confident; incompetent/competent; ill-intended/well-intentioned; dishonest/sincere; repellent/likable; reactive/creative; rational/intuitive; serious/playful; traditional/modern; shy/outgoing; interested in objects/interested in people and reserved/sociable.

Participants then answered how important they felt various values were to professionals of the occupation they read about, using a slider ranging from "not important" to "extremely important". They saw the following values: helping others, serving humanity, working with people, connecting with others, assisting others, caring for others, intimacy, power, recognition, success, self-promotion, independence, status, competition.

After this, participants answered all the previous questions regarding the occupation and respective professionals that they didn't read about (i.e., regarding computer engineers if they read about personal care aids and vice versa). Following this, they went through another memory check and then answered how they personally felt about the previously presented values. Lastly participants answered a set of demographic questions: gender, age, nationality, native language, and occupation.

Measures & Materials

Stimuli. We selected personal care aide as the representative of the HEED fields and computer engineer according to the same criterium from the previous study. Personal care aides had one of the highest ratings in the communal scale in the Imhoff and collaborators' (2018) study ($M = 74.29$), while computer engineers had one of the highest ratings in the science-oriented scale of the same study ($M = 81.50$). Additionally, we chose these two occupations according to their fit in a similar and realistic scenario to enhance either psychological or economic impact.

There were four different stimuli presented, according to conditions. Half of the participants read about the impact of *personal care aides*. Half of these participants read that elderly people who received care from a personal care aide, whether at home or at a specialized facility, have a much smaller probability of developing health complications when compared with elderly people without access to these services, concluding that personal care aides have a *high economic impact* in public finances, given the savings produced within the national health system.

The other half of the participants who read about personal care aides read instead that their services have led to higher levels of well-being and satisfaction reported by elderly people under their care when compared to elderly people without access to these services, concluding that personal care aides have a *high psychological impact* in public well-being.

The other half of participants in our sample read about the impact of *computer engineers* on public health. Half of these participants read that usage of intuitive apps allow for automation and optimization of logistics and administration of health services, concluding that computer engineers have a *high economic impact* in public finances, given the savings produced within the national health system.

The other half of participants who read about a STEM occupation read that usage of intuitive apps allows for overall better communication with patients, resulting in higher well-being and satisfaction reported by said patients, concluding that computer engineers have a *high psychological impact* in public well-being.

Occupation-Related Measures. We asked participants about what they thought was the real monthly income and ideal monthly income for professionals of the selected occupations in order to be able to assess both differences between occupations and between conditions. For this measure, we asked participants to use a slider ranging between 0 euros and 3500 euros. Additionally, we asked participants about the number of weekly work hours of the selected professionals given the association found in literature between the higher value of STEM occupations with a higher workload, instead of a direct difference in value (Block et al., 2019). Weekly hours were measured on a slider ranging between 0 and 90. We were also interested in testing whether highlighting an economic impact would increase the perception of the occupation as prestigious and complex, so we measured for those two constructs. Prestige and Difficulty were measured using rating scales on sliders ranging from 0 (not difficult/prestigious at all) to 100 (highly difficult/ prestigious).

Professionals-Related Measures. Because Imhoff and collaborators' (2018) research specifically focused on occupations, produced from a bottom-up approach of large scale, we selected some of their opposing attribute scales to further assess the manipulation's effect on known occupational perceptions. We selected the three principal attributes of each of the four scales that Imhoff and collaborators (2018) produced. To these twelve attributes we added another three to allow the analyses of five known social perception models (DPM by Abele et al., 2020; BRM by Ellemers & van den Bos, 2012; DCM by Yzerbyt, 2018; SCM by Fiske, 2018b; ABC by Koch et al., 2016). These scales also allow a more complex portrait of the social perceptions we intended to capture (e.g., exploring sociability vs. communion).

Finally, we also asked participants to relate a series of values to the selected professionals and to themselves. These values were adapted from Block and collaborators' (2019) value scale as the communal values (helping others, serving

humanity, working with people, connecting with others, assisting others, caring for others, intimacy) are associated with HEED occupations and the agentic values (power, recognition, success, self-promotion, independence, status, competition) are associated with STEM occupations. The inclusion of this assessment might allow us to detect any change in perception among conditions as well as assessing whether the self-values would impact the participants' perception of the selected occupations.

Results and Discussion

First, we checked both our memory check items to assess whether participants had been paying attention during the stimulus presentation. In the first item, approximately 8% of participants failed the memory check and in the second item approximately 14% of participants failed the memory check. Interestingly enough, most errors happened in the STEM/Well-being condition, as it is an incongruent value for that occupation.

Perceived Social Worth

We analysed the perceived social worth of the occupations, comparing between conditions. To do that, we calculated 2 (occupation: HEED vs STEM) x 2 (impact: economic vs well-being) ANOVAs on several measures, namely real salary, ideal salary, percentage of increase from real to ideal salary, work hours, prestige and difficulty.

As expected, there was a considerable main occupation effect in the ANOVA results for the real salary, $F(1, 139) = 88.72$, $p < .001$, $\eta_p^2 = .39$, as the STEM occupation was ascribed a significantly higher ($M = 1377.03€$, $SD = 28.47€$) real salary than the HEED occupation ($M = 825.26€$, $SD = 54.00€$). There was also an impact effect, $F(1, 139) = 4.03$, $p = .047$, $\eta_p^2 = .03$. It is interesting to note that the manipulation had a very small effect on the perceptions participants had of the real salary of workers, with people estimating higher salaries when presented with an economic driven stimulus ($M = 1132.76€$, $SD = 60.58€$) than when presented with a well-being driven stimulus ($M = 1050.81€$, $SD = 45.22€$). Participants might have been prompted into thinking that the profit mentioned in the message reflected an already existing gain. However, there was no significant interaction between the occupation and impact, $F < 1$. Considering the variance across occupations, participants estimated that there was a considerable difference in monetary compensation (see Figure 1), but not a very

realistic one, as the value for personal care aides (M = 825.26; SD = 28.47) was considerably higher than the minimum wage in Portugal, which is their usual compensation. Compensation for computer engineers is generally higher and so the general estimate (M = 1377.03; SD = 54.00) is not wholly unrealistic.
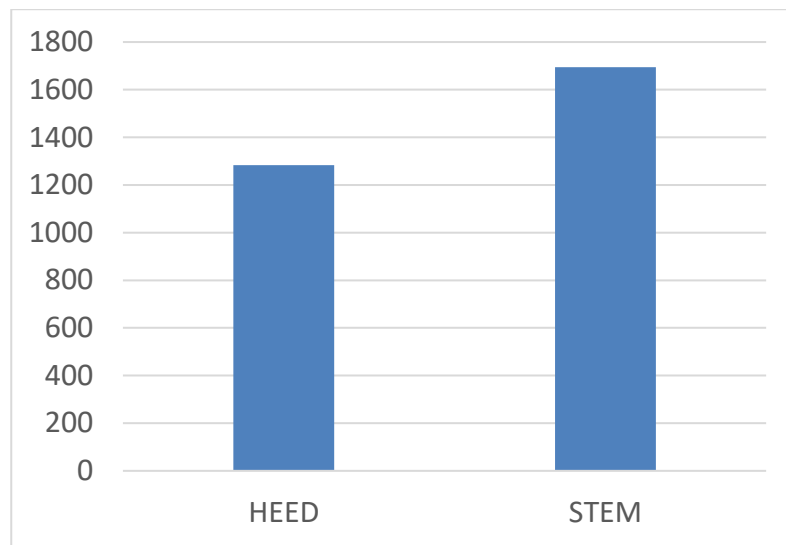
Figure 1

Participants' estimates for real salary
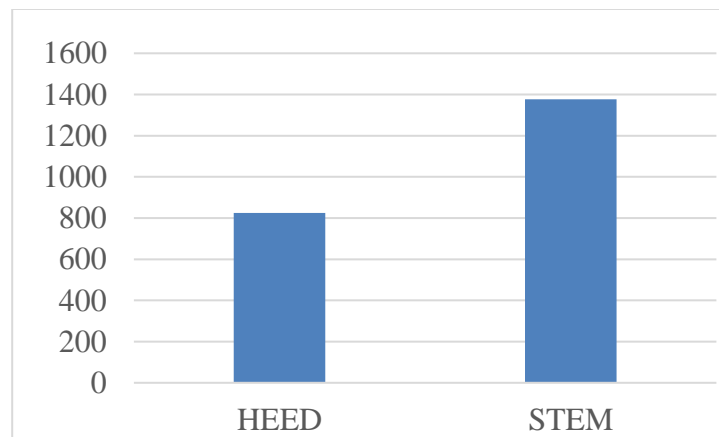
However, contrary to the expected, for the ideal salary (see Figure 2) there was only a significant occupation effect, $F(1, 139) = 28.25$, $p < .001$, $\eta_p2 = .17$, with participants assigning higher ideal monetary compensation for STEM workers (M = 1693.81€, SD = 44.36€) than HEED workers (M = 1282.77€, SD = 44.36€). While the previous effects only reveal what people think the reality is for these professionals, the difference here is important to consider, since despite the information they received relative to the profit or gain attributed to personal care aides, they still didn't think they (M = 1282.77; SD = 44.36) deserve substantially better compensation, especially when compared to the results for computer engineers (M = 1693.81; SD = 64.37). This finding replicates previous literature on societal devaluation of HEED occupations (e.g., Block et al., 2019), which is not only relevant because of the harm it causes for essential workers, but also because these are highly dependent on context, so it is important for this study to have evidence that the pattern is similar to previous findings with non-Portuguese samples.

Figure 2

Ideal Salary

Because participants' estimates of the ideal salary could be biased by their estimates of the actual salary, we computed a new variable representing the percentage increase from real to ideal salary (see Figure 3). This new variable was obtained by subtracting the estimate for the real salary from the estimate for the ideal salary and then dividing the output by the estimate for the real salary. We only obtained a main effect of occupation, $F(1, 139) = 32.38$, $p < .001$, $\eta_p^2 = .19$, and no significant effects for value or the interaction between these variables. This main effect follows the opposite tendency of the previous occupational effects, which means that despite participants stating that computer engineers deserve higher compensation than personal care aides in absolute terms, they believed that personal care aides deserve a much higher raise than computer engineers. This shows us that even if our participants devalue HEED labour, they believe these professionals are under more unjust work conditions, and that merits further exploration.

Figure 3

Percentage Increase across Occupations
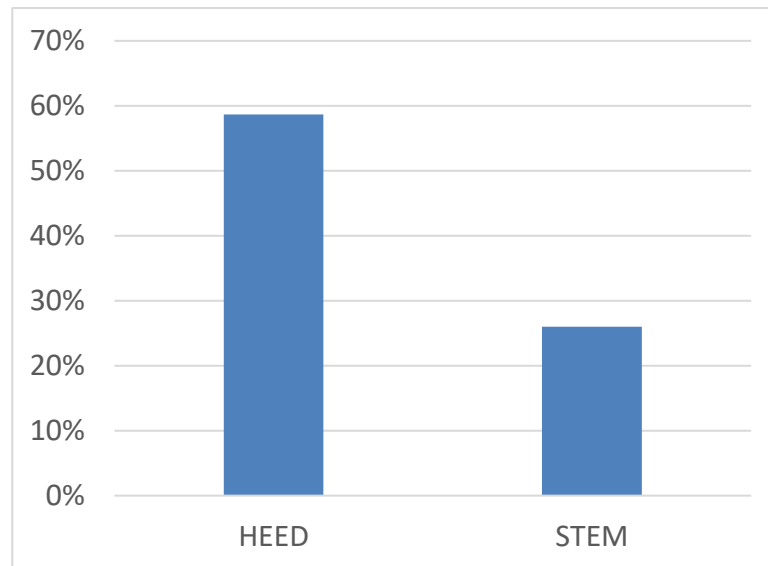
The analogous ANOVA for work hours did not reveal any differences according to the occupation, $F < 1$, impact, $F < 1$, or their interaction, $F(1, 139) = 1.11$, $p = .295$. So, contrary to what Block and collaborators (2019) found, the previous results cannot be accounted for by an assumption that STEM professionals work more hours than HEED professionals. In Portugal, there is a strict limit of 40 hours week (while in the US more than 40 hours is simply considered overtime and is not strictly overseen), and while there weren't relevant differences across conditions (see Figure 4), on all conditions the results were higher than 40 hours, which seems to indicate that participants believe these workers spend more time at their job than mandatory. It could be that both STEM and HEED occupations are considered labour intensive. There might also be a general assumption concerning labour culture that reflects this and a tendency for need to do overtime.

