

**Examining the Potential of Character Strength Interventions to Foster Daily Subjective  
State Authenticity among Students**

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## Abstract

The experience of state authenticity confers well-being benefits and has a guiding function in life. However, the cultivation of subjective state authenticity remains understudied. From a standards-behavior congruency perspective, the present study aimed to provide insight into the potential of character strength interventions to foster daily subjective state authenticity among students. The present study was the first to explore the impact of strength interventions on the experience of being one's true self. Participants ( $M$  age = 20.1 years,  $SD$  = 2.9, 75% female) were psychology undergraduates at Tilburg University. Authenticity was measured daily during a two-week baseline phase and a three-week intervention phase. Individuals participated in either a signature strength intervention or an ideal strength intervention. Interrupted times series analyses (ITSA) were conducted in a multilevel model, to examine the intervention effects on daily subjective state authenticity over time (baseline vs. intervention phase) and between individuals (signature vs. ideal strength condition). Unexpectedly, results showed that the strength interventions did not increase levels of daily subjective state authenticity. No difference was found between the two conditions. Nevertheless, based on existing empirical and theoretical indications, recommendations for future research are made to further explore whether and how strength interventions could cultivate subjective state authenticity.

## **Examining the Potential of Character Strength Interventions to Foster Daily Subjective State Authenticity among Students**

Authenticity as a construct has a rich history in philosophy and psychology, which traces back to the ancient Greeks. Generally, authenticity is defined as acting in line with core aspects of the self (Smallenbroek et al., 2017). Research originally focused on authenticity as a trait, while recently the focus has shifted to authenticity as a state. State authenticity is defined as the momentary experience of being one's true self (Sedikides et al., 2019). Research on state authenticity is important for two main reasons. First of all, state authenticity is considered a hallmark of well-being (Harter, 2002). A rapidly growing body of research shows the association between state authenticity and various well-being indicators (Heppner et al., 2008; Lenton et al., 2016; Reich et al., 2012; Schlegel et al., 2009; Thomaes et al., 2017). Secondly, the experience of state authenticity has a unique guiding function in life. People commonly believe that the true self "should be used as a guide when making major life decisions" (Schlegel et al., 2013, p. 542). Especially in modern western society individuals are challenged to guide themselves from within, as societal and cultural directives are diminishing (Schlegel et al., 2013; Storme & Celik, 2018).

Although state authenticity is important throughout the full life span, its recognized attainment is particularly important to students in the phase of emerging adulthood. First of all, students are considered a high-risk population for mental health issues and impaired well-being (Baik et al., 2019). Secondly, this developmental phase is characterized by major life decisions regarding education and vocation (Turner et al., 2020). Many students struggle to navigate themselves, facing endless potential best choices. Consistently, difficulties in career decision-making are widespread (Chuang et al., 2020; Creed et al., 2009; Santos et al., 2018). Building upon the well-being benefits and guiding function of state authenticity, it is argued that students could benefit from the experience of state authenticity.

Accordingly, it is important to understand how the experience of state authenticity can be cultivated. Although recent research has contributed to enhanced understanding (Sedikides et al., 2019), the cultivation of state authenticity remains understudied (Lenton, Bruder et al., 2013; Lenton, Slabu et al., 2013). The present research takes a step forward and is the first to explore the impact of character strength interventions on daily state authenticity. Playing into a growing interest in strength-based approaches within universities (Littman-Ovadia et al., 2014), and promising empirical and theoretical indications from previous research (Fleeson & Wilt, 2010; Harter, 2002; Lenton et al., 2016; Sedikes et al., 2019), the present study aims to provide renewing insights in the potential of character strength interventions to foster the experience of state authenticity.

### **State Authenticity**

State authenticity should be conceived of as a subjective experience susceptible to conscious introspection (Fridhandler, 1986; Harter, 2002; Schlegel et al., 2011). Accordingly, the present study focuses on subjective state authenticity, which is defined as the self-reported judgment that one is being one's true self. Characterizing for an individual high in subjective state authenticity is the momentary sense to really be oneself (Sedikides et al., 2019; Lenton, Bruder et al., 2013). In contrast, inauthenticity contains a sense of phoniness and feels like putting up an act (Harter, 2002). Building upon the recent shift from trait to state authenticity, a state approach was chosen for two reasons. First of all, state authenticity and its precursors, cultivators, and consequences are yet way less understood than trait authenticity (Lenton, Bruder et al., 2013). Secondly, research has repeatedly shown that the experience of authenticity varies widely across situations, beyond individuals' trait levels of authenticity (Sedikides et al., 2019). Consistently, state authenticity is found to vary more within than between people (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Lenton et al., 2016). Both reasons highlight the relevance of examining state instead of trait

authenticity.

Within state authenticity, there are generally speaking two main operationalizations: subjective vs. prescriptive (Lenton, Bruder et al., 2013). The subjective approach operationalizes authenticity in descriptive terms of its phenomenological experience. For example, individuals are asked to report to what extent they are “really being me” and “true to oneself”. The prescriptive approach operationalizes state authenticity in terms of criteria that must be met to be declared “authentic” in a given moment. Examples of such criteria are self-awareness, rejection of external influence, unbiased processing of one’s attributes, and openness and honesty with others (Kernis & Goldman, 2006). The present study adopted the subjective approach for two reasons. Firstly, recent research shows that fulfilled criteria do not guarantee the phenomenological experience of authenticity, and vice versa (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Sheldon et al., 1997). Taking into account that it is the recognized experience of authenticity that contributes to well-being (Harter, 2002; Schlegel et al., 2011) and has a guiding function in life, the subjective approach was adopted. Secondly, the phenomenological approach aligns with layman understandings of authenticity and is therefore high in ecological validity (Sedikides et al., 2019). Both arguments promote the subjective beyond the prescriptive operationalization.

The reported variability in state authenticity within individuals (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Lenton et al., 2016) sparked previous research on the determinants underlying the experience of state authenticity. Central to the literature about determinants of state authenticity is the standards-behavior congruency perspective (Barrett-Lennard, 1998; Deci & Ryan, 2000; Harter, 2002; Kernis & Goldman, 2006; Maslow, 1971; Rogers, 1964). This perspective suggests that state authenticity is determined by the momentary congruence between one’s behavior and certain internal standards. Examples of internal standards are self-concepts, attributes, values, and cognitions (Sedikides et al., 2019).

Traditionally, personality traits are perceived as the most important internal standard (Harter, 2002; Fleeson & Wilt, 2010). The traditional perception is reflected in the trait-state consistency hypothesis, which suggests that individuals experience state authenticity when acting consistently with their personality traits (Cooper et al., 2018). Correspondingly, laymen generally believe that individuals are being real when behaving congruently to their traits, either positive or negative (Fleeson & Wilt, 2010). In accordance, individuals high in neuroticism are theorized to feel more authentic when behaving highly neurotic. The underlying idea is that traits are essential to who one is, and function as central identity and self-concept components (Costa & McCrae, 1994). Consequently, acting upon one's personality traits is reasoned to coincide with the sense of being one's true self (Fleeson & Wilt, 2010). Two studies support the trait-state consistency hypothesis. In the first study, participants had to rate themselves on the Big Five personality traits, both generally and within certain social roles (i.e., student, friend, romantic partner, employee, and child). In addition, they had to report how authentic they feel in each role. Participants were found to feel particularly authentic in social roles for which their general trait scores aligned with their within-role trait scores (Sheldon et al., 1997). In the second study (Fleeson & Wilt, 2010; study 4), participants were instructed to describe how they act when feeling like their true self while using the same adjectives that they used to assess their dispositional Big Five traits. Fleeson and Wilt (2010) found that individuals feel authentic when acting in line with their Big Five trait levels. In sum, traditionally personality traits are perceived as the most important internal standard, which when acted upon functions as a determinant of state authenticity (Sedikies et al., 2019). This traditional perception is in the literature represented by the trait-state consistency hypothesis (Fleeson & Wilt, 2010; Harter, 2002).

