Volitional Change in Adult Attachment: Can People Who Want to Become Less Anxious and Avoidant Move Closer Towards Realizing Those Goals?

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Abstract: People value relationships and want to relate to both friends and romantic partners in a secure and comfortable fashion. But can individuals move towards realizing this goal of their own volition? To address this question, across three studies with a combined total of more than 4000 participants, we developed and validated a new measure of people's desires to change their attachment anxiety and avoidance. In Study 1, we created the new, 16-item Change Goals—Experiences in Close Relationships measure. In Study 2, we replicated the Change Goals —Experiences in Close Relationships' factor structure and demonstrated that it correlates in theoretically expected ways with criterion variables (e.g. people who were high in undesirable traits such as anxiety or avoidance generally wanted to change those traits; change goals were linked to dissatisfaction with relevant life domains). Finally, in Study 3, we conducted a 16-wave, weekly longitudinal study. Results indicated that goals to change attachment anxiety and avoidance predicted corresponding growth across time (e.g. people who wanted to become less anxious tended to experience declines in attachment anxiety across time). Thus, our research provides a new measure for studying changes in attachment and suggests people may be able to increase in attachment security per their own volition. © 2019 European Association of Personality Psychology

Key words: volitional personality change; change goals; adult attachment; adult personality development

Relationships are frequently among the most important concerns in people's lives (e.g. Baumeister & Leary, 1995; Roberts, O'Donnell, & Robins, 2004)—whether it be finding a meaningful romantic partnership or enriching existing bonds with others. Oftentimes, when pursing important goals—such as initiating and thriving in close relationships —people desire to change aspects of themselves that they believe will facilitate goal attainment (Baumeister, 1994; Hudson & Roberts, 2014; Kiecolt, 1994). For example, those desiring to improve their relationships may wish they were not so worried about rejection or that they were more comfortable with forming deep, connected bonds with others. In other words, people may want to change their attachment styles and become more secure. Indeed, potential evidence for this possibility can be found in best-selling books lists. For example, the 2018 #14 best-selling book on Amazon.com—and even the second best-selling book across all of 2018—promised, among other aims, to help people become less anxious in how they approach their relationships and more comfortable with forming close, intimate, trusting bonds (Amazon.com, 2019).

But can people actually change their attachment styles simply because they desire to do so? Contemporary models of adult attachment specify that salient experiences in close relationships are necessary to change attachment orientations (e.g. Arriaga, Kumashiro, Simpson, & Overall, 2018; Mikulincer & Shaver, 2016). However, a growing body of literature suggests that people can change other aspects of their personalities—such as their Big Five personality traits—simply because they desire to do (Hudson, Briley, Chopik, & Derringer, 2019; Hudson, Derringer, & Briley, 2019; Hudson & Fraley, 2015, 2016a). This naturally raises the question as to whether people can also volitionally change their attachment styles. However, anecdotes (such as bestsellers lists) aside, very little is known empirically about whether people even want to change their attachment styles—and more importantly, whether they can potentially find success in endeavours to do so. Therefore, the purpose of the present studies was to fill this gap by investigating the extent to which people wish to change their attachment styles—and whether such *attachment change goals* predict subsequent trait growth.

Volitional change

Previous research suggests that the vast majority of adults want to change something about their personalities (Baranski, Morse, & Dunlop, 2017; Hudson & Fraley, 2016b; Miller, Baranski, Dunlop, & Ozer, 2019; Robinson, Noftle, Guo, Asadi, & Zhang, 2015). This research has

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focused exclusively on the Big Five personality traits (for an overview of the Big Five, see Goldberg, 1993) and has found that a minimum of approximately 85% of people want to increase with respect to the socially desirable pole of each dimension (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience) (Hudson & Fraley, 2016b).[1] These *change goals* are thought to emerge for at least two reasons. First, high levels of the Big Five personality traits are socially desirable in and of themselves (Dunlop, Telford, & Morrison, 2012; Lamkin, Maples-Keller, & Miller, 2018). Thus, people who lack desirable traits may wish to increase in those traits for the intrinsic value of possessing the traits *per se*. To that end, research suggests that change goals are negatively correlated with existing trait levels (e.g. introverts tend to express the greatest desires to increase in extraversion; Hudson & Roberts, 2014).

Second, individuals who are dissatisfied with aspects of their lives may formulate goals to change traits that they believe would have utility in ameliorating their negative life circumstances (Baumeister, 1994; Hudson & Roberts, 2014; Kiecolt, 1994). Supporting this idea, change goals are negatively correlated with satisfaction with relevant life domains (e.g. college students who are dissatisfied with their academic experience tend to want to increase in conscientiousness, which may have utility in improving their grades; Hudson & Roberts, 2014). Similarly, the specific traits that individuals most wish to change across the lifespan appear to track common, age-graded life tasks (e.g. college-aged adults appear to prize conscientiousness, whereas middle-aged adults tend to also value agreeableness, which has utility in fulfilling generative roles, such as caring for children or aging parents; Hudson & Fraley, 2016b).

Thus, there is no question that people want to change their personality traits. Moreover, emerging research suggests that they may actually be able to do so. Evidence for this idea comes from at least two related lines of research. First, at least 12 longitudinal studies to date have found that change goals predict corresponding trait growth over the following 4 months (Hudson & Fraley, 2015, 2016a; Hudson, Fraley, Chopik, & Briley, 2020). For example, participants who express desires to become more extraverted tend to actually increase in extraversion at a faster rate than their peers who do not wish to change. Thus, at the very least, people tend to change in ways that align with their desires. Second, at least two longitudinal experiments have found that volitionally modifying one's behaviour to align with desired traits facilitates trait growth (Hudson, Briley, et al., 2019; Hudson & Fraley, 2015). For example, taking regular action to behave in an extraverted fashion (e.g. inviting friends to lunch and asserting one's opinions and feelings during conversations) leads to increases in trait extraversion across time. Taken together, these studies suggest that individuals'

intentional actions may be able to guide the development of their personalities across time.

How, though, is it possible that people might be able to change their own traits? In terms of mechanisms, modern personality theories suggest that trait growth occurs whenever state-level thoughts, feelings, and behaviours are altered for a sufficient period of time (Allemand, 2008; Hennecke, Bleidorn, Denissen, & Wood, 2014; Hudson & Fraley, 2017; Jackson, Hill, Payne, Roberts, & Stine-Morrow, 2012; Magidson, Roberts, Collado-Rodriguez, & Lejuez, 2014). As one example of this principle in action, people tend to become more conscientious when they commit to their careers (Hudson & Roberts, 2016). This phenomenon is thought to occur because workplaces require consistently elevated levels of conscientious thoughts, feelings, and behaviours from employees (e.g. punctuality and responsibly performing one's duties). Over extended periods of time (perhaps as short as 6 weeks; Roberts et al., 2017), state-level changes can coalesce into enduring trait-level changes. This may occur because new patterns of thoughts, feelings, and behaviours become relatively automatic and habitual and eventually even incorporated into individuals' identities (i.e. how they see themselves) and biology (e.g. via changes to the epigenome or nervous system) (Burke, 2006; Hennecke et al., 2014; Hudson & Fraley, 2017; Kandler & Zapko-Willmes, 2017; Magidson et al., 2014; Roberts, 2018).

Extending similar logic to self-change efforts, people may be able to volitionally change their personalities simply by chronically modifying their thoughts, feelings, and behaviours to align with desired traits until those new cognitive, affective, and behavioural patterns coalesce into enduring trait change. Indeed, longitudinal experiments suggest that making regular changes to one's thoughts, feelings, and behaviours is an effective strategy for catalysing trait change (Hudson, Briley, et al., 2019; Hudson & Fraley, 2015). In sum, people want to change themselves and seem to be able to do so—at least with respect to the Big Five. Whether or not such processes can be extended to more interpersonal characteristics—such as an individual's attachment style—is another question entirely.

Attachment styles

Although the existing literature on volitional change has focused exclusively on the Big Five personality traits, individuals differ from one another in a variety of important ways that are not fully captured by the Big Five (e.g. McAdams & Pals, 2006). As one critical example, people vary in the extent to which they feel comfortable forming close relationships and trusting others to meet their relational needs (Bowlby, 1969). Specifically, some people form intimate relationships easily and feel comfortable depending on their romantic partners and close friends. Others may feel less secure and worry that their partners, friends, and family will not be willing or able to adequately provide love and care. These types of insecurities spur a variety of coping mechanisms, ranging from defensively pushing others away to clinging tightly to them (Bartholomew & Horowitz,

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[1]The precise prevalence depends on how change goals are assessed. When merely asked whether they would like to change something about their personalities, approximately 70% of people say 'yes' (Baranski, Morse, & Dunlop, 2017). However, when asked more specifically whether they would like to change with respect to each of the items in standard personality inventories, approximately 85–99% of people indicate that they want to increase in each of the Big Five traits (Hudson & Fraley, 2016b; Hudson & Roberts, 2014).

1991; Hazan & Shaver, 1987; Mikulincer & Shaver, 2016). Generally, these individual differences in how people approach close relationships—especially romantic partnerships—are referred to as *attachment styles* or *attachment orientations* (Hazan & Shaver, 1987; Mikulincer & Shaver, 2016; Shaver, Hazan, & Bradshaw, 1988).

In adulthood, attachment orientations vary along two relatively independent, continuous dimensions: attachment *anxiety* and *avoidance* (Fraley, Hudson, Heffernan, & Segal, 2015; Fraley, Waller, & Brennan, 2000). Individuals who are relatively high in attachment anxiety have concerns about their self-worth in relationships and consequently tend to desire intense levels of intimacy and frequent reassurance that their partners love them (Bartz & Lydon, 2006; Campbell & Marshall, 2011; Collins, 1996; Hazan & Shaver, 1987). People with relatively high levels of avoidance, in contrast, do not trust others to meet their relational needs and, as a consequence, tend to minimize the psychological importance of close relationships and push others away (Collins, Guichard, Ford, & Feeney, 2004; Fraley, Davis, & Shaver, 1998; Hazan & Shaver, 1987). Importantly, it is possible for individuals to fall anywhere in the two-dimensional space defined by anxiety[2] and avoidance: those with low levels of both anxiety and avoidance are considered *securely attached*, whereas individuals with high levels of both anxiety and avoidance are said to be 'fearfully attached' (e.g. simultaneously wanting but fearing close relationships; Bartholomew & Horowitz, 1991). Finally, it is critical to emphasize that people's attachment styles are distinct from their Big Five traits. Attachment anxiety is moderately correlated with emotional stability ($r \sim -.40$), but the remaining correlations between the attachment dimensions and Big Five domains are small ($|r| = .20$ or lower) (Noftle & Shaver, 2006). Thus, processes observed with the Big Five (e.g. volitional change) may not necessarily generalize to attachment dimensions, as they are separable constructs.

Understanding attachment styles is important because attachment anxiety and avoidance have been linked to a wide array of consequential outcomes. Specifically, security (i.e. lower anxiety and avoidance) is associated with better functioning and success in romantic relationships (Collins & Read, 1990; Conde, Figueiredo, & Bifulco, 2011; Shaver & Brennan, 1992); higher friendship quality (Fraley & Davis, 1997; Grabill & Kerns, 2000; Saferstein, Neimeyer, & Hagans, 2005); better mental health, including less depressive and obsessive symptomology (Carnelley, Otway, & Rowe, 2016; Doron, Sar-El, Mikulincer, & Talmor, 2012); better physical health (Pietromonaco & Powers, 2015); and even better basic cognitive processes such as attention (Dewitte, Koster, Dehouwer, & Buysse, 2007; Ein-Dor, Mikulincer, & Shaver, 2011) and memory (Edelstein, 2006; Fraley & Brumbaugh, 2007; Hudson & Fraley, 2018a).

