

## Nudging Street-Level Bureaucrats to Increase Policy Effectiveness?

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### 1. Introduction

Street-level bureaucrats (SLBs – e.g. welfare workers, police officers, educators) interact directly and on a regular basis with citizens, and exercise discretionary power when delivering public services (Lipsky, 1980; Maynard-Moody and Musheno, 2003). Such discretion at the frontline is requested to motivate civil servants to enforce policy rules (Thomann et al, 2018; Tummers, 2011; Tummers and Bekkers, 2014) and tailor their implementation decisions to local political contexts and individual circumstances (Lipsky, 1980; May and Winter, 2007). However, it may also lead to less desirable effects, such as gaps between the legislator’s intention and the way policy is delivered (Hupe and Buffat, 2014), or unequal treatment of citizens’ demands (Meyers et al, 1998; Pedersen et al, 2018; Thomann and Rapp, 2018). For instance, when implementing policy tools (e.g. granting a disability benefit), frontline welfare workers may use their leeway to prioritize some citizens over others, and justify their discriminatory behaviour by arguing that some citizens (e.g. vulnerable, meritorious or worthy) deserve more help than others (Jilke and Tummers, 2018; Van Oorschot, 2000). Such “deservingness cues” and behavioural decision biases are probably legitimized if they resonate with the personal preferences of SLBs (Dubois, 2010; May and Winter, 2007; Raaphorst and Van de Walle, 2018), their moral dispositions (Zacka, 2017), their professional norms (Evans and Harris, 2004), or if they reproduce dominant social stereotypes about different policy beneficiaries (e.g. Harrits and Moller, 2014; Kallio and Kouvo, 2015; Einstein and Glick, 2017; Thomann and Rapp, 2018).

These factors also impact on the way SLBs process the available information when assessing the policy beneficiaries. This is most likely to take place when they have to tackle highly complex and abundant information in a limited time frame (Brodkin 2006, 2011; Keiser, 2009). SLBs then tend to develop their own filters to process information, based on personal values and experiences, ideology, adherence to agency goals, background, etc. (Wood and Vetlitz, 2007), thus mechanically focusing on specific pieces of information and neglecting the others. In some cases, such partial information processing may impede the consideration of relevant information and result in less effective decisions (Wood and Vetlitz, 2007). This eventually leads to a disjuncture between the targeted policy goals and the actual implementation practices (Hasenfeld, 2010).

In other words, this study focuses on the effectiveness of SLBs decisions which should contribute to the achievement of the legally stated policy goals. It investigates whether better ways to process information can be incentivized and, thus, lead to more effective implementation decisions. It relies on a field experiment testing the impact of a “thought provoking” nudge (John, 2018: 129) that focuses SLBs on beneficiaries' life-course and vulnerability with the aim of improving the effectiveness of SLBs' decisions. Empirically, it studies the allocation of disability benefits in Switzerland. It addresses the following research question: *“Does a life-course mindset lead SLBs to look at recipients as human beings and, thus, to make more effective implementation decisions?”*.

This research design is innovative, and thus risky, for three reasons. First, it measures the behaviour of SLBs as policy implementers, rather than citizens' behaviour, as done in most studies applying a behavioural public policy (BPP) approach (Grimmelikhuijsen et al, 2017: 53; Bellé et al, 2018: 829; Battaglio et al, 2019: 305; Kasdan, 2018:13). Investigating the bounded rationality and cognitive biases of SLBs is important since one cannot directly attribute findings about citizens' thinking and behaviour to the bureaucrats' context.

Second, it uses a treatment that induces a life-course mindset in SLBs. This cognitive “debiasing strategy” (Larrick, 2004) goes beyond a mere nudge (Thaler and Sunstein, 2008: 6), since it does not manipulate the architecture of choice to mitigate systematic decision-making errors based on system 1 (i.e. automatic) thinking (Kahneman, 2011: 105). Such treatment invites SLBs to adjust their intuitive judgement by mobilizing system 2 (i.e. reflexive) thinking, like a *Think intervention* (John et al, 2011), as SLBs are reasonable and capable of reflection to overcome their bounded rationality problems (John et al, 2011: 13-14). A Think intervention does not reduce the discretionary margin of SLBs when selecting and processing information to substantiate their judgements. Quite the contrary: SLBs should engage in more reflection and

extensively use their room for manoeuvre. We have thus designed an experiment that takes into account the irremediable discretionary power of SLBs.

The third innovation is to conduct a *field experiment* with SLBs – instead of administering another survey experiment on SLBs’ cognitive biases. Pioneers in BPP research strongly encourage scholars to undertake field experiments to increase the external validity of empirical findings (Bellé et al, 2018: 836-837; Battaglio et al, 2019: 315; Gilke et al, 2016). Thus, our research question is relevant for practitioners: it aims at improving the quality of policy outputs, which is a guiding principle of the behavioural approach to public administration (Grimmelikhuisen et al, 2017: 53).

This article presents the field experiment and its results. The next section introduces our theoretical framework and hypotheses. We expect that SLBs having a life-course mindset are better able to process information and to evaluate the working capacity of the beneficiary, and thus make more effective decisions than SLBs without this mindset. The empirical findings from the field experiment do not support this expectation. However, we found some empirical evidence that the life-course mindset increases the humanization of the beneficiary by SLBs and, for one case out of three, this in turn leads to effective policy decisions. The concluding section puts these results into a broader perspective for both the SLBs and BPP literature.

## **2. Theoretical framework**

Nudges are “aspects of the choice architecture” that have the potential to orient people’s choices and behaviour (Thaler and Sunstein, 2008: 6). They are features of the environment in which participants are embedded that can be as subtle as the position of the signature on the tax returns form, either at the beginning or at the end (Shu et al, 2012). Nudges are effective because they create an evocative mindset that has a relation with the target behaviour. For example, signing a form at the beginning makes ethics and personal commitment salient and decreases dishonest self-reports in comparison to signing at the end (Shu et al, 2012). In the domain of public administration, nudges have the potential to reduce a wealth of biases in decision-making, namely accessibility, loss aversion, and overconfidence/optimism, when people are thinking in a fast, automatic, intuitive manner (Battaglio et al, 2019). Thus, we decided to use a nudge that is able to create a life-course mindset, with an emphasis on vulnerability, namely a diagram depicting how events in different life domains and during the life-course are interconnected (see Appendix 1).

Importantly, such procedure involves a “system 2” nudge, rather than a “system 1” nudge (Sunstein, 2016). In psychology, the distinction refers to the two different modes of

thought around which human cognition is organized: system 1 refers to intuitive, fast, automatic thinking, whereas system 2 refers to reasoned, slow, controlled thinking (e.g., Kahneman, 2003). In this respect, system 2 nudges engage the target in controlled thinking (Sunstein, 2016), an option that recent research has shown to be preferable when people are asked to make important decisions (Marchiori et al, 2017). System 2 nudges are therefore at an intermediate position in the space that John and colleagues (2011) identified between *nudge* (in their view, system 1 nudging) and *think*, the fully controlled deliberative process during which people reflect upon the reasons for and the meaning of their choices. In other words, a system 2 nudge is a “thought provoking” nudge (John 2018: 129) that creates some level of cognitive conflict (Butera et al, 2019), requires individuals to decentre from their usual or preferred way of thinking (Butera and Buchs, 2005), and leads individuals to attend to the relevant knowledge involved in the task at hand (Butera et al, 2018). A nudge that creates a life-course mindset is therefore a nudge, in that it attracts the targets’ attention to a specific aspect of their environment, but it is a system 2 nudge, to the extent that a mindset requires some level of reasoning (Dweck, 2017). Importantly, mindset interventions have been shown to promote accuracy in information processing (Yeager et al, 2016), for instance by increasing preference for challenging information processing, leading to better learning.

The general hypothesis is thus that SLBs working with a life-course mindset are more able to process the information about the working capacity of the beneficiary, and eventually make more effective policy decisions, than SLBs without this mindset (H1).

What are the processes that lead from thinking about the life-course of welfare beneficiaries to better assessing their working capacity? We reasoned that a life-course mindset could increase SLBs’ empathy toward (H2a) and humanization of (H2b) the welfare beneficiaries, as compared with a business-as-usual mindset, and that empathy (H3a) and humanization (H3b) could mediate the effects of the life-course nudge on policy decisions.

Empathy refers to the ability to take the perspective of another person and to experience emotional reactions congruent with the emotional state of another person (Stephan and Finlay, 1999). Previous research has examined the effects of SLBs’ dispositional empathy, i.e. the stable tendency to experience points of view and emotions of others (Jensen and Pedersen, 2017; Borry and Henderson, 2020). In contrast, our experiment focuses on situational empathy, i.e. the empathic responses to a specific situation. Indeed, empathy toward another person can increase or decrease as a function of the focus on the other’s suffering and difficulties. For example, being encouraged to consider the point of view of a suffering person (Batson, 1991) or witnessing a suffering person (Hoffman, 1991) have been found to increase empathy toward

the person in need. In line with these findings, a system 2 nudge which encourages focusing on beneficiaries' life-course should increase empathic reactions toward them, compared to business-as-usual instructions (H2a).

As regards the effects of empathy, research has consistently shown that taking the perspective of a person in need and experiencing feelings of emotional closeness and sympathy toward that person are associated with helping behaviour (Batson, 1991). Extending this research to relations between SLBs and potential recipients of social benefits, empathy should be associated with concern toward and willingness to make appropriate choices for the sake of recipients. Thus, increased empathy toward recipients should be associated with more effective choices, and mediate the effect of our nudge on policy decisions (H3a).

According to infrahumanization theory (Leyens et al, 2007), people tend to ascribe a different human status to the group they belong to (ingroup) than to other groups (outgroups). Specifically, people tend to consider their ingroup as more human than the outgroups: they attribute more uniquely human characteristics (Capozza et al, 2013) and more secondary, uniquely human emotions (Leyens et al, 2007) to their ingroup than to outgroups. Research has also considered humanity attributions at the individual level (see Bastian and Haslam, 2010, for self-dehumanization; Vaes and Muratore, 2013, for the attribution of humanity to a patient by health-care workers). Humanity perceptions are malleable and can be affected by personal experiences, mindsets, or nudges. For example, previous personal contacts (Capozza et al, 2013) or simple and fast experimental manipulations based on making several social categories simultaneously salient (Prati et al, 2016), or even merely inviting respondents to approach the target in a computerized task (Capozza et al, 2017) have been found to increase humanization of others. We thus reasoned that a system 2 nudge that attracts SLBs' attention to the beneficiaries' life-course is likely to result in a more complex, broad, and humanized representation of them. Respondents in the life-course mindset experimental condition should then humanize beneficiaries, i.e. look at them as human beings, more than those in the control condition (H2b).

Importantly, ascribing a higher human status to people or to outgroups has been shown to be associated with increased helping behaviour (Cuddy et al, 2007), and greater concern for the safety of the person or the outgroup (Bandura, 1999). Hence, humanization of possible recipients of social benefits by SLBs should be associated with an increased concern for their well-being and the willingness to make the best choice to support them and improve their life. Thus, increased humanization should be associated with more effective choices, and mediate the effect of our nudge on policy decisions (H3b). In sum, empathy toward beneficiaries and

humanization of beneficiaries should mediate the effects of a life-course nudge on accuracy, compared to business-as-usual instructions. Figure 1 summarizes this mediation model.

[Figure 1 here]

*Figure 1 Hypothesized mediation model*

### **3. Case selection, Procedure and Data**

We designed and conducted a field experiment within two disability insurance offices (i.e. local public administrations in charge of disability insurance) in two Swiss cantons aimed at testing the impact of a system 2 life-course nudge designed with the aim of improving the policy effectiveness of SLBs' decisions.

Following the policy goals stated in the law, the targeted objective is to activate beneficiaries to find their way back to the labour market and regain financial autonomy whenever this is possible; for beneficiaries where such activation is unachievable, granting benefits is the solution. An effective decision is thus one that activates beneficiaries with a working potential, while granting benefits to those unable to work. If this policy intervention logic is undisputed today, it has to be noted however that the Swiss disability insurance (DI) has undergone many reforms over the last 15 years, with the aim to improve recipients' return to the labour market (Thomann and Rapp, 2018). The role of SLBs has gradually been reshaped toward early intervention, promoting vocational rehabilitation programs, and reducing access to DI pensions. In this context, strongly emphasizing the principle of activation, SLBs are called to make early decisions whether DI beneficiaries should be activated or not, based on administrative and medical documents, which allow assessing their working capacity. Our claim is that a life-course mindset encourages adequate information processing in the assessment of the working capacity and thus leads to effective decisions, i.e. activation if working capacity versus pension if no working capacity.

For the purpose of our field experiment, three real past cases (i.e. real files of DI recipients who applied for DI benefits between 2012 and 2013, see Appendix 2) were provided by one of the DI offices, according to the following criteria:

- a) **Case A**, where decision was made to activate the DI beneficiary, and this decision proved to be effective, as this person found a job on the labour market after completing a vocational rehabilitation program.

- b) *Case B*, where decision was made to activate the DI beneficiary, but this decision proved to be ineffective, as the vocational rehabilitation program failed. This person could not find a job and was granted a disability pension in the end.
- c) *Case C*, where decision was made not to activate the DI beneficiary, but this decision proved to be ineffective as this person was successfully activated at a later stage and found a job.

We chose the field experiment technique (e.g. Walton and Wilson, 2018; Harackiewicz and Priniski, 2018) because it allows simultaneously randomizing respondents to different experimental conditions and testing causality (in this case, the effects of a life-course mindset on the effectiveness of SLBs' decisions), while preserving ecological validity. During the experiment, SLBs worked in the same setting and with the same tools and procedures as in their daily practice. Note that the three cases used for the purpose of our experiment were anonymized past, closed cases. Indeed, it would have been unethical to influence the outcome of a beneficiary's current request. Our study is thus a field experiment in which a tradeoff has been made between ecological validity and ethical concerns<sup>1</sup>.

The study was a field experiment also in terms of sample selection. We worked with two DI offices (DIO) and the management personally encouraged all SLBs employed in the two offices to participate in the study. No previous study of this kind has been conducted, so a power analysis would have been based on an effect size difficult to estimate. Instead, as our experimental design included two conditions (a life-course mindset vs. a business-as-usual control condition), we aimed at a minimum of 50 respondents per condition (Simmons et al, 2013: 775), that is a total of at least 100 participants. Anticipating the dropout of some respondents, we invited the 175 SLBs from the DIOs in two Swiss cantons to participate in our study. 115 respondents completed the experiment (i.e. response rate was 65.7%; see Appendix 3 for the socio-demographic characteristics of respondents). The experiment was administered via LimeSurvey.

