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Assisted versus asserted autonomy satisfaction: Their unique associations with wellbeing, integration of experience, and conflict negotiation

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Abstract We investigate the possibility of two distinct approaches to autonomy satisfaction—one that is contextually "assisted" and one that is individually "asserted". Exploratory and confirmatory factor analyses (Pilot Study and Study 1; N = 449) develop and validate the two-factor structure. We then show that asserted and assisted autonomy orientations predict psychological wellbeing through distinct pathways (i.e., highly active/agentic vs. interdependent). In Study 2 (N = 206), we examine the sociodevelopmental antecedents of each type of autonomy satisfaction, revealing that assisted autonomy is associated with having had authoritiative parents, whereas asserted autonomy is associated with having had authoritarian parents. In Study 3 (N = 109) we show that asserted—but not assisted—autonomy predicts the integration of negative life experiences. Finally, in Study 4 (N = 202), we examine the degree to which assisted and asserted autonomy moderate responses to conflict in need-thwarting contexts, showing that assisted autonomy predicts an acquiescent coping style, whereas asserted autonomy predicts an assertive negotiation style.

Keywords Autonomy · Psychological needs · Wellbeing · Motivation · Integration · Need thwarting · Conflict negotiation

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Introduction

Autonomy is a critical psychological need. It denotes the experience of volition and self-direction in thought, feeling, and action. People feel autonomous when their goals and behaviors are aligned with their innermost desires, interests, and ideals; when their actions are endorsed at the highest level of self-reflection. But how, exactly, is the basic need for autonomy satisfied? Can it be fulfilled in different ways? Given that autonomy satisfaction results from a dynamic interaction between the individual and the context, it is essential to consider person-level flexibility in the degree to which autonomy derives from individual versus environmental factors. In this research, we propose that autonomy can become satisfied through both asserted and assisted means. That is, individuals may come to feel autonomous through experience with autonomy-supportive contexts and relationships, or they may satisfy the need for autonomy by proactively pursuing it on their own—in spite of low contextual support. We suggest that this divergence in autonomy satisfaction is important in predicting different pathways to wellbeing and integration, as well as different situational coping responses.

Although autonomously motivated states are theoretically active and agentic—representing action initiated by personal choice and interest—traditional research has conceptualized and measured the process of autonomy satisfaction as a rather passive phenomenon. That is, researchers have typically defined and assessed autonomy fulfillment as functionally dependent upon facilitative environmental conditions. Indeed, satisfaction of autonomy is generally thought to require autonomy-supportive contexts; to the extent that the environment fulfills one's need for autonomy by offering opportunity for self-direction, then one's need for autonomy tends to be met and one's

feelings, cognitions, and actions become self-endorsed and integrated (Deci and Ryan 2013). Although this is indeed the way in which the need for autonomy is often satisfied, in this research we ask whether autonomy can also be fulfilled through more assertive and proactive means. Specifically, we propose that satisfaction of the need for autonomy can be both contextually assisted and individually asserted. While both cases represent fulfillment of the need for autonomy, they constitute *distinct trait-based approaches* to satisfying it. We suggest that it is important to consider the distinction between assisted and asserted styles of autonomy satisfaction because it opens up the possibility that autonomy may be realized in spite of autonomy-neglecting past experiences. More broadly, the distinction also implies that people can *get at* autonomy in different ways, which might illuminate different routes toward health and functioning.

The basic need for autonomy

Autonomy refers to volition and self-determination. It involves the need to feel self-directed and self-endorsed. Thus, rather than feeling pressured or constrained, those who feel autonomous are motivated by personal values and interests. Instead of perceiving their self-worth as contingent upon social approval and meeting expectations, autonomously functioning individuals feel free to express who they really are. Almost four decades of research in self-determination theory (SDT; Deci and Ryan 2000) has underscored the universal importance of autonomy in the flourishing of human motivation and psychological health (e.g., Chatzisarantis et al. 2012; Deci and Ryan 2000; Deci et al. 2001; Legate et al. 2012; Sheldon and Elliot 1999; Sheldon and Niemiec 2006; Vansteenkiste and Ryan 2013).

SDT espouses that autonomy fulfillment results from an interaction of individual and contextual forces (e.g., Deci and Ryan 2000, p. 231). However, little attention has been paid to the disambiguation of these forces. We suggest here that autonomy can be fulfilled through either individually-asserted or contextually-assisted trait-based modes; that these two modes are conceptually and psychometrically distinct; that they yield separable outcomes; and that they are brought about through unique circumstances.

Contributing to the expansion of the autonomy satisfaction construct

Given the grave importance of autonomy, it is plausible that it may be sought, fulfilled, and restored in different ways. We build on a handful of studies suggesting that autonomy satisfaction is not simply something that "happens to" people; it is also something that people negotiate and find on their own (e.g., Reeve 2013). By distinguishing between asserted and assisted styles of autonomy satisfaction, we hope to develop a better and more nuanced understanding of the complexity of autonomy and autonomy fulfillment, and the different routes it takes toward optimal psychological functioning.

How, then, is autonomy satisfied? Within traditional self-determination theory research, autonomy is *principally* satisfied by environments and relationships that support it. That is, autonomy is thought to be inherently dependent upon autonomy support. Without contextual, situational, and developmental provisions, autonomy is unlikely to be actualized, and to the extent that the environment is controlling and coercive, autonomy is expected to be thwarted (e.g., Adie et al. 2012; Soenens and Beyers 2012; Weinstein et al. 2012b). While this classic way of assessing autonomy satisfaction is critical, it assumes that self-direction, self-organization, and self-integration are privileges granted to the individual through a well-fitting interpersonal history or context.

In contrast, some researchers have recently begun to consider the manner in which individuals assert, affirm, and actively fulfill their own need for self-direction—particularly when the context challenges or neglects autonomy. So, rather than withering in the face of neglect, autonomy satisfaction can show a proactive nature. For instance, Sheldon and Gunz (2009) found that the lower individuals were in autonomy satisfaction, the more likely they were to express the desire for autonomy-magnifying experiences—suggesting that autonomy neglect may precede autonomy-seeking action. In an experimental test of this idea, Radel and colleagues showed that when autonomy was undermined via deadlines or surveillance, participants showed a spontaneous "autonomy restorative" response, that is, an augmented preference for autonomy-related stimuli and greater assertion of independence (Radel et al. 2011). Radel and colleagues subsequently demonstrated that experienced interest in a given activity was higher when it was preceded by a controlling activity, presumably because people aimed to reestablish lost autonomy (Radel et al. 2014). Although previous research has suggested that autonomy may take a "reactive" form when external forces threaten choice, freedom, and volition (i.e., Brehm 1966; Koestner and Losier 1996), we suggest here that the concerted assertion of autonomy can be highly reflective and self-determined.

Additionally, recent evidence supports the notion that individual differences arise in the degree to which autonomy is actively negotiated. Reeve (2013) showed that college and middle-school students differ in the extent to which they are "agentically engaged", that is, the degree to which they take initiative by expressing their ideas and opinions and letting teachers know what they want and

need to learn and succeed. As such, agentically engaged students are able to initiate motivationally satisfying learning environments for themselves; indeed, initial level of agentic engagement at the beginning of the semester predicted level of perceived autonomy support later in the semester—showing that agentic intrapersonal engagement lead to increased autonomy satisfaction above and beyond other contextual variables (Reeve 2013).

We expand this emerging work by suggesting a certain amount of individual-level adaptation and flexibility in the quest to fulfill the critical need for autonomy. We suggest that socialization and personal experience shape the manner in which people navigate toward autonomy satisfaction. We also suggest that experience with autonomy neglect might lead to a different type of autonomy orientation than exposure to autonomy-supportive environments. This is not to say that a history of environmental support is not pivotal in the fulfillment of autonomy. But, staunch emphasis on the necessity of such a history neglects the possibility that the need for autonomy can be satisfied through less environmentally-contingent modes, or as a result of more challenging circumstances. Indeed, an assumption of previous assessments of autonomous functioning is that it is reserved for those exposed to optimal environments and that individuals do not—or cannot—search for their own autonomy-providing conditions. As such, previous conceptualization and measurement of autonomy satisfaction is, arguably, disproportionately attentive to the environmental component and suffers a dearth of focus on individual-level autonomy resilience processes. Given the importance of autonomy for optimal health and functioning, it seems likely that individuals should strive for it, even when unsupported.

Asserted versus assisted autonomy

Here, we suggest that individual differences arise in the degree of individual assertion versus interdependency in autonomy satisfaction. For instance, repeated experience with autonomy-supportive environments wherein one's inner motivational resources are nurtured by supportive parents or partners and one's needs and interests are facilitated by engaging tasks, one would come to feel quite autonomy-fulfilled, and go on to engage one's interests unencumbered. Such an individual might express relatively less need to assert, defend, or search for opportunities to be self-determined because fulfillment of autonomy would already be instigated by the environment. As a result of this pattern of autonomy support, it seems plausible that individuals should develop a preference for, and perhaps even a reliance on, autonomy-fulfilling environments and situations.

Thus, we define *assisted autonomy satisfaction* as the experience of ease and harmony in self-determination and self-expression resulting from experience with autonomy-support; the need for autonomy has been furnished by supportive environments—whether those be autonomy-supportive relationships, tasks, situations, experiences, or opportunities. When autonomy is met through supportive means, the individual need not exert much effort in searching for it, because it has already been conferred through interactions with need-congruent contextual stimuli. Similarly, when the environment supplies option, opportunity, and enrichment, then self-organization and self-integration are relatively seamless and efficient (Deci and Ryan 2013). It is important to note that our definition of assisted autonomy satisfaction reflects the nature of autonomy satisfaction among individuals who inhabit autonomy-supportive environments; it does not simply reflect the characteristics of the environment, although these are inherently intertwined. Those for whom autonomy has been consistently supported feel free to do the things they find interesting and important, and feel free to be who they really are—not because they have struggled to undertake such endeavors, but because their environment has been (and is) facilitative.