Development in attachment styles
Because of the importance of attachment styles, scholars have naturally taken interest in whether they might change. To that end, research suggests that people's attachment styles can and do change across time (e.g. Baldwin & Fehr, 1995; Fraley, 2002). For example, as people become older, they tend to decrease in attachment anxiety and increase in avoidance (Chopik & Edelstein, 2014; Chopik, Edelstein, & Fraley, 2013; Hudson, Fraley, Chopik, & Heffernan, 2015). These normative trends are thought to reflect both biological maturation (analogous to physical maturation; Roberts, Wood, & Caspi, 2008) and the influence of common, age-graded life events. For example, most adults enter romantic relationships as life progresses (e.g. more than half of Americans aged 18 or older are married; United States Census Bureau, 2017), and settling into an enduring romantic relationship is associated with declines in attachment anxiety (Eastwick & Finkel, 2008). Beyond these normative trends, attachment styles also appear to develop in idiosyncratic ways in response to various life events (as anticipated by Bowlby, 1969). For example, positive and negative experiences in romantic relationships are associated with changes in people's levels of anxiety and avoidance (Arriaga et al., 2018; Davila & Kashy, 2009; Davila & Sargent, 2003; Hudson, Fraley, Brumbaugh, & Vicary, 2014).

Recently, scholars have begun to investigate whether it is possible to more actively change people's attachment styles. Along these lines, numerous studies show that interventions can be effective in at least temporarily shifting people's attachment anxiety and avoidance. For example, experimental manipulations that ask people to reflect on security-fostering relationships and/or experiences therein appear to cause people to *actually behave* in a more secure fashion.[3] Indeed, experimentally increasing people's attachment security causes them to exhibit greater empathic, authentic, responsive, generous, and creative behaviours (Gillath & Hart, 2010; McClure, Bartz, & Lydon, 2013; Mikulincer, Hirschberger, Nachmias, & Gillath, 2001; Mikulincer, Shaver, & Rom, 2011; Mikulincer, Shaver, Sahdra, & Bar-On, 2013)—and to report fewer insecurities about their appearance and self-worth (Mikulincer, Shaver, Bar-On, & Sahdra, 2014; Park, 2007). Moreover, preliminary experimental evidence suggests that such interventions, when repeatedly administered, may even be able to change people's enduring, trait levels of attachment anxiety and avoidance over the course of several months—with downstream effects on consequential life outcomes such as relationship functioning and even well-being (Carnelley & Rowe, 2007; Gillath, Selcuk, & Shaver, 2008; Hudson & Fraley, 2018b). To summarize, attachment styles change both naturalistically in concert with life events and also in response to interventions.

Volitional change in attachment
Attachment styles are linked to a wide swath of important life outcomes, and they can also change across time. This naturally raises the question as to whether—similar to the Big Five—individuals can take a more active role in volitionally

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[2]Throughout this manuscript, 'anxiety' always refers specifically to *attachment anxiety*—and not more generalized anxiety (i.e. neuroticism)—unless explicitly noted otherwise.

changing their attachment styles, as well. However, no research to date has investigated volitional change in attachment. Thus, the goal of the present studies was to elucidate people's desires and attempts to change their attachment styles. Understanding this issue requires addressing at least two constituent questions. First, do people even *want* to change their attachment styles? Second, do people tend to change in ways that align with their desires?

Do people want to change their attachment styles?.
Theoretically, people generally formulate desires to change their personality traits for at least two reasons (Baumeister, 1994; Hennecke et al., 2014; Hudson & Fraley, 2017; Hudson & Roberts, 2014; Kiecolt, 1994). First, people may wish to increase in socially desirable traits that they lack for the intrinsic value of possessing the trait *per se*. To that end, lower levels of both anxiety and avoidance (i.e. higher security) are seen as desirable (e.g. Strauss, Morry, & Kito, 2012). Thus, there is reason to believe that people may intrinsically want to become more secure (i.e. less anxious and avoidant)—and that this may be especially true of people who are relatively insecure (i.e. high in anxiety and/or avoidance).

Second, people may wish to change traits that they believe would have utility in assuaging sources of dissatisfaction in their lives (Hudson & Fraley, 2016b; Hudson & Roberts, 2014; Kiecolt, 1994). Attachment anxiety and avoidance are both negatively linked to a wide gamut of consequential life outcomes—the first and foremost of which is functioning in close relationships (e.g. Bauminger, Finzi-Dottan, Chason, & Har-Even, 2008; Collins & Read, 1990; Feeney & Collins, 2001; Grabill & Kerns, 2000). Thus, individuals who are dissatisfied with their romantic relationships in particular may reason that their relational woes might be ameliorated if they possessed lower levels of anxiety and/or avoidance. Indeed, laypersons seem to be able to intuitively reason about which traits are linked to which life domains (e.g. Hudson & Roberts, 2014). Thus, even laypersons might intuit that they would have better relationships if they were less needy (i.e. lower in attachment anxiety) or less apt to pushing others away (i.e. lower in avoidance)—and consequently, they may desire decreases in those traits. In sum, there is reason to expect that people may generally wish to change their attachment styles. Moreover, such desires should be correlated with existing trait levels and relationship dissatisfaction.

Can people volitionally change their attachment styles?.
If people want to change their attachment styles, the natural next question is whether they might be able to actually do so. This is a complex issue, because individuals' attachment styles are based in their beliefs about the

fundamental nature of close relationships (e.g. are other people generally responsive to the self's needs?; Bartholomew & Horowitz, 1991). Presumably, these beliefs result from real experiences in close relationships (Bowlby, 1969; Mikulincer & Shaver, 2016)—and thus, relational experiences may be necessary to change attachment styles (Arriaga et al., 2018).

However, it is also possible that people may be able to volitionally change their own attachment styles. Individuals obviously cannot control other people's behaviour (e.g. whether or not their relationship partners are actually responsive). Nevertheless, people may be able to change their attachment-related beliefs and feelings through a variety of cognitive processes (e.g. mentally reconstruing relationship experiences in a positive fashion) (e.g. Collins, Ford, Guichard, & Allard, 2006).

How then can we test whether people can volitionally change their attachment styles? One method is to examine whether change goals predict subsequent growth in the corresponding traits (e.g. do people who want to become less avoidant actually decrease in avoidance over time?) (Hudson & Fraley, 2015, 2016a). Why might people change in ways that align with their desires? Research has found that some individuals who want to change their personalities naturalistically engage in strategies designed to help them attain their goals (e.g. Hudson & Fraley, 2015; Quinlan, Jaccard, & Blanton, 2006; Stevenson & Clegg, 2011). For example, one study found that students who feared becoming boring in the future engaged in behaviours they felt would make themselves more interesting (Quinlan et al., 2006).

Thus, if people want to change their attachment styles and actively work on doing so, they may be able to actually modify their attachment anxiety and avoidance across time. Indeed, preliminary research already suggests that attachment styles can be changed through intervention (Carnelley & Rowe, 2007; Gillath et al., 2008; Hudson & Fraley, 2018b). Namely, interventions that repeatedly induce feelings of attachment security appear to lead to enduring reductions in attachment anxiety—and, more equivocally, perhaps avoidance—across periods of up to 4 months. Theoretically, these interventions are efficacious because state-level changes to attachment (e.g. temporary feelings of security) that are maintained for sufficient periods of time should eventually coalesce into enduring trait change (Carnelley & Rowe, 2007; Gillath et al., 2008; Hudson & Fraley, 2018b). Thus, individuals may be able to volitionally change their attachment styles by modifying their state-level thoughts, feelings, and behaviours over sufficient periods of time (perhaps as short as 6 weeks; Roberts et al., 2017), until those changes coalesce into enduring trait change.

Overview of the present studies

The goal of the present studies was to systematically investigate whether people want to change their attachment styles —and, if so, whether these *attachment change goals* predict corresponding trait growth across time. To do so, we (1) developed a new measure of attachment change goals and (2) validated it by examining its criterion validities with

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[3]Such manipulations are not merely 'social priming'. Rather, these manipulations work because they capitalize on the defining feature of the attachment system: proximity to an attachment figure makes people feel secure (Bowlby, 1969). For example, being near a parent generally calms a fearful child. In adulthood, this process becomes internalized to the point that *mental proximity* to attachment figures (e.g. thinking about one's romantic partner and the associated love and care) fosters security and calmness (Fraley & Shaver, 2000). Thus, asking participants to think about security-fostering relationships and experiences activates the attachment system and produces state-level feelings and experiences of attachment security.

theoretically relevant predictors (e.g. existing attachment styles and relationship satisfaction). Finally, we (3) conducted a 16-week, intensive longitudinal study examining whether attachment change goals predicted corresponding growth in people's attachment styles (e.g. do people who want to become less avoidant actually decrease in avoidance across time?).[4]

STUDY 1

The purpose of Study 1 was to develop a new, relatively short, 16-item measure of people's goals to change their levels of attachment anxiety and avoidance. To do so, we adapted most of the items from the current gold-standard measure of adult attachment: the 36-item Experiences in Close Relationships—Revised (ECR-R; Fraley et al., 2000). We subsequently administered the pool of candidate items to approximately 1700 online participants and used a combination of a rational–theoretical approach and factor analysis to determine the final set of 16 items to be included in our new measure of attachment change goals.

Method

Participants

Participants were recruited on the first author's website, www.PersonalityAssessor.com. Visitors can find Personality Assessor via Internet searches (e.g. 'free personality tests'), and they typically complete studies as a recreational/leisure activity and to receive feedback about their personalities. Study 1 was advertised as a 'free personality test' that allowed participants to 'Learn about [their] actual and ideal styles of forming close relationships'. A total of 1837 participants completed the study. Of these participants, 90 indicated that they were under 18 years of age, and thus, per Institutional Review Board (IRB) requirements, their data were discarded—yielding a final sample size of 1747 individuals. The total sample size was arbitrary, but no analyses were performed prior to ceasing data collection. This sample size afforded 99% power to detect effects as small as $r = .10$ and 80% power to detect effects as small as $r = .07$.

The final sample was 75% female, with ages ranging from 18 to 99 ($M = 30.92$, $SD = 11.72$). Participants were asked to check all relationship statuses that applied from a list containing the options: 'single' (46%); 'committed, non-marriage relationship (e.g. dating and engaged)' (30%); 'married' (13%); 'casual relationship (e.g. non-exclusive dating)' (7%); 'divorced' (6%); 'separated' (3%); and 'widowed' (1%). Participants who indicated that they were in any sort of relationship were asked to report the length of their relationship and their partner's gender. Of the 915 participants who responded to the relationship length question,[5] the average relationship length was 70.16 months ($SD = 104.54$). Of the 969 participants who responded to the partner gender question, 92% were in heterosexual relationships, 5% were in female–female

relationships, and 3% were in male–male relationships. We did not collect any additional demographic information from participants.

Measures

We describe all measures collected in Study 1 in the below text.

Attachment styles. Participants provided self-ratings of their attachment styles using the 36-item ECR-R (Fraley et al., 2000). The ECR-R contains two 18-item subscales that respectively measure attachment anxiety (e.g. 'I'm afraid that I will lose my partner's love') and avoidance (e.g. 'I prefer not to show a partner how I feel deep down'). All items were rated on a 5-point scale from *strongly disagree* (1) to *strongly agree* (5). Before rating the items, participants were provided with instructions that read, 'Many of the following statements will ask you about your relationship with your romantic partner. If you are not currently in a romantic relationship, you may think about a previous romantic partner, your romantic relationships in general, or even your closest friend'. Research has found that people provide similar ratings of their attachment styles irrespective of whether they are instructed to think about close others in general or specifically their romantic partners (r's ~ .60; Fraley, Heffernan, Vicary, & Brumbaugh, 2011); thus, heterogeneity in whether people were thinking of a specific partner vs close others in general while completing the ECR-R in our study is not of particular importance. Items were averaged to form separate composites for attachment anxiety ($\alpha = .93$) and avoidance ($\alpha = .94$). A prototypically secure individual is low in both anxiety and avoidance.

Attachment change goals. Using similar methods to Hudson and Roberts (2014), we adapted the ECR-R to measure people's goals to change their attachment styles. Namely, we presented participants with instructions that read:

> **'How much do you want to change yourself?'**
>
> 'Here are a number of personality traits that you may or may not want to change within yourself. Please rate the extent to which you **want to change** each trait'.
>
> 'Many of the following statements will ask you about your relationship with your romantic partner. If you are not currently in a romantic relationship, you may think about a previous romantic partner, your romantic relationships in general, or even your closest friend'.