A more recent trend of research, suggests that the valence (positive vs. negative) of the internal standards plays a crucial role. More specifically, recent research introduced the

self-positivity hypothesis, which suggests that state authenticity is triggered when acting in congruence with positively (vs. negatively) valenced internal standards that trigger self-positivity. Self-positivity refers to the momentary experience of feeling good about oneself (Sedikies et al., 2019). Supportively, reconsidering the study by Sheldon et al. (1997), participants felt more authentic in the social roles in which they exemplified the positive (vs. negative) poles of the Big Five traits. They felt more authentic, regardless of their dispositional trait levels. Likewise, Fleeson and Wilt (2010; study 3) found that individuals experience more authenticity when behaving in an extraverted, agreeable, conscientious, and emotionally stable way. Again, regardless of their dispositional trait levels. Moreover, Jongman- Sereno and Leary (2016) found participants to rate their positive behaviors as more authentic than negative behaviors, even when the behaviors were equally aligned with their personality. On top of that, Cooper et al. (2018) specifically compared trait-state consistency and positive feelings in the light of state authenticity. Participants filled out eight ESM measurements per day for seven days and had to indicate their current situational characteristics and states. Findings showed that trait-state consistency did not predict state authenticity, while positive feelings did. In sum, based on a recent trend of research, positively valenced internal standards that induce self-positivity are perceived as determinants of state authenticity (Sedikies et al., 2019). Interestingly, recent research hints that the positive valence of a standard determines the experience of state authenticity even beyond trait-state consistency. This relatively recent perception is in the literature represented by the self-positivity hypothesis (Sedikies et al., 2019).

Taken all together, the standards-behavior congruency perspective is represented in the literature by the trait-state consistency hypothesis and self-positivity hypothesis. Examining how both hypotheses relate to each other as determinants of authenticity, is beyond the scope of the present research. The main point here is that both the trait-state

consistency hypothesis and self-positivity hypothesis suggest that acting upon positively valenced traits would foster subjective state authenticity.

### **Character Strengths**

The present research focuses on character strengths as yet unresearched positively valenced internal standards. Acting upon character strengths is likely to foster state authenticity, as character strengths are both positively valenced and trait-like (Littman-Ovadia et al., 2014; Meyers et al., 2015; Wood et al., 2011). Character strengths are defined as positively valued characteristics, which are expressed through thinking, feeling, willing and action (Niemiec, 2013). Peterson and Seligman (2004) introduced the Values in Action (VIA) classification of strengths, consisting of 24 universal character strengths (Park et al., 2006). The strengths are classified into six universal virtues, which are wisdom, courage, humanity, justice, temperance, and transcendence. Examples of strengths are curiosity, fairness, humor, leadership, and perseverance. Peterson and Seligman describe strengths as psychological reflections and behavioral expressions of their corresponding virtue. The selection of the 24 strengths was guided by 10 criteria. For example, character strengths had to be trait-like, morally valued, and universally displayed. Additionally, the use of those strengths had to contribute to individual fulfillment and optimal functioning.

In the past years, scholars and practitioners increasingly put the VIA classification into practice, using character strength interventions. Strength interventions are developmental programs promoting the identification, development, and/or usage of character strengths (Quinlan et al., 2012). Interventions vary widely in their design features, such as duration, medium of delivery (online vs. in-person), and main focus (strength identification vs. strength development vs. strength use), though are united in their aim to enhance well-being and/or performance outcomes. Consistently, strength interventions are found to confer well-being and performance benefits (Ghielen et al., 2018; Quinlan et al., 2012; Schutte & Malouff,



2019). More specifically and most importantly in the light of authenticity, is that strength interventions are found to boost self-positivity (Littman-Ovadia et al., 2014; Meyers et al., 2015; Wood et al., 2011).

### **Signature Strengths and State Authenticity**

In the present study, two types of character strengths are distinguished, being signature strengths and ideal strengths respectively. Signature strengths are the most prominently present strengths in an individual (Schutte & Malouff, 2019). Everyone has by estimation between 3 and 7 signature strengths, which are typically used across various settings during the majority of the time. The usage of signature strengths involves intrinsic motivation and has an energizing effect. Interestingly, Seligman and Peterson (2004) additionally state that displaying signature strengths is marked by a sense of authenticity. Building upon the trait-state consistency hypothesis, the experience of state authenticity follows from the fact that signature strengths are trait-like core parts of the self. Consequently, acting in congruence with those strengths is supposed to feel genuine (Bakker & Van Woerkom, 2017; Peterson & Seligman, 2004). According to the self-positivity hypothesis, it is not just that signature strengths are trait-like core parts of the self, but rather the positive nature of strengths that is supposed to induce state authenticity through self-positivity. The overall key point here is that both hypotheses suggest that a strength intervention that promotes the use of signature strengths (i.e., signature strength intervention) is well-positioned to foster subjective state authenticity.

### **Ideal Strengths and State Authenticity**

Ideal strengths are character strengths that an individual ideally would possess, according to personal hopes and aspirations. The concept of ideal strengths is hereby newly introduced and derived from the self-discrepancy theory (SDT; Higgins, 1987), which

distinguishes the actual and ideal self-concept. Actual self-concept refers to the attributes that one believes to actually possess and outwardly display. The ideal self-concept is defined as the attributes that one ideally would possess, according to personal hopes and aspirations. The SDT (Higgins, 1987) postulates that actual-ideal self-concept discrepancies motivate the individual towards a condition of matching self-views (i.e., ideal self-concept congruency). The ideal self-concept has even been described as a powerful driver of behavioral change (Boyatzis & Akrivou, 2006).

In terms of the standards-behavior congruency perspective, the ideal self-concept functions as a positively valenced internal standard that sparks self-positivity when acted upon. According to the self-positivity hypothesis, individuals are suggested to feel authentic when behaving in congruence with their ideal self-concept. Supportive results were obtained by Lenton, Bruder et al. (2013), who let participants describe their behavior during a moment in which they felt most and least like their true self (i.e., authentic self) respectively. After, they had to rate the extent to which the described behaviors aligned with their ideal self-concept. Accordingly, the descriptions in which they felt most (vs. least) like their true self showed greater overlap with the ideal self-concept. Furthermore, support for the association between feeling authentic and feeling ideal was provided by an experience-sampling method (ESM) study. Real-time measurements of subjective state authenticity and judging oneself as ideal were found to be highly associated (Lenton et al., 2016). In sum, the self-positivity hypothesis suggests that the ideal self-concept is a positively valenced internal standard that sparks self-positivity when acted upon, and therefore induces the experience of state authenticity. Both a retrospective (Lenton, Bruder et al., 2013) and an ESM (Lenton et al., 2016) study support the association between situational ideal self-concept congruency and the experience of state authenticity. Building upon the aforementioned, a strength intervention

that promotes the use of ideal strengths (i.e., ideal strength intervention) is well-positioned to foster subjective state authenticity.

### **Signature Strengths versus Ideal Strengths**

Both the signature strength intervention and ideal strength intervention are considered promising ways to boost the daily experience of state authenticity. Therefore, it is interesting to exploratively compare the interventions in their authenticity-inducing potential.