In contrast, we refer to *asserted autonomy satisfaction* as the personal claiming of autonomy. We suggest that such individuals have effortfully sought out autonomy-satisfying conditions and experiences—perhaps by asserting their interests and values, or by finding ways to be self-expressive and self-aligned. The main feature here is that the act of autonomy satisfaction and self-integration is highly active in nature. Although asserted autonomy might not involve adverse preconditions, it does denote the quest and grit for autonomy, and we expect that when environments fail to offer autonomy enhancing opportunities, asserted autonomy is needed to mobilize resources to overcome such circumstances (an assisted autonomy style will not suffice in such cases). Although we in no way contest that chronic and severe need thwarting results in human suffering (see Ryan et al. 2006), we suggest that environments that simply neglect autonomy do not *invariably* lead to deficits in autonomy satisfaction (they likely lead to deficits in perceived autonomy *support*, but not necessarily (asserted) autonomy satisfaction.

Although we purport that these are two trait-based modes or styles of autonomy satisfaction which are developed and shaped by experiences with autonomy-relevant relationships and situations, we do not suggest that they are completely dissociated and cannot vary within individuals as a function of context or domain. However, the current investigation joins recent work by suggesting that it is important to delineate how individuals tend to get

their autonomy satisfied—either through interdependent conferral or through agentic pursuit.

Asserted versus assisted autonomy and wellbeing

An important step in examining the distinction between assisted and asserted autonomy satisfaction is to understand how each form contributes to psychological functioning. Both forms should be adaptive—but for different reasons. We expect that asserted autonomy should predict psychological growth and wellbeing through relatively more active and assertive pathways, whereas assisted autonomy should predict wellbeing by means of a more passive route—one that relies heavily on supportive and cohesive relationships. More specifically, Because of its self-reliant and proactive nature, we expect that asserted autonomy should be associated with relatively more agentic and intrapersonal processes, including self-integration, self-exploration and curiosity. In contrast, those with an assisted autonomy orientation are expected to depend on and look toward supportive and nurturing interpersonal relationships in order to thrive and grow. Indeed, we expect that nurturing relationships are necessary for those high in assisted autonomy because such individuals may be less likely to seek out growth experiences wholly on their own. Conversely, given that those with an asserted autonomy-satisfying style are likely to focus their efforts on personal expansion, we expect that these individuals will depend less upon nurturing relationships as a source of wellbeing and growth.

The present studies: goals and hypotheses

Five major objectives were pursued:

1. To develop and validate the proposed dual structure of autonomy satisfaction. This was achieved using exploratory and confirmatory factor analyses (Pilot Study and Study 1, respectively);
2. To evaluate the divergent ways in which each form of autonomy satisfaction predicts wellbeing (Studies 1 and 2). We expected that those who satisfy their need for autonomy by assertive means should be more likely to purposely seek out situations that are in line with their interests and values, thus promoting a sense of inquisitiveness and exploration, which should predict vitality and growth. Conversely, because they have been fortunate enough to have had their autonomy supported by the environment, autonomy-assisted individuals should be more likely to continue to look toward supportive interpersonal relationships in order to thrive and grow;
3. To assess the developmental antecedents of each mode of autonomy satisfaction (Study 2). In particular, we examined associations among participants' assessments of their parents' style of parenting and type of autonomy satisfaction. Because assisted autonomy is most likely to develop from a highly autonomy-supportive interpersonal climate, we expected that it would be predicted by perceptions of having had authoritative (i.e., structured but supportive) parents. In contrast, we surmised that asserted autonomy would be moderately associated with having had authoritarian parents. That is, we presumed that, by assessing autonomy satisfaction in its asserted form, we might unveil associations with autonomy-neglectful precursors.
4. To ascertain whether assisted and asserted autonomy differentially predict the active integration of challenging life experiences (Study 3). Because we propose asserted autonomy satisfaction to be more proactive, self-reflective, and self-organizing, we anticipate that it will be uniquely associated with integration processes.
5. To examine how each mode of autonomy satisfaction affects responding to conflict when psychological needs are thwarted (Study 4). Because of their unique developmental trajectories, we expected that asserted and assisted styles would differ in their use of conflict management strategies under conditions of need thwarting; those with an asserted style should be more apt to assert and defend their autonomy when threatened, and should therefore display more tenacious responses to conflict. In contrast, due to their interdependent style, those with an assisted autonomy orientation should be more likely to accommodate the needs of their interaction partner during conflict, and should show relatively more passive conflict resolution tactics.

Pilot study: exploratory factor analysis of assisted and asserted autonomy satisfaction

We aimed to obtain preliminary support for the dual nature of autonomy satisfaction by exploring its factor structure via exploratory factor analysis. In addition, we sought further construct validity by assessing correlations between the two types of autonomy satisfaction and various related concepts, including traditional measures of autonomous motivational style (Deci and Ryan 1985); the index of autonomous functioning (Weinstein et al. 2012a), wellbeing (i.e., vitality), and interpersonal connectedness. Because we administered the survey to adults from the

general population, we also examined associations between each mode of autonomy satisfaction and different forms of work motivation, as well as job satisfaction.

Method

Participants and procedure

A series of questionnaires was administered to 206 participants online, through Mechanical Turk. Three participants were excluded for failing an attention check. In the final sample (N = 203), participants had a mean age of 35.90 years (SD = 9.72), and 111 were male. On average, they had completed 4 years of postsecondary education and had been employed in the last 6 months. Participants took approximately 15 min to complete the survey and they were compensated $2.50USD for their contribution.

The concepts under investigation: asserted and assisted modes of autonomy satisfaction

Items were developed by experts in self-determination theory and scale construction, and based on the conceptual framework herein that delineates two distinct trait-level approaches to general autonomy satisfaction. During two two-hour focus group sessions, thirty-seven preliminary items were created to reflect our proposed definitions of asserted (e.g., "I always search for ways to express who I am") and assisted autonomy (e.g., "My interests are supported by the people (e.g. my friends and family) in my life"). To formulate each item, we relied partly on formulation and content from other measures of autonomy satisfaction (e.g., Gagné 2003), but adapted items from past research to represent the highly agentic and asserted versus the supported and facilitated aspects of autonomy attainment. Items were rated on a 6-point Likert scale (1 = disagree completely; 6 = agree completely), according to the extent to which they represented respondents' autonomy-satisfying style. The primary focus of this pilot study was to test whether it was possible to retain just four items that successfully represented each proposed style (for a total of 8 items). To this end, we used a data-reduction procedure, in which the weakest factor loadings and most problematic cross-loadings were systematically eliminated one-by-one.

Construct validity: additional measures

General Causality Orientation Scale (Deci and Ryan 1985) This scale assesses differing motivational styles, including autonomy orientation, controlled orientation, and impersonal orientation. A person high in autonomy orientation tends to display self-direction and self-integration, and is more likely to perform activities that are perceived to be interesting. The controlled orientation reflects the extent to which a person is oriented toward being controlled by rewards, deadlines, structures, conditions of self-worth, and the directives of others. Those high on the impersonal orientation have no sense of being able to affect outcomes or cope with demands or changes. The scale consists of 17 vignettes, each containing three possible responses (reflecting the respective motivational styles). Items are rated on a 7-point Likert scale (1 = very unlikely; 4 = moderately likely; 7 = very likely). Previous studies have corroborated the scale's construct validity and reliability (e.g., Rose et al. 2001). In the current study, Cronbach α ranged from .79 to .89.

Index of Autonomous Functioning (IAF; Weinstein et al. 2012a) is a 15-item questionnaire designed to assess three important aspects of autonomy, i.e., authorship/self-congruence (e.g., "I strongly identify with the things that I do"); susceptibility to control/pressure (e.g., "I do a lot of things to avoid feeling ashamed"); and self-interest-taking/self-exploration (e.g., "I am interested in understanding the reasons for my emotions"). Items are rated on a 5-point scale (1 = not at all true; 5 = completely true). This scale has been shown to demonstrate good psychometric properties and construct validity (Weinstein et al.). In the current study, Cronbach α ranged from .77 (pressure) to .92 (self-exploration).

Wellbeing The Subjective Vitality Scale (Ryan and Frederick 1997) is a seven-item scale designed to assess aliveness, alertness, and energy (e.g., "I nearly always feel awake and alert"). Across numerous studies, subjective feelings of energy and vitality have been shown to be critical to psychological wellbeing (including positive affect), as well as associated with physical symptoms and perceived body functioning (Ryan and Frederick). Items are rated on a 7-point Likert scale (1 = not at all true; 4 = somewhat true; and 7 = very true). The scale has displayed good psychometric properties across various samples (Bostic et al. 2000; Ryan and Frederick 1997). Internal consistency in the current study was excellent (α = .93).

Interpersonal connectedness Interpersonal relationship quality and connectedness was assessed using the relatedness subscale from the general, domain-nonspecific version of the Basic Psychological Need Scale (Gagné 2003). This subscale represents satisfaction of the basic need to feel liked and cared for by significant others (e.g., "I consider the people I regularly interact with to be my friends"). Eight items are rated on a 7-point scale (1 = not at all true; 4 = somewhat true; and 7 = very true). In the current study, Cronbach α = .83.

Work motivation The Work Extrinsic and Intrinsic Motivation Scale (WEIMS; Tremblay et al. 2009) is an 18-item measure of work motivation grounded in self-

determination theory. Respondents indicate the extent to which they are involved their current work using a 7-point Likert scale (1 = does not correspond at all; 7 = corresponds exactly). The scale targets six forms of motivation toward work: intrinsic motivation ("Because I derive much pleasure from learning new things"), integrated regulation ("Because it [my work] has become a fundamental part of who I am"), identified regulation, ("Because I chose this type of work to attain my career goals"), introjected regulation ("Because I want to succeed at this job, if not I would be very ashamed of myself"), external regulation (e.g., "For the income it provides me"), and amotivation ("I don't know why; we are provided with unrealistic working conditions"). The scale demonstrates very good psychometric properties, including strong reliability and construct validity across independent samples and different organizational settings (Tremblay et al.). In the current study, Cronbach α ranged from .76 to .92.