Subsequently, we adapted most of the items in the ECR-R to measure how much people wanted to change with respect to each item. For example, one of the (reverse-keyed) items measuring avoidance in the ECR-R is 'I feel comfortable sharing my private thoughts and feelings with my partner'.

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[4]These studies were not preregistered. Data and analysis scripts can be accessed at https://osf.io/97vbx/.

[5]Approximately 15% of users who indicated that they were in a romantic relationship skipped this question. Users who complete online studies for leisure may differ from participants in lab studies in a variety of ways. For one, they may be hesitant to provide information that they deem as personal and/or irrelevant to receiving feedback about their personality (such as their relationship length or partner's gender).

The corresponding change goals item was, 'I want to be comfortable sharing my private thoughts and feelings with my partner'. As with existing change goals measures, all attachment change goals items were rated on a 5-point scale running from *much less than I currently am* (−2) to *I do not wish to change this trait* (0) to *much more than I currently am* (+2). Thus, participants could report desires to increase, decrease, or stay the same with respect to each item in the measure.

Importantly, unlike measures of Big Five change goals, which presented a nearly a verbatim, direct translation of the items from the BFI (e.g. 'I see myself as talkative' became 'I want to be talkative'), many items in the ECR-R were awkward to directly translate into a change goals format and thus were substantially rewritten. For example, the ECR-R contains an item to measure anxiety that reads, 'I'm afraid that I will lose my partner's love' (rated on a *agree/disagree* scale). The corresponding change goal item was, 'I want to be concerned with issues like maintaining my partner's love' (rated on a *more/less than I currently am* scale). This occasionally entailed introducing subtle shifts into the meaning of the items. For example, the

ECR-R anxiety item reading, 'I often wish that my partner's feelings for me were as strong as my feelings for him or her', was translated into 'I want to be someone who develops strong feelings for partners, even if their feelings for me aren't quite as strong'. Despite the meaning of some of the items slightly shifting during the translation process, we were diligent to ensure that all items continued to directly tap the core theoretical definitions of anxiety and avoidance outlined by theorists (Hazan & Shaver, 1987; Mikulincer & Shaver, 2016).

We were able to adapt 34 of the 36 ECR-R items. One ECR-R attachment anxiety item did not translate well into change goals format ('My partner only seems to notice me when I'm angry'), and another was redundant with another item in the subscale ('My desire to be very close sometimes scares people away' would have been redundant with the change goals translation of 'I find that my partner[s] don't like to get as close as I'd like', which thus led to the creation of the item, 'I want to be someone who is satisfied even with relationships characterized by less closeness and attention than I would ideally want'). Thus, our final pool of

Table 1. Items in the candidate pool for the Change Goals—Experiences in Close Relationships

Item	Text
Anxiety	
1	I want to be concerned with issues like maintaining my partner's love.
2	I want to be someone who often checks whether my partner wants to stay with me.
3	I want to be someone who occasionally contemplates whether my partner really loves me.
4	I want to be unconcerned with issues like whether romantic partners care about me as much as I care about them.
5	I want to be someone who develops strong feelings for partners, even if their feelings for me aren't quite as strong.
6	I want to spend a lot of time thinking about my relationships.
7	I want to be someone who is concerned about whether my partner is interested in other people.
8	I want to be someone who does not compare whether my partner cares about me as much as I care about him or her.
9	I want to be someone who does not worry about my partner leaving me.
10	I want to be someone who has no doubts about myself in romantic relationships.
11	I want to be unconcerned about rejection or abandonment.
12	I want to be someone who worries about how I measure up to other people.
13	I want to be someone who generally feels secure that my partner loves me.
14	I want to be someone who is satisfied even with relationships characterized by less closeness and attention than I would ideally want.
15	I want to be comfortable opening up to romantic partners without worrying about rejection.
16	I want to be someone who requires a lot of affection and support from my partner.
Avoidance	
1	I want to be someone who discusses my feelings with my partner.
2	I want to be comfortable sharing my private thoughts and feelings with my partner.
3	I want to be someone who depends on romantic partners.
4	I want to be comfortable being very close to romantic partners.
5	I want to be someone who opens up to romantic partners.
6	I want to be someone who prefers to be very close to romantic partners.
7	I want to be someone who gets uncomfortable when a romantic partner wants to be very close.
8	I want to be someone who quickly and easily gets close to partners.
9	I want to be someone who keeps a bit of distance between me and my partner.
10	I want to be someone who discusses my problems and concerns with my partner.
11	I want to be someone who turns to my romantic partner in times of need.
12	I want to be someone who tells my partner just about everything.
13	I want to be someone who talks things over with my partner.
14	I want to be someone who gets nervous when partners get too close to me.
15	I want to be someone who is comfortable depending on romantic partners.
16	I want to be someone who finds it easy to depend on romantic partners.
17	I want to be someone who is affectionate with my partner.
18	I want to be someone who fully expresses who I am and what I need to romantic partners.

attachment change goals items consisted of 16 attachment anxiety items and 18 attachment avoidance items. The full list of candidate items is presented in Table 1.

Results and discussion

Our goal was to select 16 total items—eight attachment anxiety and eight attachment avoidance items—to form the final Change Goals—Experiences in Close Relationships (C-ECR) scale. To narrow the pool of items, we conducted an iterative principle axis factor analysis with varimax rotation on the 34 candidate items. A total of five eigenvalues were greater than one, although scree plots suggested the presence of 2–3 factors (the respective eigenvalues for the first six factors were 8.34, 4.55, 1.66, 1.38, 1.29, and 0.97). For the sake of thoroughness, we examined both the three-factor and two-factor solutions. Critically, for ease of interpretation, all items were reversed when appropriate (such that higher numbers indicate goals to *increase* in attachment anxiety or avoidance) prior to conducting factor analyses. Thus, all items should have *positive* loadings on the appropriate factor.

The three-factor solution explained 43% of the variance in the item pool. As can be seen in Table 2, the rotated solution yielded a (mostly) clean avoidance factor (albeit with some anxiety items highly cross-loading). In contrast, the anxiety items were split across the remaining two factors, largely based on whether the items were worded positively ('I want to be someone who often checks whether my partner wants to stay with me') vs negatively ('I want to be someone who does not worry about my partner leaving me'). In sum, the three-factor solution did not appear to produce three substantive factors—but instead, it appeared to bifurcate the anxiety items along a method factor (positive vs negative wording).

In contrast, a two-factor solution explained 38% of the variance in the item pool (~5% less than the three-factor solution)—and as can be seen in Table 3, it produced relatively clean avoidance and anxiety factors, except for a few anxiety items with high cross-loadings. Thus, notwithstanding those few items, the two-factor solution appeared to be more substantively interpretable than the three-factor solution.

Based on the results of this factor analysis—combined with a rational theoretical approach—we selected eight anxiety items and eight avoidance items to comprise the final C-ECR. The final, chosen items are marked in the right-hand column of Table 3, and their text is provided in Table 4. Critically, the final items were not chosen merely based on factor loadings. Anxiety and avoidance are expected to correlate to some degree—and thus, it would not have been advisable to simply select items that eliminated all cross-loadings and produced uncorrelated factors (Fraley et al., 2000). We avoided clearly problematic items, such as anxiety Items 5 ('I want to be someone who develops strong feelings for partners, even if their feelings for me aren't quite as strong') and 15 ('I want to be comfortable opening up to with romantic partners without worrying about rejection'), as they had convoluted wording and/or implicated both anxiety-related and avoidance-related components. However, merely

Table 2. Study 1 three-factor solution for attachment change goals items

Item	Rotated factors		
	1	2	3
Anxiety			
1	−.17	**.44**	.19
2	−.01	**.62**	.20
3	.07	**.59**	.22
4	.05	.13	**.45**
5	−.31	.32	.08
6	−.13	**.47**	.17
7	.01	**.57**	.22
8	.09	.14	**.42**
9	.11	.26	**.54**
10	.21	.34	**.48**
11	.09	.25	**.47**
12	.11	**.58**	.22
13	.27	.43	.51
14	−.08	.07	**.33**
15	.42	.27	.40
16	−.32	.33	.20
Avoidance			
1	**.71**	−.02	.21
2	**.69**	−.01	.27
3	**.52**	−.21	−.07
4	**.70**	.15	.06
5	**.75**	.01	.12
6	**.65**	−.05	.01
7	**.51**	.36	−.14
8	**.42**	−.12	−.01
9	**.53**	.04	−.18
10	**.66**	−.03	.24
11	**.65**	−.06	.07
12	**.62**	−.08	.19
13	**.61**	.02	.25
14	**.52**	.44	−.10
15	**.61**	.03	.07
16	**.59**	.02	.03
17	**.56**	.05	.00
18	**.55**	.12	.29

Note: N = 1747. Prior to analysis, all items were positively keyed, such that higher scores indicate goals to increase in anxiety or avoidance. Each item's primary loading, if applicable, is highlighted in boldface.

selecting the items with the highest loadings would have created extremely homogenous scales that measured only a small slice of the theoretical definition of each construct. For example, most of the eight highest-loading anxiety items (e.g. Items 2, 3, 7, 9, 10, 12, and 13) referred to issues of maintaining one's partner's love at the expense of omitting other critical components of attachment anxiety (e.g. rumination, worry about one's value as a romantic partner, and intense desires for closeness).

Thus, the final items were chosen based on a variety of criteria, including content validity (i.e. covering the entire breadth of each construct), non-redundancy with other selected items, loading on the appropriate factor, and appropriate wording of the item. This item selection process entailed a subjective component. For example, of the anxiety items, Item 3 ('I want to be someone who occasionally contemplates whether my partner really loves me') was selected,

Table 3. Study 1 two-factor solution for attachment change goals items

	Rotated factors		
Item	1	2	Selected
Anxiety			
1	−.18	**.47**	
2	−.02	**.61**	
3	.06	**.60**	×
4	.09	**.36**	
5	−.32	.31	
6	−.14	**.48**	×
7	.00	**.59**	×
8	.13	**.36**	
9	.15	**.52**	
10	.24	**.55**	×
11	.13	**.47**	×
12	.10	**.59**	×
13	.29	**.65**	
14	−.05	**.26**	×
15	.44	.45	
16	−.32	.39	×
Avoidance			
1	**.73**	.11	×
2	**.71**	.14	
3	**.53**	−.22	
4	**.69**	.15	×
5	**.76**	.07	
6	**.65**	−.04	
7	**.45**	.19	
8	**.42**	−.11	
9	**.50**	−.08	×
10	**.68**	.11	
11	**.65**	−.01	×
12	**.64**	.04	×
13	**.64**	.16	
14	**.46**	.28	
15	**.61**	.08	×
16	**.59**	.03	
17	**.56**	.03	×
18	**.57**	.26	×

Note: $N = 1747$. Prior to analysis, all items were positively keyed, such that higher scores indicate goals to increase in anxiety or avoidance. Each item's primary loading, if applicable, is highlighted in boldface.

while other similar items were discarded for having more extreme or seemingly awkward wording based on the conversion from the ECR-R to the C-ECR (e.g. Item 2, 'I want to be someone who often checks whether my partner wants to stay with me') or much higher cross-loadings with avoidance (e.g. Item 13, 'I want to be someone who generally feels secure that my partner loves me'). In contrast, other items were selected for inclusion in the final scale, despite less-than-stellar primary loadings and cross-loadings, because of their content and face validity in directly targeting critical components of the theoretical definition of attachment anxiety (e.g. Item 14, 'I want to be someone who is satisfied even with relationships characterized by less closeness and attention than I would ideally want'; Item 16, 'I want to be someone who requires a lot of affection and support from my partner'). Ultimately, the goal was to weigh pragmatic concerns (e.g. staying close to an adaptation of the ECR-R, conceptually

capturing desire to change in anxiety/avoidance) within the context of the factor analysis.

