



Research Networking Programmes

Short Visit Grant or Exchange Visit Grant

(please tick the relevant box)

Scientific Report

Scientific report (one single document in WORD or PDF file) should be submitted online within one month of the event. It should not exceed eight A4 pages.

Proposal Title: Connecting Perspectives by Disconnecting Mind and Body: On the Relation between Beliefs in Mind-Body Dualism and Perspective-Taking.

Application Reference N°: 5943

1) Purpose of the visit

Collaboration with Dr. Andrew R. Todd (University of Iowa) on a mutual research project on the effects of beliefs in mind-body dualism on mental-state reasoning.

2) Description of the work carried out during the visit

(1) Emotional Contagion

Based on our previous finding that strengthening (vs. weakening) people's beliefs in mind-body dualism facilitates perceptual as well as conceptual forms of perspective-taking (Burgmer, Forstmann, Todd, & Mussweiler, in prep.), we set out to investigate how more bodily-grounded forms of mental-state reasoning may be affected by beliefs in mind-body dualism. Drawing on the framework by Zaki & Ochsner (2012) who differentiate three major facets of empathy (i.e., mentalizing, experience-sharing, and prosocial concern), we designed an online-study in Mechanical Turk (N = 242; 86 females, 156 males; Mage = 31.15, SDage = 10.94) looking at the effects of beliefs in mind-body dualism on emotional contagion.

In general, we argue that processes of mentalizing may be facilitated by mind-body dualism (Burgmer et al., in prep.), whereas processes of experience-sharing may be attenuated by mind-body dualism. The latter may be the case because people rely on their internal, bodily-grounded states -- such as facial muscle activity when viewing a target person's facial expression -- as, for instance, in the case of mood contagion (Neumann & Strack, 2000). We assume that such bodily-grounded processes of experience-sharing will be more pronounced among people who view their minds as deeply rooted in their bodies, that is, physical properties. Hence, we predicted that strengthening mind-body dualism would attenuate emotional contagion.

Adopting a paradigm used by Kimura, Daibo, and Yogo (2008), participants were first asked to write down the name of a close friend. Ostensibly, as a task investigating perception of close others, participants were subsequently instructed to imagine an episode in which their respective friend either passed a very important exam (i.e., positively valenced episode: success), or failed a very important exam (i.e., negatively valenced episode: failure). Participants were then asked to elaborate in writing about how their friend would be feeling in such an episode, and about how it made themselves feel.

Using a previously validated priming procedure (Forstmann, Burgmer, & Mussweiler, 2012), mind-body relations were either strengthened or weakened by having participants read a vignette text either describing mind-body dualism as the current scientific position or physicalism, that is, a type of materialistic monism. This priming procedure has been successfully demonstrated to alter participants' beliefs about mind-body relations in the desired direction in previous research (Forstmann et al., 2012). We also added a baseline condition in which participants did not undergo any priming procedure in order to obtain evidence regarding the validity of the emotional-contagion paradigm.

After responding to two manipulation-check items, participants answered the IPANAT (Quirin, Kazen, & Kuhl, 2009), an indirect measure of state affect. Specifically, this task draws on participant ratings of the extent to which artificial words subjectively convey various emotions. Participants responded to a total of six items. For example, they were asked "to what extent does the sound of the artificial word 'SAFME' convey each of the following moods:" followed by three positive (e.g., happy) and three negative (e.g., helpless) emotions. Responses were made on a rating scale ranging from 1 (= Doesn't fit at all) to 4 (= Fits very well). We followed the scoring algorithm by Quirin et al. (2009), which arrives at two scale scores, one score for positive affect, and one score for negative affect. The score for negative affect is then subtracted from the score for positive

affect, resulting in a difference score with higher values indicating more positive affect.

Overall, the current study was based on a 2 (Priming: Dualism vs. Physicalism) x 2 (Episode: Positive vs. Negative) between-subjects design. We expected an interaction effect between Priming and Episode, such that the affect of participants who were primed with mind-body dualism would be less influenced by imagining either a positive or a negative episode with their friend. In other words: We predicted that priming dualism would attenuate the impact of the valence of the imagined episode on participants' indirectly measured affect, resulting in a decreased emotional-contagion effect.