Job satisfaction Job satisfaction was assessed with a single item: "In general, how satisfied are you with your job?" Responses ranged from 1 = not at all satisfied to 7 = extremely satisfied.

Results and discussion

Exploratory factor analysis (EFA)

We sought preliminary evidence for the two-factor structure of autonomy via an exploratory factor analysis with direct oblimin rotation and maximum likelihood estimation. We systematically reduced items from 37 to 8 by retaining those that loaded acceptably onto their target factors without also cross-loading. For the final 8 items, a scree-plot analysis revealed two factors with eigenvalues of 3.93 and 1.93 (all other components had eigenvalues less than 1). These two factors accounted for 72.73 % of total item variance. Factor loadings displayed a clean two factor structure (displayed in Table 1). The asserted and assisted subscales were moderately correlated ($r = .22$, $p < .001$), demonstrating that these two measures are related yet distinct aspects of overall autonomy satisfaction. In sum, EFA results provide preliminary support for the hypothesized dual approach to autonomy satisfaction and functioning.

Additional construct validity

As shown in Table 2, asserted and assisted autonomy were both positively correlated with the autonomous orientation of the GCOS, suggesting that both proposed forms of autonomy are indeed related to traditional measures of autonomy. Similarly, both asserted and assisted autonomy were positively and moderately related to self-congruence, suggesting that asserted and assisted styles are mutually reflective of integrated feelings, thoughts, and behaviors. This concurrent validity is an important first step in determining the extent to which asserted and assisted styles represent distinct yet critical dimensions of the same underlying construct of autonomy. It should be noted, however, that, with the exception of self-exploration, aspects of general autonomy were more strongly related to assisted autonomy than asserted autonomy. Although this may reflect greater autonomous functioning among assisted types, it likely reflects the idea that traditional measures of autonomy tap into autonomy that is supported by the interpersonal climate, and may not fully capture the assertive aspect of autonomy. In contrast, the association with self-exploration was more than twice as strong for asserted compared to assisted autonomy, which may suggest that assisted and asserted forms represent different aspects of trait-level autonomous functioning. This positive association with self-exploration suggests that asserted autonomy is not a reflexive form of autonomy (cf. Koestner and Losier 1996). Similarly, it is noteworthy that assisted autonomy was negatively related to perceived external pressure and asserted autonomy showed no association with external pressure. This finding is indicative of the individual-environment cohesion that marks the experience of assisted (but not asserted) autonomy. This similar-yet-distinct pattern of correlations, coupled with the moderate interfactor correlation, offers some preliminary evidence that assisted and asserted forms of autonomy indeed tap into different aspects of general autonomous functioning.

Wellbeing was positively associated with both asserted and assisted autonomy, suggesting that each orientation relates to health and vitality. In addition, both forms of autonomy satisfaction were related to interpersonal connectedness, although this link was stronger for assisted autonomy. Finally, both asserted and assisted autonomy orientations were moderately and positively associated with intrinsic and autonomous motivations toward one's work. In contrast, a negative association was observed between assisted autonomy and amotivation, and no association was found between asserted autonomy and amotivation. Finally, job satisfaction was moderately related to each form of autonomy fulfillment, revealing that both asserted and assisted autonomy orientations play a role in important life outcomes.[1]

[1] Across studies, no gender differences were found in asserted autonomy ($M_{asserted}$ for men = 4.22; SD = .98; $M_{asserted}$ for women = 4.29; SD = .91), $F < 1$. In Study 2 only, women (M = 4.60; SD = .95) showed significantly more assisted autonomy than men (M = 4.27; SD = 1.02), $F(1, 204) = 7.249$, $p < .001$. T there were no gender differences in assisted autonomy across the other studies ($M_{men} = 4.784$; SD = .817; $M_{women} = 4.741$; SD = .931), $F < 1$.

Table 1 Exploratory factor analysis of items assessing assisted and asserted autonomy satisfaction (pilot study)

Item	Assisted	Asserted
1. I feel like my social groups (e.g. friends, family) allow me the chance to express myself and my feelings	.87	−.03
2. I feel supported by my social environment	.86	−.01
3. My interests are supported by the people (e.g. my friends and family) in my life	.83	.04
4. I feel like I get the chance to be my true self	.71	.00
5. I fight against the obstacles that prevent me from expressing my interests and desires	−.01	.88
6. I always search for ways to express who I am	.01	.85
7. I fight for opportunities to be who I really am	.01	.66
8. I look for every opportunity to express my ideas and opinions	−.01	.65
Eigenvalue	3.89	1.93
Variance explained (%)	48.57	24.16
Cronbach's α	.89	.85

In sum, this pilot study offers preliminary support for the proposed dual structure of autonomy satisfaction. That is, individuals may satisfy their need for autonomy in asserted and assisted ways. This finding requires validation, however, and there remains the need to demonstrate why it is important to differentiate between asserted and assisted autonomy.

Study 1: Validation of the two-factor approach to autonomy satisfaction

There were two focal aims of Study 1. The first was to verify the hypothesized dual structure of autonomy satisfaction. To this end, we implemented complementary procedures devised to provide information regarding the construct validity and discriminant validity of the proposed autonomy satisfaction subtypes. We expected that the two-factor structure of autonomy satisfaction (i.e., asserted vs. assisted) would be corroborated by means of a second-order confirmatory factor analysis. To this end, we tested the extent to which assisted and asserted items loaded onto their target latent factors and the extent to which each first-order latent factor loaded onto a second-order, general autonomy factor.

We also tested the assertion that assisted and asserted autonomy satisfaction would be differentially related to various constructs. We anticipated that, compared to assisted autonomy, asserted autonomy would be more strongly related to both internal and external curiosity and exploration (i.e., self and world), as well as a need for uniqueness. In contrast, due to its expected link with self-cohesive interpersonal relationships, we anticipated that assisted autonomy would show stronger associations with interpersonal connectedness and an interdependent self-construal.

The second major objective of Study 1 was to test the unique pathway through which each form of autonomy predicts wellbeing, using structural equation modeling. We expected that asserted autonomy would predict wellbeing through a highly active pathway—that is, through curiosity and exploration. In contrast, we expected that assisted autonomy would be critical to wellbeing, but through an entirely distinct—and relatively passive—route, namely through supportive interpersonal relationships. We theorized that, because assisted autonomous functioning derives from social support, it subsequently predicts interdependence with nurturing interpersonal relationships that encourage and facilitate psychological growth.

Method

Participants and procedure

After discarding 4 participants who failed attention checks, the sample consisted of 248 respondents from the general population (129 males and 116 females). Participants completed 30 min surveys, which were administered through Amazon's Mechanical Turk. Participants' mean age was 34.76 years (SD = 8.89). Their ethnocultural backgrounds were 81 % White; 6.5 % Black; 6.9 % Asian; 3.3 % Hispanic or Latino/a; and 2.4 % "other". They had completed high school (18 %), some college (33 %), all of college (38 %) or all of graduate school (11 %).

The concepts under investigation: asserted and assisted autonomy satisfaction

Participants completed the new 8-item version of the measure developed in the pilot study. In the current sample, internal consistency was $\alpha = .84$ for the assisted autonomy subscale and $\alpha = .81$ for the asserted autonomy subscale.

Table 2 Pearson correlations among asserted/assisted autonomy satisfaction and related constructs

Construct	Asserted	Assisted
Need satisfaction (*Study 3*)		
Autonomy	.31***	.50***
Competence	.40***	.36***
Relatedness	.30***	.41***
Need thwarting (*Study 3*)		
Autonomy frustration	−.10	−.30**
Competence frustration	−.20*	−.36***
Relatedness frustration	−.20**	−.58***
General Causality Orientation Scale (*Study 1*)		
GCOS autonomy	.25***	.45***
GCOS controlled	.16*	−.05
GCOS impersonal	−.20***	−.39***
Index of Autonomous Functioning		
Self-congruence		
Pilot	.34***	.53***
Study 1	.29***	.59***
Perceived external pressure		
Pilot	−.03	−.21**
Study 1	.09	−.31***
Self-exploration		
Pilot	.32***	.15*
Study 1	.27***	−.02
Interpersonal connectedness		
Pilot	.35***	.67***
Study 1	.07	.68***
Study 2	.26**	.62***
Interpersonal climate (*Study 3*)	.32***	.69***
Work motivation (*Study 1*)		
Intrinsic	.31***	.38***
Integrated	.31***	.27***
Identified	.39***	.34***
Introjected	.30***	.20**
External	.26***	.20**
Amotivation	−.08	−.30***
Job satisfaction (*Study 1*)	.34***	.44***
Self-construal (*Study 2*)		
Independence	.30***	.35***
Interdependence	.06	.17**
Need for uniqueness (*Study 2*)	.45***	−.01
Curiosity and exploration		
Study 1	.42***	.15*
Study 2	.51***	.30***
Parental authority (*Study 2*)		
Authoritative Style	.13	.32***
Authoritarian Style	.23**	−.02
Permissive Style	.03	.14†
Wellbeing (vitality)		
Pilot	.39***	.57***
Study 1	.23***	.46***
Wellbeing (personal growth)		
Study 2	.40***	.44***
Integration of negative experience (*Study 3*)	.31***	.08

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

The two subscales were modestly correlated, $r = .13$, $p = .05$.

Construct validity: additional measures

Index of Autonomous Functioning (IAF) The IAF was again used to confirm concurrent validity of the two-factor model of autonomy satisfaction (Cronbach α ranged from .78 to .94).

Interpersonal connectedness Interpersonal connectedness was measured using the same procedure as Study 1 ($\alpha = .86$).