After selecting the final items, we reconducted a principal axis factor analysis on only the final 16 scale items. The two-factor solution, which explained 42% of the variance across the final 16 items, is presented in Table 5 along with the item means and standard deviations (all items in Table 5 were reversed as necessary such that higher values represent wanting *greater* anxiety or avoidance). Table 6 contains the descriptive statistics and correlations for the composites formed from the final attachment anxiety ($\alpha = .71$) and avoidance ($\alpha = .84$) change goals items. Replicating research with the Big Five (Baranski et al., 2017; Hudson & Fraley, 2016b; Hudson & Roberts, 2014), goals to change anxiety and avoidance were negatively related to existing levels of the corresponding traits (average $r = -.50$)—indicating that people with high levels of undesirable traits (insecurity) were most likely to express desires to decrease in those traits.

STUDY 2

In Study 1, we developed a new, 16-item measure to assess people's attachment change goals: the C-ECR. Study 2 was designed to replicate the factor structure of the C-ECR in a new sample. Beyond this, we also collected measures of several variables that should relate to goals to change attachment styles (e.g. relationship satisfaction; Hudson & Fraley, 2016b; Hudson & Roberts, 2014) in order to test the C-ECR's criterion validities.

Method

Participants
Participants were recruited using identical procedures to Study 1. A total of 1993 participants completed Study 2. Of these, 187 participants' data were discarded—due to IRB requirements—because they reported being less than 18 years old. Total sample size was selected to be similar to Study 1—and no data were analysed prior to ceasing data collection. The final sample of 1806 individuals afforded 99% power to detect effects as small as $r = .10$ and 80% power to detect effects as small as $r = .07$. This sample was 72% female, with ages ranging from 18 to 99 ($M = 30.81$, $SD = 12.12$). Participants were instructed to check all racial/ethnic groups with which they identified: 68% identified as White, 13% as Asian, 9% as Hispanic/Latino, 7% as Black, 3% as Asian Indian, 3% as Middle Eastern, and 2% as Pacific Islander. Participants were also instructed to select all applicable relationship statuses; the sample was 43% single, 33% in a committed non-marriage relationship (e.g. dating or engaged), 15% married, 6% in a casual relationship, 5% divorced, 2% separated, and 1% widowed. Of the 968 participants who answered the relationship length question, the average relationship length was 6.40 years ($SD = 9.17$). Of the 984 participants who answered the partner gender question, 95% were in heterosexual relationships, 4% ($n = 39$) were in female–female relationships, and 1% ($n = 8$) were in male–male relationships.

Table 4. Final Change Goals—Experiences in Close Relationships items

Item	Text
Anxiety	
1	I want to be someone who occasionally contemplates whether my partner really loves me.
2	I want to spend a lot of time thinking about my relationships.
3	I want to be someone who is concerned about whether my partner is interested in other people.
4 (R)	I want to be someone who has no doubts about myself in romantic relationships.
5 (R)	I want to be unconcerned about rejection or abandonment.
6	I want to be someone who worries about how I measure up to other people.
7 (R)	I want to be someone who is satisfied even with relationships characterized by less closeness and attention than I would ideally want.
8	I want to be someone who requires a lot of affection and support from my partner.
Avoidance	
1 (R)	I want to be someone who discusses my feelings with my partner.
2 (R)	I want to be comfortable being very close to romantic partners.
3	I want to be someone who keeps a bit of distance between me and my partner.
4 (R)	I want to be someone who turns to my romantic partner in times of need.
5 (R)	I want to be someone who tells my partner just about everything.
6 (R)	I want to be someone who is comfortable depending on romantic partners.
7 (R)	I want to be someone who is affectionate with my partner.
8 (R)	I want to be someone who fully expresses who I am and what I need to romantic partners.

Note: R, reversed item.

Measures
We describe all measures collected in Study 2 in the following text.

Attachment styles. As in Study 1, participants provided self-reported ratings of their attachment styles using the ECR-R. Separate composites were formed for attachment anxiety ($\alpha = .92$) and avoidance ($\alpha = .93$).

Attachment change goals. Participants provided self-report ratings of their desires to change their attachment styles using the newly developed C-ECR (the final items are presented in Table 4). Separate composites were formed for goals to change with respect to attachment anxiety ($\alpha = .68$) and avoidance ($\alpha = .81$).

Relationship quality. Participants were asked, 'Are you currently in any sort of romantic relationship (e.g., casual dating, committed dating, engaged, partnered, married)?' This question was separate from the relationship status question described earlier in the Participants section. Participants who answered 'yes' to this question ($n = 1134$; 63%)[6] rated the quality of their romantic relationship using modified versions of the Investment Model Scales (Rusbult, Martz, & Agnew, 1998). The Investment Model Scales contain five items to measure relationship satisfaction (e.g. 'I feel satisfied with our relationship'), five items to measure quality of alternatives (e.g. 'The people other than my partner with whom I might become involved are very

appealing'), five items to measure relationship investment (e.g. 'I have put a great deal into our relationship that I would lose if the relationship were to end'), and seven items to measure relationship commitment (e.g. 'I am committed to maintaining my relationship with my partner'). All items were rated on a 5-point scale from *strongly disagree* (1) to *strongly agree* (5). We averaged items to form separate composites for relationship satisfaction ($\alpha = .90$), quality of alternatives ($\alpha = .74$), relationship investment ($\alpha = .74$), and relationship commitment ($\alpha = .90$).

Investment in friends. Because people's attachment styles are associated with relationship dynamics that unfold within friendships in addition to those that unfold within romantic partnerships (Fraley & Davis, 1997; Grabill & Kerns, 2000), we adapted Lodi-Smith and Roberts's (2012) measure of family investment to measure people's investment in their friendships. Five items (e.g. 'Friendships should be a large part of one's life'; 'An individual's life goals should be mainly friend-oriented') were rated on a 5-point scale from *strongly disagree* (1) to *strongly agree* (5) and averaged to form a composite ($\alpha = .76$).

Results and discussion

We first attempted to replicate the results of Study 1 in a new sample. A two-factor solution explained 40% of the variance in the C-ECR items in Study 2—and the pattern of loadings (presented in Table 5) closely replicated that in Study 1. Thus, the factor structure of the C-ECR successfully replicated in an independent sample. We therefore formed separate composites for goals to change attachment anxiety and avoidance and explored their properties in the analyses that follow.

How prevalent are attachment change goals?
Next, we examined the prevalence of attachment-related change goals. Figure 1 contains histograms of participants' goals to change with respect to attachment anxiety and

[6]This represents somewhat of a discrepancy between the relationship statuses people checked at the beginning of the study. For example, 172 people checked that they were 'single' at the beginning of the study but then indicated using this question that they were in a romantic relationship and answered the investment model questions. Some of this discrepancy can be explained by the fact that 59 single individuals indicated at the beginning of the study that they were also currently dating (whether exclusively or not), separated, or divorced. Thus, these individuals may have completed the relationship quality scales with respect to their dating partners and/or estranged marital partners. It is not clear what relationship characteristics the remaining 113 single individuals, who did not even indicate that they were casually dating, were rating while completing the investment model scales.

Table 5. Studies 1 and 2 Change Goals—Experiences in Close Relationships items means, standard deviations, and factor loadings

	Descriptive statistics				Rotated factor loadings			
	Study 1		Study 2		Study 1		Study 2	
Items	M	SD	M	SD	1	2	1	2
Anxiety								
1	−0.71	0.87	−0.66	0.89	.09	**.60**	.04	**.63**
2	−0.60	0.88	−0.49	0.89	−.13	**.50**	−.16	**.46**
3	−0.67	0.87	−0.55	0.88	.04	**.58**	.01	**.60**
4	−1.08	0.89	−0.97	0.93	.26	**.52**	.31	**.46**
5	−0.88	1.11	−0.72	1.14	.13	**.43**	.14	**.38**
6	−0.99	0.88	−0.89	0.93	.13	**.61**	.09	**.60**
7	−0.30	0.97	−0.32	0.94	−.05	**.27**	−.03	**.20**
8	−0.30	0.86	−0.24	0.85	−.32	**.43**	−.34	**.42**
Avoidance								
1	−0.67	0.80	−0.64	0.81	**.73**	.07	**.70**	.07
2	−0.72	0.80	−0.67	0.80	**.67**	.12	**.66**	.14
3	−0.29	0.85	−0.26	0.86	**.48**	−.09	**.41**	−.07
4	−0.52	0.83	−0.47	0.82	**.65**	−.02	**.67**	−.04
5	−0.46	0.83	−0.43	0.82	**.64**	.02	**.68**	.02
6	−0.56	0.84	−0.41	0.86	**.58**	.03	**.49**	−.04
7	−0.69	0.79	−0.62	0.77	**.56**	.02	**.55**	−.03
8	−1.01	0.82	−0.87	0.83	**.58**	.24	**.61**	.20

Note: Study 1, N = 1747; Study 2, N = 1806. Prior to analysis, all items were positively keyed, such that higher scores indicate goals to increase in anxiety or avoidance. Each item's primary loading is highlighted in boldface.

Table 6. Study 1 descriptive statistics and correlations for attachment change goals scales

	M	SD	Correlations							
Variable			1	2	3	4	5	6	7	8
Traits										
1. Anxiety	3.07	0.85	-							
2. Avoidance	2.61	0.81	**.20**	-						
Change goals										
3. Anxiety	−0.68	0.53	**−.59**	−.08	-					
4. Avoidance	−0.61	0.55	**−.18**	**−.40**	.07	-				
Demographics										
5. In relationship	0.43	0.50	**−.18**	**−.24**	**.08**	.05	-			
6. Relationship length	70.16	104.54	**−.15**	.02	**.13**	−.05	-	-		
7. Male	0.25	0.43	−.06	**−.11**	**.08**	.00	−.03	**.11**	-	
8. Age	30.92	11.72	**−.15**	−.07	**.13**	.00	**.15**	**.63**	**.08**	-

Note: N = 1747. Relationship length is specified in months. Ninety-five per cent confidence intervals for correlations in boldface do not include zero.

avoidance. Positive values represent goals to increase in the attachment dimensions (e.g. become *more* anxious with respect to attachment), values of zero represent a lack of goals to change, and negative values represent goals to decrease in attachment anxiety or avoidance (i.e. become more secure). As might be expected, the average participant in our sample wanted to become more secure by decreasing in both attachment anxiety (M = −0.61, SD = 0.52) and avoidance (M = −0.55, SD = 0.54).

Another somewhat different way to quantify the prevalence of change goals is to examine the number of people who wanted to change—to any degree—with respect to each trait (i.e. who had composite scores not exactly equal to zero). To that end, as can be seen in Figure 1, 84% of participants expressed desires to decrease in anxiety, and 81% of participants wanted to become less avoidant.[7] Approximately 6% and 8% of people wanted to *increase* in anxiety or avoidance, respectively. The remaining 10–12% of participants expressed no desires to change their levels of anxiety or

[7]Sixty-nine per cent of people wanted to decrease in *both* anxiety and avoidance, and only 4% of people reported wanting to change *neither* anxiety nor avoidance (i.e. 96% of people wanted to change at least one of the two traits). Thus, approximately 27% of people wanted to change either *only* anxiety or *only* avoidance.
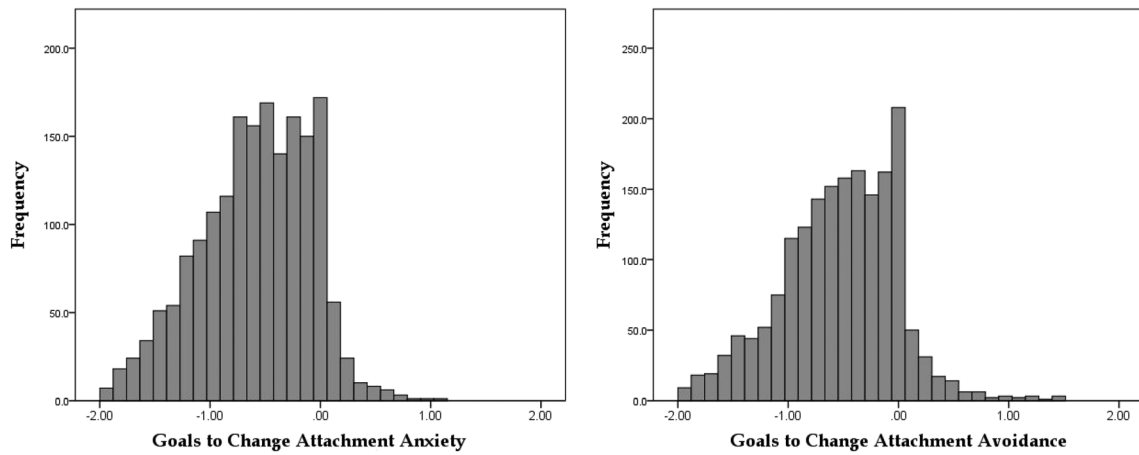
Figure 1. Histogram of participants' goals to change attachment anxiety and avoidance in Study 2. $N = 1806$. Change goals were rated on a scale from -2 to $+2$. Negative values represent goals to decrease in anxiety or avoidance (i.e. become more secure). Positive values represent goals to increase in these traits. Values of zero represent no goals to change. Eighty-four per cent of participants expressed desires to decrease in anxiety, and 81% of participants wanted to become less avoidant.