Considering the preceding literature, the interventions are evenly matched. The signature strength intervention is supported by both the trait-state consistency and the self-positivity hypothesis, whereas the ideal strength intervention is backed by the self-positivity hypothesis and the association between authenticity and ideal self-overlap. Thus, it is not evident which intervention is best positioned to induce daily subjective state authenticity.

### **The Present Study**

The present study aims to provide renewing insights into the potential of character strength interventions to cultivate the experience of state authenticity among students. Accordingly, the present research explores the impact of both a signature strength and ideal strength intervention on daily subjective state authenticity in a student population. Researching the experience of state authenticity is relevant, considering its well-being benefits (Heppner et al., 2008; Lenton et al., 2016; Reich et al., 2012; Schlegel et al., 2009; Thomaes et al., 2017) and guiding function in life (Schlegel et al., 2013; Storme & Celik, 2018). Accordingly, renewing insights could be practically applied within university services that aim to support students in their well-being and decision-making processes (Littman-Ovadia et al., 2014).

The present research contributes to the existing literature through its renewing character in two ways. First of all, the present study contributes to the current body of

literature by its renewing scope, as it is the first to examine daily subjective state authenticity in the context of strength interventions. Building upon previous research from the standards-behavior congruency perspective (Cooper et al., 2018; Fleeson & Wilt, 2010; study 4; Lenton, Bruder et al., 2013; Lenton et al., 2016; Sheldon et al., 1997; Smallenbroek et al., 2017), the present study bridges a gap in the literature by examining character strengths as yet unresearched internal standards. Accordingly, the present research opens up an interesting niche of research and has the potential to provide innovative insights.

Secondly, the present research enriches the existing literature by means of its daily subjective state operationalization of authenticity. Previous studies did operationalize authenticity as a 1) daily (Heppner et al., 2008), 2) subjective (Cooper et al., 2018; Fleeson & Wilt, 2010), or 3) state construct (Cooper et al., 2018; Fleeson & Wilt, 2010; Lenton et al., 2016), though never combined the three features into one measurement of authenticity. The renewing operationalization is well-supported. To elaborate on the daily operationalization of authenticity, this approach is supported by the fact that the commonly used retrospective measurements of authenticity are prone to memory errors (Lenton et al., 2016). In the present study, memory errors are minimized by assessing subjective state authenticity day by day. Touching upon the state (vs. trait) operationalization, the state approach is based on the recent finding that authenticity varies more within than between individuals. A trait approach to authenticity would not render justice to its varying nature (Sedikides et al., 2019). Regarding the subjective (vs. prescriptive) operationalization, this approach is supported by the finding that fulfilled prescriptions of authenticity do not guarantee the phenomenological experience of state authenticity (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Sheldon et al., 1997). The subjective approach surpasses the risk of merely measuring the extent to which a theoretical conceptualization is fulfilled, as it directly assesses the extent to which the experience of being one's true self is lived.

The present study is characterized by its unique research design, consisting of a two-week baseline phase and a three-week intervention phase. Employing daily measurements of subjective state authenticity throughout both phases, the design enables the examination of within- and between-individual intervention effects. In terms of research design, the signature strength and ideal strength intervention are reflected in two distinctive research conditions. Accordingly, the present research addresses the following research questions and hypotheses to examine the impact of the two strength interventions on daily subjective state authenticity. *Research question 1*, whether participating in a signature strength intervention increases daily subjective state authenticity among students, is answered by testing the hypothesis that mean levels of daily subjective state authenticity will be higher during the intervention phase than during the baseline phase within a student sample. *Research question 2*, whether participating in an ideal strength intervention increases daily subjective state authenticity among students, is answered by testing the hypothesis that mean levels of daily subjective state authenticity will be higher during the intervention phase than during the baseline phase within a student sample. *Research question 3*, whether there is a difference between the signature strength condition and ideal strength condition in the mean level change of daily subjective state authenticity from baseline to intervention phase, is answered with exploratory analyses. No hypothesis is formulated, as the two conditions are evenly supported by existing literature.

## Methods

### Participants

Participants ( $M$  age = 20.1 years,  $SD$  = 2.9, 75% female) were first and second-year psychology undergraduates ( $N$  = 104) at Tilburg University, recruited through online university platforms, social media, WhatsApp groups, and advertisement during lectures. The inclusion criteria were enrollment at Tilburg University and sufficient English language

proficiency, as the study was administered in English. Participants were rewarded with credit towards a research-participation requirement.

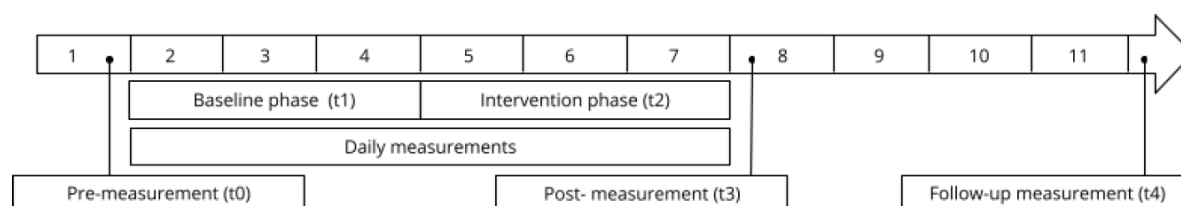
To accurately estimate regression coefficients and variances using multilevel modeling, minimally 50 Level 2 cases and 20 Level 1 cases are required (Hox, 2002). Taking dropout into account, the aim was to recruit a minimum of 50 participants for both conditions. The present study included 104 participants, which were equally distributed across the two conditions (Level 2). Further, each individual completed 35 ( $M = 31.7$ ,  $SD = 3.0$ ) assessments (Level 1). Therefore, the power was considered adequate to examine the research questions using multilevel analyses.

## Design

The present study was part of an 11-week field study, which followed a quasi-experimental design. The overarching field study consisted of five measurement waves ( $t_0$  = pre-measurement,  $t_1$  = daily measurements baseline phase,  $t_2$  = daily measurements intervention phase,  $t_3$  = post measurement and  $t_4$  = follow-up measurement). Central to the present study were  $t_0$ ,  $t_1$ , and  $t_2$ . The latter two waves concerned daily measurements of subjective state authenticity, during respectively and consecutively, 14 and 21 days. Two intervention conditions were included. Stratified random sampling by gender was used to assign participants to either the signature strength or ideal strength condition. See Figure 1 for an overview of the field study in its full length.

**Figure 1**

*Flowchart of Measurement Waves Overarching Field Study*



## **Instruments**

### ***State Authenticity***

State authenticity was assessed with a daily self-report measurement, administered via the smartphone app Ethica (Ethica Data Services Inc, 2019). The measurement involved three face valid items. Each item closely reflected the subjective approach towards state authenticity as chosen in the present study. The first item concerned “I felt authentic in the way I acted during this day” and was accompanied with the following definition of authenticity “According to psychologists, the sense of authenticity is defined as ‘the sense or feeling that you are in alignment with your true, genuine self.’ In other words, the sense of authenticity is the feeling that you are being your real self” (Lenton, Bruder et al., 2013, p. 279). The other two items concerned “I felt like I was really being me during this day” and “I was true to myself during this day”. The items were derived from a previous study by Fleeson and Wilt (2010), who reported a rather high internal consistency ( $\alpha = .97$ ). Consistently, a high internal consistency was reported for the present study ( $\alpha = .96$ ), even though the items were slightly changed regarding their time frame (“this day” used to be “the past 20 minutes”). Participants were instructed to reflect on their day and indicate to what extent they agreed with the statements, by moving a slider along a continuum (i.e., Visual Analogue Scale; VAS) ranging from “Not at all” to “Very much”. Based on the location of the slider, a score between respectively 0 and 100 was obtained. Higher scores suggested a higher level of experienced state authenticity that day. Single item scores were aggregated into an average state authenticity score per person per day for further analyses.

### ***Character Strengths***

Signature strengths were, to minimize participant burden, identified with a shortened version of the VIA Inventory of Strengths (VIA-IS; Peterson et al., 2005). The validated

VIA-IS-Positive (VIA-IS-P; McGrath & Wallace, 2019) contains 96 (vs. 250) positively keyed items. Participants were asked to indicate the extent to which the statements described them. Per item, answers were given on a five-point scale (1 = *very much unlike me* ranging to 5 = *very much like me*). An example item for curiosity is “*Being able to come up with new and different ideas is one of my strong points*”. As each character strength was assessed with 4 items, participants could obtain scores between 4 and 20 per strength. A higher score indicated a stronger presence of the concerning strength. Filling out the VIA-IS-P resulted in a personal ranking of the 24 strengths, with the top strengths being the ones most endorsed. The ranking was used to select the top 3 signature strengths for each participant. Random selection was used in case a top 3 ranking position contained more than one character strength.

To identify the ideal character strengths, participants were asked to reflect on their ideal self in terms of the VIA character strengths, and to subsequently select the six strengths that characterized their ideal self the most. For each strength, a short definition was provided. Ideal self was defined as “the person you would like to be” and as constituting the “characteristics that you ideally would like to possess, according to your personal hopes and aspirations”. For those participants allocated to the ideal strength condition, a top 3 was randomly selected out of the six non-hierarchically chosen ideal strengths. In case of overlap between the individuals’ six ideal strengths and top 3 signature strengths, it was decided to exclude the signature strengths from the random selection to reduce overlap between the signature and ideal strength condition.

## **Procedure**

After approval from the Ethics Review Board of Tilburg School of Social and Behavioral Sciences, recruitment of participants started. In case of interest, participants signed up for the study via SONA, an online research participation management system.



Once the recruitment period was over, participants received an email including the information letter, instructions to install Ethica on their phone, and a link to the online pre-measurement survey in Qualtrics (t0). Informed consent was obtained at the very start of the survey. A 60-minute battery of questionnaires followed, containing amongst others the VIA-IS-P (McGrath & Wallace, 2019). Within a few days, the daily measurements started in Ethica. The 6-8 minute survey included the three authenticity items. Each evening, participants received a notification on their phone to complete the daily measurement at either 8.00 PM, 9.00 PM, or 10.00 PM. The exact time was determined in consultation with the participant, who had in all cases till noon the next day to fill out the survey. For each measurement, a reminder was sent in both the evening and morning. In total the daily measurements continued for five consecutive weeks, consisting of 14 days baseline phase (t1) and 21 days intervention phase (t2). However, a minority of the participants started the baseline phase and/or the intervention phase with 1-2 days delay due to technical difficulties in Ethica. As a consequence, those participants had a slightly deviating amount of days per phase. Throughout the full five weeks, compliance was closely monitored to minimize dropout rates. Participants who missed a daily measurement were encouraged via email to keep up and continue their participation.

Towards the end of the baseline phase, all participants were asked via email to indicate six ideal strengths in a Qualtrics survey. Eight participants who were assigned to the ideal strength condition failed to complete the ideal strength survey in time. Therefore, the concerning participants were manually allocated to the signature strength condition. In exchange, eight participants were randomly selected and moved from the signature strength condition to the ideal strength condition. In the final ideal strength sample, the top 3 ideal strengths was randomly selected from the six ideal strengths. In case of overlap between the individuals' six ideal strengths and top 3 signature strengths, the signature strengths were

excluded from the ideal strength selection to reduce overlap between the two conditions. At the end of the baseline phase (t1), participants were informed of the details and start of the intervention. Once the intervention was finished (t2), only the post (t3) and follow-up (t4) measurements were remaining. Respectively, these measurements took place within a few days and four weeks after the last day of the intervention. Both measurements consisted of a 30-minute Qualtrics survey, which participants had to complete within one week time. Roughly two weeks after the follow-up measurement, participants were rewarded with credits towards their research-participation requirement through SONA. Participants meeting the minimum compliance rate of 80% for the daily assessments received the full amount of credits, the others were solely compensated with credits for the estimated time spent on the study.

### ***Interventions***

Participants in the signature strength and ideal strength condition received a comparable 3-week intervention in Ethica, specifically developed in the context of the present study. The main aim of the interventions was to promote strength use. Participants completed four intervention steps each week, while focusing on a different top 3 strength every 7 days. The four-step structure was derived from the validated Aware-Explore-Apply (AEA) model (Niemic, 2014), which describes the process by which practitioners typically work with character strengths. For both conditions, the first step involved the cultivation of strength Awareness, as participants discovered their top-3 strength and its meaning according to the VIA classification system (Peterson & Seligman, 2004). The second and third step of the intervention were both based on the Explore phase of the AEA model, which is generally about exploring the past, current, and future use of the strength, at both pleasant and challenging times (Niemic, 2018). In both conditions, the second step involved the exploration of the personal meaning and expression of the strength through reflective

questions. The third step aimed to cultivate the participants' appreciation for their strength. In the signature strength condition, participants reflected on their past strength use across various life domains and the benefits they enjoyed by using this particular strength. In the ideal strength condition, participants imagined how the desired strength could potentially serve them in the future across various life domains. The fourth step aligned with the phase of strength Application. In the signature strength condition, participants were challenged to formulate an action plan on how to use their strength in a new way. The 'new way technique' has been widely used and validated (Ghielen et al., 2018; Seligman et al., 2005). Participants had to specify in Ethica how, when, and in which situations they planned to practice their strength. In the ideal strength condition, participants were challenged to put the desired strength into action, by acting as if they already possessed them to the desired degree. Research confirms that the 'acting as if technique' effectively boosts the display of certain traits, such as character strengths (Niemic, 2018). Likewise, these participants had to formulate a detailed action plan. In both conditions, exemplary action plans were provided for each strength to support participants.

In terms of planning, participants were instructed to complete Step 1 and 2 on Monday, and Step 3 and 4 on Tuesday. From Wednesday to Sunday, participants were instructed to execute their personal action plan as a way to promote strength use. As each step had an estimated duration of 15 minutes, the intervention had a total duration of 60 minutes per week (excluding the time spent on actual strength application). Intervention instructions were predominantly delivered in text and partly through informative videos. While completing the intervention steps, participants had to submit their answers and thoughts in text boxes in Ethica, which served as a way to foster and gain insight into the engagement. Intervention compliance was closely monitored by checking the number of completed steps on the intended day. Motivational reminders were sent via email to foster compliance.

## **Analyses**

### ***Descriptive Analyses***

The first step concerned the data preparation. Due to technical difficulties in Ethica during the first days of the baseline and intervention phase, a minority of the participants filled out the daily measurement multiple times on the same day. Accordingly, double assessments were removed. In addition, assessments originating from participants who did not engage in the interventions were removed from the data set, as their assessments could not have captured the potential impact of the strength interventions. At last, data preparation involved the aggregation of daily item scores into a daily average score of subjective state authenticity for each participant.

The second step involved the descriptive analyses. A randomization check was performed in IBM SPSS Statistics 27 to compare the two conditions with regards to age and baseline levels of authenticity (analyses of variance; ANOVAs). After, two analyses without independent variable were modeled to gain insight into the within- versus between-subject variation in daily subjective state authenticity. One analysis involved assessments from both conditions, obtained throughout the baseline and intervention phase. The other analysis likewise involved assessments of both conditions, though only the ones obtained during the baseline phase.

### ***Multilevel Analyses State Authenticity***

The third step concerned the exploration of daily subjective state authenticity at both the within-subject (baseline vs. intervention phase) and between-subject (signature vs. ideal strength condition) level. Multilevel analyses were conducted in Mplus version 7.4 (Muthén & Muthén, 1998). As data was collected across 14 days before the interventions (t1) and across 21 days during the intervention phase (t2), interrupted time series analyses (ITSA)

were conducted to examine the intervention effects on authenticity. Clear guidelines on power are lacking for ITSA, though a common rule of thumb is minimally 12 time points before and 12 time points after the intervention (Penfold & Zhang, 2013; Wagner et al., 2002). This rule of thumb was fulfilled in the present study (no. assessments baseline phase  $M = 14.0$ ,  $SD = 0.8$ ; no. assessments intervention phase  $M = 20.4$ ,  $SD = 1.6$ ). ITSA are well-suited to examine mean level changes in outcome variables between the baseline and intervention phase. Additionally, an advantage of ITSA is the opportunity to gain in-depth understanding of the effects. Since ITSA gives insight into whether changes are gradual or abrupt, and whether baseline trends (i.e., trends already present in the baseline phase) account for the mean level changes over time (Huitema & McKean, 2000).

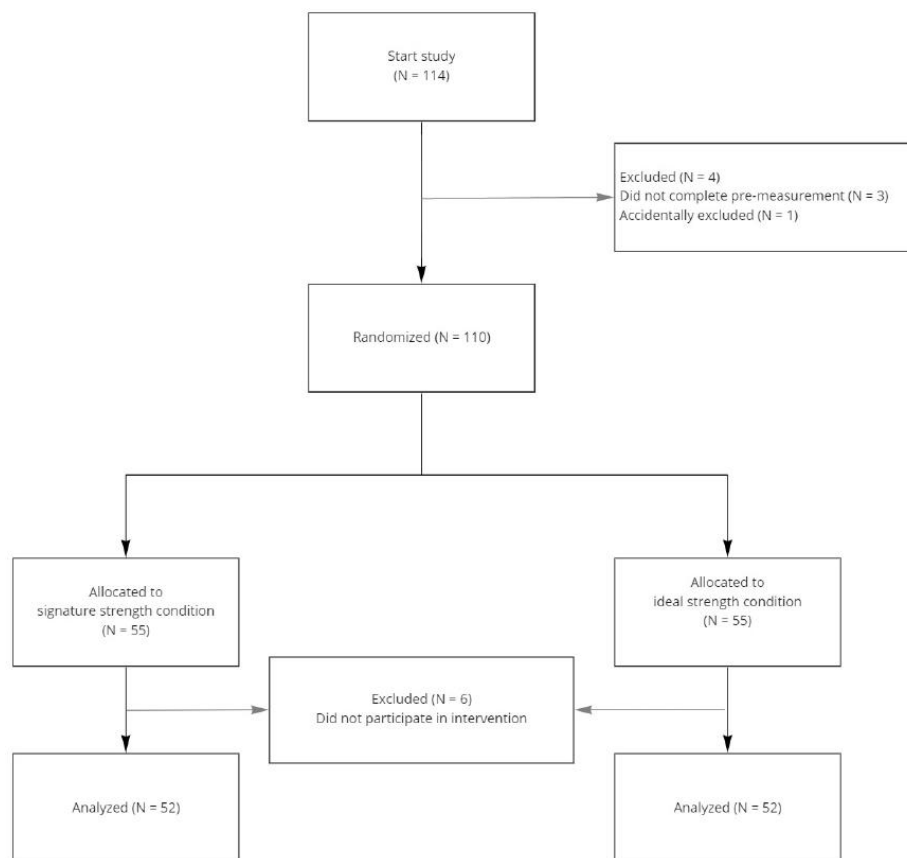
The hypotheses for *Research question 1* (signature strength condition) and *Research question 2* (ideal strength condition), that mean levels of daily subjective state authenticity would be higher during the intervention phase than during the baseline phase, were tested on the within-subject level. The hypotheses were tested with separate though similar analyses. In both cases, the first step was to model the dummy variable for phase (baseline = 0, intervention = 1) as a random effect on daily subjective state authenticity. In this way, mean level changes over time (baseline vs. intervention phase) were obtained. To gain in-depth understanding, the second step was to explore the nature of the change (gradual vs. abrupt) and the presence of potential baseline trends. Both the linear change (slope) in the baseline phase and the slope change during the intervention phase (slope change) were added to the models, according to the guidelines provided by Huitema and McKean (2000). Please note that the estimate for level change in this extended model no longer represents the change in mean level after the intervention, but the change in daily subjective state authenticity between the last day of the baseline phase and the first day of the intervention phase (i.e., immediate level change).

Explorative *Research question 3*, whether there is a difference between the signature and ideal strength condition in the mean level change of daily subjective state authenticity, was examined with a cross-level interaction. An interaction was modeled on authenticity, between the within-level variable phase and the between-level variable condition. Hence, insight into the difference in mean level change in authenticity between the conditions was obtained. Consistently, to gain in-depth understanding, the slope and slope change were added to the model. Accordingly, the extended model provided insight into the difference between the two conditions in terms of immediate level change, baseline slope, and slope change during the intervention phase. Results were considered significant when  $p < .05$ .

## Results

### Participant Flow

The participant flow is visually represented in Figure 2. In total, 114 participants were recruited at the start of the study. Four participants were excluded from the randomization: Three out of four participants failed to complete the pre-measurement in time. The remaining participant was excluded from the mailing list on accident, and as a consequence not included in the randomization. Accordingly, 110 participants were randomly allocated to either the signature or ideal strength condition. Six participants did not engage in the allocated intervention, as was concluded based on their consistently blank answer sections submitted in Ethica. Those participants were therefore excluded from the final data set. As a result, the final sample consisted of 104 participants for inclusion in the multilevel interrupted time-series analyses. Overall, participants provided a total of 3301 completed assessments, which corresponds with an excellent daily measurement compliance rate of 91%.

**Figure 2***Flowchart of Participant Enrollment and Drop-out***Descriptive Statistics**

Descriptive statistics are presented in Table 1. Firstly, a randomization check was conducted. ANOVA indicated no significant effect of condition on age, as no difference was found between the two conditions in terms of age ( $F(1, 102) = 2.94, p = .09$ ). In contrast, a similar analysis indicated a significant effect of condition on mean levels of baseline authenticity, as baseline scores of authenticity were significantly higher in the signature condition compared to the ideal condition ( $F(1, 3300) = 28.50, p < .001, \eta^2 = .01$ ). Secondly, the within- versus between-subject variation was analyzed. Intraclass correlation coefficients of .50 and .48 were obtained, respectively based on assessments throughout both phases and the baseline phase only. Both coefficients indicate that there is as much variation in levels of daily authenticity within as between individuals.

**Table 1***Descriptive Statistics*

	Signature condition ( <i>n</i> = 52)	Ideal condition ( <i>n</i> = 52)	Complete sample ( <i>N</i> = 104)
Females ( <i>n</i> [%])	39 (75%)	39 (75%)	78 (75%)
Age ( <i>M</i> [ <i>SD</i> ])	19.6 (1.3)	20.5 (3.9)	20.1 (2.9)
Undergraduate ( <i>n</i> [%])	52 (100%)	52 (100%)	104 (100%)
Authenticity baseline ( <i>M</i> [ <i>SD</i> ])	70.77 (22.25)***	66.66 (22.00)***	
ICC baseline & intervention			0.50
ICC baseline			0.48

*Note.* ICC = intraclass correlation coefficient. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Please note that the significance levels indicate whether significant differences were found between the conditions.

### Multilevel Analyses State Authenticity

The results of the multilevel interrupted time series analyses on daily subjective state authenticity are given in Table 2 and Table 3, respectively providing within-subject and between-subject results. In addition, within-subject results are visually represented in Appendix A, corresponding with the signature and ideal strength condition. Considering *Research question 1*, no significant mean level change was found between the baseline and intervention phase in the signature strength condition (Table 2, Table A1). Thus, the hypothesis that mean levels of daily subjective state authenticity would be higher during the intervention phase than during the baseline phase was rejected. Consistently, explorative analysis on the immediate level change, baseline slope, and slope change provided non-significant results. Accordingly, running the extended model showed that levels of daily subjective state authenticity remained stable throughout the baseline and intervention phase. Considering *Research question 2*, no significant mean level change was found between the baseline and intervention phase in the ideal condition (Table 2, Table A2). Thus, the hypothesis that mean levels of daily subjective state authenticity would be higher during the intervention phase than during the baseline phase was rejected. Explorative analysis on the immediate level change, baseline slope, and slope change provided non-significant results.



Accordingly, running the extended model again showed that levels of daily subjective state authenticity remained stable throughout the baseline and intervention phase. Regarding explorative *Research question 3*, no significant difference in mean level change between the two conditions was found (Table 3). Consistently, there was no significant difference between the two conditions in the immediate level change, baseline slope, and slope change over time. Taking it all together, in both conditions daily subjective state authenticity did not change over time during the baseline phase, intervention phase, and between the two phases respectively.

**Table 2**

*Estimates of Level and Slope Change in Daily State Authenticity (Auth) per Condition*

	Mean Level Estimate		Extended Model	
	Signature condition ( <i>n</i> = 52)	Ideal condition ( <i>n</i> = 52)	Signature condition ( <i>n</i> = 52)	Ideal condition ( <i>n</i> = 52)
	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )
Auth mean baseline	71.08 (2.09)***	65.72 (2.34)***	71.17 (2.40)***	65.78 (2.33)***
Auth level estimate	-0.74 (1.36)	0.96 (1.05)	0.39 (1.96)	0.23 (1.52)
Auth slope baseline			-0.01 (0.15)	-0.01 (0.15)
Auth slope change			-0.10 (0.17)	0.09 (0.17)

*Note.* *SE* = Standard Error. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Please note that the significance levels indicate whether the estimates were significant per condition. To calculate the intervention phase slope, coefficients for the baseline phase slope and the slope change should be summed.

**Table 3**

*Differences in Estimates of Level and Slope Change in Daily State Authenticity (Auth) between Conditions*

	Mean Level Estimate		Extended Model	
	Signature condition ( <i>n</i> = 52)	Ideal condition ( <i>n</i> = 52)	Signature condition ( <i>n</i> = 52)	Ideal condition ( <i>n</i> = 52)
	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )	Estimate ( <i>SE</i> )
Auth intercept	71.25 (2.09)	65.74 (2.34)	71.17 (2.40)	65.78 (2.33)
Auth level estimate	-0.78 (1.36)	1.01 (1.05)	0.39 (1.96)	0.24 (1.52)
Auth slope baseline			-0.01 (0.15)	-0.01 (0.15)
Auth slope change			-0.10 (0.17)	0.09 (0.17)

*Note.* *SE* = Standard Error. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Please note that the absence of indicated significance levels indicates that no significant differences in estimates were found between conditions. To calculate the intervention phase slope, coefficients for the baseline phase slope and slope change should be summed.

## Discussion

The present study aimed to provide renewing insights into the potential of character strength interventions to cultivate the experience of state authenticity among students, by exploring the impact of a signature strength and ideal strength intervention on daily subjective state authenticity in a student population. Enhanced understanding of subjective state authenticity is relevant, considering its well-being benefits (Heppner et al., 2008; Lenton et al., 2016; Reich et al., 2012; Schlegel et al., 2009; Thomaes et al., 2017) and guiding function in life (Schlegel et al., 2013; Storme & Celik, 2018). Building upon previous research on state authenticity from the standards-behavior congruency perspective (Cooper et al., 2018; Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Lenton et al., 2016; Sheldon et al., 1997; Smallenbroek et al., 2017), the present study bridges a gap in the literature as it examined character strengths as yet unresearched internal standards.

Central to the present study are three research questions. *Research question 1* concerns the question whether participating in a signature strength intervention increases daily subjective state authenticity. *Research question 2* concerns the question whether participating in an ideal strength intervention increases daily subjective state authenticity. The hypothesis that mean levels of daily subjective state authenticity would be higher during the intervention phase than during the baseline was formulated for both conditions (signature strength vs. ideal strength). For both conditions, the hypothesis was rejected. Considering explorative *Research question 3*, whether there is a difference between the signature strength condition and ideal strength condition in the mean level change of daily state authenticity, no difference was found.

Elaborating on the signature strength condition, levels of daily subjective state authenticity remained stable throughout the baseline and intervention phase and were not affected by the intervention. Accordingly, it is concluded that participating in a signature

strength intervention does not increase daily subjective state authenticity. Considered from a standards-behavior congruency perspective, this conclusion is in contrast to the traditional trait-state consistency hypothesis and recently formulated self-positivity hypothesis.

According to the former hypothesis, the experience of state authenticity follows from the fact that signature strengths are trait-like core parts of the self (Bakker & Van Woerkom, 2017; Peterson & Seligman, 2004). This hypothesis is supported by two previous studies, who found individuals to report their trait congruent (vs. trait incongruent) behavior as relatively authentic (Fleeson & Wilt, 2010; study 4; Sheldon et al., 1997). The discrepancy between those two studies and the present study is potentially explained by the different measurement methods. People generally believe that they are authentic when behaving according to their traits (Fleeson & Wilt, 2010). Therefore, retrospective self-reports requiring individuals to directly assess the degree of experienced authenticity in a past situation, might be biased by the generally held belief. Consistent with this reasoning, both Sheldon et al. (1997) and Fleeson and Wilt (2010) used retrospective and direct self-reports of authenticity. Moreover, the reasoning is supported by the fact that ESM studies rejected the trait-state consistency hypothesis (Cooper et al., 2018; Fleeson & Wilt, study 3). Those studies used real-time and separate measurements of state authenticity and trait-consistent behavior. Accordingly, ESM excludes retrospective biases deriving from the generally held belief. Similarly, the present study minimized retrospective biases by using daily measurements of subjective state authenticity that were only indirectly related to trait-consistent strength use. Hence, the measurement method might explain why, in conflict with previous studies supportive of the trait-state consistency hypothesis, the present study did not find an effect for the signature strength intervention on state authenticity. Shifting to the self-positivity hypothesis, it is not just the fact that strengths are trait-like core parts of the self, but rather the positive nature of signature strengths that should have induced state authenticity through self-positivity (Cooper

et al., 2018; Fleeson & Wilt, 2010; study 3; Jongman-Sereno & Leary, 2016; Sedikes et al., 2019). However, the present study does not support this line of reasoning.

Elaborating on the ideal strength condition, again levels of daily subjective state authenticity remained stable throughout the baseline and intervention phase and were not affected by the intervention. Accordingly, it is concluded that participating in an ideal strength intervention does not increase daily subjective state authenticity. Taking a standards-behavior congruency perspective, this conclusion is in contrast with the self-positivity hypothesis. According to this hypothesis, the experience of authenticity should have been induced, as ideal strengths are positively valenced internal standards that boost self-positivity when acted upon (Cooper et al., 2018; Fleeson & Wilt, 2010; study 3; Jongman-Sereno & Leary, 2016; Sedikes et al., 2019). Here the trait-state consistency hypothesis provides a potential explanation for the discrepancy in findings. While the trait-state consistency hypothesis suggests that authenticity is triggered when behaving in congruence with one's traits, were participants in the ideal strength intervention challenged to perform desired behaviors that might not come naturally (Harter, 2002). As a consequence, acting upon one's ideal strengths might have induced subtle feelings of phoniness (vs. authenticity). One could speculate that in turn, those feelings might have counteracted subtle authenticity-inducing effects of self-positivity. However, the hypothesis that an ideal strength intervention would foster the experience of state authenticity was also partly based on the reported association between ideal self-concept congruency and authenticity. Retrospective (Lenton, Bruder et al., 2013) and ESM (Lenton et al., 2016) studies found that situational ideal self-concept congruency and the experience of state authenticity are highly associated. Accordingly, it was implicitly hypothesized that an ideal strength intervention would promote ideal strength use, which would, in turn, lead to ideal self-concept congruency and the experience of authenticity respectively. Thus a directional link was hypothesized based on non-directional reported

associations, while potentially the link is not directional at all. Another option is directionality contrarily, as the experience of authenticity could also induce the perception of being aligned with one's ideal self-concept. Although speculative, this line of reasoning would explain why the ideal strength intervention did not induce subjective state authenticity.

In short, in conflict with the standards-behavior congruency perspective and corresponding literature, neither the signature strength intervention nor the ideal strength intervention increased daily subjective state authenticity among students. The discrepancies can be explained by reasonable though speculative reasoning.

### **Strengths and Limitations**

The present study is characterized by four main strengths. Firstly, the present study is the first to explore the impact of strength interventions on the daily experience of state authenticity. Hence, it opens up an interesting yet undiscovered niche of research. Moreover, building upon previous research on state authenticity from the standards-behavior congruency perspective (Cooper et al., 2018; Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Lenton et al., 2016; Sheldon et al., 1997; Smallenbroek et al., 2017), the present study bridges a gap in the literature as it examines character strengths as yet unresearched internal standards.

Secondly, the operationalization of authenticity as a daily assessed subjective state is considered a strength. The daily assessment surpasses the risk of memory errors that marks the commonly used retrospective measurements of state authenticity (Fleeson & Wilt, 2010; Jongman-Sereno & Leary, 2016). The state (vs. trait) operationalization renders justice to the latest insight that state authenticity varies more within than between individuals (Lenton, Bruder et al., 2013; Lenton et al., 2016), and the subjective operationalization surpasses the reported discrepancy between prescriptions of state authenticity and its phenomenological experience (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Sheldon et al., 1997). In short, the daily subjective state operationalization of authenticity is well-supported, which favors

the measurement's validity.

Thirdly, the reported excellent compliance to the daily authenticity measurements is considered a strength. On average participants completed 91% of the assessments. Such compliance reflects continuity in the measurements over time, which strengthens the validity of the obtained data. The compliance rate can be explained by proactive compliance monitoring, as motivational messages were sent to participants when they missed out on an assessment. Another explanation is the instructed minimum of 80%, which was required to receive the full amount of participation credits.

Fourthly, the unique research design of the present study is considered a strength. Employing daily assessments throughout a two-week baseline and three-week intervention phase, the design allowed for in-depth examination of both within and between individual intervention effects. Besides, although not the focus of the present study, the baseline assessments gave insight into the multilevel variability of state authenticity in everyday life (i.e., without any manipulation). The reported intraclass correlation indicated that authenticity varies as much within as between individuals, which is in line with previous research (Fleeson & Wilt, 2010; Lenton, Bruder et al., 2013; Lenton et al., 2016). Moreover, this finding supports the recent shift from trait to state authenticity and corroborates the stance that state (vs. trait) authenticity is worth researching on its own (Sedikides et al., 2019; Sedikides et al., 2017).

Besides the strengths, several limitations should be acknowledged. The first limitation concerns the interval between the execution of the intervention throughout the day and the daily measurement of subjective authenticity in the evening. Due to the interval, the reflective measurement did potentially not fully capture the momentary impact of the strength intervention on subjective state authenticity. Accordingly, the interval undermines the informativeness of the daily authenticity measurements. The second limitation is that the

hypotheses are rather indirectly supported. The argumentation underlying the hypotheses consists of multiple, presumed but in the present study unexamined, directional relationships. Consider for instance the hypothesis that mean levels of daily subjective state authenticity would be higher during the intervention phase than during the baseline, which was formulated for both the signature and ideal strength condition. The hypotheses are partly built upon the presumption that the strength interventions would promote strength use and self-positivity sequentially, to ultimately boost levels of subjective state authenticity. The intervening presumptions complicate detailed interpretation of the results obtained by the present study, as the absence of effect can be explained by multiple potentially unjust presumptions. Accordingly, the informativeness of the findings is restricted.

The third limitation builds upon the second, as it concerns the limited insight in the extent to which the strength interventions actually promoted the use of either signature or ideal strengths. The promoted strength use is a crucial requirement for the interventions to boost authenticity, as the standards-behavior congruency perspective suggests that it is the alignment between internal standards and behavior that induces daily subjective state authenticity. Accordingly, enhanced insight into the extent to which the strength interventions promoted the use of the top 3 strengths, would help to more thoroughly understand the potential of strength interventions to boost the experience of state authenticity. Moreover, enhanced insight could by means of specific recommendations have contributed to future strength interventions and their power to promote strength use.

### **Implications for Future Research**

Based on a convincing body of literature further research is proposed, even though the present study does not support the suggested potential of strength interventions to promote subjective state authenticity. Future research should take the aforementioned strengths and limitations into account. More specifically, future research is recommended to build upon the

unique design while using ESM assessments instead of daily assessments. The use of ESM assessments surpasses the risk that momentary effects of a strength intervention are not captured by a delayed daily state authenticity assessment.

Elaborating on the ESM measurements, these should entail assessments of state expressions of character strengths, self-positivity, ideal self-concept congruence, and subjective state authenticity. Although not allowing for causal conclusions, including those ESM assessments would give more insight into the extent to which these constructs co-occur. Assessing state expression of character strengths would for example clarify the extent to which the strength intervention actually promotes strength usage. When combined with a measurement of self-positivity, more insight would be gained into the extent to which strength use induces self-positivity. The latter directional relationship is a crucial link in the reasoning that strength interventions can foster state authenticity, therefore more insight into this link would be valuable. Accordingly, including the proposed ESM assessment would be a first step in clarifying the presumed but in the present study unexamined directional relationships between those constructs.

In sum, future research is recommended to build upon the present research while taking the proposed ESM assessments into account, to gain further understanding of the potential of strength interventions to induce state authenticity. Further understanding is required before any practical implication can be given about whether and how strength interventions could help universities in supporting students in their well-being and decision-making processes (Littman-Ovadia et al., 2014).

## **Conclusion**

Building upon the standards-behaviors congruency perspective, the current study aimed to gain insights into the potential of strength interventions to foster daily subjective state authenticity among students. By means of its renewing character and unique research



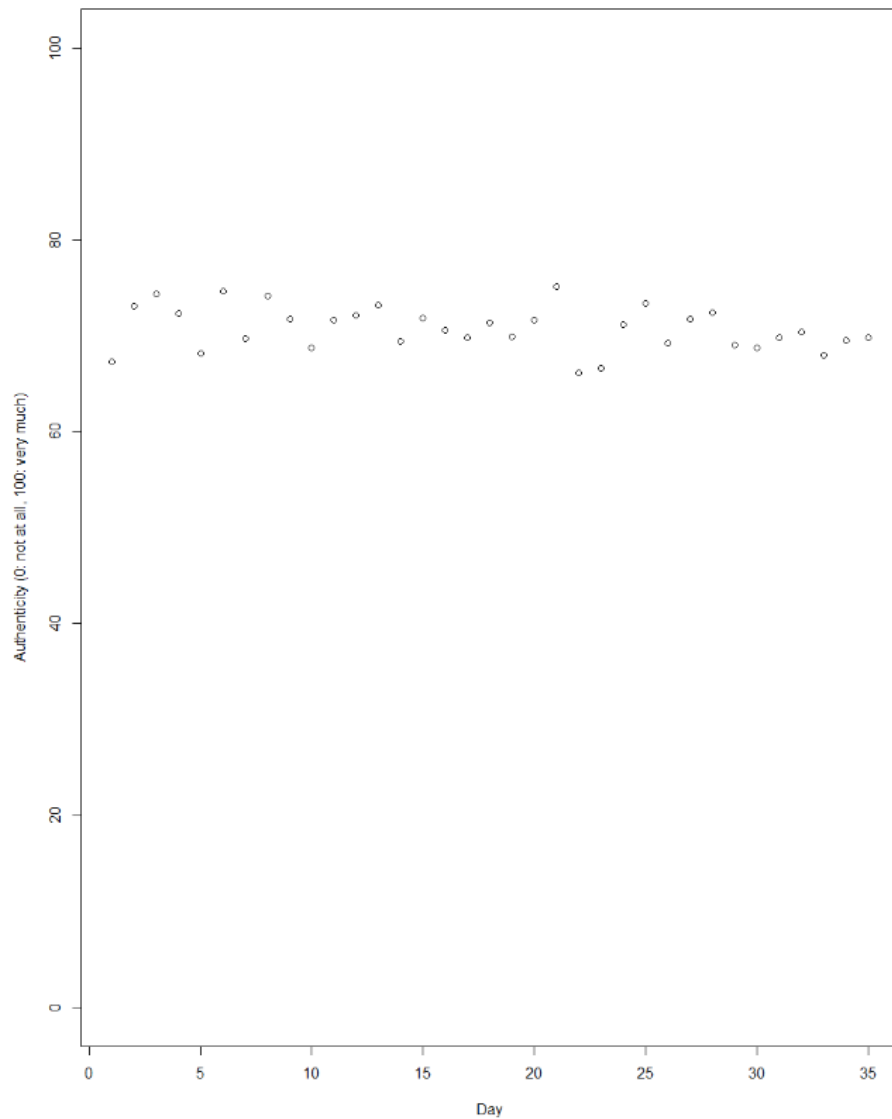
design, the present study was the first to explore the impact of a signature strength and ideal strength intervention on the daily experience of being one's true self. In contrast to empirical and theoretical indications from previous research, it is concluded that the strength interventions did not impact levels of daily subjective state authenticity among students. However, the present study refrains from drawing general conclusions about the potential of strength interventions to foster authenticity for two main reasons. Firstly, the findings of the present study should be considered in light of several methodological limitations. Although speculative, those limitations might have obscured intervention effects. Secondly, strength interventions vary widely in their design, and a standardized strength intervention does not (yet) exist. As a consequence, findings on the current interventions cannot by default be generalized to other strength interventions.

To conclude, the signature strength intervention and ideal strength intervention administered in the present study did not impact levels of daily subjective state authenticity among students. It must be acknowledged that the present study does not provide the renewing insights on the potential of character strength interventions, which was initially aimed for. However, the present research does provide support for the variability of state authenticity within individuals, and accordingly supports the stance that state (vs. trait) authenticity is worth researching on its own. Supported by a convincing body of literature, the present study hopefully sparks future research to further explore whether and how character strength interventions could cultivate the momentary experience of being one's true self.

## Appendix A

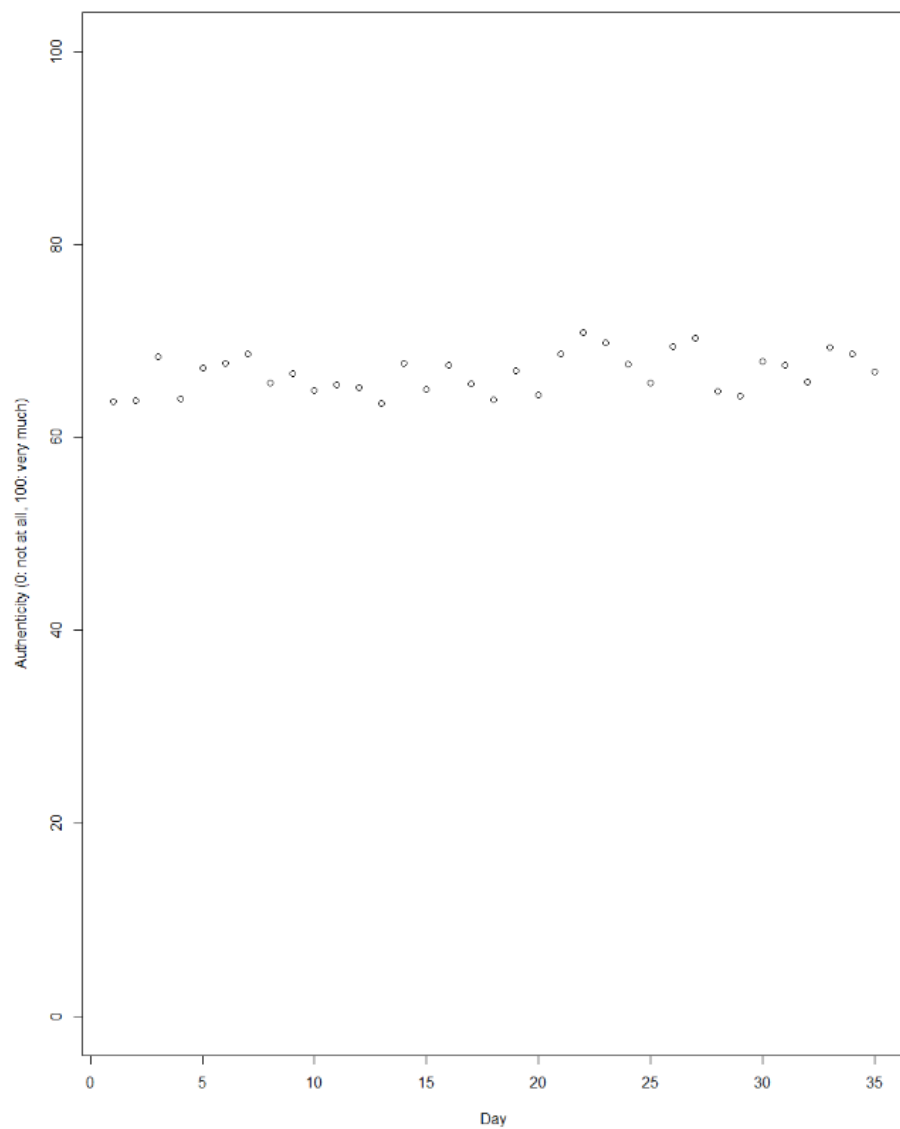
**Figure A1**

*Mean Levels of Authenticity Aggregated by Day - Signature Strength Condition*



**Figure A2**

*Mean Levels of Authenticity Aggregated by Day - Ideal Strength Condition*



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