Independent and Interdependent Self Scale (IISS; Lu and Gilmour 2007) This 42-item scale assesses individualism and collectivism in personality and the functioning of the self. Items reflecting the personality trait of individualism include: "I believe that people should pursuit their own welfare" Items reflecting collectivism include: "I believe that it is important to maintain group harmony". This measure has shown adequate reliability and validity (Lu and Gilmour 2007). In the current study, both subscales displayed a Cronbach α of .92.

The Self-Attributed Need for Uniqueness Scale (SANU; Lynn and Harris 1997a) Uniqueness theory (Snyder and Fromkin 1980) posits that people need to establish dissimilarity from others. On the SANU, respondents indicate how distinctive they want to be, how important being different is to them, how often they intentionally try to differentiate themselves from others, and how strongly they feel the need to be unique. Items ($N = 4$; $\alpha = .85$) are formatted as fill-in-the-blank sentence completions (e.g., "I prefer being _____ different from other people)," and include response options of "no," "slightly," and "moderately". The measure has shown excellent predictive validity, and, unlike previous uniqueness measures, circumvents self-presentation (Lynn and Harris 1997b).

Curiosity and Exploration Inventory (CEI-II; Kashdan et al. 2009) Curiosity reflects high receptivity and willingness to engage with novel stimuli. Curiosity stimulates learning, discovery, and immersion in an activity (Silvia 2006). The CEI-II taps two dimensions of curiosity: (1) exploration/stretching, which refers to the active seeking of

opportunities for new information and experiences [e.g., "Everywhere I go, I am out looking for new things or experiences"; ($\alpha = .85$)], and (2) embracing uncertainty, which reflects the willingness to tolerate the novel and unpredictable nature of everyday life [e.g., "I prefer jobs that are excitingly unpredictable"; ($\alpha = .83$)]. Participants were asked to rate ten items on a 6 point Likert scale (1 = *very slightly or not at all,* 3 = *moderately,* 5 = *extremely*). The measure has demonstrated adequate psychometric validity (Kashdan et al. 2009).

Wellbeing The Subjective Vitality Scale (Ryan and Frederick 1997) again assessed alertness and energy ($\alpha = .93$).

Analytic strategy

Two models were assessed. In the first, a second-order confirmatory factor analytic model was used to validate the proposed two-factor structure of autonomy. In the second, structural equation modeling was used to determine the extent to which each type of autonomy predicted wellbeing, and the unique mechanisms involved. These models were estimated using structural equation modeling (SEM) with EQS 6.3. A maximum likelihood estimation was used for all model testing. The magnitude of estimated path coefficients was ascertained and the degree of fit between the proposed models and the observed covariance matrices was tested using the following recommended and non-redundant criteria (Cheung and Rensvold 2002): the Satorra-Bentler Scaled Chi-square Statistic (χ^2_{SB}; to protect against potential deviations from the assumption of multivariate normality), the comparative fit index (CFI); the root mean square error of approximation (RMSEA); and the standardized root mean-squared residual (SRMR).

Results and discussion

Validating the dual structure of autonomy satisfaction

The measurement model (i.e., confirmatory factor analysis; CFA) was assessed by estimating target loadings, item uniqueness values, and factor variances and covariances. Results of the second-order CFA revealed a well-fitting model, χ^2_{SB} (19, N = 248) = 43.91, $p < .001$; CFI = .96; RMSEA = .07 (90 % CI = .04–.10); SRMR = .05. The final factor structure is presented in Fig. 1. All parameters estimated in the model were significant at the $p < .05$ level and no post hoc model respecifications were required (i.e., the factor structure was clean and free of crossloadings and correlated error terms). The correlation between the assisted and asserted latent factors was modest ($r = .20$), indicating the distinctiveness of each type of autonomy fulfillment. Nonetheless, adequate second-order factor loadings indicate that both assisted and asserted autonomy satisfaction represent separate aspects of a general autonomy construct.[2]

Construct validity: associations with theoretically relevant variables

In order to extend the construct validity of the proposed dual structure of autonomy satisfaction, we again assessed correlations between each type of autonomy and theoretically related and discrepant constructs. These results are presented in Table 2. Results replicate and extend those of Study 1. As expected, both modes of autonomy fulfillment were associated with the self-congruence dimension of the IAF. However, asserted and assisted autonomy satisfaction related to other aspects of autonomy in divergent ways. In particular, only assisted autonomy was negatively associated with perceived external pressure. Furthermore, only asserted autonomy was positively associated with self-exploration, which highlights its dynamic and active nature. In further support of this notion, asserted—but not assisted—autonomy satisfaction was related to both curiosity/exploration and need for uniqueness. Importantly, both types of autonomy fulfillment were associated with subjective vitality, a key feature of psychological wellbeing. Finally, asserted and assisted autonomy were differentially related to aspects of self-construal, with both asserted and assisted autonomy being associated with independent self-construal but only assisted autonomy relating to interdependent self-construal. This finding suggests that those with an assisted autonomy orientation tend to perceive themselves as interdependently connected to their social groups, whereas those who assertively satisfy their need for autonomy do not.

In summary, assessment of the validity of the two-factor structure of autonomy satisfaction provided evidence of an adequate and well-fitting model. That is, the imposed hypothesized model fit the covariance matrix observed in the sample. Theoretically, CFA results lend evidence to the conceptual validation of the asserted versus assisted approach to autonomy satisfaction. It appears that individuals may come to feel autonomous for very different reasons.

[2] An alternate one-factor model where both assisted and asserted items were ascribed to the same first-order latent general autonomy factor yielded an undesirable fit, CFI = .727; SRMR = .161; RMSEA = .136, which further justified the proposed two factor structure of autonomy satisfaction. We also tested a standard first order factor structure, with asserted and assisted autonomy specified as separate factors. Not surprisingly, this yielded a fit similar to the second order model, CFI = .96, RMSEA = .07; SRMR = .06.

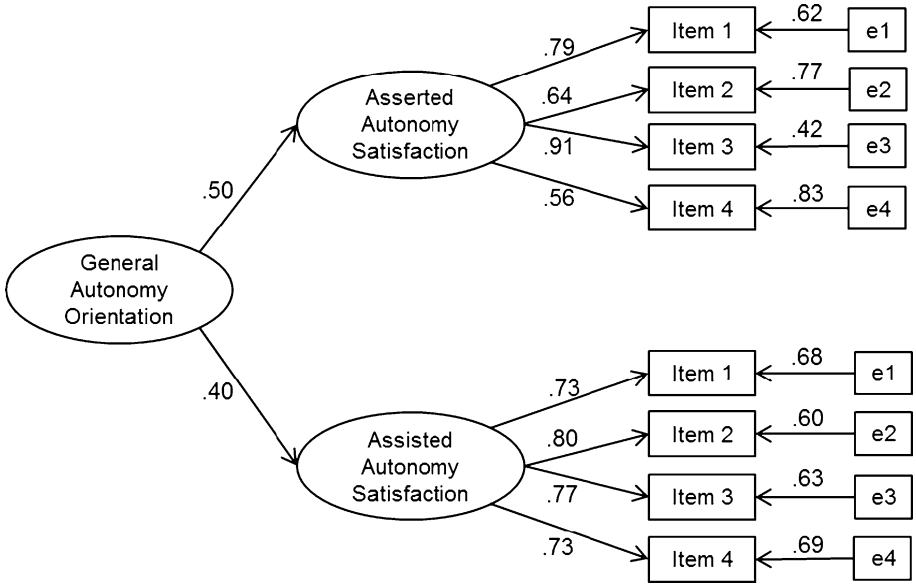

Fig. 1 Second-order factor structure of autonomy satisfaction. Factor loadings and path coefficients are significant at $p < .05$ (Study 1)

Alternate pathways to wellbeing

Testing the measurement model Before testing the proposed structure among latent variables, the measurement model was assessed from several angles, in order to verify and correct for any misspecification in measurement. Confirmatory factor analyses indicated a very well-fitting measurement model, χ^2_{SB} (109, N = 248) = 179.38, $p < .001$; CFI = .97; RMSEA = .05 (90 % CI = .04–.06); SRMR = .05. Factor loadings were high and in the expected direction and assessment of modification indices demonstrated an absence of cross-loadings or correlated error terms.

Testing the hypothesized structural model Structural equation modeling was used to ascertain the extent to which each form of autonomy satisfaction predicted well-being (i.e., vitality), and the unique mechanisms involved in these links. As anticipated, a very well-fitting model [χ^2_{SB} (109, N = 248) = 179.37, $p < .001$; CFI = .97; RMSEA = .05 (90 % CI = .04–.06); SRMR = .05], revealed that each form of autonomy fulfillment indirectly predicted wellbeing, but through different pathways. That is, asserted autonomy predicted vitality through curiosity and exploration, while assisted autonomy predicted vitality through positive interpersonal relationships. The final structural model, including path coefficients, is presented in Fig. 2.

Findings from Study 1 strongly support the need to consider asserted and assisted modes of autonomy satisfaction separately. Both forms are psychologically adaptive—but for different reasons. This finding is novel and important because it suggests that autonomous processes are more complex than previously assumed; indeed, this research highlights the notion that autonomy can be both asserted and assisted in nature, representing both efficiency in need-environment fit as well as the effortful search for personal volition and identity. The distinction also alludes that each subtype might rely on characteristic developmental antecedents. Thus, the objective of Study 2 was to determine whether asserted versus assisted autonomy satisfaction might relate uniquely to different types of parental authority.