(2) Compassion:

During my stay at the University of Iowa, I also started a new project in collaboration with C. Daryl Cameron. Based on his previous work looking at the psychological underpinnings of the collapse-of-compassion phenomenon (Cameron & Payne, 2011), we aimed at investigating whether beliefs in mind-body dualism may be a meaningful moderator of this phenomenon. To this end, we ran a first exploratory online-study in MTurk (N = 88) in which we added a continuous measure of mind-body dualism (Forstmann et al., 2012). This study was exploratory in the sense that the measure only appeared at the end of the study, that is, additional measures that were not relevant for the current hypothesis appeared between the critical independent variable and the dualism measure.

Following the experimental set-up of Experiment 1 in Cameron and Payne (2011), participants were randomly assigned to read about one or eight children from Darfur. Cameron's work has shown that people expect the needs of large groups to be potentially overwhelming, and, as a result, they engage in emotion regulation to prevent themselves from experiencing overwhelming levels of emotion. Hence, when confronted with eight targets in distress as opposed to only one target in distress, people paradoxically tend to report lower levels (or in some studies about the same level) of compassion towards the suffering of the larger group. This pattern is reflected in different types of dependent measures, for example, self-reported compassion or willingness to donate for the respective targets. In the current study, we included both types of dependent variables: (1) self-reported compassion as measured in Cameron & Payne (2011, see Appendix), and (2) willingness to donate.

As we added mind-body dualism as a continuous moderator, we expected a two-way interaction effect between Number-of-Victims (between-subjects factor) and Mind-Body Dualism (at +/- 1 SD from the mean). As we have argued above, dualists may be less likely to rely on their internal states when making judgments. In this particular case, less reliance on the emotions experienced when confronted with one or eight victims should lead to a less pronounced difference between the two Number-of-Victims Conditions. Assuming that negative emotions increase when confronted with eight victims (as opposed to one victim), for physicalists the opposite pattern may emerge. Specifically, as physicalists rely more on their affective states when making judgments, being confronted with a large number of victims may be more impactful for them compared to being confronted with only one victim.

(3) Other Projects:

In (1) and (2) I described two studies that are most relevant to the current research proposal (i.e., mind-body dualism and mental-state reasoning).

In addition to these studies, we are currently also running a lab-study in the Todd-lab looking at the effects of beliefs in mind-body dualism on reliance on internal states. This line of work relates to the more general question whether dualists may rely less on internal states when making judgments and decisions. Thus far, we have demonstrated this effect in an experiment adopting a classic excitation-transfer paradigm (Dutton & Aron, 1974). Here, we adopted a recent self-anchoring paradigm introduced by Overbeck & Droutman (2013) designed to assess the degree to which participants use their own affective state (i.e., an internal, bodily-grounded state) when inferring other people's affective states. Particularly, participants first undergo a mind-body-relations priming procedure. Specifically, they work on a variation of the priming task that was described earlier (Forstmann et al., 2012, Study 5). Subsequently, participants state affect is measured using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Finally, they work on the Mind-in-the-Eyes task (MET; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). According to this paradigm by Overbeck & Droutman (2013), the tendency to make errors on the MET that are consistent with the participant's state affect reflects the degree of self-anchoring. In other words: Self-anchoring occurs, when participants project their own current affect onto the social targets whose affect they are supposed to decode. We expect participants whose dualistic beliefs are strengthened to display a weaker tendency for self-anchoring

compared to participants whose dualistic beliefs are weakened. Data collection for this study is currently still ongoing.

(4) Other Activities:

In addition to the empirical and conceptual work described in this report, I was also invited to give a talk in the Department's Colloquium as well as in the Cameron-Brownbag.

Further, I also gave a guest lecture in Andrew Todd's course on Social Cognition. The talks as well as the guest lecture were all focused on my current work on the psychological underpinnings and consequences of holding common-sense beliefs in mind-body dualism.