All respondents were asked to log in a computer for about one hour (at their office and during working hours), to examine the files of three DI beneficiaries (cases A, B, and C) and to decide what course of action they would recommend: to activate them or not. To control for possible order effects, the presentation of the three cases was randomized across respondents.

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<sup>1</sup> Note that our experiment has been submitted to, and approved by the Ethics Board of the Geneva School of Social Science of the University of Geneva (see Appendix 9).

The dependent variable of this experiment was thus the effectiveness of SLBs' implementation decisions. As we used three real past cases, for which we knew the actual outcome, our assessment of effectiveness relies on the congruence with policy goals as stated in the law, which is further attested by evidence-based outcomes, unambiguously showing that the beneficiaries' situation improved once the effective decision had been made. For every case, this interpretation was confirmed unanimously by the professional judgment of DI experts, whatever their background (i.e. previous field workers, lawyers, psychologists, administrative staff).

Case A was the most straightforward, the decision was made quickly and its effectiveness was confirmed by the positive outcomes, i.e. professional integration. Case B was more complex: a first medical assessment indicated a potential for activation, which induced SLBs to repeatedly try activation measures over five years, every time unsuccessfully. Finally, the beneficiary was granted a disability pension, which eventually led to positive outcomes in terms of not blaming oneself for failing to get activated. The final decision not to activate thus proved to be effective. Case C was complex too: medical assessments were inconclusive, which made the SLB decide not to activate the beneficiary. The latter contested this decision and was finally granted a vocational rehabilitation program, which resulted in professional integration. In both cases B and C, the medical condition of the recipient did not evolve between the moments of the ineffective decision and the final effective decision, meaning that the changing decision did not derive from a modified health status, but from a different way to consider and process the information that was already available.

We provided respondents with all the anonymized documents (between 30 and 216 per case – see Appendix 4) collected or produced by the DIO for each case until the document stating the decision to grant (vs. not) a rehabilitation program, which was logically excluded from our experiment. These documents were organized and labelled exactly like in SLBs' usual work environment. This procedure was designed with a set of DI managers and middle managers to be as close as possible to the usual procedure and ensure the ecological validity of the field experiment. Accordingly, SLBs had to make their decision in maximum 20 minutes for each case.

Before they started inspecting beneficiaries' files, respondents in the *life-course mindset condition* were presented with a diagram depicting how events in different life domains (family, work, health, and housing) and during the life-course are interconnected (see questionnaire, Appendix 1). Such a visual representation was intended to help respondents imagine the life-



course of a generic DI beneficiary. Respondents were also led to focus on vulnerabilities during the life-course: the diagram pointed to several life events that were labelled as factors of vulnerability. In sum, the diagram was a graphical representation of a fictitious life-calendar – inspired by the life history calendars used in life-course research (Morselli et al, 2016) – emphasizing interconnectedness across events in four life domains and factors of vulnerability and thus suggesting the importance of properly considering all relevant pieces of information. Respondents were asked to answer three mandatory questions to ensure that they had paid attention to the experimental manipulation. All respondents answered correctly the first two questions, while 7 out of 53 (13.2%) did not answer correctly the third question. However, we kept them into the data analysis.

Respondents in the *business-as-usual control condition* were simply asked to examine the documents and reach a decision.

For each case, after the first question (to activate or not), we measured humanity attributions and empathy toward each recipient as possible mediators of the effects of a life-course mindset on effectiveness. For humanity attributions, we adapted a measure (Vaes and Muratore, 2013) based on the infrahumanization paradigm (Leyens et al, 2007) and on the distinction between primary, non-uniquely human emotions, and secondary, uniquely human emotions. Specifically, respondents were asked to estimate to what extent each recipient experienced (both positive and negative) primary and secondary emotions during the process of dealing with DI. Emotions were selected based on their relevance for the specific situation. We selected four primary and four secondary emotions, which could be felt by a potential recipient while dealing with DI (see Appendix 1). The order of the emotions was randomized across respondents. According to the infrahumanization paradigm, the higher the attribution of positive and negative secondary emotions (those that are uniquely human), the more the recipient is perceived as a full human being. Next, we measured *empathy* toward each recipient with six questions (items adapted from Batson et al, 1988; Davis, 1980; Voci and Hewstone, 2007; see Appendix 1). The order of the questions was randomized across respondents. The response scale ranged from 1 (*not at all*) to 5 (*very much*) for both humanity and empathy measures.

Before the end of the experiment, respondents also answered four items used as a composite proxy of their level of public service motivation (PSM, see Appendices 1 and 5). Finally, SLBs reported their socio-demographic characteristics (see Appendix 3).

Respondents were randomly assigned to one of the two conditions (valid sample:  $n = 53$  in the experimental condition,  $n = 62$  in the control condition). Response rate did not significantly differ between the two conditions.

#### **4. Results**

Respondents in the experimental condition and those in the control condition did not differ on any socio-demographic characteristic and on PSM level (see Appendix 6), confirming the successfulness of the randomization of respondents to the two conditions.

##### ***Effects of the life-course mindset on the effectiveness of SLBs' decisions***

To test whether our experimental manipulation impacted effectiveness, we first computed the proportion of effective activation decisions for each case. Most of the decisions were effective for cases A (113 out of 115, 98%) and C (89 out of 115, 77%), while most of the decisions were ineffective for case B (15 out of 115, 13%), suggesting that SLBs usually proposed activation measures for all three cases.

To test whether the proportion of effective activation choices (for cases A, B, and C) differed between the experimental and control conditions, we performed chi-squared tests. The tests revealed that *effective activation choices* ( $\chi^2(1)_{\text{caseA}} = 1.74, p = .19$ ,  $\chi^2(1)_{\text{caseB}} = 0.002, p = .96$ ,  $\chi^2(1)_{\text{caseC}} = 0.19, p = .66$ ) did not differ between the experimental and control conditions, whatever the case (A, B or C), thereby failing to support H1 (see Figure 2).

[Figure 2 here]

*Figure 2 Proportion of SLBs' effective decisions per case and condition*

##### ***Effects of the life-course mindset on empathy and humanization***

Before testing H2, we computed two composite scores for each recipient: (a) an empathy score averaging the six empathy items, and (b) a humanization score averaging the four secondary emotions items. For empathy, higher scores represented more empathy. For humanization, the higher the attribution of secondary emotions the higher the humanization of the recipient (see Appendix 7 for reliabilities of the empathy and humanity measures).

To test H2 we conducted a series of  $t$  tests with independent samples comparing participants' empathy toward and humanization of recipients A, B, and C between the experimental and control conditions.

As for *empathy*, no effects reached significance for any of the three cases ( $t(111)_{\text{caseA}} = 0.03, p = .98, t(113)_{\text{caseB}} = 0.79, p = .43, t(111)_{\text{caseC}} = 0.83, p = .41$ ), thereby failing to support H2a.

As for *humanization*, the effect did not reach significance for case A,  $t(108) = 0.14, p = .89$  (in the experimental condition  $M_{\text{caseA}} = 2.73, SD_{\text{caseA}} = 0.67$ , in the control condition  $M_{\text{caseA}} = 2.74, SD_{\text{caseA}} = 0.71$ ), but for case B respondents in the experimental condition attributed more secondary emotions to the recipient ( $M_{\text{caseB}} = 2.67, SD_{\text{caseB}} = 0.50$ ) compared to respondents in the control condition ( $M_{\text{caseB}} = 2.38, SD_{\text{caseB}} = 0.64$ ),  $t(104) = 2.52, p = .013$ . Likewise, for case C respondents in the experimental condition attributed more secondary emotions to the recipient ( $M_{\text{caseC}} = 2.47, SD_{\text{caseC}} = 0.54$ ) compared to respondents in the control condition ( $M_{\text{caseC}} = 2.21, SD_{\text{caseC}} = 0.74$ ),  $t(108) = 2.07, p = .041$ .

Thus, H2b was supported in two cases out of three: while the life-course mindset did not improve SLBs' humanity perceptions toward case A compared to business-as-usual instructions, it did increase SLBs' humanity perceptions toward cases B and C compared to business-as-usual instructions.

### ***Effects of the life-course mindset on the effectiveness of SLBs' choices via humanization***

We could not test our third hypothesis as we found no direct effects of a life-course mindset on effectiveness of decisions. Indeed, according to Baron and Kenny (1986), a mediation test consists in analyzing whether (1) the independent variable (X) has an effect on the dependent variable (Y), (2) X has an effect on the mediator (M), (3) M has an effect on Y, (4) the effect of X on Y is reduced when accounting for the effect of M. A mediation thus implies that the independent variable (X, here the experimental manipulation) affects the dependent variable (Y, here effective choices) because of its effects on the mediators (M, here empathy and humanization). Given that the experimental manipulation did not affect effectiveness we could not test mediation. Still, based on Hayes (2017; see also Aguinis et al, 2017) we could test indirect effects, i.e. if X (the experimental manipulation) impacts M (humanization), which is in turn associated with Y (effective choice). While a mediation test implies that the independent variable affects the dependent variables because of its effects on the mediator(s), an indirect effect test implies that the independent variable affects the mediator, and that there is an

association between the mediator and the dependent variable, without an association between the independent and the dependent variables. Among those respondents for whom the experimental manipulation was successful in increasing humanization, there could be a significant probability that the more they humanize the recipient, the more they make effective choices.

We did not run these analyses for empathy because we found no effects of the experimental manipulation on this variable. Also, the experimental manipulation increased humanization only for recipients B and C and not recipient A. Thus, the following analyses focus only on cases B and C.

To run the indirect effects analysis, the life-course experimental condition was coded +1, while the control condition was coded 0. Effective choices (i.e. no activation for case B and activation for case C) were coded +1, while ineffective decisions were coded 0.

To test for the occurrence of indirect effects, we used logistic regression analyses (because the dependent variable is a categorical variable) using the Process macro (Hayes, 2012; model 4).

**Case B:** Logistic regressions revealed that the experimental manipulation did not yield indirect effects on effective choices via secondary emotions,  $IE = -0.13$ , 95% bootstrapped confidence interval  $CI = [-0.75, 0.14]$ .

**Case C:** Logistic regressions revealed that the experimental manipulation did yield indirect effects on effectiveness via secondary emotions,  $IE = 0.25$ , 95% bootstrapped  $CI = [0.01, 0.70]$  (see Figure 3). The same logistic regression analysis was run controlling for primary emotions (to check whether the indirect effect is specific to uniquely human emotions rather than to emotions attributed to the recipient in general), for socio-demographic characteristics and for PSM (to check whether the indirect effect holds when taking into account other variables which might affect effectiveness). Given the sample size, control variables were included one at a time as predictors in the logistic regression analysis. The indirect effect holds when controlling for primary emotions, gender, age, education, seniority of respondents, location of the DIO, position in the hierarchy, and PSM.

[Figure 3 here]

*Figure 3. Indirect effects on effectiveness of choice via humanization for case C*  
*Notes. Unstandardized regression coefficients (and standard errors) are reported. \*  $p < .05$ .*

As a robustness check, we also considered a second dependent variable related to the effectiveness in the choice of the vocational rehabilitation measure proposed by SLBs (see Appendix 8). The results pattern is identical to the one for the “effective vs. ineffective decision of activation” variable.

## **5. Discussion**

### *Null results*

Our system 2 nudge did not produce the expected direct impact on the effectiveness of SLBs’ decisions, thus resulting in a null finding regarding H1. This is an important result that calls for explanations. Battaglio and colleagues (2019) emphasized the importance of null findings in BPP research applied to public administration, especially when null findings can be accounted for.

Two factors could account for these null findings. First, the power of the normative framework over SLBs’ decisions, i.e. activation principles implemented through recent political reforms, is stronger than expected, and induces mechanical ways of processing information. In other words, activation reforms create a strong policy narrative (Jones et al, 2014), shaping SLBs’ socialization toward compliance with this narrative, rather than using their discretionary power when implementing disability policy. It also seems that organizational socialization (peer pressure, corporate culture, etc. – see Hatmaker and Park, 2013; Hatmaker et al, 2016; Oberfield 2014) reinforces the power of this narrative and leads to biased information processing, emphasizing the aspects advocating activation against those underlining a limited or absent working capacity. Under such circumstances, our system 2 nudge was not strong enough to reverse the policy narrative purported by active reforms and by processes of organizational socialization. SLBs who participated in the field experiment suggested themselves this interpretation when the results of our study were presented to them. This new hypothesis – system 2 nudges are not sufficient to orient behaviour when policy narratives and organizational socialization are very pregnant – shows the importance of considering the meso and macro environment when designing nudges: if those are not supported by the policy and organizational environment, the likelihood that they fail will be higher. This is an important contribution to the BPP literature (see also Introduction to this special issue).

A second, complementary interpretation is that our system 2 nudge was not strong enough to produce the expected outcome. When SLBs’ routines or mindsets are strongly implanted (as suggested by Lipsky, 1980), nudges need to be stronger. What does it mean to

implement “stronger” nudges? Our nudge was a system 2 nudge, based on sufficient cognitive activity to create a mental representation (a mindset) likely to orient respondents toward the features in the task at hand that are concerned with life-course and vulnerability. A stronger version of such a mechanism would be what Grüne-Yanoff and Hertwig (2016) have termed “boost”. The use of boosting stemmed from the criticism of the passive nature of system 1 nudges; boosting, on the contrary, entails “a decision maker whose competences can be improved by enriching his or her repertoire of skills and decision tools and/or by restructuring the environment such that existing skills and tools can be more effectively applied” (ibid.: 152). In this respect, a training session on vulnerability processes in the life-course may have more impact than our experimental treatment, as it may provide not only awareness and information processing, but also relevant analysis tools and empowerment (Hertwig and Grüne-Yanoff, 2017). Again, this new hypothesis needs further empirical investigation; it may also enrich the literature on nudges by linking it to the longstanding tradition of research on social influence in social psychology (Butera et al, 2017).

### *Indirect effects through humanization*

H2a on empathy did not receive support for any of the three cases, whereas H2b on humanization received support for cases B and C but not for case A, suggesting that H2b is mostly supported. Otherwise stated, it appears that a life-course mindset increased SLBs’ humanization of the welfare beneficiaries, but not SLBs’ empathy toward them. This is an important result, to the extent that our manipulation consisted in a graphical representation of a life history calendar devised to activate a life-course and vulnerability mindset.