Study 2: Antecedents and consequences of asserted and assisted autonomy satisfaction

The major objective of Study 2 was to examine how socialization might predict asserted and assisted modes of autonomy satisfaction. More specifically, we assessed individuals' perceptions of their mothers' and fathers' parenting styles (i.e., authoritarian, permissive, and authoritative parenting styles). In line with a self-determination theory approach, we expected that authoritative parenting, which emphasizes democracy while also providing feedback and structure, would be related to assisted autonomy. We reasoned that individuals with an assisted style would likely have experienced an autonomy-facilitative socialization history, including parents that provided autonomy-enhancing conditions. In contrast, we theorized that an asserted autonomy orientation may result from less supportive and nurturing environments. That is, the development of asserted autonomy satisfaction may, in part, be a function of necessity, whereby individuals respond to neglectful conditions by actively asserting their psychological requirements. Given the enormous individual-level variability involved in overcoming adversity (e.g., Bonanno 2004; Masten et al. 1990), we argue that the

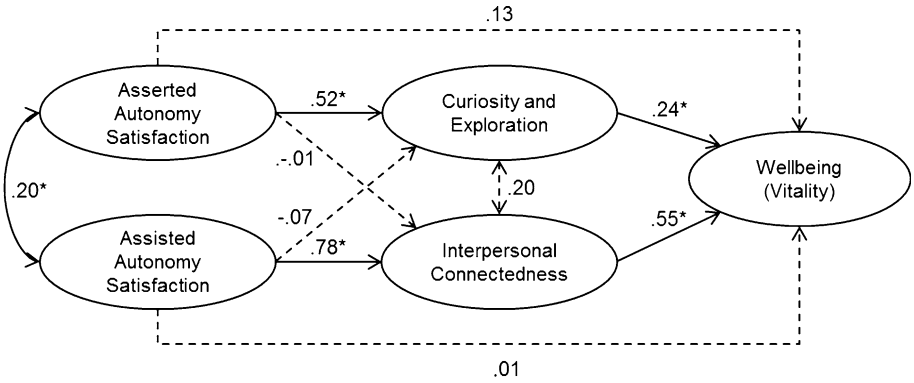

Fig. 2 Assisted and asserted autonomy orientations predict unique pathways to wellbeing: final structural model (Study 1). *$p < .05$; *Dashed lines* represent nonsignificant relationships

development of an asserted autonomy-satisfying style may in fact reveal a capacity for psychological resilience in the face of need-undermining conditions.

Additionally, we expect to replicate and extend Study 1 by demonstrating that asserted and assisted autonomy predict wellbeing in different ways. To do so, we generalize our model using a new measure of psychological wellbeing: personal growth.

Method

Participants and procedure

Participants completed 20 min surveys through Crowdflower, a crowdsourcing platform. After removing two participants who failed an attention check, the age range of the final sample (N = 206) was 21 to 53 years (M = 34.45; SD = 7.45), and 60 % female (n = 124). Participants were 73.7 % White; 10.7 % Asian; 5.9 % Black; 3.9 % Hispanic or Latino/a; and 5.9 % "other". Finally, 3 % of participants indicated that the highest level of education they had completed was "some high school"; 20.7 % indicated "high school"; 26.9 % indicated "some college"; 38.9 % reported completing college, and 8.2 % reported having completed graduate school.

Measures

Asserted and assisted autonomy satisfaction The new measure was used ($\alpha = .86$ for both asserted and assisted forms). The two subscales were moderately correlated, $r = .44$, $p < .001$.

Interpersonal connectedness Interpersonal connectedness was measured using the same procedure as Studies 1 and 2. ($\alpha = .83$).

Curiosity and Exploration Inventory (CEI-II) Curiosity and Exploration was assessed in the same way as Study 2. ($\alpha = .87$ for stretching and $\alpha = .86$ for embracing).

Parental Authority Questionnaire (PAQ; Buri 1991) Participants' assessments of their parents' authority were measured using the PAQ. Three styles of parenting were assessed: authoritarian, authoritative, and permissive. These dimensions reflect Baumrind's (1971) classic parental authority prototypes. Authoritarian parents tend to be autocratic and value unquestioning obedience. They use punishment to control their children's behavior and discourage reciprocal dialogue. Such parents are perceived by their children to be relatively cold and inflexible. Authoritative parenting, in contrast, involves a balance of structured direction and flexible acceptance of children's viewpoints. Authoritative parents provide clear expectations in conjunction with informative rationale, warmth, and verbal give-and-take. Finally, permissive parents make very few demands on their children and permit them to regulate their own behavior with little intervention, structure, or leadership. Parallel forms of the PAQ were administered—one for the respondent's assessment of their mother and one for their father. Each form contains 30 items (10 per subscale). Items are measured using a 7-point Likert scale (1 = not at all true; 4 = somewhat true; 7 = very true). Example items include: "As I was growing up my mother/father did not allow me to question any decision s/he had made" (authoritarian); "As I was growing up, once family policy had been established, my mother/father discussed the reasoning behind the policy with the children in the family" (authoritative); "While I was growing up my mother/father felt that in a well-run home the children should have their way in the family as often as the parents do" (permissive). Due to 8 % missing data for fathers, we averaged participants' assessments of their mothers and fathers (in the case of missing data for fathers, only the mother's parenting score was used). Combining perceptions of mothers and fathers yielded $\alpha = .92$ for authoritarian; $\alpha = .94$ for authoritative; and $\alpha = .93$ for permissive.

Wellbeing: personal growth The 9-item Personal Growth Initiative Scale (PGIS; Robitschek 1999) assesses personal involvement in the search for growth. Example items include: "If I want to change something in my life, I initiate the transition process" and "I know how to change

specific things that I want to change in my life" ($\alpha = .94$). Items are rated on a 7 point Likert scale from 1 = Disagree completely to 7 = Agree completely. The PGIS has been shown to be strongly positively related to psychological wellbeing and negatively related to psychological distress (Robitschek and Keyes 2009), and so we used this measure to assess another facet of wellbeing, in order broaden the effect demonstrated in Study 1.

Results and discussion

Testing the measurement model

Before testing the proposed structure among latent variables, the measurement model was assessed from several angles, in order to verify and correct for any assessment misspecification. Confirmatory factor analyses (CFAs) revealed a very well-fitting measurement model, χ^2_{SB} (293, N = 206) = 548.15, $p < .001$; CFI = .93; RMSEA = .06 (.05–.07); SRMR = .06. Factor loadings were high and in the expected direction and assessment of modification indices demonstrated an absence of cross-loadings or correlated error terms.[3]

Testing the hypothesized structural model

It was expected that authoritarian parenting would be associated with asserted autonomy, whereas authoritative parenting would be associated with assisted autonomy. In turn, asserted autonomy was expected to predict well-being (growth) through active means, namely curiosity and exploration, whereas assisted autonomy was hypothesized to predict wellbeing in a more interdependent manner—that is, through associations with positive interpersonal relationships. Results demonstrate that the data fit the hypothesized model (χ^2_{SB} (304, N = 206) = 585.73, $p < .001$; CFI = .92; RMSEA = .07 (.06–.08); SRMR = .08). The final model, including path coefficients, is presented in Fig. 3. Results replicated and extended the wellbeing model from Study 1, that is, asserted autonomy fulfillment predicted growth through curiosity and exploration, while assisted autonomy fulfillment predicted growth through supportive relationships.

A major contribution of Study 2 was the finding that asserted autonomy is associated with authoritarian parenting, whereas assisted autonomy is related to authoritative parenting. Permissive parenting was not found to be uniquely related to either form of autonomy satisfaction. Presumably, assertively autonomous individuals have overcome autocratic parenting conditions and sought out alternate autonomy satisfying experiences. These results indicate that autonomy-neglectful environments may sometimes result in a proactive form of autonomy; because autonomy has not been facilitated (e.g., by parents), individuals may be faced with cultivating this critical need in less interdependent ways. To further test the proactive nature of asserted autonomy, Study 3 investigated whether assisted versus asserted forms of autonomy satisfaction might yield differences in the capacity or tendency to integrate challenging life experiences into the self.

Study 3: Asserted autonomy predicts the integration of negative life experiences

Because the self is made up of various inconsistencies, divergent attributes, and highly valenced experiences, *integration* is necessary for a sense of self-coherence, wholeness, and growth (Deci and Ryan 2000; Maslow 1954; Rogers 1963). Research suggests that satisfaction of the need for autonomy is an important antecedent of identity consolidation and integration (Ryan 1995; Weinstein et al. 2011). In particular, autonomy has been shown to be critical in the integration of *negative* life experiences and identities (Legault et al. 2016). That is, while positive identities and experiences are easy to accept for most people, difficult or threatening life experiences are harder to acknowledge because they undermine self-esteem. When people are high in autonomy, however, they tend to be less defensive against threatening self-relevant information (Legault et al. 2016). We reasoned that because asserted autonomy is highly agentic, self-reflecting, and self-explorative, it would be more strongly associated with the integration of difficult past experiences, relative to assisted autonomy. Thus, the purpose of Study 3 was to investigate whether asserted versus assisted autonomy differentially predict integrative processing.

Method

Participants and procedure

Participants were 109 undergraduates at a small university in Northern New York who participated for partial course credit (68 males and 41 females). Their ages ranged from 18 to 24 years (M = 19.13; SD = 1.11), and they were 93 % Caucasian.

[3] Although they represent theoretically distinct constructs, the strong correlation between assisted autonomy satisfaction and interpersonal connectedness led us to test a measurement model wherein assisted autonomy items and interpersonal connectedness items were specified to load onto the same "interpersonal" factor. This yielded a poor fit, CF1 = .795; SRMR = .147; RMSEA = .121, suggesting that assisted autonomy and interpersonal connectedness are metrically (as well as conceptually) different.