Figure 4

Work hours across Occupations and Impact/Value
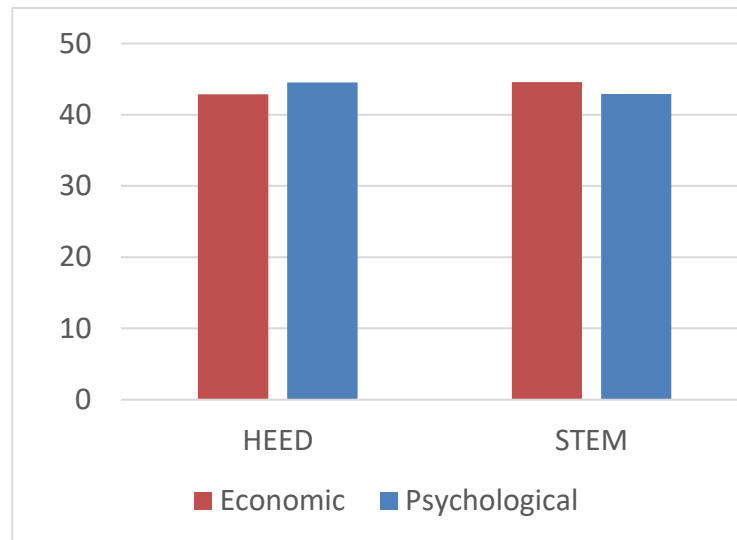
As expected, there was an occupation main effect in perceived prestige, $F(1, 139) = 60.90$, $p < .001$, $\eta_p2 = .30$, in line with previous literature (e.g., Imhoff et al., 2018), as STEM occupations were perceived as more prestigious than HEED occupations. However, the analysis of perceived difficulty did not align either with the pattern we have shown thus far nor previous research. Only a statistically significant occupation effect emerged, $F(1, 138) = 5.25$, $p = .023$, $\eta_p2 = .03$, but in the opposite direction to the one we expected, with the HEED occupation considered more difficult ($M = 79.84$, 95% CI = [75.95; 83.72]) yet less prestigious ($M = 41.73$, 95% CI = [35.66; 47.80]) than the STEM occupation (difficulty: $M = 73.34$, 95% CI = [69.51; 77.17]; prestige: $M = 71.30$, 95% CI = [67.08; 75.53]). It is possible that, contrary to our intentions, the difficulty measure did not tap into participants' beliefs about the abilities needed for the occupation, as seen in previous research, but instead for the daily tasks or living difficulties these professionals deal with.

To summarize, our manipulation was not effective in our direct measures of social rewards of a HEED occupation. This does not mean our manipulation did not produce any insights. Given the aforementioned analyses, we can say: the Portuguese sample is similar to other cultural contexts; people are aware of a devaluation issue within HEED occupations even if their perceptions of the issue are less nuanced than desired (e.g., the estimate for real salary of personal care aides).

Personality Impressions of Workers

Our manipulation didn't increase personal care aides' perceived social worth, but it might have impacted the participants' perception of competence (see Figures 5 and 6). To test this, we analysed the evaluations participants provided within the framing of four factors that emerged from research on occupational stereotypes (Imhoff et al., 2018), and the fundamental dimensions of five classic social perception models.

Figure 5

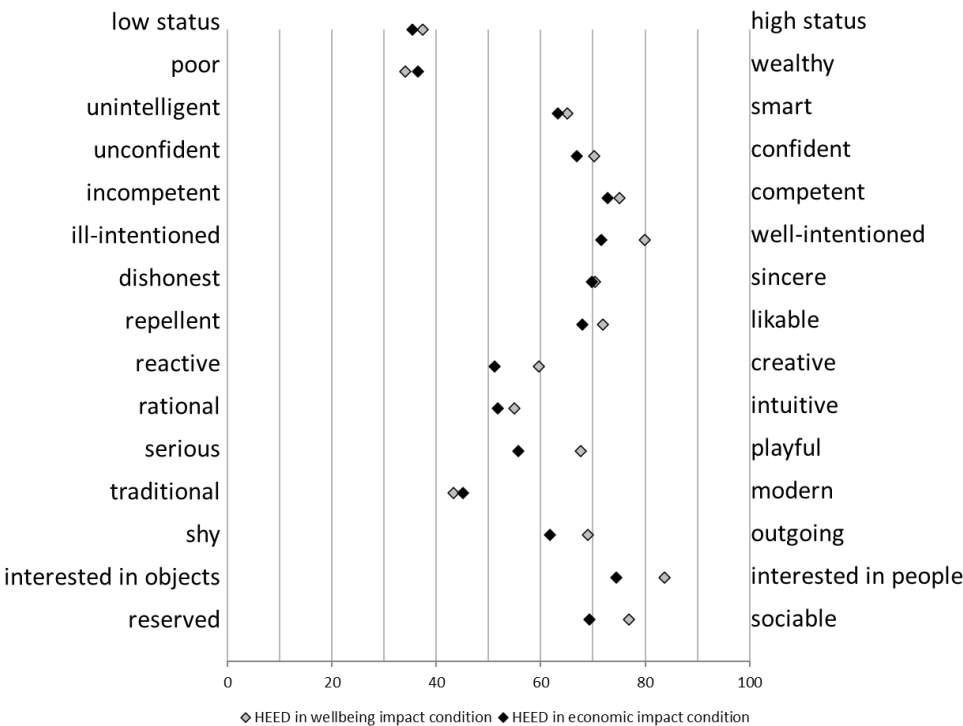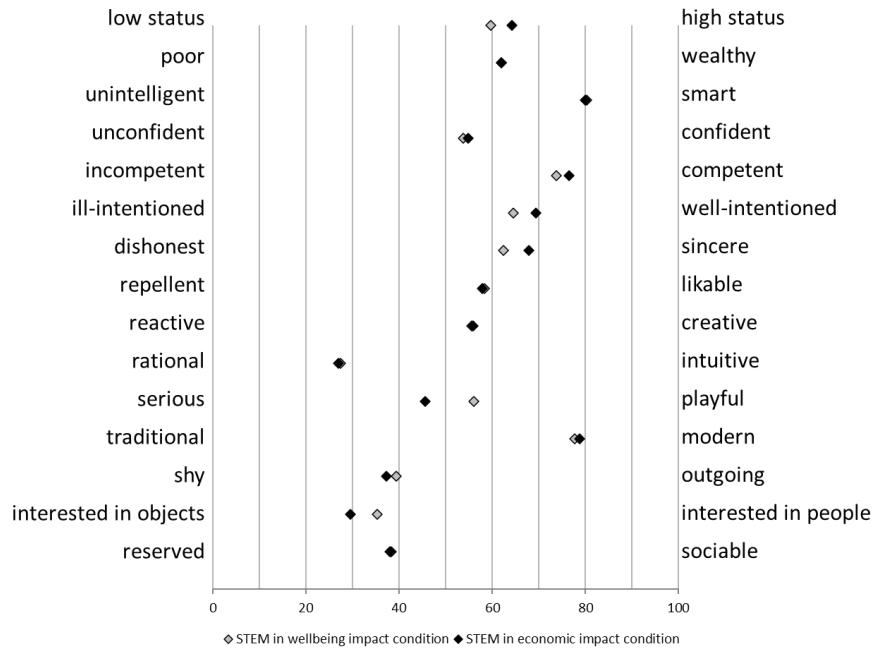*Forest plot of perceived attributes of personal care aides across conditions*

Figure 6

Forest plot of perceived attributes of computer engineers across conditions

low status		high status
poor		wealthy
unintelligent		smart
unconfident		confident
incompetent		competent
ill-intentioned		well-intentioned
dishonest		sincere
repellent		likable
reactive		creative
rational		intuitive
serious		playful
traditional		modern
shy		outgoing
interested in objects		interested in people
reserved		sociable

◇ STEM in wellbeing impact condition   ◆ STEM in economic impact condition

The items related to the personality impressions of the workers themselves (adapted from Imhoff et al., 2018) had high internal consistency amongst three of the four dimensions: the dimension *agency/competence*, consisting of the items *status*, *wealth* and *intelligence* (Cronbach's α = .80); communion, consisting of the items for *well-intentioned*, *sincere* and *likable* (Cronbach's α = .83); sociability, consisting of the items for *outgoing*, *interest in people* and *sociability* (Cronbach's α = .85) and progressiveness, with the lowest internal consistency, consisted of the items for *creativity*, *intuition* and *playfulness* (Cronbach's α = .44).

In a 2 (occupation: HEED vs. STEM) x 2 (impact: economic vs well-being) x 4 (dimension: agency vs. communion vs. sociability vs. progressiveness) mixed ANOVA, we observed main effects for all three factors. The occupation main effect, $F(1, 130) = 24.97$, $p < .001$, $\eta_p^2 = .16$, revealed that personal care aides were rated overall more positively than our representative of STEM workers. The impact main effect, $F(1, 130) = 3.97$, $p = .048$, $\eta_p^2 = .03$, revealed that workers were more positively evaluated when the well-being impact of their work was highlighted compared to the economic impact. The dimension main effect, $F(3, 390) = 54.49$, $p < .001$, $\eta_p^2 = .30$, emerged because participants ratings on the communion dimension were particularly high ($M = 67.99$), followed by agency/competence, sociability, and finally progressiveness ratings.

We predicted a three-way interaction whereby HEED workers, but not STEM workers, would benefit from highlighting the economic impact (compared to the

psychological impact) in the agency/competence dimension, because this dimension is particularly related to perceived status. The analysed dimensions interacted with both occupation and impact, but not in a three-way interaction, $F < 1$. Actually, the agency/competence ratings for the HEED workers in the economic impact condition ($M = 45.48$) or well-being impact ($M = 45.09$) were very similar.

The interaction between the dimensions of the ratings and occupation, $F(3, 390) = 147.06$, $p < .001$, $\eta_p^2 = .53$, produced the expected pattern (see Table 2), with the HEED occupation producing high values across communion, sociability and progressiveness, with only lower agency than its counterpart; the STEM occupation was perceived as low in sociability and progressiveness, high on agency and quite high in communion but lower than HEED's, as expected from past literature. This corroborates the suggestion that our participants judged both occupations as previous samples have, giving further validity to the whole of our data.

Table 2

Data-driven dimension ratings across occupations

Occupation	ACSP	Mean	N
HEED (Personal Care Aide)	Agency	45.29	69
	Communion	71.99	69
	Sociability	72.44	69
	Progressiveness	56.72	69
STEM (Computer Engineer)	Agency	68.51	65
	Communion	63.74	65
	Sociability	36.14	65
	Progressiveness	44.57	65

As for the interaction between these dimensions and the highlighted impact in the presented stimulus, $F(3, 390) = 3.15$, $p < .025$, $\eta_p^2 = .02$, participants that saw a message related to a psychologic impact perceived the professionals in question as more social and more progressive than participants that read about an economic impact. There were no differences between psychological and economic impact in the agency/competence and communion dimensions. The size of this effect is rather small, and given the low consistency within the progressiveness items, it would be premature to draw any considerable conclusions from this finding.