The question is now how our system 2 nudge relates to humanisation and effective choice (H3). As we did not find any direct effect of the experimental manipulation on the effectiveness of SLBs’ decisions, we could not test the mediation hypothesis as such. However, for case C our results are compatible with H3b, although not in the expected form, i.e. we found an indirect effect instead of a mediation effect. Specifically, for case C, but not for case B, the life-course manipulation increased the humanization of the beneficiary (attributions of secondary emotions), and this in turn led to more effective decisions.

In sum, we found some moderate evidence (in one case out of three) that our nudge – intended to bring the SLBs to think about life-course – may improve effectiveness through the increased humanization of the beneficiary. However, as discussed in the above section about the null findings, our manipulation would need to be supported by a favorable policy and

organizational environment and implemented with a stronger or longer procedure in order to probably yield a direct and/or a mediated effect and to probably have consistent effects throughout different cases.

### *Limitations*

A limitation of our research is the tradeoff inherent in field experiment techniques between internal and external validity. Our field experiment has been designed in order to guarantee external validity and the possible implementation of a life-course mindset if it was successful in improving decision effectiveness. Furthermore, the field experiment also guarantees internal validity. Indeed, participants were randomly assigned to the experimental or control conditions. This randomization allows concluding that any difference in outcomes (here effectiveness, humanization, and empathy) between the experimental and control conditions is due to the treatment (here, the life-course mindset), and thus testing causal relations (e.g. that a life-course mindset could improve humanization of recipients). We acknowledge, however, that some threats to validity might have occurred. Regarding internal validity, although we invited SLBs to participate in the study individually and to avoid interruptions or distractions, we cannot guarantee that no distraction happened or that participants did not discuss about this research. Note though that proportions of effective choices are really close between the experimental and control conditions (Figure 2), suggesting that it is unlikely that we did not find a significant difference just because of distractors during the task. As regards threats to external validity, if we had found the hypothesized effect on effectiveness, we would have needed to be careful in the generalization of our findings and in the proposition of implementing programs based on our system 2 nudge, as the working conditions might be different in DIOs in other cantons and linguistic regions of Switzerland. Another limitation concerns the fact that variables not measured in our experiment could contribute to shape the effects of a life-course nudge on effectiveness. For example, we have not measured whether SLBs usually already take into account the life-course of recipients. Case A and case C findings, i.e. that most decisions were effective irrespective of the experimental condition, would be consistent with this argument; but case B findings, i.e. where most decisions were not effective, suggest that this is not (at least not always) the case. While with the current data we cannot know to what extent SLBs already take into account the vulnerability of recipients and whether this could affect effectiveness, we encourage future research to test this. In addition, upcoming studies should also better isolate the net impact of SLBs decisions on policy outcomes from the impacts induced by confounding factors. Indeed,

external factors related to the labor market (e.g. the supply of jobs by employers) might be more important for policy effectiveness than activation measures implemented by SLBs.

Further, it is possible that SLBs rely on categorical information and on stereotypes when making decisions (e.g., Harrits, 2019). This would be compatible with the finding that our nudge increased humanization of recipients B and C (Swiss men) and not of recipient A (Swiss-Somali woman, i.e. with foreign origins). Indeed, the infrahumanization paradigm proposes that people ascribe less secondary emotions to members of external groups. However, a close inspection to the data suggests that this was not the case, because participants attributed more secondary emotions to recipient A compared to recipients B and C. This finding suggests that the stereotype that women are more emotional than men (Plant, Hyde, Keltner, & Devine, 2000) might play a role. We encourage future research to assess also stereotypes endorsed by SLBs when analyzing SLBs' decisions effectiveness.

## **6. Conclusion**

Our research is innovative for the three reasons mentioned in the introduction. First, it focused on SLBs as policy implementers, and in particular it is the first, to the best of our knowledge, to manipulate a mindset intended to bring SLBs to reflect on the life-course and vulnerability of policy beneficiaries. Second, we designed an experiment based on a “system 2 nudge” – or “think-strategy”, or “thought provoking” nudge depending on the existing labels – to address the irremediable discretionary power of SLBs. Third, we conducted a field experiment, rather than another survey experiment, with in service SLBs confronted with real cases.

What have we learned? A one-minute nudge evoking a life-course and vulnerability mindset may increase humanization of beneficiaries, but it is too weak or too short to improve the effectiveness of decision-making. The reason may indeed lie either in the strength of the nudge – insufficient to overcome the policy narratives and organizational socialization in which SLBs are embedded – or in its duration – insufficient to change SLBs' mindsets and routines. SLBs operate at the crossroad of micro, meso and macro factors, and nudges need to be designed accordingly. Furthermore, they are experts in the public policy to be implemented. Both organizational rules and professional expertise might reduce their inclination to make fast, intuitive, associational, and effortless decisions (as citizens frequently do), even if SLBs might take cues and use heuristics from within their organisation (Norgaard, 2018). Finding out the conditions under which SLBs are “reasonably rational” (Simon, 1976) and make slow,



reflective, controlled and effortful decisions remains an ambitious research endeavour. The present study contributes to this goal by delivering preliminary evidence on this new area of investigation for behavioural public policy and/or administration (Grimmelikhuijsen et al, 2017: 52). Our mixed findings call for further research in line with Ewert's notion of advanced behavioural public policy (Ewert, 2019), which should also integrate issues such as stereotypes, accountability and the compassion dimension inherent to the Public Service Motivation. System 2 nudges might indeed be a promising avenue to promote better ways to process information in civil servants. However, our results suggest that such thought provoking nudges must be supported by a favourable policy and organizational environment in order to become part and parcel of the civil servants' habits (Wood, 2019).

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## Appendix 1: Questionnaire<sup>1</sup>

### 1. Survey on the allocation of vocational rehabilitation measures

Welcome and thank you for participating in this survey about the allocation of vocational rehabilitation measures. The aim is not to assess work practices but to understand decision-making processes. The survey is strictly anonymous and we guarantee that only members of our research team will have access to your answers.

The survey will take a maximum of one hour during which you will be asked to look at the anonymised case files of three insured persons and to make decisions concerning the accuracy of granting vocational rehabilitation measures on the basis of the information at your disposal. It is important that you focus on the survey without interruption and that you do not speak with your colleagues about its content.

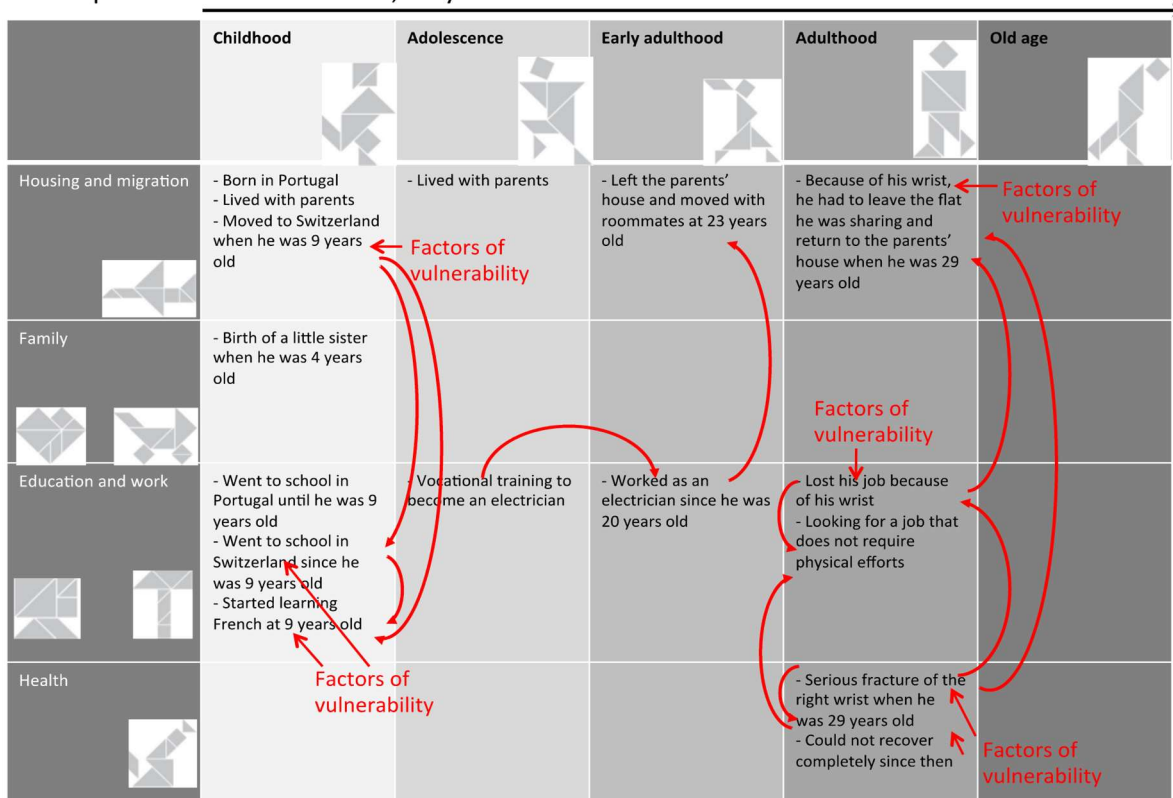
### 2.1 Treatment group (life-course–vulnerability experimental condition)

You are going to examine three insured people's files. Examine carefully each file and, based on the information at your disposal, take a decision concerning the opportunity of allocating a rehabilitation measure for each of the three insured persons.

During the examination of the files, imagine what this person has been through in the different aspects of his/her life (family, work, education, health, etc.). Think about the links between these different aspects (for example, how an event related to health can influence one's professional opportunities or housing conditions).

It is important that you identify the factors of vulnerability (sickness, accident, unemployment, divorce, etc.) in their life-courses. To help you with this task, here is a graphical example representing the life-course of a fictitious insured person and the links between the factors of vulnerability.

Example of life calendar. Man, 32 years old.



Red lines underline the interdependence of life stages and domains.

#### 2.1.1 We are now asking you to answer three questions about the life-course of this fictitious man:

- At what age did he move to Switzerland?

<sup>1</sup> Note that that the actual survey was in French. This is a translation of this survey.

- When he was 12 years old
- When he was 9 years old
- **When he was 29 years old, what did he break?**
- His wrist
- His ankle
- **What is his professional status?**
- He is looking for a job
- He works as an electrician

## 2.2 Control group (business-as-usual control condition)

You are going to examine three insured people's files. Examine carefully each file and, based on the information at your disposal, take a decision concerning the opportunity of allocating a vocational rehabilitation measure to each of the three insured persons.

## 3. Case A

We ask you to look into the case file of the following insured person: woman born in 1991. Below you will find the documents included in this file.

31_Jui_2012_DP_Communication.pdf	20_Sep_2012_Services_sociaux.pdf	31_Oct_2012_Rens._divers_assures_tiers.pdf
31_Jui_2012_DP_Annexes_a_la_communication.pdf	21_Sep_2012_Accuse_reception.pdf	06_Nov_2012_Demande_Rapport_employeur.pdf
28_Aou_2012_DP_Correspondances_diverses.pdf	21_Sep_2012_Affiliation_AVIS.pdf	06_Nov_2012_Rapports_divers_contrat_de_de_travail_certif.pdf
11_Sep_2012_DP_Autorisation.pdf	21_Sep_2012_Demande_Rapport_medical.pdf	07_Nov_2012_Rapport_medical.pdf
11_Sep_2012_Resultats_de_la_DP.pdf	21_Sep_2012_IP_Orientation.pdf	14_Nov_2012_Rapport_employeur.pdf
11_Sep_2012_Rapports_divers_contrat_travail_certif.pdf	01_Oct_2012_Statut_menagere_active.pdf	20_Nov_2012_Avis_medical_SMR.pdf
20_Sep_2012_Formule_officielle.pdf	01_Oct_2012_DP_Rapport_initial.pdf	21_Nov_2012_Avis_d_entree_sortie_de_centre.pdf
20_Sep_2012_Annexe_a_la_demande.pdf	05_Oct_2012_Divers_changement_d_adresse.pdf	29_Nov_2012_IP_Rapport_initial.pdf
20_Sep_2012Quest_pour_etrangers.pdf	08_Oct_2012_C.I..pdf	
20_Sep_2012_Rapports_divers_contrat_de_travail_certif.pdf	09_Oct_2012_Accuse_reception.pdf	
20_Sep_2012_Rapport_medical.pdf	10_Oct_2012_Rapport_medical.pdf	

## 3.1 Given this information, would you propose a vocational rehabilitation measure?

- Yes
- No

### 3.1.1 If yes, which one:

- Integration measures
- Vocational guidance
- Initial vocational training
- Professional conversion
- Job placement
- I don't know

## 3.2 To make this decision, which documents did you rely on?

Please select up to 5 documents from the list and rank them in order of importance (1 being the most important, 2 the second most important, etc.)

## 3.3 We will now ask you questions about your feelings and those of the insured person.

### 3.3.1 First, think about what she felt when she applied for DI benefits. According to you, she felt...

	<i>Not at all</i>			<i>Very much</i>	
Hope	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Serenity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shame	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Remorse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Surprise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pleasure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 3.3.2 Now, think about how you feel about this person.

*Not at all*

*Very much*





*Questions 5.1. to 5.3.2 similar to questions 3.1. to 3.3.2*

**6. Now, please indicate whether you agree or disagree with each of the following statements:**

	<i>Strongly disagree</i>		<i>Neither agree nor disagree</i>		<i>Strongly agree</i>
Making a difference in society means more to me than personal achievements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am prepared to make enormous sacrifices for the good of society.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meaningful public service is very important to me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I consider public service my civic duty.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**7. Finally, some personal information:**

- **Your age**
- **Your gender**
  - Female
  - Male
- **Your level of education**
  - Vocational education and training
  - High school
  - Upper vocational training
  - Higher or tertiary education
  - Other
- **Your workplace**
  - Disability insurance office A
  - Disability insurance office B
- **Your position**
  - Administrative assistant
  - Jurist
  - Rehabilitation counsellor
  - Rehabilitation counsellor, psychologist
  - Vocational guidance psychologist
  - Vocational integration specialist
  - Other
- **Does your role imply supervising other employees? That is, you have the formal responsibility to supervise their work (trainees not included).**
  - Yes
  - No
- **How many years have you been working for the DI?**

**8. Would you like to add a comment that would help us interpret your answers?**

**This survey is now complete. We thank you for your participation.**

## **Appendix 2: Short Presentation of the Three Real Cases**

**Case A:** Swiss-Somali woman, born in 1991. She suffered from severe depression and anxiety, resulting in multiple school failures, unskilled jobs, and periods of inactivity. She has completed a tourist agent training, but her diploma was not officially recognized by employers, and she could not find a job. With the support of her therapist, she applied for DI benefits in 2012 in order to benefit from a vocational rehabilitation programme and complete a commercial apprenticeship. After 5 years she got a federal diploma and was hired with an open-ended contract.

**Case B:** Swiss man, born in 1960. He used to work as a heating system technician. In 2012, he was diagnosed with a degenerative disc disease, causing acute abdominal pain and forcing him to stop working for 6 months. When returning to work, he still suffered a lot because of abdominal pain and thus applied for DI. After five years of vocational rehabilitation attempts, which failed either because of his health condition or the absence of job opportunities, DI finally granted him a half disability pension.

**Case C:** Swiss man, born in 1980. Trained as a truck driver, he used to work as a machine operator. In 2013, he developed a herniated disc, affecting his working capacity and his sleep. After 4 months of sick leave, he applied for a DI rehabilitation measure but this was refused by DI by the end of 2013. He contested this decision and lost his job in January 2014. Finally, in March 2014, DI decided to provide him with a vocational rehabilitation program. He completed a one-year training to be a transport manager and, in the end, he was hired with an open-ended contract.

**Appendix 3: Socio-demographic characteristics of SLBs participating in the field experiment (Sample), in comparison with the whole population of SLBs working in the two disability insurance offices (Pop.).**

Variables	Categories	Percentage		Frequency	
		Pop.	Sample	Pop.	Sample
<b>Gender</b>	Man	35%	<b>35%</b>	60	<b>40</b>
	Woman	65%	<b>65%</b>	110	<b>75</b>
<b>Disability insurance office</b>	A	40%	<b>33%</b>	68	<b>38</b>
	B	60%	<b>67%</b>	102	<b>77</b>
<b>Profession / Position<sup>2</sup></b>	Rehabilitation counsellor and vocational integration specialist	44%	<b>42%</b>	45	<b>49</b>
	Administrative assistant	29%	<b>35%</b>	30	<b>40</b>
	Vocational guidance psychologist	20%	<b>15%</b>	20	<b>17</b>
	Jurist	6%	<b>5%</b>	6	<b>6</b>
	Other	1%	<b>3%</b>	1	<b>3</b>
<b>Education<sup>3</sup></b>	Vocational education and training	21%	<b>17%</b>	21	<b>20</b>
	High school	4%	<b>10%</b>	4	<b>11</b>
	Upper vocational training/ Higher or tertiary education	75%	<b>71%</b>	77	<b>82</b>
	NN	-	<b>1%</b>	-	<b>1</b>

<sup>2</sup> The distribution of professions/positions among the entire population is based on data provided by DIO B. Data were not available for DIO A.

<sup>3</sup> The level of education among the entire population is based on data provided by DIO B. Data were not available for DIO A.

#### Appendix 4: Documents included in case files and consulted by SLBs

The following table groups the documents which respondents had access to into 5 categories and displays the proportion of each category of documents in the overall total of documents for each case.

Categories of documents	Case A n = (% =)	Case B n = (% =)	Case C n = (% =)
DIO official documents (reports, mailing, and follow-up notes)	16 (53%)	189 (88%)	29 (73%)
Medical reports and certificates	5 (17%)	18 (8%)	5 (13%)
Administrative documents (ID, civil status certificate, etc.)	4 (13%)	2 (1%)	2 (5%)
Documents related to work and education (CV, work certificate, training certificate, skills assessment, etc.)	4 (13%)	6 (3%)	3 (8%)
Personal income (certificate)	1 (3%)	1 (<1%)	1 (3%)
Total	30	216	40

*Type and distribution of documents available for each case*

The next table displays which type of documents respondents most often relied on to make their decision (activate vs. not activate). It is based on a compilation of the answers to question 3.2 “To make this decision, which documents did you rely on? Please select up to 5 documents from the list and rank them in order of importance (1 being the most important, 2 the second most important, etc.)”<sup>4</sup>.

Case A (113 respondents)		Case B (106 respondents)		Case C (112 respondents)	
Type of document	Citation by SLBs n = (% =)	Type of document	Citation by SLBs n = (% =)	Type of document	Citation by SLBs n = (% =)
Medical report	101 (89%)	Medical report	57 (53%)	DIO official document (report)	72 (64%)
DIO official document (report)	58 (51%)	Medical report	53 (50%)	Medical report	55 (49%)
DIO official document (report)	52 (46%)	DIO official document (report)	30 (28%)	Medical report	41 (36%)
Medical report	42 (37%)	Personal income	24 (22%)	Medical certificate	36 (32%)
Medical report	37 (32%)	DIO official document (mailing)	23 (21%)	DIO official document (follow-up notes)	35 (31%)

*Documents most frequently cited by SLBs as useful when making their decision*

Comparison between the two tables indicates that medical reports are largely overrepresented among the documents considered as useful by SLBs. For each case, two or three of them are part of the five most cited documents, even though they represent only 17%, 8%, and 13% respectively of the documents made available to SLBs.

<sup>4</sup> Note that answering this question was not mandatory. This explains why each case resulted in a different number of respondents. Also note that the order of importance was not taken into account in the table.

## Appendix 5: PSM

The PSM construct encompasses four sub-dimensions (Perry, 1996)<sup>1</sup>:

- "*Attraction to politics and policymaking*" characterises public employees who prefer to serve public interest by influencing political processes (i.e. policymaking).
- "*Commitment to the public interest*" describes civil servants' aspirations for pursuing the common good and furthering public interest (i.e. achieving policy goals).
- "*Compassion*" is a unique feeling of sympathy for the suffering of others that involves emotions and empathy toward others (i.e. target-groups of a given public policy), a sense of understanding and the will to protect.
- "*Self-sacrifice*" is characterised by a devotional desire to help others and a sense of abnegation.

We introduced this control variable since we expected SLBs with higher PSM levels (e.g. those who feel more compassion for DI beneficiaries) to make more effective policy decisions.

We used a proxy to measure the level of PSM with four items (see questionnaire, Appendix 1). Answers on a 5-point scale were averaged to create a composite score with higher scores representing higher public service motivation ( $M = 3.12$ ,  $SD = 0.92$ ). The PSM measure was reliable, Cronbach's alpha = .79 (see Appendix 7).

We acknowledge the limitation resulting from the fact that we used very few items (in comparison to the construct developed by Perry 1996) and measured PSM after the experimental manipulations, at the end of the experiment. It was done so in order to avoid priming ideologies related to the importance of public service, and to isolate the effects of the life-course and vulnerability mindset. While the experimental manipulation could have affected PSM, this was not the case as shown by the non-significant difference in PSM levels of participants in the two conditions. However, future field experiments would do well in assessing dispositional control variables before the experimental manipulations. They should also use all items encompassed in the original measurement tool (as developed by Perry 1996) to accurately assess the various sub-dimensions of the PSM concept (and particularly its compassion sub-dimension).

<sup>1</sup> Perry, J. L. (1996) Measuring Public Service Motivation: An Assessment of Construct Reliability and Validity, *Journal of Public Administration Research and Theory*, 6: 5-22.