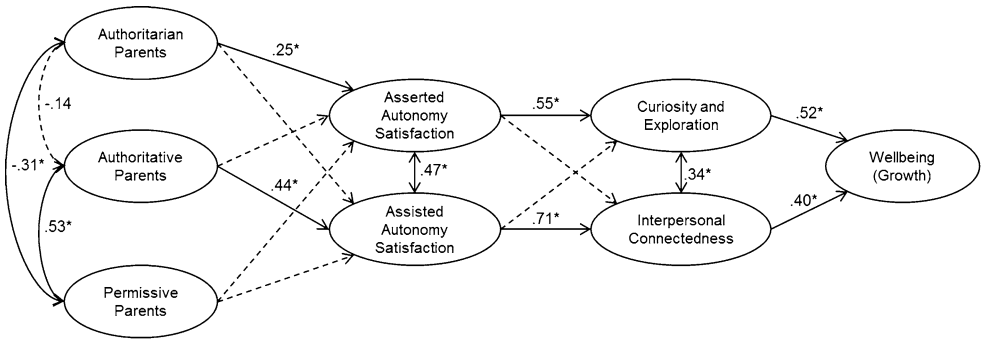

Fig. 3 Antecedents and consequences of asserted and assisted autonomy: final model (Study 2). *$p < .05$; *Dashed lines* represent nonsignificant relationships

Upon arrival at the laboratory, participants completed a survey assessing asserted and assisted autonomy, as well as additional related constructs (including basic psychological need satisfaction and frustration). We then asked participants to identify a negative life experience occurring between 1 and 5 years prior, and write about it. They were given the following prompt: "Most people have experienced negative life events. In the next 5–10 min, please identify and write about a negative or difficult personal experience. Describe what happened in your own words". We then ascertained the extent to which participants integrated and openly acknowledged this experience as part of themselves, using measure of integration versus defensiveness.

Measures

Asserted and assisted autonomy satisfaction The newly-validated measure was used ($\alpha = .87$ for asserted; $\alpha = .84$ for assisted). The two subscales were moderately correlated, $r = .35$, $p < .001$.

Basic psychological need satisfaction and frustration Although not the principle focus of the current study, Chen et al.'s (2015) 24 item scale was used to assess the extent to which the basic psychological needs of autonomy, competence, and relatedness were satisfied or actively frustrated. This was done in order to supplement the construct validity of the current dual-autonomy construct. Items were rated on a Likert Scale ranging from: 1 = Disagree Strongly, to 5 = Agree Strongly. Examples items include: "I feel a sense of choice and freedom in the thinks I undertake" (autonomy satisfaction; 4 items; $\alpha = .75$); "I feel pressured to do too many things" (autonomy frustration; 4 items; $\alpha = .83$); "I feel confident that I can do things well" (competence satisfaction; 4 items; $\alpha = .92$); "I have serious doubts about whether I can do things well" (competence frustration; 4 items; $\alpha = .90$); "I feel that the people I care about also care about me" (relatedness satisfaction; 4 items; $\alpha = .82$), and; "I feel excluded from the group I want to belong to" (relatedness frustration; 4 items; $\alpha = .80$).

Integration of negative personal experience Integration was assessed using the procedure in Weinstein et al. (2011) and Legault et al. (2016). Specifically, participants were asked to recall a difficult life experience and to write about it for five to ten minutes. Then, the degree to which they had integrated the experience into their sense of self was assessed using six items reflecting distancing from the experience (e.g., "I try not to spend any time thinking about how that experience made me feel") versus approach/connection to the experience (e.g., "Although it was negative, this experience is part of me"). Distancing items were reverse-scored to create a composite measure of integration ($\alpha = .77$). Items were measured on a 6 point Likert scale.

Results and discussion

Correlations with need satisfaction and frustration

As can be seen in Table 2, both assisted and asserted autonomy satisfaction were moderately and positively associated with satisfaction of the needs for autonomy, competence, and relatedness. Assisted autonomy was negatively associated with frustration of the needs for autonomy, competence, and relatedness, whereas asserted autonomy was unassociated with autonomy frustration, and negatively associated with frustration of both competence and relatedness. These associations help to underscore the proposition that both assisted and asserted autonomy satisfaction are indeed forms of autonomy satisfaction in general.

Predicting integration

Integration scores were regressed onto asserted and assisted autonomy satisfaction simultaneously. Asserted autonomy was associated with integration, $\beta = .31$ [$B = .33$], $t(197) = 3.18$, $p = .002$, 95 % CI [for B] = .125 to .538. In contrast, assisted autonomy was not, $\beta = -.02$ [$B = -.023$], $t(197) = -.193$, $p = .85$, 95 % CI [for B] = −.261 to .214. Inspection of confidence intervals

indicated some overlap between the lower bound confidence interval of asserted autonomy (.125) and the upper bound confidence interval for assisted autonomy (.214). When plotted, this overlap appeared to be approximately 50 %. According to Cumming (2009), estimates are statistically different from one another when their respective 95 % confidence intervals overlap *by no more than 50 %*. So, to precisely calculate whether the B coefficients were significantly different, half (50 %) of the average overlap (.111 across both variables) was added to the lower bound CI of asserted autonomy (.125 + .111 = .236). Since this 50 % point of .236 was greater than (i.e., did not overlap) the upper bound CI for assisted autonomy (.214), we can conclude that the degree of overlap is less than 50 % and that the two path coefficients are significantly different from one another at $p < .05$. In sum, results suggest that asserted autonomy predicts integration reliably better than assisted autonomy.

Given the active, self-exploring nature of asserted autonomy, it is not surprising that it should be related to the integration of challenging personal experience. This finding is noteworthy because, although past research has highlighted the important role of autonomy in the process of integration (e.g., Ryan 1995; Weinstein et al. 2011), distinguishing between asserted and assisted forms reveals that it is the active and asserted component that is particularly relevant when it comes to integrating difficult or painful self-relevant information. Taken with the findings from Study 2, these results suggest that assisted and asserted autonomy may produce divergent responses to negative, difficult, or controlling situations. In Study 4, we investigate whether need-thwarting contexts elicit different coping responses as a function of assisted versus asserted autonomy.

Study 4: Coping when basic psychological needs are thwarted

In order to thrive and grow, self-determination research shows that individuals require fulfillment of the basic psychological needs of relatedness, autonomy, and competence (Deci and Ryan 2013). Although need satisfaction is thought to be forestalled when environments are rejecting, controlling/coercive, or undermining of competence, very little research has directly examined the active role of autonomous functioning in responding to (and coping with) need neglecting contexts (except see Radel et al. 2011, 2014). In Study 4, we assessed whether asserted and assisted forms of autonomy satisfaction predicted divergent responses to need thwarting.

Given the finding from Studies 2 and 3—i.e., that asserted autonomy is associated with personal growth in the face of controlling childhood experiences, and it also predicts the acknowledgement and integration of painful experiences—one might expect that it would be associated with a pattern of vigorous autonomy-preserving responses to interpersonal conflict. In contrast, since assisted autonomy thrives primarily in supportive interpersonal contexts, one might expect that, for these individuals, interpersonal situations that thwart the basic need for autonomy would be met with more caution (perhaps balancing between autonomy-preservation and relationship maintenance). To better understand how assisted and asserted autonomy predict divergent responses to need-thwarting, Study 4 assessed associations between each form of autonomy satisfaction and use of conflict resolution strategies in need-thwarting versus need-supportive interpersonal contexts.

Participants were assigned to either a need-thwarting or need-supportive condition before exposure to a hypothetical interpersonal conflict. We then assessed various conflict management strategies—two constructive (passive loyalty/accommodation and active voice/negotiation) and one destructive (passive rumination). These strategies were adapted from the exit-voice-loyalty-neglect typology proposed by Rusbult and Zembrodt (1983), which classifies the vast majority of possible responses to relationship conflict along two dimensions: active/passive and constructive/destructive. Although negotiation and accommodation are both highly constructive responses to conflict which serve to preserve the relationship (Rusbult et al. 1996), negotiation uses an active voice; it represents action taken to settle a disagreement, while still expressing concern for the other (Straus et al. 1996). It might entail, for instance, expressing the belief that the disagreement can be worked out. In contrast, we framed accommodation as loyalty, or, waiting patiently for the disagreement to subside by accommodating the needs of the other. This strategy entails agreeing to the partner's requests and ideas, and remaining optimistic for a resolution (Finkel and Campbell 2001). In this way, accommodation-loyalty is more submissive than negotiating a compromise. We also assessed a maladaptive coping strategy—rumination. Rumination is a method of coping that involves self-focused attention and a repetitive and passive focus on one's negative emotions. It is robustly linked with depression (Treynor et al. 2003).

Given the self-integrated and flexible nature of autonomy, we expected that both asserted and assisted subtypes would predict constructive rather than destructive responses to conflict overall. However, because asserted autonomy reflects a high degree of personal autonomy-affirmation, we expected that, in the need-thwarting condition, asserted autonomy would be more strongly related to the use of active voice-negotiation tactics than would assisted autonomy. Conversely, because assisted autonomy

is associated with relying on and maintaining social bonds, we expected that a need-thwarting interpersonal context should predict more cautious—and relationally accommodative—strategies. Thus, under need-thwarting conditions, we expected asserted (but not assisted) autonomy to be associated with conflict negotiation tactics, whereas we expected assisted (but not asserted) autonomy to be associated with accommodative interpersonal behavior.

We expected a different pattern of results in the need-supportive condition. That is, given the security of a need-supportive interpersonal relationship, we surmised that those with an assisted autonomy orientation would be just as likely to negotiate through conflict as those with an asserted style. Thus asserted autonomy should be germane to active coping under conditions of need thwarting but not need support. For accommodation, we expected the same pattern of results as in the need-thwarting condition (i.e., that assisted autonomy would be more strongly related to accommodating the relationship partner).

Method

Participants and procedure

After removing 10 respondents who failed an attention check, 202 participants (including 112 women) from a small university in Northern New York and from the general American population received either partial course credit or $1.50USD through Mechanical Turk. All stimulus materials and questionnaires were presented online in a survey format which took approximately 10 min to complete. Participants' ages ranged from 17 to 72 years ($M = 28.80$; $SD = 12.96$). The majority were Caucasian (86 %) and the remaining were Asian (6 %), Hispanic (2 %), biracial/multiracial (2 %), and African American (1.5 %).

