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MASTERARBEIT / MASTER'S THESIS

Title of the Master's Thesis

„Mirror, Mirror on the wall – is the perception of my self malleable at all?

**How the implicit theory about the malleability of the self is associated with
authenticity and approach tendencies“**

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Abstract in English

Perceived authenticity and implicit beliefs have a profound impact on people's well-being, behavior, and life progression. This master's thesis examines the relationship between implicit perceptions of the malleability of the self, perceived authenticity, and resulting behavioral tendencies. Using an online questionnaire with $N=316$, the implicit perception of the malleability of the self was manipulated, and a resulting change in behavioral tendencies was measured. Participants who were convinced in a text that people's selves were malleable tended to agree more to a planned bar date with work colleagues who did not seem entirely compatible. In contrast, participants who were convinced in a text that people's selves are fixed and unchangeable tended not to want to attend this planned bar evening.

The relationship of perceived authenticity, implicit perception of self, and behavioral tendencies was also examined using moderation analysis. No significant results were found here. The interrelationship of the studied constructs should be further investigated in the future.

Key words: lay beliefs, perceived authenticity, perception of self, SAFE model, growth mindset, fixed mindset, approach avoidance tendencies

Abstract in German

Wahrgenommene Authentizität und implizite Glaubenssätze haben einen entscheidenden Einfluss auf das Wohlbefinden, Verhalten und den Verlauf des Lebens von Menschen. In dieser Masterarbeit wird der Zusammenhang zwischen der impliziten Wahrnehmung der Veränderbarkeit des Selbst, der wahrgenommenen Authentizität und den hieraus resultierenden Verhaltenstendenzen untersucht. Mittels eines Onlinefragebogens mit $N=316$ wurde die implizite Wahrnehmung der Veränderbarkeit des Selbst manipuliert, und eine hieraus resultierende veränderte Verhaltenstendenz gemessen. Teilnehmer*innen, die in einem Text davon überzeugt wurden, dass das Selbst der Menschen veränderbar ist, tendierten eher dazu, einem geplanten Barabend mit nicht ganz kompatibel scheinenden Arbeitskolleg*innen zuzustimmen. Im Gegensatz dazu tendierten Teilnehmer*innen, die in einem Text davon überzeugt wurden, dass das Selbst der Menschen fix und unveränderbar ist, diesem geplanten Barabend eher nicht beiwohnen zu wollen. Der Zusammenhang von wahrgenommener Authentizität, der impliziten Wahrnehmung des Selbst und den Verhaltenstendenzen wurde außerdem mittels Moderationsanalyse untersucht. Hierbei wurden keine signifikanten Ergebnisse gefunden. Der Zusammenhang der untersuchten Konstrukte sollte in Zukunft näher untersucht werden.

Schlüsselwörter: wahrgenommene Authentizität, Wahrnehmung des Selbst, Laientheorien, SAFE model, Wachstums-Mindset, Annäherungs und Vermeidungs Tendenzen

1 Introduction

Not only advertisements of delicious chocolate bars (“You are not you when you are hungry”) but also philosophers, sociologists and psychologists have been encouraging people to be and feel comfortable with their true selves (Jongman-Sereno & Leary, 2020; Kernis & Goldman, 2006). This “feeling, that one is currently in alignment with one’s true or genuine self” represents a common definition of authenticity (Lenton et al., 2013; Schmader & Sedikides, 2018; Sedikides et al., 2017).

And authenticity, related to Schmader and Sedikides (2018) conceptualized as a temporal state, is associated with many meaningful aspects of human life, such as wellbeing, self-esteem, meaning in life, integration, social status and social identity (Kernis & Goldman, 2006; Robinson et al., 2013; Schmader & Sedikides, 2018; Toor et al., 2009; Zhang et al., 2019).

And it is precisely this connection of authenticity with other social constructs that will be analyzed in this master's thesis: we want to explore the connection between authenticity and social behavior, and here in particular the implicit perception of the malleability of the self, authenticity and approach and avoidance tendencies of social situations. Concretely, this master thesis examines the question of whether there is a positive relationship between perceptions of malleability of the self and a behavioral approach tendency: If people are more likely to perceive the self as malleable, are they more likely to engage in certain approach and avoidance behavior tendencies?

In addition, we also ask to what extent authenticity acts as a moderator in this regard: Is this assumed positive correlation between the perception of malleability of the self and approach tendencies influenced by perceived authenticity? Do people who perceive themselves as more authentic in certain situations possibly experience this correlation more strongly than people who perceive themselves as less authentic?

The foundation of this intention is provided by the results of Bauer and Job (in preparation). They found evidence that higher perceived malleability is associated with a higher tendency to approach certain situations, and that authenticity functions as a moderator in this process.

In this thesis, we deepen this result and investigate the extent to which a manipulation affects this process. Understanding the interrelation of the variables mentioned above can help pave the way for gradually drawing conclusions about our everyday behavior in relation to perceived authenticity, perception of the malleability of the self, and approach and

avoidance tendencies. Considering that perceived authenticity has an impact on various aspects of everyday life (Kernis & Goldman, 2006; Robinson et al., 2013; Schmader & Sedikides, 2018; Toor et al., 2009; Zhang et al., 2019), potential intervention programs could contribute to empowering individuals to feel more authentic. To achieve this, it is important to thoroughly understand the different associations between perceived authenticity and constructs such as perception of the malleability of the self, approach and avoidance tendencies as well as the manipulation of those variables.

2 Theoretical background

In line with Bauer and Job (in preparation) we assume that there exists a connection between two overarching theoretical frameworks: on the one side authenticity, environmental cues and approach and avoidance tendencies are embedded in the State Authenticity as Fit to Environment (SAFE) model (Schmader & Sedikides, 2018). On the other side the concept of the self is embedded in the lay beliefs, in particular in the people's lay belief about the self-concept (Walton et al., 2014).

2.1 State Authenticity

Schmader and Sedikides (2018) postulate in their SAFE model that environmental cues can stimulate fits, that activate fluency and thereby causes the feeling of authenticity. It is precisely this subjective feeling, the perceived authenticity, that we define as temporarily perceived feeling of being oneself that we want to bring into the context of approach and avoidance tendencies here.

Suppose a person has been part of a judo team for years. The weekly training takes place in an environment specifically designed for judo: tatami mats, judo kimonos, and a typical soundscape. Those environmental cues can contribute to the so-called fit: the person feels familiar and connected to the training, movements in judo, maybe the trainer and the other judokas.

During the training, the person can thus enter a state of fluency, focusing on the techniques, movements, and exchanges with training partners. In this state of fluency, the person feels authentic as he or she express their judo skills and fully develop in the combat art.

The temporary feeling of being themselves is enhanced as the person successfully applies the techniques, probably builds self-confidence, and maybe connects to their personal

judo identity. The combination of the specific environmental stimuli of judo training and the experience of fit, fluency and authenticity contributes to the person feeling like "themselves" during the training. This sense of perceived authenticity may subsequently contribute to the person's revisiting the judo training situation.

This example illustrates the context in which perceived authenticity should be distinguished from partially correlated constructs (Rivera et al., 2019; Schmader & Sedikides, 2018) such as self-esteem and (good or bad) mood. For example, a high state of self-esteem, defined as the fluctuating individual worth of one's own individual person over time (Thomaes et al., 2010), does not always go hand in hand with high authenticity: one can feel very authentic during the Judo training, but as well with a low as well as a high state of self-esteem - depending on the standard one sets for oneself (Rivera et al., 2019).

A similar line of reasoning can be used in delineating (good or bad) mood from authenticity or inauthenticity. Someone can feel authentic in a bad mood as well as in a good mood. Someone who, for example, is not genetically predisposed to getting up early in the morning will at least not feel authentic right away when doing a morning laughter yoga. The fact that moods and perceived authenticity are two different constructs is also shown by examining the two variables and their mutual influence (Erickson & Wharton, 1997; Lenton et al., 2013; Lenton et al., 2016; Turner & Billings, 1991). For example, Lenton et al. (2013) were able to show that manipulating mood led to higher perceived authenticity.

2.2 Approach avoidance tendencies

Regarding the SAFE model perceived authenticity leads to approach or avoidance tendencies (Schmader & Sedikides, 2018). We define approach avoidance tendencies as

“the energization of behavior by, or the direction of behavior toward, positive [desired] stimuli (objects, events, possibilities), whereas avoidance motivation may be defined as the energization of behavior by, or the direction of behavior away from, negative [undesired] stimuli (objects, events, possibilities).” (Elliot, 2008, p.3)

The study of what leads people to engage in certain actions and resist others has a long history in psychological research (Monni et al., 2020) and there are different social psychologic concepts to approach and avoidance tendencies (e.g. Grays Reinforcer

Sensitivity Theory or Higgins Regulatory Focus Theory). The fact that perceived authenticity was associated with approach and avoidance tendencies was again concretely triggered by the work of Schmader & Sedikides, but also emerged in other forms, for example, in the Self Determination Theory. In this theory, it is assumed that, in addition to the experience of competence and relationship, the need for autonomy, i.e., the striving to act in a freely determined manner that corresponds to the self, also contributes to satisfaction (Deci & Ryan, 2000) and this in turn influences further action (approach or avoidance).

According to the SAFE model (Schmader & Sedikides), those who feel more authenticity will also be more likely to seek out precisely those situations in which they have experienced authenticity as a result of the fit and the accompanying authenticity.

For example, if a top athlete feels comfortable and passionate about his or her training, he or she will experience a greater fit in the training situation (Hassan & Nambudiri, 2022). This causes a higher fluency, for example motivational fluency, which increases his will to achieve his or her personal goal. As a result, he or she will experience more authenticity and approach the training situation more often (Schmader & Sedikides, 2018).

In contrast, if people experience that the environmental fit is repeatedly not given, for example, because they repeatedly feel discriminated, this is associated with a lower perceived authenticity (Bauer & Hannover, 2020). And this, in turn, was associated with a lower tendency to make native friends (lower approach tendency).

Schmader and Sedikides' (2018) constellation of fit, authenticity and approach tendencies has already been demonstrated in a growing number of studies (Borawski, 2019; Hicks et al., 2019, Rivera et al., 2019; Zhang et al., 2019). And precisely because this model can be used to explain socially important topics such as social identity, discrimination or dynamics of minority groups (Schmader & Sedikides, 2018), we see it as an important task of research to further deepen the findings.

2.3 Implicit theories: fixed and growth mindset

When individuals seek to explain, predict, or interpret human behavior, implicit lay theories about basic human processes contribute a major part to these explanations, interpretations, or predictions (Dweck, 1999, 2012; Molden & Dweck, 2006).

These so-called implicit theories, defined as people's lay beliefs about the nature of human attributes (Dweck, 2012) can occasionally make a major contribution to how human life proceeds, for example, how good one's grades are in school, how successful one is in

one's academic studies or how the general well-being of a person feels like (Yeager & Dweck, 2012; Ortiz Alvarado et al., 2019).

Looking at these lay beliefs from the perspective of Dweck (1999; 2012) as a framework, one can distinguish between two ends of a spectrum: on one side there is the growth mindset (*incremental theory*). People with a growth mindset assume that human attributes can be malleable and therefore changeable.

On the other side there is the fixed mindset (*entity theory*) (Dweck, 2012; Dweck & Legett, 1988). People with a fixed mindset take certain attributes as given, stable, partly innate and above all unchangeable.

Whether human attributes are perceived implicitly as malleable or fixed affects social perceptions in many ways, for example, when it comes to working with coping strategies when performance is unsatisfactory (Hong et al., 1999) or when it was a question of how to deal with a pandemic (Zhang et al., 2021). For example, the tendency toward the growth mindset was associated with a lower perceived susceptibility to severe illness from COVID 19, and people with a growth mindset took more pandemic preparedness measures than people with the fixed mindset tendency (Zhang et al., 2021).

If a romantic relationship is perceived from the perspective of the growth mindset and the relationship is thus perceived as malleable, dynamic and expandable, this can lead to a positive influence on the relationship in terms of its quality and maintenance (Mattingly et al., 2019).

In summary, it can be concluded that while people with tendency towards growth mindset tend to see challenges and failures as opportunities for continued learning and growth, people with a tendency towards the fixed mindset tend to see failures and mistakes as risks that could negatively impact them (Dweck, 2012) - be it related to health, eating behavior, education or athletic behavior. As already mentioned, this is a spectrum with several distinct characteristics, which can have different effects in different areas of life. Someone who is convinced that he or she can become an excellent judoka through his or her own hard training does not have to be convinced at the same time that he or she can become a math expert through his or her own hard work.

As already mentioned, this is a spectrum (Dweck, 2012) with several distinct characteristics, which can have different effects in different areas of life. Someone who is convinced that he or she can become an excellent judoka through his or her own hard training does not have to be convinced at the same time that he or she can become a math expert through his or her own hard work. This is precisely why it is essential to examine different

aspects and effects of the growth and fixed mindset - and in our case, to examine the connection with the implicit perception of the malleability of the self.

2.4 Implicit theories and the expandable self theory

As Oyserman and Markus (1990) we understand the self concept as a “multifaceted structure with a wide range of self-representations”.

Already in 1999, Dweck assumed that the perception of the self as malleable also influences our behavior. McFarland and Buehler (2012) were able to contextualize this by showing that different coping mechanisms for dealing with negative mood were activated depending on whether personality-related attributes were perceived as changeable or not. Furthermore, Steimer and Mata (2016) found evidence that people implicitly perceived their strengths as more malleable than their weaknesses. Interestingly, this assumption only affected themselves - this implicit assumption was not made for other people.

And in line with the expandable self theory (Walton et al., 2012) we propose that the perception of the self varies depending on the situation in the broadness, the complexity and the structure. According to the expandable self theory the perception of a broader self makes people feel less vulnerable and helps them to perform better. On the other side the perception of a more narrow self is associated with more vulnerability and worse performance.

The effects of the perception of a wider or narrower self has so far been demonstrated primarily in the context of the stereotype threat (Spitzer & Aronson, 2015; Walton et al., 2012). For example, Gresky et al. (2005) showed that activating a perception of a broader self results in better math performance in women. To induce activation of the perception of a broader self, women were asked to create a self-concept drawing-either with many nodes (broader self) or with few nodes (narrow self). The women in the first condition performed significantly better than women from the “narrow self condition” or women who had not been primed at all - hence, the stereotype threat could be reduced in this case by activating the perception of a broader self.

Even other simple exercises, such as asking about other important aspects in life besides school performance before a math test achieved the same consequences: when the perception of the self was expanded, the stereotype threat was reduced (Logel et al., 2009).

2.5 The connection between the SAFE model and implicit theories of the self

In line with Bauer and Job (in preparation) we assume that the implicit theory about the malleability of the (expandable) self influences the processes around perceived authenticity and the associated approach and avoidance tendencies.

The link between perceived authenticity and lay beliefs about the self was also addressed by Rivera et al. (2019). They postulated that people use their perceived authenticity as an indicator to evaluate their standard of living using the so-called “true-self-as-guide” lay belief.

We assume, if individuals perceive their self as malleable and in line with the expandable self theory as more expandable, this corresponds more to a tendency towards a growth mindset: in this case, people assume that they can adapt themselves to situations and dynamically expand their perception of their self. In comparison, people with a tendency towards a fixed mindset tend to see their self as given and narrow: if they do not feel comfortable - or authentic - in a situation, they might more likely come to the conclusion that their self does not fit in and that there are few possible solutions due to the non-existent fit.

More specifically, we suggest that implicit theories of the perception of the malleability of the self influence the transition from environmental fit and fluency to authenticity as well as in the transition from authenticity to approach and avoidance tendencies. Bauer and Job (in preparation) have already identified this association: when people implicitly perceived themselves as broader and thus in line with a growth mindset, they reported higher approach tendencies as well. Congruent with the SAFE model (Schmader & Sedikides, 2018) this positive correlation between the perception of the malleability of self and the approach tendencies was moderated by the stated authenticity.

In this master's thesis, we would like to build on these results and extend them with a component, specifically a brief manipulation of the perception of the malleability of the self. As with the brief interventions to activate the perception of a broader self in the context of the stereotype threat mentioned earlier, we would like to work with a short exercise to ensure that either the growth mindset, respectively a malleable, broader self or the fixed mindset related to the perception of the narrower self is activated. This approach is based on the findings that sharing scientific information about the growth or fixed mindset can change the mindset of people (Bernecker & Job, 2019).

Figure 1 shows this association graphically. Hence, beside the control group we compare two conditions: those who are inducted with the fixed mindset (experimental group

"fixed self") and those who are primed with growth mindset (experimental group "malleable self"). The comparison of those two groups is tested as follows:

Hypothesis 1: The experimental group “malleability of self” shows higher approach tendencies.

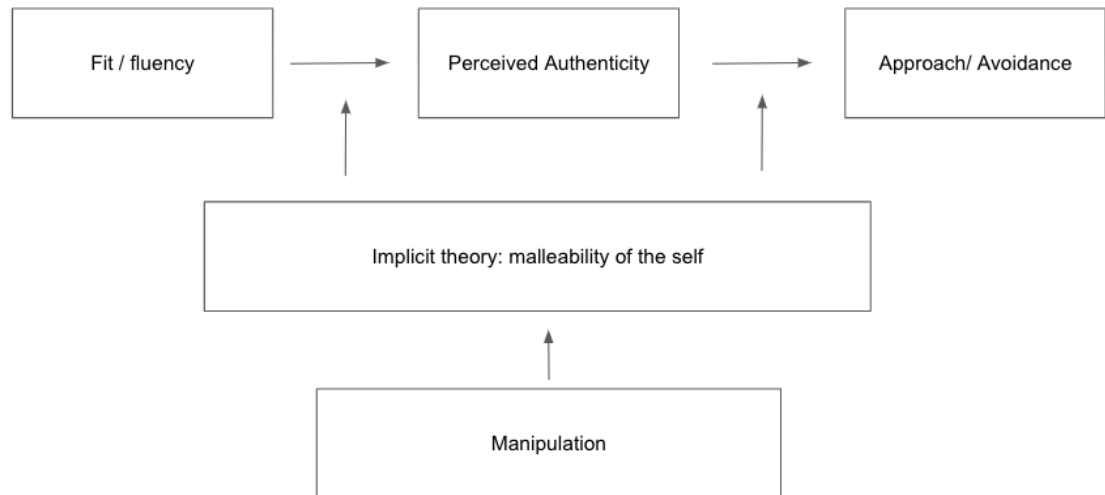


Figure 1: connection between implicit theory of the self and the SAFE model.

In summary, based on the present argumentation we would like to explore the question of the relationship between the malleability of the self, perceived authenticity and approach and avoidance tendencies testing the second hypothesis:

Hypothesis 2: The connection of the malleability of the self on approach tendencies is moderated by the perceived authenticity.

3 Method

3.1 Procedure

The data was collected from a collaborative project for our master's thesis together with my comrade Katharina Koss and our supervisor Christina Bauer. Katharina and I worked together on the first hypothesis, and the second hypothesis differed from each other.

We supported each other in data preparation and data analysis, and we also gave the presentations in the master seminar together.

Participants were recruited through acquaintances and friends via whatsapp, Instagram and LinkedIn. Additionally, the study was posted in 72 Facebook groups for students. As an incentive, three vouchers worth 50 to 100 euros for an online store were raffled. The questionnaire was conducted as an online survey in German and each participation took approximately 15 minutes.

The study was conducted with Qualtrics.XM. Data was collected from 24.11.2021 until 27.12.2021. When participants clicked on the link, they were automatically and randomly assigned to one of our three distinguishable conditions: the group “fixed self”, the group “malleable self” and a control group. The full survey in German and the complete dataset are available in our codebook (s. attachment).

The manipulation of the perception of the malleability of the self was conducted as follows: Depending on the condition, the participants each received a different text, which was declared as a scientific article about the self. This should activate either the malleable or the fixed self. The "article" was written in consultation with our supervisor Christina Bauer. The articles were about one page long and graphically prepared to resemble a scientific article. For example, a graphic was included to show what percentage of the self was malleable or fixed. Content included arguments and vivid examples of why the self has been shown to be fixed or malleable. The full-length articles can be found in the codebook.

For the control group, we wrote an “article” about nostalgia that should activate neither of the two self tendencies.

The article was followed by a so-called saying is believing exercise. As is common in a saying is believing exercises, subjects are asked suggestively to reflect on the text after reading it (Aronson, 1999; Walton & Wilson, 2018). This is intended to cause subjects to further internalize the core message. In our case we asked the participants “Why do you think the self is malleable/fixed?”.

3.2 Participants

The sample size was calculated using GPower 3.1 (Faul et al., 2007). Assuming as previous studies (Bauer & Hannover, 2020; Jongman-Sereno & Leary, 2020; Zhang et al. 2018) an estimated small to medium effect size of $d = .4$, a power level of .80 and alpha of .05 we needed a minimum of 244 participants.

A total of 316 participants (64,31% female, 34,73% male, 0,96% divers) fulfilled our survey. Because five participants indicated that they had not started studying, we excluded these participants. Since two of the three scenarios refer to situations in academic studies, we had specified a started study as a requirement for participation. The average age was 30.5 years ($SD=9.92$). Overall, 74,28% of the participants stated that they had a German or Austrian nationality, 1.93% Central Europe, 1.29% Eastern Europe, 1 person (0.32%) Asian, 22,19% stated “other” or did not fill out the field.

98,5% of the participants reported that they were current students or having studies in the past.

The participants were randomly assigned to which group they ended up in, resulting in the following composition: Group “Malleable Condition” = 106, Group “Fixed Condition” = 89, Control Group = 116.

3.3 Measures

3.3.1 Manipulation check

To check if our manipulation worked, we used the “Implicit Person Theory Measure” with Cronbach’s alpha of .93 (Levy et al., 1998), consisting of a seven likert scale to measure the malleability or the fixed mindset regarding the self. The instrument includes three items, for example “*The kind of person someone is, is something basic about them, and it can’t be changed very much*”.

As expected, the groups differed in their average score on this measurement. The lower the value of malleability, the more likely people were to report perceiving a malleable self. While the “malleability self” group scored 3.23 ($SD=0.78$), the control group scored 3.59 ($SD=0.89$), and the “fixed” group scored 3.86 ($SD=0.98$). This difference was also statistically significant, as shown by an analysis of variance: $F(2,310)=12,729, p > .05$.

3.3.2 Scenario for measuring perceived authenticity

We gave our participants three scenarios in which the degree of perceived authenticity should vary. Working with scenarios in questionnaires can have the advantage that it is easy for participants to understand what is being asked of them without the knowledge of the theoretical background (Utomo et al., 2022), and is considered an established tool to capture people’s assessment of certain situations (Atzmüller & Steiner, 2010). We used the Scenarios that Bauer and Job (in preparation) had already deployed.

For example, the third scenario was as follows: *Imagine that after graduation you start a job in a company for which you have moved to a new city. You find the topic you are working on in your job really interesting. At the same time, you notice that you feel inauthentic when interacting with your colleagues - you feel that you can't fully be yourself when talking to your colleagues.*

3.3.3 Perceived authenticity

After reading the scenario, the participants were asked how authentic they would perceive this situation. We measured the perceived authenticity with the items of English and John (2013) that is a six-point Likert scale with Cronbach's alpha of .93. For example, one of the four items is: *I can be completely myself when interacting with new students.*

As expected, the score of the perceived authenticity varied in the different scenarios. For scenario 1, the mean score was 4,00 ($SD=0,94$), for scenario 2 it was 3,6 ($SD=1,00$) and for scenario 3 it was 3,09 ($SD=0.89$). A higher score is associated with a higher perceived authenticity.

3.3.4 Approach Avoidance Tendencies

For the requirement of the approach and avoidance tendencies we used the four items scale of Bauer and Job (in preparation). An example item for this is: *I want to keep the conversations alive.* The respondents were asked to fill out a 6-level likert scale.

As anticipated, the score of the approach and avoidance tendencies varied in the different scenarios. For scenario 1, the mean score was 4,00 ($SD=0,81$), for scenario 2 it was 3,64 ($SD=0,99$) and for scenario 3 it was 3,55 ($SD=0.89$). A higher score is associated with a higher approach tendency.

3.3.5 Anticipated Behavioral Engagement

To measure the anticipated behavioral engagement we used an adapted version of the question from Bauer and Job (in preparation): *Imagine further that there is a plan to end the evening in a bar. How likely is it, according to their current feeling, that you would come along?*

And also here the results varied according to our predictions depending on the scenario. Scenario 1: mean score = 4,07 ($SD=1,22$), Scenario 2: 3,71 ($SD=1,36$), Scenario 3: 3,65 ($SD=1,23$).

3.3.6 Demographic Data and control variables

At the end of the questionnaire, we collected age, gender, education level and nationality. Since Schmader and Sedikides (2018) already drew attention to the connection between authentic experience and social status, we also asked for the subjective social status as a control variable. For this purpose, we use the method for surveying subjective social status (intraclass correlation of .79) by Goodman et al. (2001). Subjects are asked to rate their perceived social status on a ladder in comparison to others.

We also asked for the personality trait extraversion as a control variable. The reasoning behind this was that our capture of our behavioral engagement component, is linked to the social aspect. Whether one plans to go to a bar with colleagues or to intensify social contact could therefore also be related to the extraverted or introverted tendency. For this purpose, we used the two associated items from the short version of the Big Five Inventory by Rammstedt (2007). The item for extraversion is: *I see myself as someone who is outgoing, social*. The participants answer the questions on a five-point Likert scale. The retest reliability is between .72 and .84.

The exact and complete questionnaire can also be found in our codebook.

4 Results

4.1 Results for hypothesis 1

To test, if the group induced with the mindset that the self is malleable showed higher score in approach tendencies, we calculated six univariate variance analyses using SPSS version 27: For each scenario, we calculated a variance analysis with the independent variable of the group and the approach avoidance tendencies of Bauer and Job. We also calculated an analysis per scenario with the independent variable of the group and the dependent variable of behavioral engagement. The level of significance was set as $p=0.05$. We controlled the variables of perceived social status, extraversion and will power.

For scenario 1, no statistically difference in the approach tendencies ($F(2,305)$, $p=.819$, partial $\eta^2=.00a$) and the behavioral engagement ($F(2,304)$, $p=.276$, partial $\eta^2=.008$) was found.

For scenario 2, no statistically difference in the approach tendencies ($F(2,304)$, $p=.477$, partial $\eta^2=.005$) and the behavioral engagement ($F(2,304)$, $p=.326$, partial $\eta^2=.007$) was found.

For scenario 3, no statistically difference in the approach tendencies was found: $F(2,304), p=.150$, partial $\eta^2=.012$))

For scenario 3, a statically difference in the behavioral engagement score was found: $F(2,304), p=.041$, partial $\eta^2=.021$)). The partial eta square number indicates a small effect. The predetermined simple contrast calculations showed a significant difference between the fixed group and the other two groups: $M_{Diff} = -3.94$, 95%-KI[-.728, -.061], $F(2,304)=3,233$, $p=.041$, partial $\eta^2=.021$). The mean values of the variable behavioral engagement give a good indication of the direction of the effect: fixed group mean = 3,42 ($SD=1,19$), malleability group mean = 3.73 ($SD=1,13$), control group mean = 3.75 ($SD=1.23$).

4.2 Results for hypothesis 2

To test, if the association between perceived authenticity and approach tendencies is moderated by the implicit theories about the malleability of the self significantly, we conducted a moderation analyses, with the macro PROCESS (Hayes, 2018) of SPSS 27.

Again, we calculated a total of six moderation analyses - for each scenario, one analysis for the relationship of approach to authenticity, and once with the behavioral engagement and perceived authenticity. Malleability of the self was used as moderator in each case. *Figure 2* shows all the relevant numbers in detail. Although all overall models were significant, no significant moderation effects were conducted.

Figure 2

Results of the moderation analyses

	Overall model	Overall p	Overall R^2	Interaction p
Scenario 1 approach	$F(3,312) = 11,12$	.0228*	3,63%	.078
Scenario 2 approach	$F(3,311) = 11,37$	.326	1,29%	.326

Scenario 3 approach	$F(3;313) = 17,78$	.0181*	8,23%	.177
Scenario 1 behavioral engagement	$F(3;311) = 7,77$	.579	6,00%	.949
Scenario 2 behavioral engagement	$F(3;310) = 16,65$	.066	2,77%	.073
Scenario 3 behavioral engagement	$F(3;309) = 10,92$	.524	1,19%	.079

*Note: * $p < .05$*

5 Discussion

5.1 Hypothesis 1

With our online experiment we tested whether a manipulation of the perception of the malleability of the self can have an influence on behavioral approach tendencies. We found evidence that in the case of one scenario a difference between the groups occurred: the participants who were in the group induced with the mindset that the self is malleable and in the control group were more willing to go further into the bar despite the inauthentic situation at their new workplace.

These significant results suggest that the link of authenticity, the malleability of the self, and behavioral effects exists and, furthermore, that this link can be influenced with a

brief intervention. In this context, the result confirms the correlations of the SAFE model (Schmader & Sedikides, 2018), which assumes that authenticity is the basis for seeking out or avoiding certain situations. Furthermore, this significant result represents a replication of the findings of Bauer and Job (in preparation).

Nevertheless, the question inevitably arises as to why the difference between the groups was only measurable in the scenario involving a situation in which the participants imagined they were confronted with new work colleagues. There are several possible explanations for this: the first two scenarios refer to situations that take place at the university. These involve group dynamics that are actually associated with students and universities. With the COVID19 pandemic and the distance learning and online courses that come with it, it may generally be that people are less able to identify with or put themselves in these situations. If this component, namely not being able to empathize well with the scenario, influences behavioral tendencies, the relatively high average age of our subjects could also have an impact. With an average age of over 30, the study could have been longer ago for some of the subjects, so that could also affect our result.

Our third scenario also targeted an inauthentic situation. Perhaps a manipulation on the fixed mindset related to the malleability of the self has more influence on inauthentic situations than on less inauthentic scenarios.

5.2 Hypothesis 2

We also tested whether the influence of the perception of the malleability of the self on approach tendencies was moderated by perceived authenticity. We could not confirm this hypothesis. In this aspect, we could not replicate the results of Bauer and Job (in preparation).

Even though this result is not a significant one, it is still of scientific importance. The replication crisis (Glöckner et al., 2018; Wingen & Berkessel, 2022) has shown us that it is precisely the non-significant results that can make us question our scientific findings.

So at this point we may ask: to what extent did the difference between Job and Bauer (in preparation) and our approach contribute to these results? Could it be that the manipulation we worked with led to this different result? In both the experiment by Bauer and Job (in preparation) and our experiment, the data that was collected was integrated into a larger questionnaire. Is it possible that the other questions asked of the participants had an influence on the response behavior?

5.3 Limitations

Due to the online format of our study, we did not have such controlled conditions as we would have when conducting the experiment in the laboratory. For example, Clifford and Jerit (2014) were able to demonstrate a difference in distractibility between laboratory and online conditions. Thus, we cannot exclude that our participants were not exposed to various distractions such as noise, people in the room or music while they are completing the experiment.

Whether or to what extent we can generalize the results of our sample to other societal groups is also open to debate. Since we recruited mainly online and in various Facebook groups, it is possible that on the one hand we reach people who generally spend more time online. On the other hand, a certain selection could arise, since our friends and acquaintances are probably more inclined to participate in the experiment. Here, however, we refer to Demerouti and Rispens (2014) who were able to show that external validity can also be achieved in samples recruited by students at a higher level than expected.

Finally, it should be noted that in our scenarios we assume that students can imagine what the atmosphere in a university is like. Our experiment, however, could also involve students who are already in their second year of university, but who have never been to a local university due to the pandemic, because they have only experienced online teaching so far. This could also affect our results, in the sense that students might generally feel inauthentic in our scenarios.

5.4 Further research

Since both perceived authenticity and implicit theories of the malleability of the self feed into everyday experience, the life cycle, and many other aspects of human existence, it is important that the interrelationships of these constructs be further explored. If interventions can be developed that can train people toward positive development, we will fulfill an important purpose of psychological research. Therefore, I propose the following options for further research purposes:

Measuring approach and avoidance tendencies. Since Bauer and Job (in preparation) have already found evidence for the connection between authenticity, the malleability of the self, and behavioral tendencies, it would be useful to examine these

associations again in more detail. In our approach, we used a questionnaire to measure behavioral tendencies.

Other question methodology, such as the Approach Avoidance Task that Radke et al. (2014) used in their study to examine depression, would also be conceivable.

Neuropsychological measurement methods could also be considered for this purpose – Ascheid et al. (2019) for example used functional magnetic resonance imaging (fMRI) for measuring approach and avoidance tendencies. In addition, it would be a possibility to include reaction and response times in an analysis, or even to use them as a measurement method per se, as for example Meule et al (2020) did. Using other questioning or measurement techniques would give us the advantage of being able to replicate and validate the results in different ways, so that we can get an increasingly accurate picture of the relationships around authenticity, perception of self, and approach and avoidance tendencies.

Working with the third scenario Since in our case the scenario with the working colleagues was the one associated with significant results, this scenario could be used for further studies and possibly extended to include other components. For example, the scenario involved the situation of working with colleagues who, at first impression, are not entirely compatible. It might be possible to design another scenario in which one feels authentic with one's work colleagues but then finds oneself in a less compatible situation because, for example, one is given a task by the boss that was not discussed in this way in the job profile. Working with extended scenarios could give us even more insight into exactly what the critical information was in our scenario. In our scenario, we mainly roughly described that one does not feel completely authentic with the colleagues. Could this possibly be described in more detail? How would it affect the participant if we did not write the word "inauthentic" directly into it, but perhaps paraphrased it differently, for example with "one could not really be oneself"?

Manipulation To manipulate our subjects, we relied on a supposedly scientific text that subjects were asked to read. With the saying is believing exercise (Aronson, 1999; Walton & Wilson, 2018), we also wanted to ensure that the subjects were convinced of the content of the text. This "procedure" takes only a few minutes, and most of the answers to the question why people had a fixed or malleable mindset turned out to be relatively short. It would be a good consideration for future research to take the exercise further with more time available and ensuring a quiet environment. For example, multiple choice questions could be asked about the content of the text to see to what extent the text itself was understood - as Boysen (2011) did in his intervention for an anti-stigma program.

Long term measurement In this experiment, we focused on a short-term and short-lived effect: from the manipulation of the malleability of the self and the imagined situations, it was a short period of time. But if we want to address social issues such as integration, discrimination, or career success, we need more sustained and larger-scale approaches. In order to be able to influence and measure implicit beliefs about the malleability of the self in the long term, it would also be important to carry out studies over a longer period of time and possibly also to design the knowledge transfer multimodally. For example, videos, testimonials, texts and other exercises could be used over a longer period of time to see to what extent a longer intervention can influence the changeability of the self, and how this in turn is related to authenticity and approach tendencies.

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