## Appendix 6: Socio-demographic characteristics by experimental condition

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Variable	Test of difference between conditions
Gender	$\chi^2(1) = 0.05, p = .82$
Age	$t(113) = 0.85, p = .40$
Education	$\chi^2(3) = 2.08, p = .56$
DIO location	$\chi^2(1) = 0.35, p = .55$
Role in the office	$\chi^2(5) = 1.97, p = .85$
Seniority in the DIO	$t(113) = 0.06, p = .95$
Position in the hierarchy	$\chi^2(1) = 0.04, p = .84$
PSM	$t(111) = 0.46, p = .65$

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*Note.* Tests of difference between experimental and control condition on respondents' socio-demographic characteristics and PSM. We used chi-squared tests for categorical variables and *t* tests for continuous variables.

## Appendix 7: Reliabilities of multiple-item measures

Variable	Case	Reliability
PSM	-	Cronbach's alpha = .79
Empathy	A	Cronbach's alpha = .82
Positive primary emotions	A	Pearson's $r = .15, p = .125$
Negative primary emotions	A	Pearson's $r = .25, p = .012$
Positive secondary emotions	A	Pearson's $r = .36, p < .001$
Negative secondary emotions	A	Pearson's $r = .43, p < .001$
Empathy	B	Cronbach's alpha = .83
Positive primary emotions	B	Pearson's $r = .10, p = .321$
Negative primary emotions	B	Pearson's $r = .49, p < .001$
Positive secondary emotions	B	Pearson's $r = .32, p = .001$
Negative secondary emotions	B	Pearson's $r = .58, p < .001$
Empathy	C	Cronbach's alpha = .84
Positive primary emotions	C	Pearson's $r = .12, p = .207$
Negative primary emotions	C	Pearson's $r = .35, p < .001$
Positive secondary emotions	C	Pearson's $r = .18, p = .070$
Negative secondary emotions	C	Pearson's $r = .56, p < .001$

*Note.* For variables assessed by two items we calculated Pearson's  $r$ , while for variables assessed by more items we calculated Cronbach's alpha.



## Appendix 8: Effectiveness in the choice of the vocational rehabilitation measure

The article reports the analysis on the main dependent variable of our field experiment, i.e. the policy effectiveness of the decision proposing an activation measure vs. not proposing it. The field experiment also included a second dependent variable, that is, the choice of the vocational rehabilitation measure which leads the beneficiary to successfully find a job (see question 3.1.1 in questionnaire, Appendix 1). This appendix describes in detail the second dependent variable and the results related to this variable. As you will read, the results pattern is identical to the results pattern for the main dependent variable, which is reported in the main text of the article.

### Description of the measure

Respondents who answered that they would have proposed activation were subsequently asked which specific vocational rehabilitation measure they would propose. Response items were formulated according to the DI official catalogue of vocational rehabilitation measures, distinguishing five categories of measures: socio-professional rehabilitation programs (the so-called Integration measures), Vocational guidance, Initial vocational training, Professional conversion, and Job placement. Some of these measures (i.e. Initial vocational training and Professional conversion) are long-term training programs, providing recipients with a qualifying degree; others (i.e. Integration measures, Vocational guidance, and Job placement) consist in short-term support.

As for the dependent variable “activation vs. no activation”, based on the judgement of DI experts, on information contained in the three case files (i.e. recipients’ eligibility to DI benefits, medical condition and professional trajectory), and on the actual outcome, we could determine which was the effective choice (i.e. “granting an Initial vocational training” for case A and “granting a Professional conversion measure” for case C). Thus, the *second* dependent variable of our field experiment captures whether the SLBs choose the *effective vs. ineffective vocational rehabilitation measure*.

### Results

#### *Effects of the life-course and vulnerability mindset on SLBs’ effectiveness of choices regarding the specific vocational rehabilitation measure*

Among those respondents who chose an activation measure, 77% (87 out of 113) for case A and 41% (36 out of 88; one participant made the effective decision of proposing an activation measure but did not indicate which one) for case C selected the effective measure.

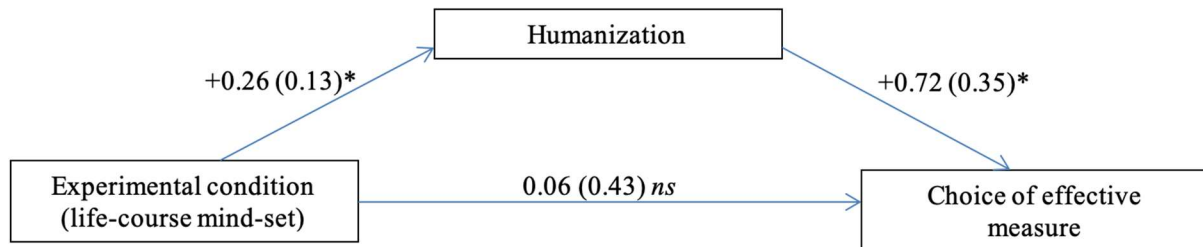
Disconfirming H1, chi-squared tests revealed that *effective outplacement measure choices* ( $\chi^2(1)_{\text{caseA}} = 0.65, p = .42, \chi^2(1)_{\text{caseC}} = 0.28, p = .59$ ) did not differ between the experimental and control conditions.

#### *Effects of the life course and vulnerability mindset on the effectiveness of SLBs’ choices via humanization*

As for the main dependent variable in our field experiment, we could only test for indirect effects and not for mediation effects, because the experimental manipulation did not impact effectiveness. Also, we did not run indirect effects analysis for empathy because we found no effects of the experimental manipulation on empathy, and we focused only on case C because the experimental manipulation did not increase humanization of recipient A.

The choice of the effective vocational rehabilitation measure was coded +1, while all the other responses (i.e. granting all other types of activation measures, not granting any activation measure and not selecting a specific measure) were coded 0.

Logistic regression analyses revealed that the life-course–vulnerability experimental condition did exert indirect effects on the choice of the effective measure via secondary emotions, IE = 0.19, 95% bootstrapped CI = [0.02, 0.53]. This effect holds when controlling – one at a time – for primary emotions, gender, age, education, seniority of the respondents in the DIO, location of the DIO, position in the hierarchy, and public service motivation.



*Indirect effects on choice of the effective vocational rehabilitation measure via humanization for case C.*

*Notes. Unstandardized regression coefficients (and standard errors) are reported. \*  $p < .05$ .*

## Appendix 9: Ethics Board Approval



**UNIVERSITÉ  
DE GENÈVE**

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DE LA SOCIÉTÉ**

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Geneva, December 12<sup>th</sup> 2019

### **Notification of the ethics commission (CER-SDS-20-2019) Geneva School of Social Sciences – University of Geneva**

The ethics commission assessed the project "**Nudging Street-Level Bureaucrats into Accurate Decisions on Requests for Welfare Benefits: A Field Experiment to Promote a Life-Course Mindset**", upon the request of Jean-Michel Bonvin in the context of the publication process of some results of this study and in response to a reviewer's comment.

In this field experiment with street-level bureaucrats, potential participants were invited to respond to an online survey, some with a life course-vulnerability mindset, and others with a 'business as usual' mindset. Based on the information provided on participant recruitment, data collection and management, the commission considers that the study conforms to established ethics standards.

A handwritten signature in black ink, appearing to read 'C. Burton-Jeangros'.

Prof C. Burton-Jeangros