3) Description of the main results obtained

(1) Emotional Contagion:

Unfortunately, a t-test for independent samples comparing the Positive Episode Condition ($M = .10$, $SD = 0.50$) with the Negative-Episode Condition ($M = .02$, $SD = .37$) in the No-Priming Baseline Condition did not reveal any significant difference regarding affect, $t(69) = 0.76$, $p = .448$, for the IPANAT Difference-Score (higher scores reflect more positive affect). This null effect indicates that the emotional-contagion paradigm did not influence participants' indirect affect as intended. However, our mind-body-dualism priming did elicit the corresponding belief as indicated by significant differences in the predicted direction on both manipulation-check items ($p < .001$). We ran a 2x2 between-subjects ANOVA to see whether our priming manipulation interacted with the valence manipulation as we had predicted. Results indeed revealed a significant interaction effect, $F(1, 159) = 4.77$, $p = .031$). Contrary to our expectation, however, the difference between the Positive-Episode Condition and the Negative-Episode Condition seemed more pronounced among participants primed with dualism ($p = .004$, for the contrast) than for participants primed with physicalism ($p = .891$, for the contrast). Additionally, the ANOVA revealed a main effect of Episode Condition, that is, imagining a positive episode ($M = .09$, $SD = .42$) did result in more positive affect compared to imagining a negative episode ($M = -.03$, $SD = .33$), $F(1, 159) = 3.95$, $p = .048$.

However, at this point, we do not feel comfortable interpreting these findings for two reasons: (1) Even though, the 2x2 ANOVA did show a significant main effect of Episode Condition in the expected direction, we did not observe such an effect in the No-Priming Baseline Condition, casting doubt on the reliability of the emotional-contagion paradigm that we used. (2) Even more critically, the six items that compose the IPANAT measure were not sufficiently intercorrelated. Specifically, participants seemed to treat the six different artificial words (e.g., SAFME or VIKES) very differently

when ascribing emotional qualities to them. When looking at the entire sample, ascriptions of positive emotions (Cronbach's Alpha = .46) and ascriptions of negative emotions (Cronbach's Alpha = .50) across the six items were only poorly correlated. This was also evident on the level of ascriptions of individual emotions (e.g., for "happy", Cronbach's Alpha = .41, or for "helpless", Cronbach's Alpha = .31).

In conclusion, both the fact that the emotional-contagion paradigm did not work as intended in the No-Priming Baseline Condition and the observation of very poor reliability-scores of the IPANAT measure prevent us from drawing any final conclusion about the results obtained in this particular study.

(2) Compassion:

In general, there was no significant main effect for Number-of-Victims, suggesting the absence of the collapse-of-compassion phenomenon in this sample.

Analyses further revealed a significant Number-of-Victims x Dualism interaction effect for the donation DV (for the compassion DV, the corresponding means produced a similar interaction pattern at $p = .15$). For dualists (+1 SD on the dualism measure), number of victims does not increase hypothetical donation amount. But for physicalists (-1 SD on the dualism measure), there is a significant increase in donation from 1 victim to 8 victims ($p < .001$).

In sum, people who tend to dissociate their minds from their bodies seemed to be less affected by the suffering of a larger group of victims than people who tend to ground their minds in their bodies. At this point, however, these findings are still preliminary. Further, we do not know yet what the psychological processes are that produce these differences. One possibility could be that mind-body dualism can function as a coping strategy, that is, dissociating the mind from the body may be beneficial when the latter currently experiences negative affect or other forms of distress. Hence, for dualists the suffering of a large group of people may not be as impactful as it is for physicalists who more strongly rely on bodily-grounded information when making judgments or decisions. Initial support for this argument can be derived from Forstmann et al. (2012, Experiment 3) who showed that confronting participants with health-constraining concepts increased their dualistic beliefs, presumably in order to cope with the vulnerability and transience of the physical body. Similarly, people may use this dissociation-strategy in order to cope with distress and other negative affect currently experienced.

4) Future collaboration with host institution (if applicable)

The collaboration with Andrew R. Todd will be continued on the various projects that are currently running. Further, together with Daryl C. Cameron, I plan on following up on the exploratory findings described in (2) regarding the moderation of compassion by beliefs in mind-body dualism.

- 5) **Projected publications / articles resulting or to result from the grant (*ESF must be acknowledged in publications resulting from the grantee's work in relation with the grant*)**

Burgmer, P., Forstmann, M., Todd, A. R., & Mussweiler, T. (in preparation). Connecting perspectives by disconnecting mind and body: On the relation between beliefs in mind-body dualism and mental-state reasoning. University of Cologne.

- 6) **Other comments (if any)**

Even though at this point, none of the data that has been collected during my short research stay will be included in the manuscript mentioned under (5), the corresponding project and manuscript has significantly profited from the opportunity to work at the University of Iowa.