We ran an analysis of variance on all five models of social perception. There were no significant main effects or interactions with the models, with the respective

ANOVAs producing only main effects of occupation and of dimensions at play. This is to say that in general, HEED professionals were more positively evaluated than STEM professionals, since they produced high ratings in scales related with warmth and moderate agency ratings. The pattern of results was only different for the ABC model (Koch et al., 2021), given the weight of status in the agency dimension and the beliefs dimension, as personal care aides were considered to be more traditional. It's possible that Koch's model is more fit for occupational groups than other, as it is the only that accounts for a less favourable view of HEED workers. As such, we will now further describe the analyses that were run concerning these models.

Considering Abele's *dual perspective model* (Abele et al, 2020), assertiveness and ability constitute the facets of agency, while morality and friendliness are facets of communion, and should therefore fit the same patterns we previously saw. A 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 4 (facet: assertiveness vs. ability vs. morality vs. friendliness) mixed ANOVA produced a main occupation effect, $F(1, 131) = 44.12$, $p < .001$, $\eta_p^2 = .25$, with personal care aides overall scoring higher in the various dimensions ($M = 71.50$) than computer engineers ($M = 58.20$). The aforementioned ANOVA produced a main effect for the facets of the dual perspective model, $F(3, 393) = 43.26$, $p < .001$, $\eta_p^2 = .25$, with little variance across the different facets, with friendliness having the lowest ratings (*sociable, M = 56.01*), ability the highest (*competence, M = 74.69*), and assertiveness (*confident, M = 61.70*) and morality (*sincere, M = 67.60*) with similar scores. There was a significant interaction between the occupation and the dual perspective model, $F(3, 393) = 39.62$, $p < .001$, $\eta_p^2 = .23$, with close ratings across facets for personal care aides ($M_{assertiveness} = 68.68$; $M_{ability} = 74.13$; $M_{morality} = 70.10$; $M_{friendliness} = 73.10$) and computer engineers having lower scores for friendliness ($M = 38.15$) and assertiveness ($M = 54.41$), with scores similar to HEED's in ability ($M = 75.27$) and morality ($M = 64.98$). The pattern of results, however, doesn't clearly split the facets as expected, with HEED scoring high across all items, and STEM scoring considerably lower both in assertiveness and friendliness. This doesn't align with our expectations, which might be related with the STEM occupation that was selected. Our manipulation doesn't seem to have had an effect on the perceptions of both occupations according to this model.

Ellemer's *behavioural regulation model* (Abele et al, 2020) defines competence as an indicator for performance, morality for intentions and sociability for demeanour. In this sense, we can also analyse the fit of our data through the items of intelligence,

sincerity and sociability. The 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 3 (dimension: competence vs. morality vs. sociability) mixed ANOVA resulted in a main effect for occupation, $F(1, 130) = 14.49$, $p < .001$, $\eta_p^2 = .10$, with HEED scoring slightly higher overall ($M = 69.14$) than STEM ($M = 61.37$). There was also a main effect for the dimensions of the behavioural regulation model, $F(2, 260) = 45.62$, $p < .001$, $\eta_p^2 = .26$, with competence scoring the highest ($M = 72.18$), followed by morality ($M = 67.87$) and sociability ($M = 56.07$). The aforementioned ANOVA produced a significant interaction between occupation and the dimensions of the behavioural regulation model, $F(2, 260) = 99.30$, $p < .001$, $\eta_p^2 = .43$. The pattern in this interaction is as expected, with STEM being perceived as more competent ($M = 80.63$) and less social ($M = 37.98$) than HEED ($M_{competence} = 64.22$; $M_{sociability} = 73.10$), with little difference in the morality aspect ($M_{HEED} = 70.10$; $M_{STEM} = 65.49$). The different perceptions of competence align with our results for prestige and for the agency/competence dimension, as well as the income participants attributed. Sociability was considerably rated lower for computer engineers ($M = 37.98$) than for personal care aides ($M = 73.10$), which might further our understanding not only of the perceptions of competence but of the nature of care and affective labour of HEED occupations. We can infer that sociability is not particularly valued in the social hierarchy given the differences presented, which might reflect the historical residue of the division of labour or even a cultural environment that is highly individualistic.

Yzerbyt's *dimensional compensation model* (Abele et al, 2020) considers two dimensions: warmth indicating getting along (through sociability and morality) and competence indicating getting ahead (through ability and motivation). For the comparison of the fit of this model to our data, we used the items for sincerity and competence in a 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 2 (dimension: competence vs. warmth) mixed ANOVA. There was no occupation main effect, but there was a main effect for the dimensions of the model, $F(1, 132) = 25.15$, $p < .001$, $\eta_p^2 = .16$, and a significant, albeit weak, interaction between the model dimensions and the occupation, $F(1, 132) = 5.00$, $p = .027$, $\eta_p^2 = .04$. As expected, STEM was rated more competent and less warm, while HEED was rated as less competent and warmer. It's relevant to note that the difference between the two dimensions was smaller for HEED than for STEM with competence for HEED averaging at 74.13 and sincerity at 70.10 out of a possible 100, and STEM averaging 75.64 in competence (barely more competent than HEED) and 65.25 in sincerity. It is

possible that this reveals more about the lack of perceived value in warmth and sociability than different perceptions of competence across occupations. This might reflect the compensatory nature of dual models, as stated in the dual perspective model (Abele et al., 2020), and/or reflect the existing social structure. Individualism and a culture built on the self-made man focuses on the power of the individual and not on their capacity for interpersonal relationships. Seeing as the lack of warmth seems to be a benefit within the social structure, it would be interesting to see if this is specific to the expression, experience or usage of emotions (e.g., possible value of emotional intelligence).

The analysis based on Fiske's *stereotype content model* (Abele et al, 2020) is also based on warmth and competence, but warmth indicates intent, and can be expressed through sincerity, and competence indicates ability to enact intent, through confidence or capability. Using confidence and sincerity ratings for our 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 2 (dimension: competence vs. warmth) mixed ANOVA, there was a main occupation effect, $F(1, 132) = 17.62$, $p < .001$, $\eta_p^2 = .12$, a main model dimensions effect, $F(1, 132) = 10.54$, $p = .001$, $\eta_p^2 = .07$, and a significant interaction between the model dimensions and the occupation, $F(1, 132) = 6.00$, $p = .016$, $\eta_p^2 = .04$. The HEED occupation produced similar high scores in both competence and warmth, while STEM scored lower in competence. As with Abele's model, it's possible that this reflects a non-exemplary selection on the STEM condition, or even a different interpretation of the construct, such as social confidence instead of the aimed construct, related with capability, since in other traits the data aligns with what was expected. If that wasn't the case, this might serve as further evidence of the penalty of warmth.

Koch's *agency beliefs communion model* (Abele et al, 2020) states that agency indicates high social economic status (high-status), beliefs indicate conservatism versus progressiveness (modern) and communion indicates fit with own values and goals (likable). In a 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 3 (dimension: agency vs. communion vs. beliefs) mixed ANOVA we found a main occupation effect, $F(1, 132) = 57.41$, $p < .001$, $\eta_p^2 = .30$, a main model dimensions effect, $F(2, 264) = 32.56$, $p < .001$, $\eta_p^2 = .20$ and a significant interaction between the two, $F(2, 132) = 76.67$, $p < .001$, $\eta_p^2 = .37$. The HEED occupation scored high in communion, and low on both agency and progressive beliefs, while the STEM occupation was considered considerably more progressive, but not considerably less

communal, despite the previous models showing the lower perceived sociability. In this model, HEED fits the expectations for communion and agency, but the difference in progressiveness contrasts with that of the first model analysed (which included 3 different items with low inter-item consistency, none of which included the item used in this analysis). The conception of progressiveness in this model might have been more closely related with the contact and dependency on technology of the computer engineer, while in the first model HEED professionals are considered more progressive for their flexibility and open-mindedness, a characteristic possibly more determinant in a social occupation. The high communion score of computer engineers might also reflect a possible misfit of the item used. Participants might have stated they liked computer engineers not for their interpersonal relationships, but as a possible benefit to the self. In all previous models, communion was very distinct across occupations, so it is possible that the wording used prompted an agentic goal instead of potential communal value.

Perceived Personal Values of Workers

It is possible that our manipulation influenced how participants perceived workers, not only in terms of personality traits as we have analysed but also in the perceived personal values of said workers. As such, we're going to test whether highlighting an economic impact lowers a perception of communal values and increases the perception of agentic values in personal care aides

The items for communal values (i.e., helping others, serving humanity, working with people, connection with others, attending to others, caring for others and intimacy) had quite high internal consistency (Cronbach's $\alpha = .93$), similarly to the items for agentic values (i.e., power, recognition, achievement, self-promotion, independence, status and competition; Cronbach's $\alpha = .85$). The ratings can be observed in table 3.

Table 3

Worker's Personal Values across occupation and condition

Occupation	Well-Being Impact		N	Economic Impact		N
HEED	Communal	84.19	34	Communal	81.44	34
	Agentic	44.76	34	Agentic	45.55	34
STEM	Communal	51.46	30	Communal	49.83	34
	Agentic	63.66	30	Agentic	71.45	34

A 2 (occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 2 (personal values: communal vs. agentic) mixed ANOVA produced a main occupation effect, $F(1, 128) = 7.49$, $p = .007$, $\eta_p2 = .06$, a main personal value effect, $F(1, 128) = 42.32$, $p < .001$, $\eta_p^2 = .25$ and a significant interaction between personal values and occupation, $F(1, 128) = 292.74$, $p < .001$, $\eta_p^2 = .70$. These effects were expected, as the values consist of two fundamental dimensions and the occupational effect is similar to previous findings. The HEED occupation had a very low score for the agentic values, with an average of 45.16 out of 100 compared to 67.80 for the STEM occupation. However, the difference between occupations for the communal values was higher (HEED: $M = 82.82$; STEM: $M = 50.59$). These results are congruent with the pattern we saw in perceived traits, with HEED scoring much higher in the communal aspect than STEM and moderately lower in the agentic aspect than STEM. Much like previous literature on social perception has shown, the perceptions of these groups are both related to their skills, and they assume these people are also oriented by congruent principles.

More interestingly, the aforementioned ANOVA showed a significant interaction between personal values and impact, $F(1, 128) = 4.12$, $p = .044$, $\eta_p^2 = .03$. When we highlighted the economic impact of occupations, workers were seen as more agentic than when we highlighted a well-being impact. The perception of communal values was also congruent with the stimulus. Our manipulation primed those values overall but did not affect the preconceptions participants presumably had about these workers.

Within Participants Comparisons

As participants rated both occupations, this allowed us to compare the perceptions of both occupations within each condition. We ran a 2 (manipulated occupation: HEED vs. STEM) x 2 (impact: well-being vs. economic) x 2 (evaluated occupation: care aide vs. engineer) mixed ANOVA for real salary, ideal salary, percentage increase, work hours, prestige and difficulty, as in the first section. In general, these analyses produced similar and expected results. An interesting exception could be found in the aforementioned ANOVA for percentage increase of salary, where we found a marginally significant interaction between evaluated occupation and impact, $F(1, 131) = 2.81$, $p = .096$, $\eta_p^2 = 0.02$ (see Figure 7.

Figure 7

Percentage Increase in Ideal Salary across Occupations and Impact
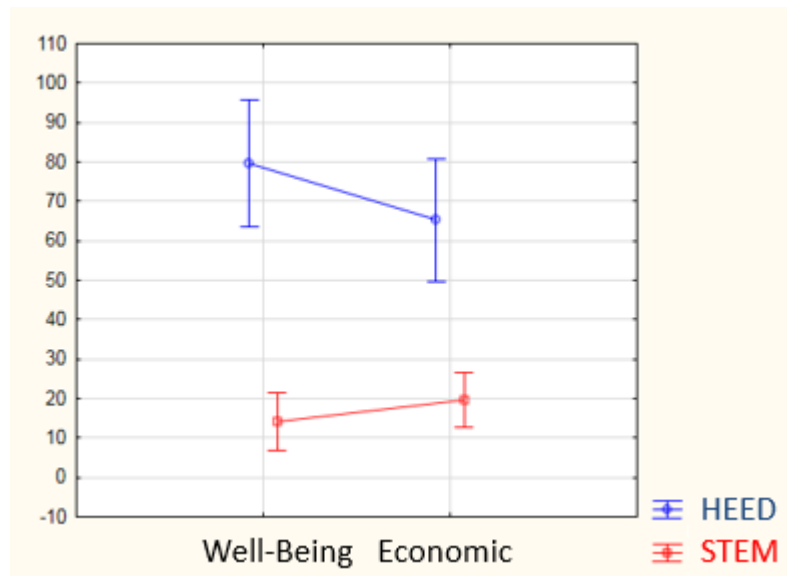

In all conditions, participants believed that personal care aides (i.e., blue markers in the figure) should have a larger raise than computer engineers (i.e., red markers). However, when participants read the article pertaining to the impact on well-being (i.e., left side of the figure), they felt that personal care aides should be more rewarded than in any other condition (on average doubling the monetary compensation). It's possible congruity of the impact is more important given occupational..

Another marginal finding of the same ANOVA was an interaction between manipulated occupation, impact and evaluated occupation, $F(1, 131) = 3.41$, $p = .067$, $\eta_p^2 = 0.03$ (see Figure 8). The presentation of an well-being impact by STEM workers prompted more equal compensation, and a considerable raise for HEED workers (more than double). We can also see here that STEM workers benefited from the economic highlight in STEM. This finding might be revealing of an mechanism of social change for HEED workers. This is the only finding where the manipulation was able to affect the compensation of personal care aides. It might so happen this is more a matter of salience and similarity of stimuli than prompting an economic value mindset.

Figure 8

*Percentage Increase in Ideal Salary across Evaluated Occupations (lower x-axis),
Impact (x-axis) and Manipulated Occupation (blue and red lines)*
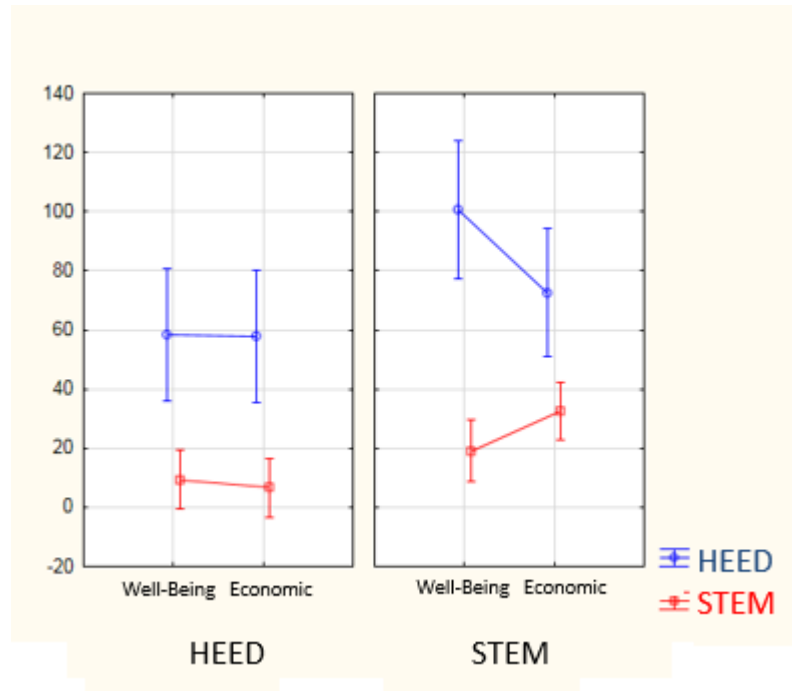
Participant's Differences

Finally, we conducted a 2 (gender: male vs. female) x 2 (occupation: HEED vs.
STEM) x 2 (impact: well-being vs. economic) x 2 (personal values: communal vs.
agentic) mixed ANOVA. The ANOVA revealed a main effect of gender, $F(1, 120) =$
11.80, $p = .001$, $\eta p2 = .09$, and a main effect of personal values, $F(1, 120) = 15.35$, $p <$
.001, $\eta p2 = .11$, that is qualified by a significant interaction between personal values
and gender, $F(1, 120) = 15.77$, $p < .001$, $\eta p2 = .12$. Men saw themselves equally in
communal and agentic values, while women equalled men in agentic values but rated
communal values as much more important. This finding is interesting given that Block
and collaborators (2019) saw the opposite tendency (agentic disparity being determinant
between genders). It isn't clear if this difference could be attributed to cultural
differences of the present sample or some other reason.

General Discussion

We hypothesized that a HEED occupation's perceived worth (e.g., in terms of ideal income) would increase when economic gain of this occupation was highlighted, compared to when psychological or wellbeing gains were highlighted. Similarly, we expected HEED workers to be perceived as more agentic and competent when economic versus psychological gains were salient. Personal care aides were not perceived significantly differently, but the tendencies indicate that if change were to happen, it would be when the impact is congruent with the occupational values (especially for the STEM occupation) and when a well-being impact was attributed to STEM. We did not predict the same effects for a STEM occupation, for it already has a clear economic gain associated. We expected that the HEED occupation would not be significantly affected by highlighting the psychological benefits for society, as those are already salient.

Both conducted studies allowed us to corroborate a connection with care and communal occupations' perception. However, our main hypothesis was not supported, as the manipulation of profit didn't make people think HEED workers were more deserving of higher monetary compensation. We expected profit and competence to affect the perception of personal care aides seeing as they would highlight agentic characteristics and their role in the country's economy. Given the reasoning of political scientists and Marxist feminist theory, the division of labour is the main cause for devaluation of paid and unpaid care, as the private sphere, the feminine sphere, was not only not dominated by men but also didn't produce value to compete with others.

Failing to corroborate our hypothesis doesn't mean there isn't truth to these theories. We can see how female liberation and progress have shaped modern views of HEED occupations, they are acknowledged as being difficult and as deserving of better compensation. More likely, HEED occupations do not benefit from this focus, and maybe they shouldn't. As care theories propose, the commodification of care could be a disservice to the labour itself, ignoring the interpersonal nature of care. In our second study, the only marginal gain with our manipulation for the personal care aide was when computer engineers were said to have an impact on the well-being of others. Possibly this made the well-being impact more salient, because it was presented with a valued

occupation. In turn, when participants afterwards rated personal care aides, they valued this kind of work more highly, as the well-being impact is a natural outcome of this job. There have been instances of highlighting communal aspects of STEM jobs in order to make them more interesting for women (Diekman et al., 2015), but it could be that highlighting communal aspects of STEM jobs benefits communal jobs as well, given dimension hitchhiking.

Another possibility would be an ecological bias (Unkelbach et al., 2021). We highlighted a point in common between two occupations, and similarities usually lead to positive evaluations. Differences and negativity might seem more frequent because they are usually more distant from one another. If people value the work of a scientist for their precision, and we tell them about the empathetic nature of a teacher, these realities seem more distant, and it might be harder to value the teacher. However, if we tell people about the scientists' attention to detail in the lab and the teacher's attention to detail in the classroom, looking after each of their students, these realities might seem closer. As negativity is often more salient, given its distance, intergroup biases can be explained through ecological biases. In this case, telling people that computer engineers help people lead better lives is more similar to the goals personal care aides have. The question here would be why it didn't happen when we highlighted an economic impact for personal care aides. It could be a methodological issue, a less believable connection, or an interaction with the sacred vision of care work. A focus on profit might harm HEED occupations, as they will lose the benefits of warmth perception, because these professionals will no longer be seen as doing it out of the goodness of their hearts. Our participants saw personal care aides as very warm and very positively (except on agency) and highlighting agentic values (monetary success) might negatively compensate in the schematic people employ (e.g., dual perspective model).

It's also possible that we didn't see the expected effect because of the agentic nature of the economic gain. Participants might have been made aware that the existence and work of personal care aides *as a whole* is important and beneficial but interpret that *a single* engineer can have a lasting impact that should be rewarded.

Our first study suggests that HEED workers tend to be more judged for their appearance than STEM workers. They are also judged on how feminine they are. It seems there could be some wisdom in the theoretical works of political science and

philosophy. In this view, care work would benefit most by highlighting communal value in general, instead of agentic value, or in other words, the consumerism and capitalist nature of modern society does not incentivize better views or better conditions for care labour.

Limitations

It's possible that our manipulation wasn't strong enough as a stimulus. In order to avoid intentionally deceiving the participants, we opted to present the manipulation text as a hypothetical article. Presumably, participants would have taken the information more seriously if the text was presented as an actual article, and the manipulation would have had stronger effects. It might also not be strong enough in its wording. Additionally, it might have been interpreted as the work of *one* STEM worker (e.g., apps developed by a single computer engineer or a small team) and the work of *many* HEED workers (e.g., all the care aides working in institutions and private homes), increasing the perceived worth of the single STEM worker.

Our perceived difficulty measure was probably interpreted in a different way than was intended. As personal care aides were seen as having a very difficult job, it's possible that they thought their life was very hard instead of focusing on the need for skill.

Implications

Despite the need for further research, our findings constitute evidence for interventions being more effective when they address and highlight communal worth in society in general, both to be able to internalize counterstereotypical information (Olsson & Martiny, 2018) but to combat disparity and lack of perceived choice.

Theoretically, this work serves as an attempt at extending the literature on care work, of which there isn't much. Most work on occupational stereotypes focuses on STEM fields.

Future Research

Taking from theories of care, future research could focus on seeing the difference between highlighting profit or highlighting affection and a third option that highlights both. As previously stated, there is considerable contention relatively to the impact of commodification of care work, and so we would benefit from this information.

As our results consistently showed a considerable difference in warmth as the deciding difference between HEED and STEM, rather than competence, it would be interesting to explore these dynamics. Are HEED workers more likable because they are emotive, comprehensive or emotionally mature? And in that sense, are STEM valued possibly for a perception of emotional intelligence or an apathetic nature? Isolating these possibilities would be useful for a better understanding of our findings, the perception of warmth and even our cultural reality.

Otherwise, employing the same design from the present work with individual versus collective highlights would avoid tainting the warmth benefits, while understanding if it is the collaboration that makes these professionals less deserving. As consumerism and individualism are closely related, it's possible that profit and production would serve as better incentives if they were attributed to a single individual. Additionally, the work in HEED fields is more often collaborative (e.g. medical staff) and STEM fields are seen as more individualistic, despite often working in research and development teams. As the focus on profit might be seen as making a noble effort (such as saving lives) no longer intrinsically motivated, a focus on individual effort might be more congruent with the idealized conception of HEED work. Higher compensation for care workers leads people to criticize said workers for "doing it for the money" (England, 2005). Compared with other idealized occupations, care workers might also suffer from this backlash if people interpret it as dehumanizing (given the interpersonal nature of the work) to the people being cared for. The comparison of the work of one skilled personal care aide might be seen much more positively in terms of monetary compensation. This study would allow us to understand the malleability of the social perception of care workers, and the focus of devaluation. If an agentic focus increases a HEED worker's monetary value, social interventions would benefit from focusing on

specific individuals as role models as STEM fields usually do, additionally to changing our perspective into a more communal one.

Follow-Up

The purpose of this study is to assess whether highlighting the economic benefits of HEED occupations with an agentic focus would increase their perceived worth. For this purpose, this study would be composed of a 2 x 2 x 2 experimental design based on a hypothetical scenario, intentionally presented as real, in which a scientific journal highlights either the economic or psychological benefits of a specific occupations, either special education teachers (HEED) or astrophysicists (STEM), as an individual effort or a collective effort, resulting in 8 different conditions, to be able to distinguish whether the assumption of collaboration in HEED labour nullifies a possible enhancement from the economic impact and whether the penalty of associating noble labour with profit persists if there is an agentic focus.

This study would allow us to understand the malleability of the social perception of care workers, and the focus of devaluation. If an agentic focus increases a HEED worker's monetary value, social interventions would benefit from focusing on specific individuals as role models as STEM fields usually do, additionally to changing our perspective into a more communal one

Participants. Data-collection would aim at 300 participants to ensure statistical power in the 8 different conditions.

Measures & Materials. *Stimulus.* The stimulus of this proposal would be similar to the ones used previously, with the changes of intentional deception (in which the article is presented as real, and in the end participants are debriefed on its fabrication) and more emphasis on the impacts we're referring to. This would mean using specific monetary values and specific psychologic benefits, to ensure that the manipulation is effective.

The manipulation for *individual* versus *collective* effort would be defined by whether the actions that produce the highlighted impact were performed by a single professional (e.g., the specialized effort of a special education teacher in employed curricula that facilitates social integration for disabled students can be estimated to produce 100k per year) or a group of professionals (e.g., the work of a team of astrophysicists results in

the discovery of sources of prime matter in accessible outer space, profiting on average 100k per year).

Using Imhoff and collaborators' (2018) communal and science-oriented scales, special education teachers and astrophysicists have the highest scores and would fit the creation of a scenario away from the health system. The distance from this context might make the interpretations more impartial given the impact of the pandemic situation on current beliefs and stereotypes. Additionally, it might be harder to believe the information in the individual condition given the collaborative nature of healthcare professionals. Using a different professional for the STEM occupation might be beneficial in the sense that the previous study produced very low sociability ratings for STEM professionals possibly associated with stereotypes specific to computer engineers. Computer engineering is also a recent occupation in the job market and so might not be as representative as others.

Occupational and Professionals Measures. In order to measure the effect of the manipulation on the perception of worth of care work, we'd employ both occupation-related measures and professionals-related measures. Seeing as most of the previously used measures reflected previous literature, it would be equally beneficial for the validity of this study to use them. As such, we would measure real and ideal salary, week hours, prestige and difficulty. This last measure should be adapted and clarified to reflect competence and skill. As to assess the manipulation's effect on known occupational perceptions we would use the fifteen previously used attributes based on the work of Imhoff and collaborators (2018) and known social perception models. We would also include the communal and agentic values scales, adapted from Block and collaborators' (2019), to assess any changes in perception among conditions, especially given possible counterstereotypical information. We would also include the same demographic assessments used previously.

Expected Results. We expect collective efforts to not benefit the HEED occupation except when STEM is highlighted as having a well-being impact. This would constitute a stronger communal orientation than the one in the previous study, and the dimension effect we previously saw should be more prevalent. We expect individual highlights to overall provide more positive evaluations, and for them to serve as moderator of the impact in HEED occupations. Given the perception of both competence and

competitiveness in this condition, the monetary success should be more salient than warmth. However, when the effort is collective, a focus on profit does not benefit the social perception of HEED occupations. If the results follow the pattern here stated, this would not only mean that the strength of the communal orientation is important for social perception of care labour, but also that initiatives for social change would benefit from highlighting individual achievements.

Conclusion

We set out to study both the nature of care in HEED occupations and whether its perceived value could be changed by manipulating the perceived profit. Social psychology has extensively shown the role of communal values and of gender stereotypes in the perception of HEED occupations, while sociology, political science and philosophy have delved into the division of labour and how it led to the devaluation of non-profitable ventures. This is, to our knowledge, a first attempt into relating these two bodies of research. We believe that social psychology has much to gain with the integration of historical and political considerations into its research and subsequent applicability.

The work here presented didn't aim at solving the difficulties experienced by care workers, but it aimed at better understanding why they are devalued, and where to place our efforts. While far from an answer, this work has highlighted the potential for change through a communal lens. This is very close to what Marxist feminists have advocated for, how capitalist society hurts the most vulnerable, from their ability to be cared for and for the ones who care for others. The values that modern society stands upon do not favour change for HEED workers, whose recipients are also devalued. This threatens the basis of society itself as collaboration is consequently more and more devalued in hustle culture and western culture. Traditionally Asian countries in which care is almost exclusively a feminine role value more their labour as part of a whole. Collaboration and a sense of duty and ethics to the good of the group benefit the societal structure itself. Valuing care work, and further understanding its devaluation is ultimately an effort to save humanity and the world we have built together.

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Appendix A

Study 1 Prototypes, constructed from most frequent words

Inclusion criteria was frequency above one; with the exception of personality traits (the most frequent category) which was frequency above one.

HEED occupations
A enfermeira usa bata branca e é mulher. É prestável, cuidadosa, atenciosa, simpática, trabalhadora e inteligente. Trabalha no hospital. Lida com doentes; com seringas, agulhas, sangue, feridas e vacinas; e com COVID e vida. O seu trabalho tem a ver com cuidados, ser cuidadora e salvar vidas; com saúde, amor e paciência; exige esforço.
A assistente social é mulher, usa fato e tem sorriso. É altruísta, cuidadora, cuidadosa, paciente e preocupada. Trabalha no lar e orfanato. Lida com crianças, idosos e pessoas; e com problemas, pobreza e o Estado. O seu trabalho tem a ver com ajudar e dar apoio; com ajuda e coragem.
A educadora de infância usa bata, é mulher, tem sorriso e riso. É paciente, simpática, carinhosa, calma, amigável, divertida e querida. Trabalha na escola, infantário e recreio. Lida com crianças, bebés e mães; com brinquedos. O seu trabalho tem a ver com brincadeiras, educar, aprender, brincar e cuidados; com paciência, carinho, amor e simpatia; é importante.
A auxiliar de geriatria usa bata e é mulher. É paciente, cuidadosa e prestável. Trabalha no hospital, lar e clínica. Lida com idosos e velhos; com fraldas; e com doença, medicina e saúde. O seu trabalho tem a ver com limpeza e apoio; com paciência, ajuda, simpatia, amor, cuidado, dedicação e empatia; é bom.
A professora de educação especial usa óculos e é mulher. É paciente, atenciosa, carinhosa, querida e preocupada. Trabalha na escola. Lida com crianças; e com necessidades. O seu trabalho tem a ver com ensinar; com paciência, ajuda, carinho, bondade, dedicação, compaixão, empatia e estudo; é bom.
A empregada doméstica é mulher, usa avental, é senhora e mãe. É trabalhadora, cuidadosa, simpática e prestável. Trabalha em casa e na cozinha. Lida com aspirador, pó, esfregona e vassoura. O seu trabalho tem a ver com limpeza e limpar; com esforço, paciência e simpatia.

STEM occupations
O astrofísico é inteligente, curioso, estudioso e interessado. Trabalha no laboratório e NASA. Lida com estrelas, planetas, telescópios, astros, céu e lua; com espaço, ciência, física, matemática, universo e cosmos. O seu trabalho tem a ver com amor, estudo, inteligência e paciência; é interessante.
O programador de computador usa óculos e é homem. É inteligente, chato, nerd e focado. Trabalha no escritório. Lida com computador, ecrã, tecla e teclado; com código,

informática, tecnologia, matemática e software. O seu trabalho tem a ver com programação; com inteligência.

O engenheiro nuclear usa bata e é homem. É inteligente, estudioso, trabalhador, cientista e cuidadoso. Trabalha no laboratório. Lida com bombas, energia, o mundo, radiações e radioatividade; com matemática, explosões, perigo, átomos, química, espaço e risco. O seu trabalho tem a ver com estudo; com inteligência e ciência; é perigoso e dá dinheiro.

O matemático usa óculos e é homem. É inteligente, calculista, estudioso e lógico. Lida com o quadro, a calculadora e o lápis; com números e o pensamento. O seu trabalho tem a ver com ser professor, fazer contas, cálculos, equações e com o raciocínio; com inteligência e lógica; é difícil e abstrato.

O biólogo usa bata e é homem. É curioso, cientista, inteligente e interessado. Trabalha no mar, no laboratório e no oceano. Lida com animais, microscópios, plantas, células e água; com ciência, natureza, vida e biologia. O seu trabalho tem a ver com estudo, investigação e experiências; é interessante e simples.

O analista de sistemas informáticos usa óculos, camisa e é homem. É inteligente, aborrecido, estudioso, atento e paciente. Lida com computadores e ecrãs; com informática, números, software, tecnologia, códigos, dados e internet; O seu trabalho tem a ver com estudo e com matemáticos; com segurança; é chato, uma seca e secante.

Filler occupations

O juiz usa peruca, preto, batina e toga. É justo, imparcial, sério e assertivo. Trabalha no tribunal. Lida com advogados; com o martelo; com leis, Direito, corrupção e casos. O seu trabalho tem a ver com poder, sentença e estudo; com justiça e conhecimento.

O ator é bonito. É carismático, criativo, talentoso e trabalhador. Trabalha no teatro, cinema, filmes, novelas, palco, séries, cenários, Hollywood e na televisão. Lida com cenas, drama, memória e personagens. O seu trabalho tem a ver com representar; com arte, empatia, persistência e talento; dá dinheiro, é interessante, dá reconhecimento e fá-lo rico.

O atleta tem músculos, calções, suor, é magro, tem pernas e ténis. É saudável, dedicado, forte, trabalhador, empenhado, focado, persistente, rápido e resiliente. Trabalha na pista. Lida com barreiras; com força, fama e o físico. O seu trabalho tem a ver com corridas, treino, correr, desporto, exercício e futebol; com esforço, coragem, empenho e rapidez.

O lavador de pratos usa luvas, avental e é jovem. É trabalhador, esforçado, paciente e rápido. Trabalha na cozinha e no restaurante. Lida com água, loiça, espuma, detergente e sabão; com sujidade. O seu trabalho tem a ver com limpeza e estar limpo; com paciência; provoca cansaço, fá-lo empregado, pobre e é chato.

O funcionário do parque de estacionamento usa um colete amarelo refletor, azul e é homem. É aborrecido, paciente, simpático, atento, calmo, prestável e trabalhador. Lida com ciganos e pedintes; com carros, moedas, cancelas, gorjetas, motas, parquímetros e

tickets. O seu trabalho tem a ver com ser arrumador; com paciência e segurança; dá dinheiro, é chato, fá-lo pobre, é entediante, seca e sem oportunidades.

A funcionária de atendimento ao cliente é feia. É paciente, simpática, calma, aborrecida, impaciente, prestável e antipática. Trabalha no call center e no balcão. Lida com clientes e pessoas; com telefones e a voz. O seu trabalho tem a ver com ser secretária; com paciência e simpatia; é cansativo, chato e provoca stress.

Appendix B – Qualtrics survey

Adapted from Qualtrics survey

Consentimento Informado

Por favor, leia as seguintes informações para compreender a natureza da participação neste estudo.

O presente estudo surge no âmbito do projeto de investigação de mestrado de Sofia Narciso, da Faculdade de Psicologia da Universidade de Lisboa, sob orientação da investigadora Sara Hagá da Faculdade de Psicologia da Universidade de Lisboa. O projeto incide sobre perceções sociais de profissões. Para este objetivo, procuramos indivíduos com mais de 18 anos que dominem a língua portuguesa. A participação neste estudo é voluntária e pode ser interrompida a qualquer momento. Não existem riscos expectáveis associados à participação no estudo. O preenchimento do questionário tem a duração aproximada de 10 minutos, numa única sessão, e é completamente anónimo e confidencial. Os dados destinam-se apenas a tratamento estatístico e nenhuma resposta será analisada ou reportada individualmente.   Se aceitar participar, por favor clique no botão *"sim" e depois no botão com a seta no canto inferior direito da página, e avance para a página seguinte. O preenchimento do questionário presume que é maior de 18 anos, que compreendeu e que aceita as condições do presente estudo, consentindo participar.   Caso deseje ter conhecimento dos resultados deste estudo ou tiver alguma dúvida, pode contactar qualquer uma das investigadoras responsáveis pelo estudo através dos seguintes endereços: Sofia Narciso: sofianarciso@campus.ul.pt Doutora Sara Hagá: sara.haga@psicologia.ulisboa.pt   Aceita participar?*

◯ Não

◯ Sim

75

Neste estudo vamos pedir-lhe que leia um texto muito curto e que depois nos dê a sua opinião sobre alguns aspetos relacionados com esse texto.
 Por isso, é importante que **leia o texto com atenção**.

 Para prosseguir, carregue no botão no canto inferior direito.

Antes de mais, alguma informação de contexto:

 A *European Journal of Public Health* (Revista Europeia de Saúde Pública) é uma revista científica multidisciplinar do campo da saúde pública, que publica contribuições oriundas da medicina social, epidemiologia, investigação em serviços de saúde, gestão, ética e direito, economia da saúde, ciências sociais e saúde ambiental. É publicada com uma periodicidade bimensal e oferece um fórum para discussão e debate de questões atuais de saúde pública internacional com foco na região europeia.

Imagine agora a seguinte situação:
(por favor, leia o texto com atenção)

Num dos volumes mais recentes da *European Journal of Public Heath*, surge um artigo sobre o impacto económico dos cuidados continuados à terceira idade nos vários serviços nacionais de saúde europeus (SNS no caso de Portugal).

Os dados analisados neste artigo revelam que idosos que recebem cuidados continuados (na sua própria casa ou em lares) têm uma propensão muito menor para complicações de saúde quando comparados com idosos que não têm acesso a estes cuidados.

Desta forma, os autores concluem que o setor dos cuidados continuados à terceira idade tem um elevado impacto económico nos dinheiros públicos, dado estar diretamente ligado à poupança de vários milhões de euros nos serviços de saúde.

Imagine agora a seguinte situação:
(por favor, leia o texto com atenção)

Num dos volumes mais recentes da *European Journal of Public Heath*, surge um artigo sobre o impacto psicológico dos cuidados continuados à terceira idade nos utentes dos vários serviços nacionais de saúde europeus (SNS no caso de Portugal).

Os dados analisados neste artigo revelam que idosos que recebem cuidados continuados (na sua própria casa ou em lares) reportam níveis muito superiores de bem-estar e satisfação com a vida quando comparados com idosos que não têm acesso a estes cuidados.

Desta forma, os autores concluem que o setor dos cuidados continuados à terceira idade tem um elevado impacto psicológico no bem-estar público, dado estar diretamente ligado à construção de sociedades com maior qualidade de vida.

Imagine agora a seguinte situação:
(por favor, leia o texto com atenção)

Num dos volumes mais recentes da *European Journal of Public Heath*, surge um artigo sobre o impacto económico da engenharia informática nos vários serviços nacionais de saúde europeus (SNS no caso de Portugal).

Os dados analisados neste artigo revelam que a utilização de aplicações informáticas mais intuitivas permitem uma automatização e otimização dos serviços logísticos hospitalares e de centros de saúde, resultando numa maior eficiência destes serviços.

Desta forma, os autores concluem que o setor da engenharia informática tem um elevado impacto económico nos dinheiros públicos, dado estar diretamente ligado à poupança de vários milhões de euros nos serviços de saúde.

Imagine agora a seguinte situação:
(por favor, leia o texto com atenção)

Num dos volumes mais recentes da *European Journal of Public Heath*, surge um artigo sobre o impacto psicológico da engenharia informática nos utentes dos vários serviços nacionais de saúde europeus (SNS no caso de Portugal).

Os dados analisados neste artigo revelam que a utlização de aplicações informáticas mais intuitivas permitem uma automatização e otimização da comunicação com os utentes hospitalares e de centros de saúde, resultando num maior bem-estar e satisfação de todos os envolvidos.

Desta forma, os autores concluem que o setor da engenharia informática tem um elevado impacto psicológico no bem-estar público, dado estar diretamente ligado à construção de sociedades com maior qualidade de vida.

O texto que acabou de ler referia-se a cuidados continuados à terceira idade.
Por favor, pense em <u>prestadores/as de cuidados continuados à terceira idade</u>:

Quantos euros (valor líquido aproximado) estima que ganham realmente, em média, por mês?
Tente dar-nos uma estimativa o mais realista possível, independentemente de quanto acha que estes/as profissionais idealmente deveriam receber

(euros por mês)

| 0 | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 |

Pensando ainda em prestadores/as de cuidados continuados à terceira idade:

Quantas horas estima que trabalham, em média, por semana?

(horas por semana)

0   10   20   30   40   50   60   70   80   90

Pensando ainda em prestadores/as de cuidados continuados à terceira idade:

Na sua opinião, quantos euros (valor líquido aproximado) deveriam ganhar idealmente, em média, por mês?
Por favor, dê-nos a sua opinião baseando-se no valor que acredita que esta profissão tem para o funcionamento da sociedade, independentemente de quanto acha que estes/as profissionais realmente recebem

(euros por mês)

0   500   1000 1500 2000 2500 3000 3500

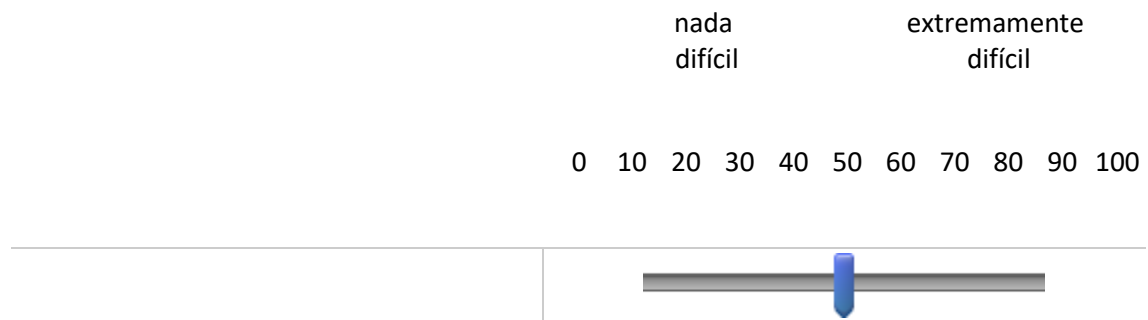**Quão prestigiada considera a profissão de prestação de cuidados continuados à terceira idade?**

nada   extremamente
prestigiada   prestigiada

0   10   20   30   40   50   60   70   80   90   100

Quão difícil considera a profissão de prestação de cuidados continuados à terceira idade?

	nada difícil	extremamente difícil
	0 10 20 30 40 50 60 70 80 90 100	

No texto que leu, afirmava-se que o setor dos cuidados continuados à terceira idade tem um elevado impacto económico nos dinheiros públicos?

○ Sim

○ Não

No texto que leu, afirmava-se que o setor dos cuidados continuados à terceira idade tem um elevado impacto psicológico no bem-estar público?
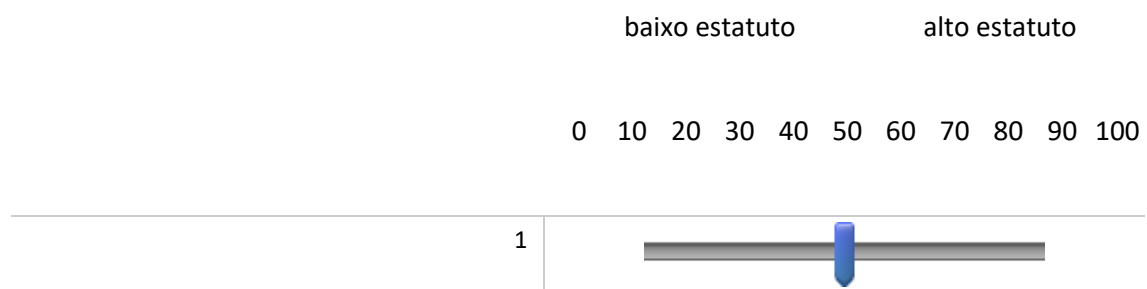
○ Sim

○ Não

Por favor, continue a pensar em prestadores/as de cuidados continuados à terceira idade.

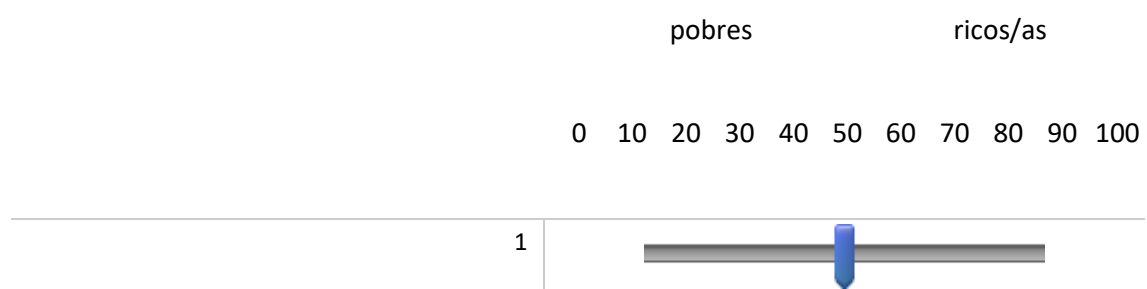 Em baixo verá vários pares de atributos.
 Para cada um desses pares, dê a sua resposta arrastando o indicador para junto do rótulo que melhor descreve a sua opinião. Quanto melhor um dos rótulos descrever a sua opinião, mais próximo do extremo correspondente deverá colocar o indicador.

 Na sua opinião, os/as prestadores/as de cuidados continuados à terceira idade geralmente são:
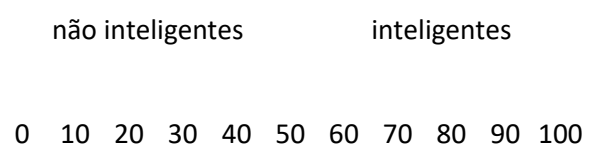
high_status

	baixo estatuto	alto estatuto
	0 10 20 30 40 50 60 70 80 90 100	
1		

wealthy

	pobres	ricos/as
	0 10 20 30 40 50 60 70 80 90 100	
1		

smart

	não inteligentes	inteligentes
	0 10 20 30 40 50 60 70 80 90 100	

1	

confident

inseguros/as confiantes

0 10 20 30 40 50 60 70 80 90 100

1	

competent

incompetentes competentes

0 10 20 30 40 50 60 70 80 90 100

1	

well_intentioned

mal intencionados/as bem intencionados/as

0 10 20 30 40 50 60 70 80 90 100

1	

sincere

desonestos/as sinceros/as

0 10 20 30 40 50 60 70 80 90 100

1	

likable

<div align="center">

Desagradáveis   Agradáveis

0 10 20 30 40 50 60 70 80 90 100

</div>

1	

creative

<div align="center">

reativos/as   criativos/as

0 10 20 30 40 50 60 70 80 90 100

</div>

1	

intuitive
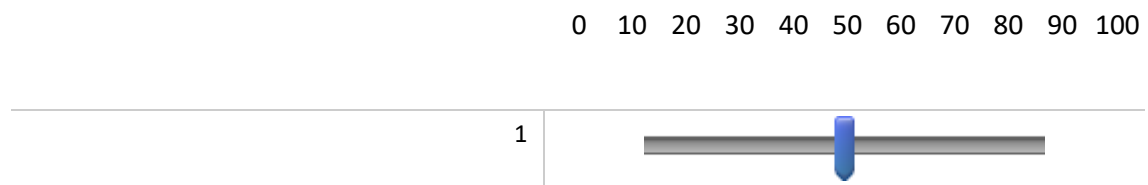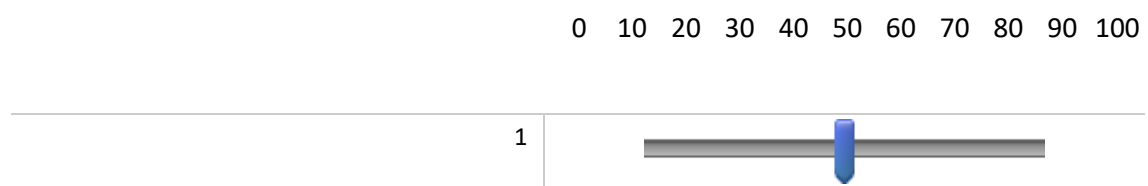
<div align="center">

racionais   intuitivos/as

0 10 20 30 40 50 60 70 80 90 100

</div>

1	

playful

<div align="center">

sérios/as   divertidos/as

</div>

0 10 20 30 40 50 60 70 80 90 100

1	

modern

tradicionais   modernos/as

0 10 20 30 40 50 60 70 80 90 100

1	

outgoing

tímidos/as   efusivos/as

0 10 20 30 40 50 60 70 80 90 100

1	

interested_people

interessados/as em   interessados/as em
objetos   pessoas

0 10 20 30 40 50 60 70 80 90 100

1	

sociable

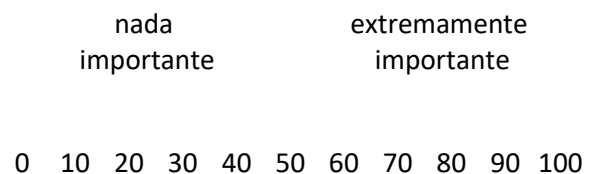reservados/as   sociáveis

0 10 20 30 40 50 60 70 80 90 100

| 1 | |

Pensando ainda em <u>prestadores/as de cuidados continuados à terceira idade</u>:

 Em baixo verá vários valores que podem ser importantes para as pessoas no geral.
 Para cada um desses valores, dê a sua resposta arrastando o indicador para junto do rótulo ("nada importante" ou "extremamente importante") que melhor descreve a sua opinião. Quanto melhor um dos rótulos descrever a sua opinião, mais próximo do extremo correspondente deverá colocar o indicador.

 Na sua opinião, quão importante é cada um destes valores para os/as prestadores/as de cuidados continuados à terceira idade?

nada   extremamente
importante   importante

0 10 20 30 40 50 60 70 80 90 100

Ajudar os outros	
Serviço à humanidade	
Trabalhar com pessoas	
Ligação com os outros	
Prestar assistência aos outros	
Cuidar dos outros	
Intimidade	
Poder	
Reconhecimento	
Sucesso	
Auto-promoção	
Independência	
Estatuto	
Competição	

Vamos agora pedir-lhe que pense numa profissão completamente diferente.
 Por favor, pense em engenheiros/as informáticos/as:

 Quantos euros (valor líquido aproximado) estima que ganham realmente, em média, por mês?
 Tente dar-nos uma estimativa o mais realista possível, independentemente de quanto acha que estes/as profissionais idealmente deveriam receber

(euros por mês)

Pensando ainda em <u>engenheiros/as informáticos/as</u>:

Quantas horas estima que trabalham, em média, por semana?

(horas por semana)

0   10 20 30 40 50 60 70 80 90

Pensando ainda em <u>engenheiros/as informáticos/as</u>:

Na sua opinião, quantos euros (valor líquido aproximado) deveriam ganhar idealmente, em média, por mês?
Por favor, dê-nos a sua opinião baseando-se no valor que acredita que esta profissão tem para o funcionamento da sociedade, independentemente de quanto acha que estes/as profissionais realmente recebem

(euros por mês)

0   500 1000 1500 2000 2500 3000 3500

Quão prestigiada considera a profissão de engenharia informática?

nada   extremamente
prestigiada   prestigiada

0 10 20 30 40 50 60 70 80 90 100

Quão difícil considera a profissão de engenharia informática?

	nada difícil	extremamente difícil
	0 10 20 30 40 50 60 70 80 90 100	

Por favor, continue a pensar em engenheiros/as informáticos/as.

 Em baixo verá vários pares de atributos.
 Para cada um desses pares, dê a sua resposta arrastando o indicador para junto do rótulo que melhor descreve a sua opinião. Quanto melhor um dos rótulos descrever a sua opinião, mais próximo do extremo correspondente deverá colocar o indicador.

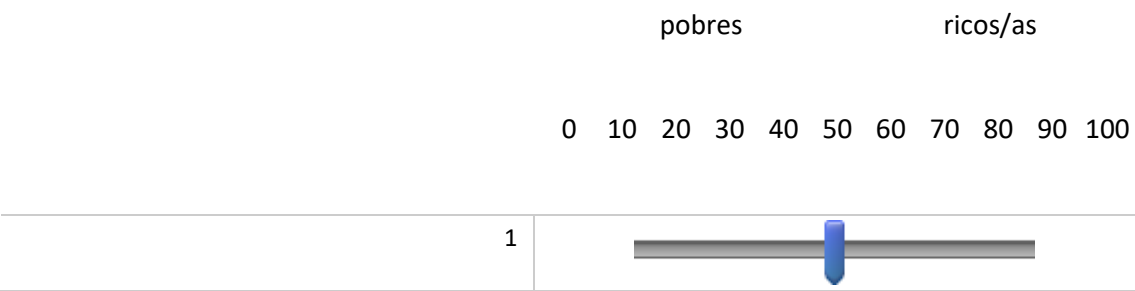 **Na sua opinião, os/as engenheiros/as informáticos/as geralmente são:**

high_status
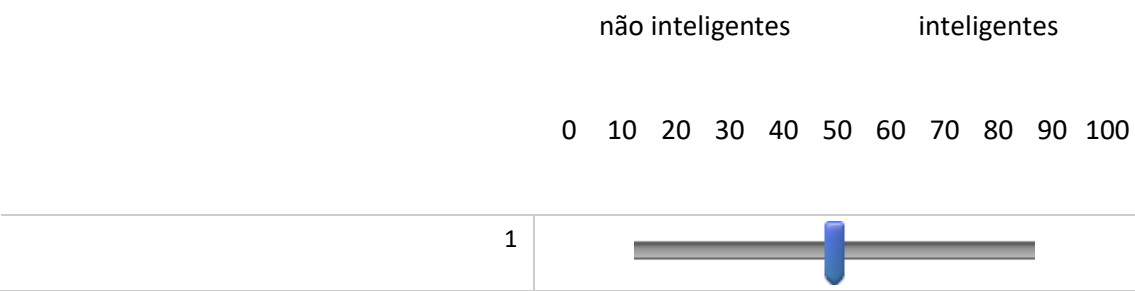
	baixo estatuto	alto estatuto
	0 10 20 30 40 50 60 70 80 90 100	
1		

wealthy

pobres   ricos/as

0   10 20 30 40 50 60 70 80 90 100

1	

smart

não inteligentes   inteligentes

0   10 20 30 40 50 60 70 80 90 100

1	

confident

inseguros/as   confiantes

0   10 20 30 40 50 60 70 80 90 100

1	

competent

incompetentes   competentes

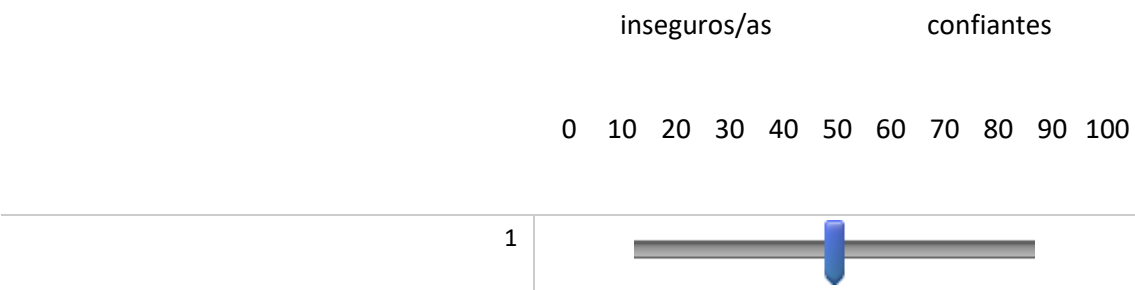0   10 20 30 40 50 60 70 80 90 100

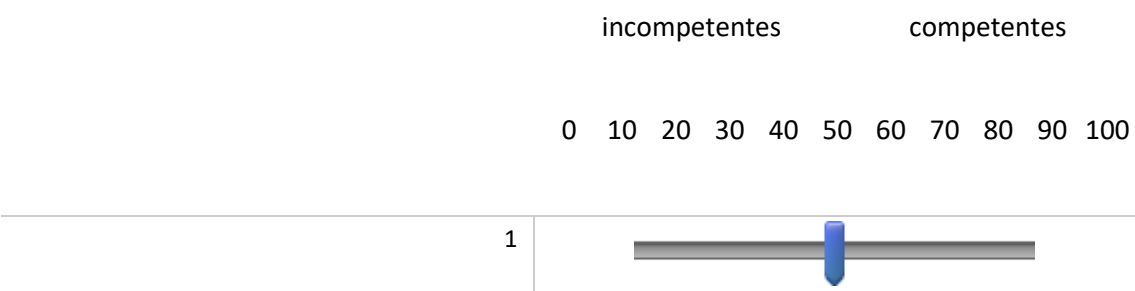| 1	

well_intentioned

mal intencionados/as   bem intencionados/as

0   10   20   30   40   50   60   70   80   90   100

1

sincere

desonestos/as   sinceros/as

0   10   20   30   40   50   60   70   80   90   100

1

likable

Desagradáveis   Agradáveis
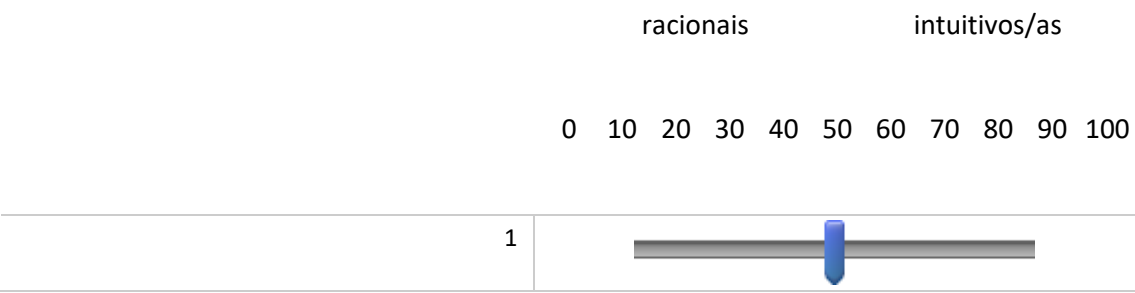
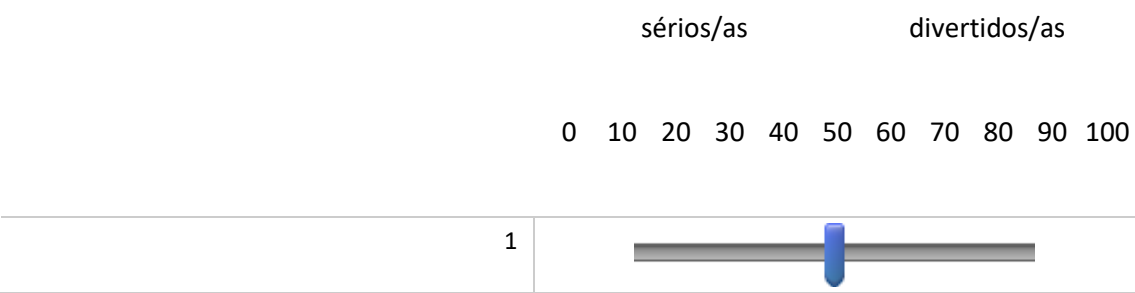0   10   20   30   40   50   60   70   80   90   100

1

creative

reativos/as   criativos/as
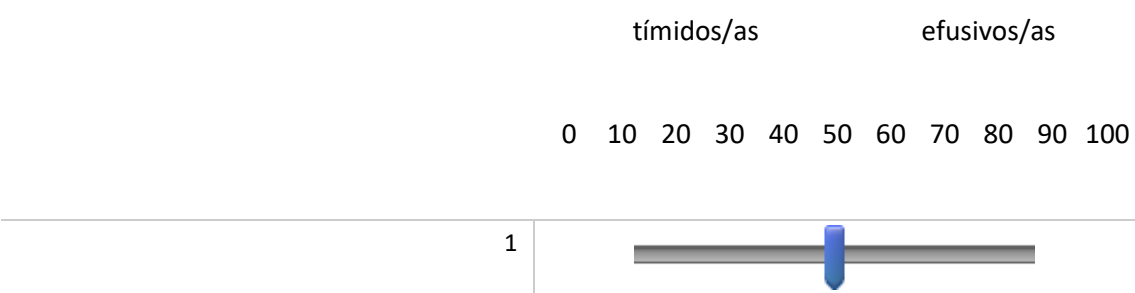
0   10   20   30   40   50   60   70   80   90   100

1

intuitive

racionais   intuitivos/as

0   10   20   30   40   50   60   70   80   90   100

1

playful

sérios/as   divertidos/as

0   10   20   30   40   50   60   70   80   90   100

1

modern

tradicionais   modernos/as

0   10   20   30   40   50   60   70   80   90   100

1

outgoing

tímidos/as   efusivos/as

0   10   20   30   40   50   60   70   80   90   100

1

interested_people

	interessados/as em objetos	interessados/as em pessoas

0 10 20 30 40 50 60 70 80 90 100

1	

sociable

	reservados/as	sociáveis

0 10 20 30 40 50 60 70 80 90 100

1	

Pensando ainda em engenheiros/as informáticos/as:

 Em baixo verá vários valores que podem ser importantes para as pessoas no geral.
 Para cada um desses valores, dê a sua resposta arrastando o indicador para junto do rótulo ("nada importante" ou "extremamente importante") que melhor descreve a sua opinião. Quanto melhor um dos rótulos descrever a sua opinião, mais próximo do extremo correspondente deverá colocar o indicador.

 Na sua opinião, quão importante é cada um destes valores para os/as engenheiros/as informáticos/as?

	nada importante	extremamente importante

	0 10 20 30 40 50 60 70 80 90 100
Ajudar os outros	
Serviço à humanidade	
Trabalhar com pessoas	
Ligação com os outros	
Prestar assistência aos outros	
Cuidar dos outros	
Intimidade	
Poder	
Reconhecimento	
Sucesso	
Auto-promoção	
Independência	
Estatuto	
Competição	

O texto que acabou de ler referia-se a engenharia informática.
 Por favor, pense em engenheiros/as informáticos/as:

Quantos euros (valor líquido aproximado) estima que ganham realmente, em média, por mês?
Tente dar-nos uma estimativa o mais realista possível, independentemente de quanto acha

que estes/as profissionais idealmente deveriam receber

(euros por mês)

0   500   1000 1500 2000 2500 3000 3500

Pensando ainda em engenheiros/as informáticos/as:

Quantas horas estima que trabalham, em média, por semana?

(horas por semana)

0   10   20   30   40   50   60   70   80   90

Pensando ainda em engenheiros/as informáticos/as:

Na sua opinião, quantos euros (valor líquido aproximado) deveriam ganhar idealmente, em média, por mês?
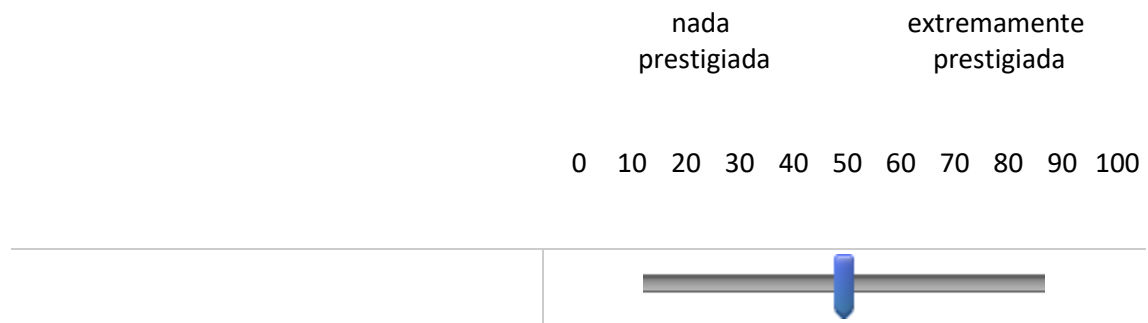*Por favor, dê-nos a sua opinião baseando-se no valor que acredita que esta profissão tem para o funcionamento da sociedade, independentemente de quanto acha que estes/as profissionais realmente recebem*
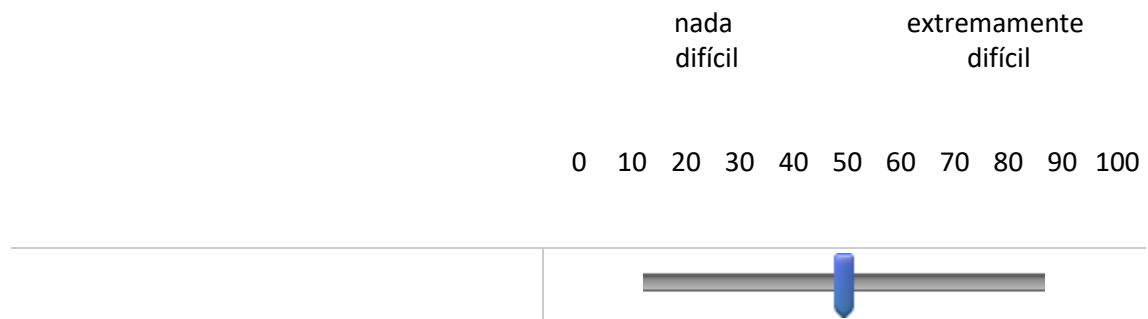
(euros por mês)

0   500   1000 1500 2000 2500 3000 3500

Quão prestigiada considera a profissão de engenharia informática?

	nada prestigiada	extremamente prestigiada
	0 10 20 30 40 50 60 70 80 90 100	

Quão difícil considera a profissão de engenharia informática?

	nada difícil	extremamente difícil
	0 10 20 30 40 50 60 70 80 90 100	

No texto que leu, afirmava-se que o setor da engenharia informática tem um elevado impacto económico nos dinheiros públicos?

◯ Sim

◯ Não

No texto que leu, afirmava-se que o setor da engenharia informática tem um elevado impacto psicológico no bem-estar público?

○ Sim

○ Não

Vamos agora pedir-lhe que pense numa profissão completamente diferente.
 Por favor, pense em prestadores/as de cuidados continuados à terceira idade:

 Quantos euros (valor líquido aproximado) estima que ganham realmente, em média, por mês?
 Tente dar-nos uma estimativa o mais realista possível, independentemente de quanto acha que estes/as profissionais idealmente deveriam receber

(euros por mês)

	0	500	1000	1500	2000	2500	3000	3500

Pensando ainda em prestadores/as de cuidados continuados à terceira idade:

Quantas horas estima que trabalham, em média, por semana?

(horas por semana)

	0	10	20	30	40	50	60	70	80	90

Pensando ainda em prestadores/as de cuidados continuados à terceira idade:

Na sua opinião, quantos euros (valor líquido aproximado) deveriam ganhar idealmente, em média, por mês?
Por favor, dê-nos a sua opinião baseando-se no valor que acredita que esta profissão tem para o funcionamento da sociedade, independentemente de quanto acha que estes/as profissionais realmente recebem

(euros por mês)

0   500 1000 1500 2000 2500 3000 3500

Quão prestigiada considera a profissão de prestação de cuidados continuados à terceira idade?

nada   extremamente
prestigiada   prestigiada

0 10 20 30 40 50 60 70 80 90 100

Quão difícil considera a profissão de prestação de cuidados continuados à terceira idade?

nada   extremamente
difícil   difícil

0 10 20 30 40 50 60 70 80 90 100

⤨

A sua participação está quase a terminar.
 Precisamos apenas de mais algumas informações.

 No início deste estudo, pedimos-lhe que imaginasse que surgia um artigo na *European Journal of Public Health*. O que dizia esse suposto artigo?

○ ...o setor dos cuidados continuados à terceira idade tem um elevado impacto económico...

○ ...o setor dos cuidados continuados à terceira idade tem um elevado impacto psicológico...

○ ...o setor da engenharia informática tem um elevado impacto económico...

○ ...o setor da engenharia informática tem um elevado impacto psicológico...

⤨

Pensando agora em si mesmo/a:

Quão importante é cada um destes valores para si pessoalmente?

	nada importante								extremamente importante	
	0	10	20	30	40	50	60	70	80	90	100

Ajudar os outros	
Serviço à humanidade	
Trabalhar com pessoas	
Ligação com os outros	
Prestar assistência aos outros	
Cuidar dos outros	
Intimidade	
Poder	
Reconhecimento	
Sucesso	
Auto-promoção	
Independência	
Estatuto	
Competição	

Para terminar, precisamos apenas de alguns dados demográficos:

gender Género

▼ Feminino ... Outro

Idade

_____

Nacionalidade

_____

Língua Nativa

_____

Ocupação (se for estudante indique também a sua área de estudos)

_____

Agradecemos a sua colaboração neste estudo.

A investigação em várias ciências sociais, nomeadamente em Psicologia Social, tem vindo a demonstrar a desvalorização de profissões relacionadas com a prestação de cuidados relativamente a profissões mais científicas ou tecnológicas. Com este estudo procuramos investigar se salientar as mais-valias em termos económicos ou de bem-estar psicológico de várias profissões tem impacto na forma como diferentes profissionais são percecionados.

Se estiver interessad@ em receber informação relativa aos resultados deste estudo, relembramos que pode contactar uma das investigadoras responsáveis pelo estudo através dos seguintes endereços:

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