Table 7. Study 2 descriptive statistics and correlations for all study variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
Traits														
1. Anxiety	2.93	0.82	—											
2. Avoidance	2.50	0.76	**.28**	—										
Change goals														
3. Anxiety	−0.61	0.52	**−.59**	**−.10**	—									
4. Avoidance	−0.55	0.54	**−.18**	**−.39**	**.05**	—								
Demographics														
5. In relationship	0.48	0.50	**−.20**	**−.27**	**.07**	**.07**	—							
6. Relationship length	6.40	9.17	**−.17**	.01	**.20**	−.01	—	—						
7. Male	0.28	0.45	−.03	−.04	**.07**	−.01	**.08**	**.12**	—					
8. Age	30.81	12.12	**−.19**	−.04	**.18**	.02	**.17**	**.65**	.07	—				
Criterion variables														
9. Relationship satisfaction	3.28	0.96	**−.43**	**−.50**	**.24**	**.19**	**.31**	−.08	.01	**−.09**	—			
10. Quality of alternatives	2.92	0.79	−.04	**.23**	**.10**	−.05	**−.20**	−.02	.03	−.02	**−.26**	—		
11. Relationship investment	3.15	0.81	.08	**−.35**	−.04	.05	**.35**	**.24**	**.07**	.08	**.27**	**−.31**	—	
12. Relationship commitment	4.05	0.83	**−.12**	**−.49**	.02	**.12**	**.42**	**.11**	.00	.01	**.57**	**−.57**	**.52**	—
13. Friendship investment	3.21	0.71	**.05**	**−.11**	−.03	**−.09**	**−.07**	−.02	.02	−.03	**.05**	.01	**.11**	.00

Note: $N = 1806$. Relationship length is specified in years. Ninety-five per cent confidence intervals for correlations in boldface do not include zero.

avoidance. Thus, by and large, people's attachment change goals represented goals to *become more secure* by decreasing in both anxiety and avoidance.

Do attachment change goals correlate with theoretically relevant criteria?
For our final series of analyses, we examined the extent to which change goals were related to several criterion variables (Table 7). Replicating Study 1, there were strong negative correlations between existing attachment orientations and change goals (average $r = −.49$). This seems to indicate that people who lack socially desired traits (such as attachment security) want to increase in those traits (Hudson & Roberts,

2014).[8] Moreover, change goals theoretically might arise from dissatisfaction with relevant areas of one's life (Hudson & Fraley, 2016b; Hudson & Roberts, 2014; Kiecolt, 1994). To that end—and conceptually replicating prior research

[8]Reviewers wondered whether there were quadratic associations between change goals and traits. There was a quadratic association between trait attachment anxiety and anxiety change goals ($\beta = −0.07$, 95% CI [−0.11, −0.04]), such that there was a largely negative linear association between trait anxiety and change goals (e.g. those with very high anxiety wanted to decrease the most in the trait), but this association slightly levelled off at very low levels of anxiety (e.g. those with very low anxiety wanted to remain the same as they currently were and they did *not*, for example, want to increase in anxiety). There was no statistically significant quadratic association between trait avoidance and goals to change avoidance ($\beta = 0.03$, 95% CI [−0.003, 0.06]).

(Hudson & Roberts, 2014)—people who were dissatisfied with their romantic relationship were more likely want to decrease in both attachment anxiety ($r = .24$, 95% confidence interval, CI [0.19, 0.29]) and avoidance ($r = .19$, 95% CI [0.13, 0.25]).[9] It is possible that such individuals reasoned that increases in attachment security (i.e. decreases in anxiety and avoidance) might assuage perceived problems and/or felt-dissatisfaction in their romantic relationship.

In a similar vein, people who reported lower commitment to their romantic relationship wanted to become less avoidant ($r = .12$, 95% CI [0.06, 0.18])—perhaps reasoning that lower avoidance would improve commitment in their relationship. People in longer relationships (who empirically tend to be more secure, on average; Eastwick & Finkel, 2008) or who were older (who are empirically more secure, on average; Hudson et al., 2015) also reported a less intense desire to decrease in anxiety (respective correlations: $r = .20$, 95% CI [0.14, 0.26]; $r = .18$, 95% CI [0.12, 0.24]). Finally, single individuals (who empirically tend to be less secure) also reported stronger desires to decrease in both anxiety and avoidance (both r's = −.07, 95% CI [0.01, 0.13]).

Our other criterion variables, however, were not systematically linked to attachment change goals in *a priori* expected ways. For example, people who perceived higher quality of alternatives (a marker of worse relationship quality) tended to have more intense desires to decrease in avoidance ($r = −.05$, 95% CI [−0.11, −0.001]) but *less intense* desires to change their attachment anxiety ($r = .10$, 95% CI [0.04, 0.16]). The latter correlation between quality of alternatives and anxiety change goals may indicate that people who perceived better alternatives to their current relationship were more willing to tolerate uncertainty in (i.e. feel somewhat anxious about) their current relationship (perhaps because they believed viable alternatives existed). However, this explanation is ultimately *post hoc* and contrary to our *a priori* expectations (that people with lower-quality relationships would want to decrease in both attachment anxiety and avoidance)—and thus, it should be approached with caution until replicated in future research. Similarly, people who had lower investment in their friends had less intense desires to change their avoidance ($r = −.09$, 95% CI [−0.14, −0.03]). Finally, romantic relationship investment was not statistically significantly related to goals to change anxiety or avoidance ($|r|$'s ≤ .05). The fact that *investment* in relationships—whether friendships or romantic partnerships—was largely unrelated to attachment change goals was unexpected. However, such a finding may indicate that people do not view a lack of investment in relationships as a problem needing amelioration; rather, a lack of investment may

indicate that the relationship is perceived as not meriting the expenditure of effort (e.g. on changing oneself to improve the relationship).

Summary of Study 2

In sum, Study 2 replicated the factor structure of the C-ECR, found that most people want to decrease in both anxiety and avoidance, and suggested that attachment change goals are related to theoretically relevant criterion variables, including existing trait levels and satisfaction with relevant domains of one's life (i.e. relationship satisfaction) (Hudson & Roberts, 2014), age (Hudson et al., 2015), and relationship length (Eastwick & Finkel, 2008). These findings support the construct validity of the C-ECR as a measure of attachment change goals.

STUDY 3

Studies 1 and 2 validated the factor structure of the C-ECR and suggested that it exhibits some appropriate criterion validities. Study 3 was designed to examine whether attachment change goals predict growth in attachment styles across time. Namely, previous research suggests that goals to change Big Five personality traits predict subsequent growth in the corresponding traits (Hudson & Fraley, 2015, 2016a; Hudson, Fraley, Chopik, et al., 2020). However, the extent to which volitional change processes occur for more relational characteristics, such as attachment styles, is unknown. Thus, in Study 3, we sought to investigate whether a similar phenomenon might be observable with attachment measures. Consequently, Study 3 both comments on substantive issues (do attachment change goals predict growth in attachment across time?) and has the potential to provide evidence of the C-ECR's predictive validity (i.e. change goals should predict trait growth across time; Hudson & Fraley, 2015, 2016a) To investigate these issues, Study 3 was a 16-wave, weekly, intensive longitudinal design. Closely following Hudson and Fraley's (2015, 2016a) paradigms, participants provided self-report ratings of their attachment change goals at the beginning of a college semester. For the subsequent 16-week semester, participants provided weekly ratings of their attachment styles. These data allowed us to investigate whether attachment change goals predict subsequent growth in the corresponding domains across time.

Method

Participants
Participants for Study 3 were recruited from psychology courses at Southern Methodist University (SMU), Michigan State University (MSU), and the University of Illinois at Urbana-Champaign (UIUC). Students in participating courses were offered the opportunity to complete waves of the study in exchange for extra course credit. To participate, students were required to register a user account on the study website. Participants at SMU and UIUC were instructed to complete one wave of the study per week

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[9]These correlations can be somewhat confusing to interpret, because anxiety and avoidance are 'negative' traits. However, most change goals were negative (representing desires to decrease in anxiety or avoidance), with very few participants indicating any sort of desires to increase in anxiety or avoidance. Thus, higher values on the change goals scale largely represent desires to stay the same. Thus, a positive correlation—for example, between relationship satisfaction and anxiety change goals—means that people who were more satisfied were more likely to express goals to remain the same in attachment. Conversely, people lower in satisfaction were likely to also have lower change goals scores (i.e. more extreme desires to decrease in anxiety or avoidance).

of the 16-week semester. Because of academic calendar differences, students at MSU were asked to complete only 15 waves. Across all schools, to provide leniency and flexibility, the study website allowed participants to complete waves as frequency as once every 5 days. Participants who waited longer than 7 days between waves were sent automated email reminders to continue the study.

A total of 414 participants provided at least one wave of data. No data were excluded for any reason. This sample size afforded approximately 99% power to detect average-sized zero-order effects ($r \sim .21$ Richard, Bond, & Stokes-Zoota, 2003) and 80% power to detect zero-order effects as small as $r = .14$.[10] The study was run for only one semester; thus, total sample size was determined by enrollment in participating courses and students' voluntary choice to participate in the study. At Wave 1, the sample was 76% female, with an average age of 20.31 years ($SD = 4.02$). Participants were instructed to select all racial/ethnic groups with which they identified; the racial composition of the sample was 66% White, 19% Asian, 9% Black, 7% Hispanic/Latino, 3% Asian Indian, 2% Middle Eastern, and 1% Pacific Islander. Participants were also instructed to select all relationship statuses that applied; at Wave 1, 65% of participants indicated that they were single, with the remainder indicating that they were in a committed non-marriage romantic relationship (dating and engaged; 33%) or casual one (4%). No participants indicated being married, divorced, separated, or widowed.

On average, participants provided 11.54 waves of data, with 396 (96%), 359 (87%), 300 (72%), and 179 (43%) participants providing data at Waves 2, 5, 10, and 15,

respectively.[11] This level of attrition is typical of intensive longitudinal studies using similar sampling strategies (e.g. Hudson, Briley, et al., 2019; Hudson & Fraley, 2015, 2016a). Attrition analyses revealed that participants tended to provide more waves of data if they were female ($r = .21$, 95% CI [0.12, 0.30]). No other study variables at Wave 1 predicted attrition (all $|r|$'s $\leq .05$, 95% CI [−0.04, 0.15]).[12]

Measures

Study 3 was part of a larger study that also included questions regarding the Big Five personality traits and moral foundations. We report all measures relevant to adult attachment and the present study's aims in the succeeding text.[13]

Attachment styles. At every wave, participants provided self-report ratings of their attachment styles using the 12-item ECR—Short Form (ECR-S; Wei, Russell, Mallinckrodt, & Vogel, 2007). The ECR-S contains six items to measure anxiety (e.g. 'I find that my partner[s] don't want to get as close as I would like'.) and six items to measure avoidance (e.g. 'I try to avoid getting too close to my partner'.). The ECR-S was used instead of the ECR-R to reduce the length of the survey each week. All items were rated on a scale from *strongly disagree* (1) to *strongly agree* (5) and averaged to form separate composites for anxiety (Wave 1, $\alpha = .80$) and avoidance (Wave 1, $\alpha = .84$).

Attachment change goals. At Wave 1 only, participants rated their goals to change their attachment styles using the 16-item C-ECR. Separate composites were formed for goals to change attachment anxiety ($\alpha = .70$) and avoidance ($\alpha = .79$).

Neuroticism and neuroticism change goals. Reviewers requested exploratory analyses of whether our findings could be explained by neuroticism (e.g. perhaps any correlation between attachment change goals and change in attachment styles is spurious and attributable to neuroticism-related dynamics). Thus, we also analysed participants' ratings of their neuroticism and neuroticism change goals. At every wave, participants provided ratings of their trait neuroticism using the 12-item neuroticism subscale from the BFI2 (Soto & John, 2017). Items (e.g. 'I see myself as someone who is tense') were rated on a scale from *strongly disagree* (1) to *strongly agree* (5) and averaged to form a composite ($\alpha = .90$).

[10]Given the repeated measures in our sample, statistical power is actually somewhat higher than these power analyses indicate. For example, using formulas for effective sample size (Kish, 1965) and assuming that approximately 80% of the variance in attachment would be between persons across time, our effective sample size is approximately 506, which also enables greater than 99% power to detect effects equivalent to correlations of $r = .21$.

[11]A total of 52 participants provided data at Wave 16. This number is low because students at MSU were asked to complete only 15 waves, whereas students at SMU and UIUC could complete 16 waves.

[12]Waves were defined individually per participant (i.e. the second time a participant completed the study, it was Wave 2 for them, irrespective of how much time had passed since Wave 1). Thus, attrition is the only form of missing data in our study (e.g. it was not possible to complete intermittent waves).

[13]In addition to the measures described in the main text, Study 3 also included the following measures. Every wave, participants completed (1) the Big Five Inventory 2 (BFI2; Soto & John, 2017), (2) the 20-item Moral Foundations Questionnaire short version (Graham, Haidt, & Nosek, 2008), and (3) the Perspective-Taking and Empathic Concern subscales from the Interpersonal Reactivity Index (Davis, 1983). At Wave 1 only, participants also completed (4) the Change Goals BFI2 (Hudson, Briley, et al., 2019) and (5) measures of change goals for Perspective Taking and Empathic Concern created by adapting the Interpersonal Reactivity Index. All measures used standard instructions and item wording. The change goals measures for perspective taking and empathic concern (which are currently not published) used identical instructions, procedures to generate items, and response scales to those used with the C-BFI2 (Hudson, Briley, et al., 2019). Study 3 included no other measures. Analyses of the empathic concern, perspective taking, and moral foundations measures are reported in a separate paper (Hannikainen, Chopik, Hudson, Briley, & Derringer, 2019) examining (1) whether people want to change their perspective taking and empathic concern and (2) whether growth in perspective taking and empathic concern predicts growth in moral foundations. Analyses of the Big Five variables have been reported in a paper mega-analysing all data we have collected to date on the correlations between Big Five change goals and Big Five trait growth (Hudson, Fraley, Chopik, & Briley, 2020).

Table 8. Study 3 growth in attachment styles

	Attachment anxiety		Attachment avoidance	
Fixed effects	b	95% CI	b	95% CI
Intercept	**0.12**	0.03, 0.21	0.06	−0.03, 0.15
Month	**−0.06**	−0.08, −0.04	−0.01	−0.03, 0.01
Random effects	s^2	SE	s^2	SE
Intercept	0.80	0.06	0.79	0.06
Month	0.03	0.003	0.02	0.003

Note: $N = 414$. CI, confidence interval. The 95% CIs for parameters in boldface do not include zero.

Table 9. Study 3 growth in attachment styles as a function of change goals

Predictor	Attachment anxiety		Attachment avoidance	
	b	95% CI	b	95% CI
Intercept	−0.01	−0.06, 0.04	0.04	−0.01, 0.09
Month	**−0.06**	−0.07, −0.05	−0.01	−0.02, 0.001
Change goal	**−0.07**	−0.13, −0.02	−0.03	−0.09, 0.01
Month × Change Goal	**0.04**	0.02, 0.05	**0.02**	0.01, 0.03

Note: $N = 414$. CI, confidence interval. The 95% CIs for parameters in boldface do not include zero. All models controlled for the appropriate Time 1 attachment variable to control for regression to the mean.

Results and discussion

At Wave 1 only, participants rated their goals to change their neuroticism using the Change Goals BFI2 (C-BFI2; Hudson, Briley, et al., 2019). As with the C-ECR, items from the BFI2 were reworded (e.g. 'I want to be someone who can be tense'), rated on a scale from *much less than I currently am* (−2) to *I do not wish to change* (0) to *much more than I currently am*, and averaged to form a composite ($\alpha = .86$).

Results and discussion

As in Study 2, the average participant in our sample wanted to decrease in attachment anxiety ($M = -0.57$, $SD = 0.48$) and attachment avoidance ($M = -0.50$, $SD = 0.48$). Also replicating Studies 1 and 2, attachment change goals were related to people's existing attachment styles. Highly anxious individuals were more likely to desire decreases in attachment anxiety ($r = -.43$, 95% CI [−0.51, −0.35]), and those who were higher in avoidance were likely to want to become less avoidant ($r = -.26$, 95% CI [−0.34, −0.16]).

Next, we tested whether change goals predicted subsequent growth in the corresponding attachment domains across time (as can be seen in Table 8, there was substantial variation in growth in both domains).[14] To do so, we estimated the parameters of the following multilevel model, which predicted attachment orientations (either anxiety or avoidance) at wave, w, for person, p, as a function of change goals and time:

$$
\begin{aligned}
(Attachment\ Orientation)_{wp} &= b_0 + b_1(\text{Month})_{wp} \\
&+ b_2(\text{Change Goal})_p \\
&+ b_3(\text{Month})_{wp}(\text{Change Goal})_p \\
&+ U_p + \varepsilon_{wp}
\end{aligned}
$$

We ran separate models predicting anxiety and avoidance individually. In these models, the attachment dimensions (anxiety and avoidance) and change goals were standardized across the entire sample before being entered into the model (Ackerman, Donnellan, & Kashy, 2011). Time was centred on Wave 1 and scaled in Months.[15] Thus, the b_1(Month) parameter captures the expected monthly growth in attachment

for people with average change goals, scaled in *SD*s per month (e.g. if $b_{\text{Month}} = -0.03$, this would indicate that people with average change goals decreased 0.03 *SD*s in the attachment domain each month). The b_3 interaction term captures the extent to which monthly growth in attachment was moderated by people's change goals at the beginning of the study (i.e. do people who want to become less anxious indeed become less anxious?). A positive interaction term would indicate that people tended to experience growth that aligned with their desires (e.g. people who wanted to decrease experienced greater declines than their peers who did not want to change).

Table 9 contains the parameter estimates from these analyses. Change goals moderated monthly growth for both attachment anxiety ($b_{\text{Month} \times \text{Goal}} = 0.04$, 95% CI [0.02, 0.05]) and avoidance ($b_{\text{Month} \times \text{Goal}} = 0.02$, 95% CI [0.01, 0.03]). These interactions indicate that people tended to change in ways that aligned with their desires. Specifically, as is depicted in the left-hand panel of Figure 2, participants who did not particularly desire to decrease in anxiety ($z = 1$; original scale score = −0.09) were predicted to decrease 0.03 *SD*s in attachment anxiety each month (95% CI [−0.04, −0.01]). In contrast, people with high desires to become less anxious ($z = -1$; original scale score = −1.05) were predicted to decrease a full tenth of a standard deviation in attachment anxiety each month (simple $b_{\text{Month}} = -0.10$, 95% CI [−0.11, −0.08])—amassing to −0.37 *SD*s of cumulative change across the entire study duration (95% CI [−0.43, −0.30]). For avoidance, people who did not particularly desire to change the trait ($z = 1$; original scale score = −0.02) were predicted to remain constant in avoidance across time (simple $b_{\text{Month}} = 0.01$, 95% CI [−0.003, 0.03]). In contrast, people with high desires to become less avoidant ($z = -1$; original scale score = −0.99) tended to decrease 0.03 *SD*s in avoidance each month (95% CI [−0.05, −0.02])—accumulating to −0.12 *SD*s of cumulative change over the course of the entire study duration (95% CI [−0.19, −0.06]). Thus, people who wanted to decrease in anxiety or avoidance generally tended to do so—and at a faster rate than their peers who did not wish to change.

Notably, the effect sizes observed in Study 3 are similar to those found in previous research with the Big Five personality traits. One recent mega-analysis of data from 2238 participants found that change goals predict growth in all five traits, with effect sizes ranging from $b_{\text{Month} \times \text{Goal}} = 0.01$ (agreeableness/openness) to $b_{\text{Month} \times \text{Goal}} = 0.04$ (emotional stability) (Hudson, Fraley, Chopik, et al., 2020). Thus, the

[14]Growth was predicted by initial (intercept) levels for both anxiety ($b = -0.07$. 95% CI [−0.10, −0.05]) and avoidance ($b = -0.05$, 95% CI [−0.08, −0.03]).

[15]For all participants, at Wave 1, Month = 0. After Wave 1, time was scaled in 30-day months. Thus, if a participant completed Wave 2 nine days after Wave 1, Month at Wave 2 for that specific individual would equal $9/30 = 0.15$.
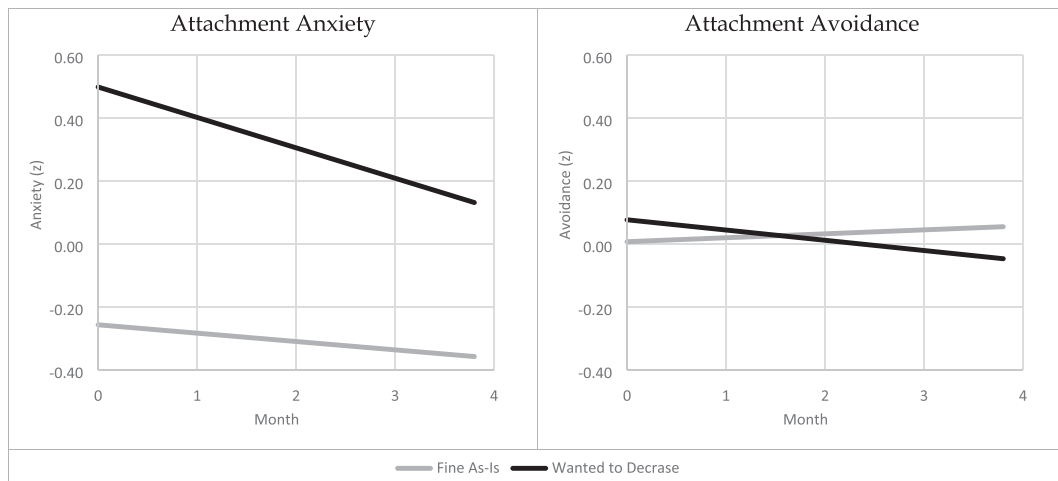
Figure 2. Model-predicted growth in attachment anxiety and avoidance as a function of goals to change the relevant trait in Study 3. $N = 414$. The 'Fine As-Is' lines are plotted at 1 SD above the mean in change goals—and correspond to a score of approximately zero on the original change goals metric that ran from -2 to $+2$ (i.e. people who indicated that they did not wish to change with respect to attachment). The 'Wanted to Decrease' lines are plotted at 1 SD below the mean in change goals and correspond to people who wanted to decrease in attachment anxiety or avoidance (approximately -1 on the original change goals metric). For both anxiety and avoidance, change goals significantly moderated growth across time such that people who desired decreases in the trait were predicted to become more secure at a faster rate than their peers who did not wish to change.

effect sizes in Study 3 ($b_{\text{Month} \times \text{Goal}}$ ranging from 0.02 to 0.04) are within the realm of what should be expected and comparable with effect sizes found with the Big Five personality traits.

Finally, we tested the specificity of attachment change goals. Namely, we examined whether goals to decrease in anxiety predicted growth in avoidance (and vice versa). To that end, goals to decrease in avoidance did *not* predict monthly growth in anxiety ($b_{\text{Month} \times \text{Goal}} = 0.01$, 95% CI $[-0.004, 0.02]$), and goals to decrease in anxiety did *not* predict growth in avoidance ($b_{\text{Month} \times \text{Goal}} = 0.00$, 95% CI $[-0.01, 0.01]$). Thus, people's attachment change goals were relatively specific in their predictive validities: goals to decrease in anxiety predicted declines in anxiety and goals to become less avoidant predicted negative growth in avoidance, and there was no evidence of cross-contamination of these effects.

Exploratory analyses
Can our findings be explained by neuroticism?. Reviewers requested that we run several exploratory analyses to attempt to rule out potential confounds in our study. First, reviewers questioned whether our findings might be explained by neuroticism. For example, it may be the case that people want to decrease in neuroticism and are successfully able to do so (e.g. Hudson, Briley, et al., 2019) and that any attachment-related dynamics are spurious and attributable to processes related to neuroticism. Indeed, in our sample, neuroticism was relatively highly correlated with attachment anxiety ($r = .48$, 95% CI $[0.40, 0.55]$)—although it was not statistically significantly related to avoidance ($r = .08$, 95% CI $[-0.01, 0.18]$).

To test whether our findings might be attributable to neuroticism, we reran our growth models (Table 9) controlling for (1) neuroticism, (2) neuroticism change goals, and (3) the interaction between Month and neuroticism change goals. Even with these control variables included in the

model, attachment change goals continued to predict growth in both attachment anxiety ($b_{\text{Month} \times \text{Goal}} = 0.03$, 95% CI $[0.01, 0.04]$) and avoidance ($b_{\text{Month} \times \text{Goal}} = 0.02$, 95% CI $[0.01, 0.04]$). In contrast, neuroticism change goals did not predict statistically significant growth in attachment anxiety ($b_{\text{Month} \times \text{Goal}} = 0.02$, 95% CI $[-0.01, 0.04]$)[16]—and neuroticism change goals actually predicted *inverse* growth in avoidance (i.e. a person who wanted to become less neurotic would be expected to increase in avoidance; $b_{\text{Month} \times \text{Goal}} = -0.02$, 95% CI $[-0.05, -0.001]$).[17] Similarly, further supporting the discriminant validity of our attachment-related findings, neuroticism change goals predicted growth in neuroticism ($b_{\text{Month} \times \text{Goal}} = 0.03$, 95% CI $[0.02, 0.04]$), but both anxiety change goals and avoidance change goals did not (respective parameter estimates: $b_{\text{Month} \times \text{Goal}} = 0.01$, 95% CI $[-0.01, 0.02]$; $b_{\text{Month} \times \text{Goal}} = 0.00$, 95% CI $[-0.01, 0.01]$). Thus, it does not appear that our findings can be explained by processes related to neuroticism. Instead, our data suggest that people's desires to change their attachment styles are distinguishable from their desires to change their neuroticism. Moreover, the observed growth in attachment orientations in our study cannot be attributed to changes in neuroticism.

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[16]This association would likely be statistically significant with a larger sample size. Thus, our data are also consistent with the idea that *both* neuroticism change goals *and* attachment anxiety change goals uniquely predict growth in attachment anxiety across time.

[17]This represents a complex suppressor effect. On a zero-order level (e.g. [Avoidance] = [Neuroticism Change Goals] + [Month] + [Neuroticism Change Goals][Month]), neuroticism change goals did not predict growth in avoidance ($b_{\text{Month} \times \text{Goal}} = -0.01$, 95% CI $[-0.04, 0.01]$). However, once avoidance change goals were mutually controlled (e.g. [Avoidance] = [Avoidance Change Goals] + [Neuroticism Change Goals] + [Month] + [Avoidance Change Goals][Month] + [Neuroticism Change Goals][Month]), neuroticism change goals predicted *inverse* growth in avoidance. The interpretation of this partial coefficient is that individuals who want to decrease in neuroticism *but do not want to decrease in avoidance* would be predicted to increase in avoidance.

Can our findings be explained by response bias?.
Reviewers wondered whether the changes in the attachment measures observed in our study could be explained by response biases, such as individual differences in the propensity to answer questions in a socially desirable manner. To test this possibility, we extracted the first unrotated factor from a principle axis factor analysis of participants' responses to the 12 attachment items as well as all 60 personality trait items from the BFI2—and we saved participants' factor scores. Although the idea is not universally accepted, this first unrotated factor is interpreted by some scholars to at least partially represent a 'halo' bias: individual differences in the propensity to respond in a socially desirable way across all items (Anusic, Schimmack, Pinkus, & Lockwood, 2009; conversely, this first factor may also represent psychological maturity; Roberts et al., 2008). This 'halo' factor was moderately strongly correlated with both attachment anxiety ($r = -.45$, 95% CI [-0.53, -0.37]) and avoidance ($r = -.36$, 95% CI [-0.44, -0.27])—partially because the anxiety and avoidance items were included in the factor analysis. The 'halo' factor was also correlated with goals to change attachment anxiety ($r = .21$, 95% CI [0.12, 0.30]) but not avoidance ($r = .05$, 95% CI [-0.05, 0.14]). Nevertheless, controlling for this 'halo' factor did not affect our pattern of findings: change goals continued to predict growth in attachment anxiety ($b_{\text{Month} \times \text{Goal}} = 0.03$, 95% CI [0.02, 0.04]) and avoidance ($b_{\text{Month} \times \text{Goal}} = 0.02$, 95% CI [0.01, 0.03]). Thus, it does not appear that our study's findings can be explained by response biases.

Can our findings be explained by relationship status?.
Given that the instructions on the attachment questionnaires asked participants to think of their romantic partner while answering the questions—or to think of their close relationships in general if they were single—reviewers wondered whether participants' attachment styles may have changed over the course of the study because of participants switching the target that they were rating while completing the attachment measures (e.g. switching romantic partners or changing from single to dating and thus switching from rating global attachment to rating partner-specific attachment). To address this issue, we classified all participants into one of three categories: (1) those who remained single across the entire study duration ($n = 203$, 49%), (2) those who reported always being in a romantic relationship across the entire study duration ($n = 112$, 27%), and (3) those whose relationship status was inconsistent across the study duration (e.g. suggesting the initiation of a new relationship, break-up of an existing relationship, or perhaps switching partners; $n = 99$, 24%).

Holding constant these relationship status categories (and their interactions with Month), change goals continued to predict growth in both anxiety ($b_{\text{Month} \times \text{Goal}} = 0.04$, 95% CI [0.02, 0.05]) and avoidance ($b_{\text{Month} \times \text{Goal}} = 0.02$, 95% CI [0.01, 0.03]). That said, as compared with those who retained a constant relationship status the entire study (either single or dating), those who switched relationship status during the study *did* experience statistically significantly greater declines each month in anxiety ($b_{\text{Month} \times \text{Switched Status}} = -0.03$, 95% CI

[-0.05, -0.004]) but not necessarily avoidance ($b_{\text{Month} \times \text{Goal}} = -0.02$, 95% CI [$-0.05$, 0.004]). This is likely attributable to the fact that most changes in relationship status observed in our study were people *entering* romantic relationships (participants were approximately 2% more likely to report being in a romantic relationship with each passing month; $b = 0.02$, 95% CI [0.01, 0.02]). Thus, our findings are consistent with the notion that individuals tend to experience especially sharp changes in attachment anxiety near the beginning of romantic relationships (Eastwick & Finkel, 2008).

Irrespective of these issues, the fact that attachment change goals continued to predict growth in attachment styles, even holding constant the effects of relationship status (always single vs always partnered vs switched status during the study) suggests that the changes in attachment styles observed in our study cannot be attributed to the effects of switching partners or the target that participants were rating throughout the study's duration.

GENERAL DISCUSSION

Previous research has found that the vast majority of people want to change their personalities (Baranski et al., 2017; Hudson & Fraley, 2016b; Hudson & Roberts, 2014; Robinson et al., 2015)—and moreover, people appear to be able to actually change some personality traits in desired ways (Hudson, Briley, et al., 2019; Hudson & Fraley, 2015, 2016a). In the present studies, we extended this research to more interpersonal characteristics—individuals' attachment styles. Specifically, we developed a new measure of people's attachment change goals. Using this measure, we found that —as with the Big Five—the vast majority of people wanted to change their attachment styles. Particularly, most people wanted to become more secure (i.e. to decrease in both attachment anxiety and avoidance). More importantly, these attachment change goals predicted corresponding growth in attachment styles across time. Namely, people who wanted to become less anxious tended to decrease in attachment anxiety at a faster rate than their peers who did not wish to change. Likewise, individuals who wanted to become less avoidant tended to actually decrease in avoidance across time—whereas their peers who did not wish to change tended to remain constant.

Why do people want to change their attachment styles?

In our studies, we found that, for both attachment anxiety and avoidance, more than 80% of participants wanted to decrease in each dimension. We investigated two reasons why individuals might desire such changes. First, past research has found that people tend to want socially desirable personality traits that they lack (Baranski et al., 2017; Hudson & Roberts, 2014). We observed a similar phenomenon with attachment styles. Namely, low levels of attachment anxiety and avoidance are socially desirable (e.g. Strauss et al., 2012). In our studies, attachment change goals were negatively correlated with existing trait levels. Thus, it was the

most anxious people in the sample who wanted the largest decreases in anxiety—and likewise for avoidance. In other words, people wanted to decrease in socially undesirable traits, anxiety and avoidance, which they possessed—or equivalently, they wanted to increase in a socially desirable trait, security, which they lacked.

Second, theoretically, people also might formulate desires to change their personalities if they are dissatisfied with aspects of their lives (Baumeister, 1994; Hudson & Roberts, 2014; Kiecolt, 1994). Most directly speaking to this issue, in our studies, people who were dissatisfied with their romantic relationships tended to express stronger desires to decrease in both anxiety and avoidance, as compared with their more satisfied peers. This may indicate that individuals with less-than-satisfying relationships reasoned that their own insecurities might be contributing to their relational woes. Such persons may have consequently reasoned that if they were less anxious (e.g. intense and needy) or avoidant (e.g. distant and unavailable) that the quality of their relationship would improve. This may have ultimately stirred within them the desire to change their attachment styles.

In a similar vein, single individuals—and those in fledgling relationships (as opposed to more established ones)—also expressed greater desires to decrease in anxiety and avoidance. Although more ambiguous, such findings are consistent with the idea that single persons might believe that security (i.e. low anxiety and avoidance) has utility value in finding a partner (e.g. being secure makes an individual a more desirable potential romantic partner; Strauss et al., 2012). Likewise, those in fledgling relationships might also reason that lower anxiety would promote retention of their new relationship. Thus, these findings collectively suggest that people might desire attachment security particularly if they believe that changes would (1) absolve sources of dissatisfaction in their lives (e.g. relationship dissatisfaction) or (2) help them attain desired outcomes (e.g. initiation and maintenance of a relationship) (Baumeister, 1994; Hennecke et al., 2014; Hudson & Roberts, 2014; Kiecolt, 1994).

Can people change their attachment styles?

For our final study, we investigated whether people might be able to change their attachment styles in desired ways. Namely, we examined whether individuals who wanted to decrease in anxiety or avoidance tended to actually decrease in those corresponding traits across time (Hudson & Fraley, 2015, 2016a; Hudson, Fraley, Chopik, et al., 2020). To that end, we found that change goals predicted growth in both anxiety and avoidance. People who wanted to become less anxious tended to actually decrease in attachment anxiety at a faster rate than their peers who did not wish to change. A similar phenomenon was observed for avoidance. Thus, our study suggests, at the very least, that people's attachment styles tend to change in ways that align with their desires.

How might people be able to change their attachment styles? Theoretically, any personality trait—whether the Big Five or attachment styles—can grow if state-level changes are maintained for a sufficient period of time (Hennecke et al., 2014; Hudson et al., 2015; Magidson

et al., 2014; Roberts & Jackson, 2008; Wrzus & Roberts, 2017). In other words, people can decrease in anxiety or avoidance simply by *acting* less anxious or avoidant over an extended period of time (perhaps as short as 6 weeks; Roberts et al., 2017). In terms of mechanisms, chronically maintained state-level changes are thought to become learned and habitual, eventually incorporated into individuals' identities (i.e. how they see themselves) and perhaps even encoded into their biology (e.g. through changes to the nervous system or epigenome) (Burke, 2006; Hennecke et al., 2014; Hudson et al., 2015; Magidson et al., 2014; Roberts & Jackson, 2008; Wrzus & Roberts, 2017)—ultimately leading to enduring trait change.

Thus, participants in our study may have been able to change their attachment styles by simply 'faking it until they made it'. In other words, they may have merely behaved in a less anxious and/or less avoidant manner until their traits genuinely changed. Indeed, prior research suggests that people sometimes naturalistically engage in strategies they believe will change their personality traits (Quinlan et al., 2006; Stevenson & Clegg, 2011). For example, one study found that college students who fear becoming boring persons in the future are more likely to engage in higher levels of binge-drinking behaviour, ostensibly in attempt to incorporate more 'fun and interesting' behaviours into their behavioural repertoires (Quinlan et al., 2006). In other words, some students appear to attempt to change their personalities (e.g. become less boring) by changing their behaviours (e.g. engaging in behaviours they believed to typify 'fun' and 'interesting' individuals). In another study, participants who wanted to change their Big Five personality traits were likely to engage in elevated trait-relevant behaviours each week, even without experimenter intervention (the control group in Study 2 of Hudson & Fraley, 2015). Thus, using similar logic, participants in our studies may have intuitively attempted to become more secure by engaging in secure behaviours per their own volition.

To that end, research already suggests that repeatedly inducing state-level security can promote enduring decreases in attachment anxiety—and perhaps avoidance (Carnelley & Rowe, 2007; Gillath et al., 2008; Hudson & Fraley, 2018b). For example, in one study, participants who reflected each week on security-fostering relationship memories tended to decrease in attachment anxiety across a period of 4 months, as compared with a control group (Hudson & Fraley, 2018b). Furthermore, although they have not been explicitly tested, past research suggests that other strategies may be viable for reducing anxiety and avoidance, as well. For example, intentionally reconstruing relationship events in a positive fashion (e.g. generating potential positive explanations for why a seemingly negative event occurred) might also lead to gains in security across time (e.g. Collins et al., 2006). Thus, research suggests that effective strategies exist that can change people's attachment styles. The fact that participants in our study changed in ways that aligned with their desires may indicate that our participants were engaging in such strategies, even without researcher intervention (for the same phenomenon with the Big Five, see Hudson & Fraley, 2015, 2016a).

In sum, it appears that people may be able to volitionally change their attachment styles. This finding has potentially large implications for understanding personality development processes. Namely, attachment styles are related to a wide gamut of extremely consequential life outcomes, including functioning in friendships and romantic relationships, physical and mental health, and even basic cognitive processes such as attention and memory (e.g. Bauminger et al., 2008; Carnelley et al., 2016; Collins & Read, 1990; Hudson & Fraley, 2018a; Mikulincer & Shaver, 2016; Pietromonaco & Powers, 2015). To the extent that individuals can volitionally change their attachment styles, they may be able to maximize these important outcomes (Carnelley & Rowe, 2007; Hudson & Fraley, 2016a). That said, we did not measure outcome variables in our longitudinal study, and thus, we were unable to empirically test whether changes that result from volitional processes translate to better relationship outcomes —presumably a goal for individuals wanting to change their attachment styles. Future research should directly collect outcome measures (e.g. relationship functioning and health) and explicitly test the extent to which volitional change in attachment predicts growth in those variables.

It is, however, important to temper claims about the potential implications of our findings with the fact that the attachment changes observed in our study were relatively small (the effect sizes were similar to those observed in studies of volitional change in the Big Five; Hudson, Fraley, Chopik, et al., 2020). Participants who wanted to become more secure only decreased approximately 0.10–0.40 SDs in anxiety and avoidance across the course of 4 months. Of course, 0.10–0.40 SDs is not trivial. For example, one online study of more than 86 000 people found that attachment anxiety and avoidance only tend to normatively change approximately 0.30 SDs across adulthood (Chopik et al., 2013). Thus, relatively speaking, observing 0.30 SDs of change in attachment anxiety across 4 months represents relatively large changes. Nevertheless, in terms of absolute growth, the changes observed in our studies do not represent dramatic shifts to participants' personalities. For example, a decrease of 0.30 SDs in attachment anxiety represents a decrease of approximately 0.25 units on the original 1–5 scale. It is possible that over longer periods of time, participants would be able to make increasingly large changes to their attachment styles—especially if given the aid of effective interventions (Hudson, Briley, et al., 2019; Hudson & Fraley, 2015). However, it is also possible that participants might eventually experience diminishing returns in their attempts to change their attachment styles over increasingly long periods of time. Future research should collect data over extended time frames to understand how long-term volitional change processes unfold.

Implications, limitations, and future directions

One implication of our studies is that the vast majority of people want to change their attachment styles—and these desires are related to theoretically relevant criterion variables, such as relationship satisfaction. That said, we measured change goals using structured questionnaires. As with all

measures, structured change goals questionnaires have both strengths and limitations. In terms of strengths, structured change goals questionnaires systematically measure the same constructs for all participants and likely exhibit low false-negative rates (e.g. such measures likely do a good job at capturing change goals that actually exist) (Hudson & Roberts, 2014). However, structured questionnaires may overestimate the prevalence of change goals due to perceived demand to respond in a socially desirable way (e.g. participants may feel social demand to report that they want to become less anxious or avoidant, irrespective of whether they truly desire such changes). To that end, there are other methods for assessing change goals, such as asking participants in an open-ended fashion what they would like to change about themselves (Baranski et al., 2017; Miller et al., 2019). Open-ended measures might be less susceptible to social desirability effects—but they also might fail to detect true change goals (e.g. participants may fail to list aspects of themselves they actually do want to change if those aspects are not easily cognitively available and accessible at the time of the survey). Future research might consider replicating our findings with multiple measures of change goals, which can mutually compensate for one another's limitations.

Relatedly, it is also worth noting that two of our three studies used samples collected online. Although this feature of our studies helps to bolster their generalizability, some reviewers expressed concerns that data collected online may be lower-quality than that collected in laboratory settings. Despite finding similar patterns (e.g. means, standard deviations, and correlations) in data collected online and data collected from college students at our universities, we cannot rule out the possibility that the findings from Studies 1 and 2 might be affected by poor-quality responses from online participants.

A second implication of our longitudinal study is that people's attachment styles tend to change in ways that align with their desires—at least across a period of up to 4 months. This is consistent with the notion that people may be able to volitionally change their attachment styles—and may have important implications for helping individuals to maximize important life outcomes, such as relationship satisfaction and physical and mental health (e.g. Collins & Read, 1990; Doron et al., 2012; Pietromonaco & Powers, 2015).

That said, there are several limitations of our longitudinal data that are worth considering (for an in-depth discussion, see Hudson & Fraley, 2015). First, we did not measure mechanisms that might explain how people were changing their attachment styles. Research on the Big Five personality traits suggests that some people naturalistically 'fake' traits they desire. In other words, some people who want to increase in extraversion may naturalistically try to behave in a more extraverted fashion (e.g. Hudson & Fraley, 2015; Quinlan et al., 2006). Along these lines, previous research suggests that repeatedly engaging in secure behaviours (e.g. recalling positive relationship experiences) has the potential to change people's attachment styles (Carnelley & Rowe, 2007; Gillath et al., 2008; Hudson & Fraley, 2018b). Thus, it may be possible that participants in our studies were

changing their attachment styles by repeatedly engaging in secure behaviours (e.g. intentionally sharing their feelings with their partners; working through insecurities and negative affect in the relationship). However, we did not explicitly test this explanation. Thus, it remains possible that the changes in our studies were not due to participants' volition but perhaps other processes. For example, people with negative relationships may have reported the desire to increase in security and then subsequently ended the negative relationship, perhaps leading to increases in security. Alternatively, attachment is a fundamentally relational construct, and thus, it may be the case that the changes observed in our studies are attributable to actions taken by participants' romantic partners (e.g. partners modifying their behaviours according to participants' wishes) rather than actions taken by the participants *per se*. Future research should collect measures of mechanisms that might link change goals to growth in attachment (e.g. attachment-related behaviours). Even more ideally, future longitudinal experiments might attempt to manipulate these mechanisms, as well.

In a similar vein, our study's findings may be partially attributable to demand characteristics or placebo effects. For example, participants may have reported illusory changes in their attachment style if they (1) believed they could change or (2) expected that participating in the study would help them change their attachment styles. Somewhat casting doubt on these notions, research shows that beliefs about whether personality can change ('personality mindsets'; Dweck, 2008) do not predict trait growth (e.g. using extremely similar methods to the present study, previous studies have found that people who believe that their levels of extraversion can change do not experience greater growth in the trait than people who believe extraversion cannot change; Hudson, Fraley, Briley, & Chopik, 2019). Moreover, one recent study explicitly measured participants' retrospective perceptions of the extent to which their personality had changed, in addition to measuring longitudinal growth in their traits (Hudson, Derringer, et al., 2019). In this study, change goals predicted trait growth, even holding constant perceived trait changes. In other words, participants tended to change in ways that aligned with their desires, even if they did not realize they had changed. Nevertheless, despite the fact that previous research suggests that demand and placebo effects are likely not a major issue in studies using similar methodology to our longitudinal Study 3, we cannot soundly rule out these confounds in our data alone.

A second limitation is that our longitudinal data were purely correlational, and thus, we cannot draw strong causal inferences that attachment change goals *cause* growth in the relevant traits. Future research might consider attempting to manipulate participants' desires to change, if ethically possible. Of course, when considering people's *volitional* change efforts, their own free choice may be an important component in fostering change (Hudson, 2020). Thus, future research might test whether it is possible to manipulate people's desires to change with respect to attachment—and whether such manipulations lead to trait change over time.

A third limitation is that our longitudinal study was relatively short in duration. Thus, it is unclear whether changes

to participants' attachment styles observed in our study would persist over longer periods of time (e.g. years). Relevant to this concern, a recent review found that certain experiences (e.g. psychotherapy) can produce changes in people's personalities in as few as 6 weeks—and that those changes can endure for years afterward (Roberts et al., 2017). Thus, it is possible that the changes observed in our studies would endure—even after participants ceased explicit self-change efforts. However, future research should examine volitional change processes over a longer period of time to determine whether participants can maintain changes to their traits or alternatively whether the observed growth 'reverts' once participants stop actively working on changing their personality traits.

A final limitation of our longitudinal study is that we collected data only from college students—and our sample was largely female. People's change goals may systematically vary with age (Hudson & Fraley, 2016b) or other factors, such as gender. Moreover, older adults or those in different life circumstances may attain different levels of success in attempts to change their traits. It is possible that personality development processes may operate similarly irrespective of age (e.g. Hudson & Roberts, 2016). However, such a phenomenon is not guaranteed, and thus, future studies should test whether older (than college-aged) adults—or those in different demographics (e.g. genders and cultures)—can also volitionally change their attachment styles.

Conclusion

Several of the best-selling books across all of 2018 on Amazon.com promised to help participants form stronger, less-anxious, more intimate, and more secure relational bonds. In short, these books claimed to hold the keys to unlocking greater attachment security (i.e. lower attachment anxiety and avoidance). Our studies reaffirm that the vast majority of people do, in fact, want to change their attachment styles by becoming less anxious and avoidant. Moreover, our longitudinal study suggests that people's attachment styles tend to change over time in ways that align with their desires. These data suggest that people may, in fact, be able to find success in attempts to volitionally change their attachment styles.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Supporting info item

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