After assessing levels of asserted and assisted autonomy satisfaction, participants were randomly exposed to either a need-supportive or need-thwarting workplace scenario (please see Appendix). In the need-thwarting scenario, participants were asked to imagine working for a highly controlling manager who consistently undermined their autonomy and competence, and made them feel excluded. In the need-supportive scenario, participants imagined a highly supportive manager who nurtured their interests and abilities.[4] Then, all participants were presented with the same hypothetical conflict situation with the same manager. They were asked to "imagine that you get into a work conflict with this boss. You are working on a new project and your boss insists that you are doing things the wrong way. Your viewpoints about the project collide very harshly. Please take a moment to consider how you would feel in this situation, and how you would respond". Participants then rated the extent to which they would employ various conflict management strategies.

Measures

Asserted and assisted autonomy satisfaction The newly-validated measure was used ($\alpha = .86$ for asserted; $\alpha = .87$ for assisted). The two subscales were moderately correlated, $r = .39$, $p < .001$.

Need-thwarting manipulation and conflict management strategy use Participants were exposed to an interpersonal conflict scenario with either a need-supportive or need-thwarting manager (Appendix). The scenarios were adapted from tenets of Basic Psychological Needs Theory within SDT (Deci and Ryan 2000) and directly targeted either the support or suppression of the needs for autonomy, competence, and relatedness. After imagining the conflict, participants rated their intentions to *actively negotiate* with their manager (4 items; e.g., "I would suggest some ways to reach a compromise" and "I would express to my boss my belief that the problem between us could be worked out"; $\alpha = .85$), as well as the extent to which they would *loyally accommodate* their manager (3 items; e.g., "I would patiently obey my boss's requests and wait for things to improve" and "I would show respect for my boss even though he may not return the feeling"; $\alpha = .68$). These items were adapted from Finkel and Campbell (2001) and based on the "voice" and "loyalty" dimensions of the exit-voice-loyalty-neglect typology proposed by Rusbult and Zembrodt (1983). In addition, we assessed *rumination* as a response to each scenario using an adapted version of Treynor et al.'s (2003) Ruminative Responses Scale (6 items; e.g., "I would think 'What am I doing to deserve this?'" and "I would think 'Why can't I handle things better?'"; $\alpha = .88$). All items were rated on a 5 point Likert scale (1 = definitely not; 5 = completely)

[4] Although this manipulation was hypothetical in nature, credibility of the scenarios in supporting or frustrating psychological needs and wellbeing was assessed by measuring state negative mood using 9 items adapted from the PANAS (i.e., Right now I feel: distressed, upset, guilty, scared, hostile, irritable, ashamed, nervous, jittery). Negative mood was assessed both before and after reading the scenario. Changes in negative mood were significantly different across conditions, $F(1, 198) = 6.046$, $p = .015$, $\eta_p^2 = .031$, such that those exposed to the need thwarting manager showed an increase in negative mood ($M = .360$; $SD = .277$), whereas those exposed to the supportive manager showed a decrease in negative mood ($M = -.057$; $SD = .234$). Changes in negative mood were not related to assisted ($r = .03$, $p = .674$) or asserted autonomy ($r = .01$, $p = .883$). Also, changes in negative mood were not associated with the outcomes of accommodation ($r = -.09$ *ns*) or negotiation ($r = -.04$ *ns*). However, an increase in negative mood was associated with rumination ($r = .28$, $p < .001$).

according to the degree to which participants felt they would exhibit each response to the conflict.

Results and discussion

For each dependent variable (i.e., negotiation, accommodation, and rumination), hierarchical regression analyses were conducted with the main effects of condition (i.e., need-supporting vs. need-thwarting manager), asserted autonomy (mean-centered), and assisted autonomy (mean-centered) entered in a first step (model 1), the 2-way interactions entered in a second step (model 2), and the 3-way interaction entered in a third step (model 3).

Negotiation

Results at step 3 indicated that both asserted autonomy satisfaction, $\beta = .27$ [B = .07], $t(198) = 3.87$, $p < .0001$, 95 % CI [for B] = .03 to .10, and assisted autonomy satisfaction, $\beta = .24$ [B = .06], $t(198) = 3.44$, $p < .01$, 95 % CI [for B] = .03 to .10, were associated with overall use of active negotiation in conflict resolution. In addition, those in the need-supportive boss condition were more likely to use negotiation than those in the need-thwarting boss condition, $\beta = .31$ [B = .29], $t(198) = 4.88$, $p < .0001$, 95 % CI [for B] = .17 to .41. However, these main effects were qualified by two 2-way interactions. That is, both asserted autonomy, $\beta = -.28$ [B = −.07], $t(195) = -3.97$, $p < .0001$, 95 % [for B] CI = −.10 to −.03, and assisted autonomy interacted with condition, $\beta = .21$ [B = .06], $t(195) = 3.01$, $p < .01$, 95 % CI [for B] = .02 to .09. The assisted X asserted interaction and the 3-way interaction (assisted X asserted X condition) were not significant, $\beta = .12$ [B = .01], $t(195) = 1.80$, $p = .09$, 95 % CI [for B] = −.01 to .02 and $\beta = -.01$ [B = −.001], $t(194) < 1$, respectively.

Group comparisons

In order to unpack the 2-way interactions, associations between assisted and asserted autonomy, on one hand, and negotiation on the other, were ascertained for supportive and need-thwarting managers separately. In the need-thwarting manager condition, asserted autonomy was associated with negotiation, $\beta = .46$ [B = .12], $t(106) = 5.08$, $p < .0001$, 95 % CI [for B] = .07 to .16, but assisted autonomy was not, $\beta = .07$ [B = .02], $t(106) < 1$, 95 % CI [for B] = −.03 to .06. Given there was no overlap in the confidence intervals of the unstandardized estimates, the difference between these two paths can be said to be significant at $p < .001$ (Cumming 2009). This interesting (and expected) finding suggests that only asserted autonomy is associated with active negotiation in the context of a controlling interpersonal relationship. This may be because those with an assertively autonomous style are adept at affirming their needs (i.e., autonomy) in need-thwarting contexts, whereas those high in assisted autonomy are not. Crucially, the opposite pattern was found in the need-supportive condition. That is, in the supportive manager condition, assisted autonomy was uniquely associated with negotiation, $\beta = .48$ [B = .12], $t(94) = 4.54$, $p < .0001$, 95 % CI = .07 to .17, but asserted autonomy was not, $\beta = .03$ [B = .006], $t(94) < 1$, 95 % CI [for B] = −.035 to .048. Because there was no overlap in the confidence intervals of these estimates, the difference between these path coefficients is significant ($p < .001$). Thus, in contrast to our hypothesis that both types of autonomy would predict negotiation in relationships where needs are adequately supported, these findings suggest that assisted autonomy predicts negotiation, whereas asserted autonomy does not. Perhaps in cases where the relationship is secure and supportive, those with an assisted style feel comfortable being assertive, whereas those with an assertive style feel relatively less desire or need to negotiate because the threat to autonomy is low.

Overall, these findings support our expectation that asserted autonomy is important for negotiating autonomy satisfaction when needs are undermined, whereas assisted autonomy is not. In contrast, assisted autonomy appears to play a key role in negotiation when needs are supported, whereas asserted autonomy does not.

Accommodation

The main effect of assisted autonomy on accommodation was significant, $\beta = .33$ [B = .08], $t(198) = 4.46$, $p < .0001$, 95 % CI [for B] = .043 to .111, but the main effect of asserted autonomy was not, $\beta = .03$ [B = .01], $t < 1$, 95 % CI [for B] = −.024 to .038]. Given the absence of overlap between confidence intervals, the difference between these two paths can be considered significant at $p < .001$ (Cumming 2009). This suggests that assisted autonomy is more reliably associated with accommodation than is asserted autonomy. In addition, those in the supportive manager condition were more likely to accommodate during conflict than those in the need-thwarting manager condition, $\beta = .35$ [B = .28], $t(198) = 5.10$, $p < .0001$, 95 % CI [for B] = .17 to .39. None of the interactions were significant (βs ranged from −.01 to .07, all ts < 1), suggesting that, regardless of level of need support, assisted autonomy was associated with accommodation whereas asserted autonomy was not. Therefore, only those with an assisted autonomy show a preference for passive conflict resolution.

Rumination

Asserted autonomy was not associated with rumination, $\beta = .05$ [B = .011], $t(198) = .647$, $p = .52$, 95 % CI [for B] = −.023 to .046, whereas assisted autonomy was negatively associated with rumination, $\beta = -.20$ [B = −.053], $t(198) = 2.71$, $p < .01$, 95 % CI = −.091 to −.014. Inspection of confidence intervals indicated some overlap between the lower bound confidence interval of asserted autonomy and the upper bound confidence interval for assisted autonomy. When plotted, this overlap appeared to be approximately 50 %. To precisely calculate whether the B values for rumination were significantly different, half (50 %) of the average overlap (.018 across both variables) was added to the lower bound CI of asserted autonomy (−.023 +.018 = −.005). Since this 50 % point of −.005 did not encroach the upper bound CI for assisted autonomy (−.014), we can conclude that the degree of overlap is less than 50 % and that the two path coefficients are significantly different from one another at $p < .05$. This suggests that, in fact, those with an assisted style of autonomy satisfaction are significantly less likely to ruminate than those with an asserted style.

Not surprisingly, those in the need-thwarting manager condition were more likely to ruminate than those in the need-supportive manager condition, $\beta = -.48$ [B = −.44], $t(198) = -7.10$, $p < .0001$, 95 % CI [for B] = −.56 to −.32, which underscores the aversive nature of the "bad manager" scenario. None of the 2-way interactions were significant (βs ranged from −.03 to .08). The 3-way interaction was also not significant, $\beta = .14$ [B = .01], $t(198) = 1.74$, $p = .09$, 95 % CI = −.01 to .02. Results indicate that, regardless of condition, assisted autonomy was inversely related to rumination and asserted autonomy was unrelated to rumination.

General discussion

Despite the assumption in SDT that autonomy is an active experience, traditional research and measurement has mostly targeted the "assisted" aspect of autonomy satisfaction, that is, by characterizing the fulfillment of autonomy as dependent on privileges and benefits of an autonomy-supportive environment. In this research, we expand upon a handful of recent studies that address the active role of the individual in self-generating autonomy-satisfying experiences (e.g., Radel et al. 2011, 2014; Reeve 2013; Sheldon and Gunz 2009). We do so by distinguishing between asserted and assisted trait-based approaches to satisfying the need for autonomy.

Several objectives were met in the present work. First, we developed and validated the asserted/assisted structure of autonomy satisfaction. Results demonstrate that both proposed forms of autonomy are concurrently associated with traditional measures of general autonomy and autonomy satisfaction. Nonetheless, their factor structure, weak to moderate interfactor correlation, and divergent pattern of unique associations with relevant variables suggests that they are indeed distinct constructs. Results also underscore that, although asserted autonomy is theorized to reflect the defense of and quest for autonomy, it is not mindlessly reactive.

Secondly, we showed that asserted and assisted autonomy predict wellbeing, that is, vitality (Study 1) and growth (Study 2), in very different ways—asserted autonomy through the process of curiosity and exploration (a highly active and individualistic pathway), and assisted autonomy through a relatively more interdependent route, that is, through supportive interpersonal relationships. So, whereas assertively autonomous individuals are likely to vigorously seek out growth experiences, personal development, and exploration on their own, those with an assisted autonomy orientation employ a relatively more symbiotic style. Note, however, that assisted autonomy orientation is not inert; it still represents autonomous functioning. But, it is comparatively less self-reliant, and does not explain unique variance in curiosity and exploration. In contrast, asserted autonomy is not uniquely related to positive relationships—suggesting that carving out one's own autonomy may incur an interpersonal cost.

Thirdly, we unveiled some of the developmental antecedents associated with the two different forms of autonomy satisfaction. Results of Study 2 demonstrate that perceptions of authoritative parenting are related to an assisted autonomy orientation; that is, those who perceived their parents to have been democratic and fair tended to show assisted (but not asserted) satisfaction of the need for autonomy. This finding echoes classic research on the link between autonomy-supportive parenting and satisfaction of the need for autonomy (e.g., Deci and Ryan 2013; Ryan et al. 2006), which has consistently shown that when parents offer choice, opportunity, and consider the feelings and desires of their child or adolescent, that child or adolescent feels self-determined. In contrast, asserted autonomy was uniquely related to authoritarian parenting. These results are the first to indicate that environments that stifle or neglect autonomy can sometimes lead to the development of highly proactive autonomy over time; because autonomy has not been facilitated by parents, but rather self-expression and personal interests have been muffled or ignored, individuals are faced with learning to cultivate this critical need on their own terms. We show that it is only by assessing autonomy satisfaction as an asserted rather than assisted process or style, that we can begin to better understand how autonomy develops in impoverished environments.

A caveat should be offered here, however; we do not necessarily expect that concurrently controlling environments should produce assertive autonomy, but rather that asserted autonomy may adapt from past experience with having to create autonomy satisfying conditions. Indeed, asserted autonomy is related to general autonomy and the absence of external pressure in the current study. It might be helpful for future work to clarify whether asserted autonomy relates to autonomy frustration or simply autonomy dissatisfaction. Thus, future research should consider the both the developmental and the situational antecedents of asserted autonomy. It is likely that both assisted and asserted autonomy depend not just on individual differences and experiences, but also on the autonomy-supportive and controlling features of the situation.

Fourthly, we demonstrated that assisted and asserted autonomy differentially predict the active integration of challenging life experiences (Study 3). We surmised that asserted autonomy is highly self-integrating because it requires conscious and concerted self-focus and places emphasis on self-expression. The finding that asserted autonomy uniquely predicts integration suggests that, rather than simply being reactive or hostile (e.g., Koestner and Losier 1996; Van Petegem et al. 2014), it underlies the height of self-reflection—the integration of painful personal experiences.

In more general terms, the distinction between asserted and assisted autonomy bears new insight into the process of self-integration. Integration is critical to wellbeing and refers to the way by which individuals align their desires, goals, values, and behavior so as to feel a consistent sense of selfhood (Ryan and Deci 2003). But, because the process of integration is often difficult, requiring effort to actively confront, accept, and reconcile challenging and sometimes even painful self-relevant information and identities (Weinstein et al. 2011), it is not surprising that people often avoid integration and instead respond defensively (e.g., by compartmentalizing unwanted attributes or thoughts, or by distorting and rationalizing behavior; Hodgins and Knee 2002). Assertively autonomous individuals may be more likely to integrate because they rely less on consistent autonomy-support to feel self-determined, cope adaptively in unsupportive environments, and employ more effort and audacity in the expression of identity and interests under inhospitable conditions. More research is needed to understand the unique role of asserted autonomy in identity integration. For instance, it has been suggested that individuals who experience intense sociocultural pressure and constraint on their sexual identity nonetheless find ways to develop self-integrity (e.g., Flowers and Buston 2001; Rosario et al. 2006).

Finally, we examined the connection between style of autonomy satisfaction and relational responses to need-thwarting. Results of Study 4 showed that both types of autonomy were associated with constructive rather than destructive conflict resolution strategies. More importantly, however, asserted autonomy predicted active negotiation in response to conflict when needs were thwarted, whereas assisted autonomy predicted passive accommodation. When needs were supported, however, asserted autonomy did not predict either type of conflict resolution (whereas assisted autonomy predicted both negotiation and accommodation). These results suggest that those with an assisted autonomy prefer passive conflict resolution strategies in general, but feel comfortable using active tactics when their needs are supported. Conversely, those with an asserted style do not use passive strategies, and are likely to respond with active negotiation tactics when their needs are threatened. Future research might expand upon the manner in which asserted and assisted subtypes respond to need thwarting situations. In particular, it may be that different types of need thwarts (e.g., coercion vs. social exclusion vs. criticism) elicit divergent effects, or that competence interacts with autonomy type in predicting autonomy-restorative responses (e.g., see Radel et al. 2013).

Extending the idea of highly active and agentic autonomy in SDT

The disentanglement of asserted and assisted approaches to autonomy satisfaction is important for various reasons. It underscores the idea that *both* the individual and the environment play roles in the satiation of autonomy, and that the balance of these roles is highly variable, nuanced, and complex. According to SDT, all individuals possess inherent tendencies to integrate their experiences and thrive (Deci and Ryan 2000, 2013). However, SDT also states that the actualization of this tendency depends upon social affordances and support, and posits that people are unlikely to feel self-determined if the environment is unsupportive. Although this notion is well-conceived and well-documented, there is rising evidence of its boundary conditions (e.g., people will automatically defend their need for autonomy when it is undermined by contextual forces; Radel et al. 2011, 2014). Our findings join this new direction by revealing that people can and will overcome neglect in order to be autonomous—not just in the moment, but perhaps over time. This idea highlights the complexity and elasticity of human autonomy. If autonomy is indeed an innate psychological need, then it is not a privilege granted only to those in autonomy-enhancing environments. Rather, it is an active growth tendency that will be sought after to variable degrees, depending on the specific features of the individual and the context. The current findings should be viewed as promising because they suggest that need-neglect may not invariably lead to the

decline of autonomous motivation—but rather can sometimes promote a more assertive and emphatic form of autonomy fulfillment and functioning.

At the same time, we must be careful not to suggest that the individual will necessarily overcome environmental control. Our proposition that individuals play an active role in their own autonomy enhancement is not in any way antithetical to the fact that supportive and controlling environments exert substantive psychological impacts. Rather, we urge researchers to consider that some individuals have the potential to be highly assertive in openly integrating experience, even when it is made effortful through external contingencies. By the same token, our results imply that individuals with highly need-congruent environments may develop relatively less grit in self-determination. The person-environment interdependency that underlies assisted autonomy highlights the relational and contextual importance of autonomy; as per classic SDT, this important need is oft achieved by having nutrient-rich environments and relationships. In turn, however, those with an assisted autonomy orientation may thrive best in enriched environments. In contrast, autonomy satisfaction that develops through a more individualistic route may actually come at a cost to interpersonal relationships—because personal interests are prioritized. The current work contributes to a new area of research on the advantages and drawbacks to two different forms of autonomy satisfaction.

Limitations

Despite its attempts at thoroughness, this research presents various limitations. First, four of the five studies were correlational in nature and so we cannot make inferences regarding the causal sequence of the theorized antecedents and consequences of assisted and asserted autonomy. Moreover, the parental antecedents measured in Study 2 were retrospective accounts and therefore may introduce some degree of distortion. In the experimental induction in Study 4, we relied heavily on a hypothetical scenario method rather than a direct situational manipulation, and so we must use caution in generalizing these findings to real contexts. Finally, four of the five studies presented were drawn from online crowdsourcing, and although we took measures to ensure participant attention and credibility of responses, this cannot be guaranteed.

Conclusion

This work helps to show that people feel happy, volitional, and self-aligned for different classes of reasons—either because their environments have fostered them with autonomy-support, or because they have worked for self-determination on their own terms. This more nuanced understanding of both the asserted and assisted components of autonomy is a step toward understanding the active role of autonomy in resilience, while also recognizing the selectiveness in the traditional measurement of autonomy. Here, we suggest that autonomy may develop through both enabling and neglectful contexts, and that these two styles of autonomy satisfaction show distinct trait-based and behavioral patterns.

Compliance with ethical standards

Conflict of interest None of the authors have any conflict of interest involving any aspect of this research.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individual participants included in the study.

Appendix: Need-thwarting versus need-supportive interpersonal scenario (Study 4)

Imagine your worst, most controlling boss

Imagine that you are working for a mid-size company, as a data entry clerk. You are required to be in the office from 8:00a.m. until 4:30p.m. every day, recording and processing sales data. