Abstract

The question of the existence and effectiveness of free will as well as mind-matter dualism are still much discussed and not fully clarified topics in psychology, among others. In order to close this research gap, recent studies postulate our motivational impulse of will as a bridge that mediates between subjective and objective reality. According to this, it should be possible to manifest a subjective, mental idea in objective, material reality with the help of emotionally anchored convictions and intentions. These considerations formed the background to the question of whether a positive, hopeful intention increases the rate performance in an online guessing game. In the present study, 285 participants took part in a short online survey in which they were asked to listen to their gut feeling and make decisions in a guessing game accordingly. A short text at the beginning of one of the two experimental conditions was intended to evoke hopeful, optimistic intentions in the participants, which in turn should improve their guessing performance. The results showed no evidence of improved guessing performance through positive intentions, rather the opposite. They also indicated a correlation between the rate performance in both experimental conditions. There may be various reasons for this, whereby the limitations of the study and alternative methods for inducing positive intentions must be taken into account. We discuss what other possible explanations there might be for these results and what implications they have for future research.

Introduction

"The world is my imagination" (Schopenhauer, 1819, in Shamdasani, 2003, p. 173). Schopenhauer's epistemology describes a subjective character of a world that most people would probably regard as objectively given. According to him, the world - and with it every object - is always only what a person, i.e. a subject, imagines it to be, and this in turn depends on individual perception, sensation and experience (Krafft & Walker, 2018).

However, our current everyday understanding clearly separates our subjective, mental reality, i.e. the mind, from the objective, physical reality, i.e. matter (Maier, 2023). This approach, which is based on Descartian dualism, assumes two mutually exclusive types of reality and is supported by the determinacy of objective reality proposed by the natural sciences. In this context, determinacy means the causal regularity of our external world and thus ensures scientific objectification on the one hand. On the other hand, this principle also poses a number of problems, as it means that, due to deterministic predetermination, it is not possible for us to exert any influence on our physical environment. This raises the frequently discussed question of the existence of free will and our autonomy as individuals. To date, it has not been fully defined to what extent objective and subjective reality are connected and whether or how our free will, if it exists, can influence objective reality through subjective reality (Maier, 2023).

In order to expand current theories and thus close this research gap, Maier (2023) proposes moving away from the dichotomous conception of reality and instead assuming a reality continuum, between whose end points different forms of reality exist. These so-called sober subjective realities represent mixtures of objective and subjective reality and allow the assumption that we as individuals

are able to exert an active and self-determined influence on our world. Based on the Unus Mundus model of reality by Wolfgang Pauli and Carl Jung, Maier (2023) postulates a potential space in which our unconscious contents are located as preforms of the conscious contents of experience. The potential space consists of a unity of pre-conscious and pre-material components and offers us various pre-real possibilities that we perceive unconsciously and whose occurrence in objective reality we can influence.

Maier (2023) regards the volitional impulse as the interface between subjective and objective reality. Accordingly, a subjective mental image can lead to a change in the environment via the potential space through an action initiated by a volitional impulse. It is assumed that a volitional impulse is always dependent on individual motives and their relevance and that the "wanting" on which this impulse is based must be linked to an emotionally anchored conviction. Such convictions act as emotionally coded messages to the potential space, which then activate the corresponding pre-real possibilities and make their occurrence in objective reality more likely. These
"Communication between our conscious self and the unconscious potential space", which Maier (2023, p. 28) refers to as "emotional transgression", thus enables us to construct reality through emotional expectations. By means of an optimistic-hopeful conviction instead of a pessimistic-anxious one, we can also increase the probability of achieving a desired goal that corresponds to what we want. Furthermore, research results in the field of micro-psychokinesis suggest the possibility of a mental-intentional influence on the outcome of quantum random processes (Maier, 2023).

For these reasons, the question has arisen as to whether an emotionally underpinned intention, supported by an optimistic and hopeful conviction, can improve the guessing performance in an online guessing game.

in an online guessing game. The aim of the present study was therefore to investigate the connection between subjective, sober and objective reality and to explore whether hopeful intentions enable access to sober reality, i.e. the potential space.

To this end, a short text in the designed guessing game was intended to evoke positive, hopeful beliefs and intentions in the participants, which served as an emotional request to the potential space, while the intuitive feeling, with the help of which they were to make a decision, represented the answer from the subjective space. Based on the above considerations, we put forward the following confirmatory hypothesis:

H1: The rate performance is better with hopeful intention than in the baseline. In addition, we asked ourselves whether certain personality

personality traits are related to the formation of positive intentions and thus also to improved rate performance. As some personality traits correlate strongly with the construct of optimism (Sharpe et al., 2011), the question of personality traits was investigated by measuring "optimism".

Due to the tendency of optimists to develop positive beliefs (Sharpe et al., 2011), we put forward the following exploratory hypothesis:

H2: Optimism is positively related to rate performance.

Subjective vitality, i.e. "the positive feeling of experiencing physical and mental energy that can lead to purposeful action" (Buchner et al., 2022, p. 1), could, in our opinion, also correlate with the development of positive, optimistic beliefs and intentions. For this reason, we put forward a further, exploratory hypothesis:

H3: Vitality is positively related to rate performance.

Methods

Participants

The requirement of the seminar was to collect 300 test subjects. The data collection was completed when 309 people took part in the study. These were recruited via various survey channels, such as family, friends and acquaintances, the work environment, university-relevant WhatsApp groups and messages sent by post.

Based on the pre-registration, the previously defined exclusion criteria then had to be taken into account. Accordingly, subjects were excluded from the data analysis if they answered in the negative to the control question as to whether they had carefully completed the study. The test subjects who did not complete the study to the end could not be included in the analysis either. This resulted in a sample of $N = 285$ with m = 101, w = 178 and d = 6. The average age of the participants was 29.49 years ($SD = 11.41$).

Materials and procedure

The responsible ethics committee of the Faculty of Psychology and Education at LMU Munich approved the conduct of the present study. The study was conducted entirely online and was designed as a within-subjects design with two experimental conditions (see Appendix A). After completing the privacy policy, including informed consent, as well as some demographic data, subjects were randomly assigned to one of two groups. Group 1 first went through the hope or experimental condition and then the baseline or control condition, group 2 the other way around. In both conditions, after a short introductory text, the participants were presented ten times in succession with a screen showing a closed box in which there was a 50% probability that there was a cat. The task of the test subjects was to listen to their gut feeling and decide accordingly whether a cat was in the box.

decide whether there was a cat in the box or not. The correct answer was already pre-programmed in the computer system. The two buttons below the box were used to select the respective decision, while the boxes at the top illustrated the number of runs so far (see Figure 1). At the end of each condition, a results screen (see Figure 2) was displayed, showing the number of correct decisions made.

Figure 1

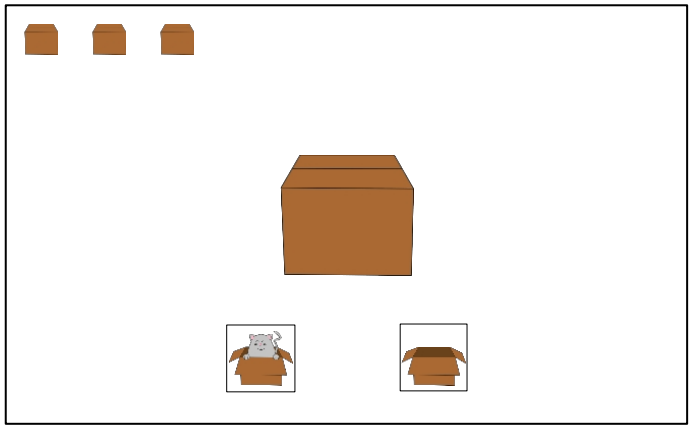
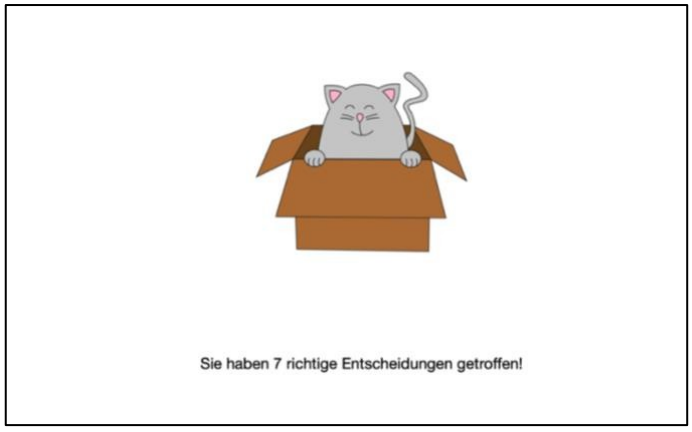


Figure 2



In the experimental condition, the participants were also asked to read a short instructional text (see Appendix A) before the ten guessing rounds, which was intended to evoke an optimistic belief in them and thus positive, hopeful intentions in order to improve their guessing performance. Rate performance, measured by the number of correct decisions, was therefore the dependent variable, while hope, as well as

optimism and vitality in the exploratory hypotheses, were defined as independent variables.

After going through the two conditions, the test subjects were asked to answer several short questionnaires with a total of 27 questions. These served to query the constructs of vitality (Buchner et al., 2022), autonomy (Janke & Glöckner-Rist, 2012), optimism and pessimism (Glaesmer et al., 2008), willpower (Job et al., 2010), as well as the currently available self-control capacity (Lindner et al., 2019) as additional variables. At the end, the respondents were asked to honestly answer the question of whether they had carefully completed the study so that their data could be integrated into the data analysis.

Results

All analyses were performed with *JASP* (JASP Team, 2024).

Descriptive statistics

Table B1 (see Appendix B) shows the descriptive data of the variables collected in the study. Better rate performance was found in the control condition ($M = 5.08$, $SD = 1.59$) than in the experimental condition ($M = 4.83$, $SD = 1.6$). This tends to contradict our assumption that rate performance is better with positive intentions than in the baseline. The correlations across the most important variables are shown in Table B2 (see Appendix B).

There was no significant correlation in favor of our hypotheses. Therefore, the exploratory hypotheses H2 and H3, which stated that rate performance is positively related to optimism and vitality, were rejected.

However, rate performance in the control condition was found to correlate slightly with rate performance in the experimental condition ($r = .117$). This suggests that subjects who guessed better or worse in the baseline condition also guessed better or worse in the hope condition.

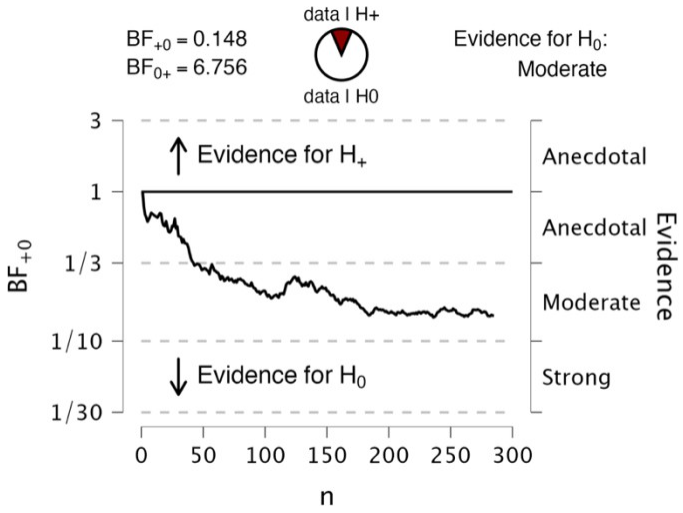
An additional exploratory hypothesis regarding a correlation between guessing performance and reaction time was rejected, as the reaction time was not recorded.

Inference statistics

Hypothesis H1 predicted that rate performance would be better at hopeful intention than at baseline. To test H1, a one-sided, right-sided t-test for dependent samples was performed. This resulted in a Bayes factor of BF_{+0}= 0.148 (see Figure 3), which indicates that there was no effect in favor of H1 (Janczyk & Pfister, 2020). The main hypothesis could therefore not be confirmed.

Figure 3

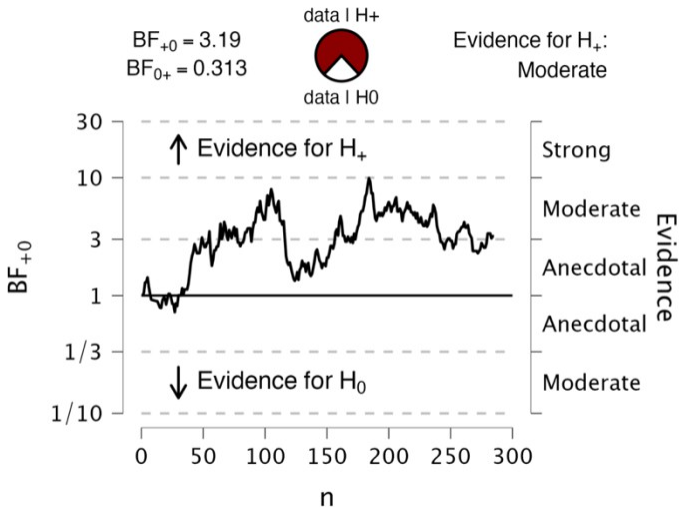
Sequential analysis: hitsExp - hitsCon



The results also indicated moderate evidence for the null hypothesis, which is why the hypothesis was tested in the opposite direction in a further analysis. The resulting Bayes factor, which compares the predictive performance of two competing hypotheses, was BF_{+0} = 3.19 (see Figure 4). Thus, the data are 3.19 times more likely under the assumption that rate performance is better in the control condition than in the experimental condition than under our original hypothesis, again indicating moderate evidence in favor of this assumption (Van Doorn et al., 2021).

Figure 4

Sequential analysis: hitsCon - hitsExp



Discussion

The aim of the present study was to investigate the link between subjective, sober and objective reality and to explore whether hopeful intentions provide access to sober reality.

Contrary to our expectation and the prediction of our main hypothesis, no relationship between hopeful intention and rate performance was found. The assumptions of the two exploratory hypotheses that rate performance is related to optimism and vitality could not be confirmed either, and there were no significant correlations between rate performance and any of the additional variables surveyed. However, the results indicate slight to moderate evidence for the opposite assumption that rate performance was better in the individual baseline than in the experimental condition. In addition, the rate performance in the control condition was slightly related to that in the experimental condition. There may be several possible explanations for these results, although the limitations of the study must first be taken into account.

As already mentioned, the desired sample size was not achieved due to the exclusion criteria, resulting in a rather small number of 285 participants.

participants in the study. However, especially when using the conservative Bayesian statistical methods (Janczyk & Pfister, 2020), a large sample is crucial in order to be able to find a possible effect. In addition, the study was conducted exclusively online and only within 10 to 15 minutes, which could call the ecological validity into question. It is therefore conceivable that the experimental conditions were too artificial and therefore not close enough to our everyday reality. Due to the rather small sample, which was recruited exclusively from students, external validity could also have been compromised. For further studies of this or a similar nature, I therefore suggest that they be conducted either in the field or laboratory and/or over a longer period of time in order to create conditions that better reflect our real world. In addition, a larger sample representing a broader group of the population should be considered in order to be able to generalize the results to the entire population.

A further limitation concerns the within-subjects design used and any resulting sequence effects. This means that the people who went through the experimental condition first could still have been influenced by the positive, hopeful intentions in the subsequent control condition and therefore achieved a better rate performance in the otherwise neutral baseline condition. However, since in our study the rate performance in the control condition was slightly better than in the experimental condition, the subjects could also have been positively influenced by their good rate performance in the baseline condition in the latter. However, there may also be general individual differences in rate performance between the subjects that explain the slight correlation between the two conditions. For these reasons, a between-subjects design should also be used in further analyses in order to determine the influence of the order of the test conditions.

Furthermore, no manipulation check was carried out in the present study. However, this would have made it possible to determine whether the instruction text evoked positive intentions in the test subjects at all or rather led to confusion, as some verbal feedback suggested. This could therefore also explain the better rate performance in the control condition in contrast to the experimental condition, as it is conceivable that an already existing connection to the unconscious potential space was disturbed by the instruction text. In addition, the nature of the instructional text, which dealt with the deep belief in the universe and the resulting trust, could have led to reactance in non-spiritual individuals. Therefore, care should be taken in the future to address a broader group of the population with such a text. The manipulation in our study could also have been too obvious and therefore less effective, which is why I recommend a more implicit influence, including a review of this, for future research. Another type of manipulation, such as a case vignette or exercises over a longer period of time in which positive-optimistic beliefs are internalized, could also be helpful in eliciting stronger positive intentions in the test subjects.

With regard to the instructional text, the question also arises as to whether trust in the universe is not the opposite of free will. After all, if one believes in being guided and thus not being able to make wrong decisions, as the text suggests, free will and the resulting intentions may not be able to influence objective reality at all, since the influence of the individual by the higher power of the universe is null and void.

Apart from the limitations of the study and its design, the possibility must be considered that there is no effect and that the induction of positive intentions does not improve rate performance but rather worsens it. This

would mean that individuals in their individual baseline, without any external influences, have better access to their intuitive feelings and to the unconscious, sober space. It is also important to note the difficulty of measuring such a complex construct as sobjectivity. Since many questions remain unanswered in this area and the general measurability of non-material realities is still a problem in psychology, it is difficult to say how artificial access to sobjective space can best be achieved. At the same time, however, it can be argued that rate performance in an online game could be too objective a measure to be influenced purely by free will and induced positive intentions.

All these considerations can only be considered under the premise of the existence of a sober subjective reality and the possibility of our mind influencing material reality. In my opinion, however, the theory of emotional transgression (Maier, 2023) is a conclusive approach to narrowing or possibly closing the research gap in the area of reality dualism and the "problem of free will" (Kane, 2012, p. 5).

In conclusion, it can be said that some additional research is still needed before definitive statements can be made. Alternative methods for manipulating positive intentions should also be considered and more differentiated analyses of the influences of individual baseline conditions should be included. Thus, the present study provides a further point of reference for further research in this area.

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Appendix A: Experimental conditions

Control/baseline condition:

In the following, you will see 10 boxes in sequence that have a 50% probability of containing a cat. Your task is to decide whether there is a cat in the box or not. Follow your gut feeling for each decision.

Experimental/hope condition:

In the following, you will see 10 boxes in succession that have a 50% probability of containing a cat. Your task is to decide whether there is a cat in the box or not. Follow your gut feeling for each decision.

Before you make the decisions, please take time to read the following text carefully and internalize it. Try to maintain the emotional state created by the text for all 10 decisions:

"I have never been alone. And I will never be alone. Because a higher power loves me. Just as I love the higher power. Because I love it, I trust that it only wants the best for me. I am convinced that it accompanies me with every breath I take. That's why I can't make the wrong decisions. Every single decision will be the right one, and I will be guided with ease."

Appendix B: Tables

Table B1

Descriptive statistics

	Age	hitsCon	hitsExp	LOT_Opt	LOT_Pess	SMS5	SVS	ITW
Valid	285	285	285	285	285	285	285	285
Missing	0	0	0	0	0	0	0	0
Mean	29.491	5.084	4.832	2.644	2.542	2.364	5.940	2.690
Std. deviation	11.405	1.586	1.597	0.841	0.851	1.248	2.222	0.944
Minimum	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Maximum	67.000	9.000	10.000	4.000	4.000	6.000	10.000	5.000

Note. Mean and *Std. deviation* stand for mean value and standard deviation respectively

Table B2

Bayesian Pearson correlations

Variable		hitsCon	hitsExp	LOT_Opt	LOT_Pess	SVS	ITW	SMS5
1. hitsCon	Pearson's r	-						
	BF_{10}	-						
2. hitsExp	Pearson's r	0.117	-					
	BF_{10}	0.513	-					
3. LOT_Opt	Pearson's r	0.016	-0.027	-				
	BF_{10}	0.077	0.082	-				
4. LOT_Pess	Pearson's r	0.030	-0.002	0.465 ***	-			
	BF_{10}	0.085	0.074	$5.872\times10^{+13}$	-			
5. SVS	Pearson's r	0.081	0.026	0.370 ***	0.094	-		
	BF_{10}	0.189	0.081	$7.165\times10^{+7}$	0.259	-		
6. ITW	Pearson's r	-0.067	0.032	-0.262 ***	-0.146	-0.130	-	
	BF_{10}	0.139	0.086	1611.228	1.539	0.804	-	
7. SMS5	Pearson's r	-0.085	-0.030	-0.473 ***	-0.423 ***	-0.445 ***	0.327 ***	-
	BF_{10}	0.207	0.084	$2.227\times10^{+14}$	$8.313\times10^{+10}$	$2.229\times10^{+12}$	561341.093	-

Note. * BF_{10}> 10, ** BF_{10}> 30, *** BF_{10}> 100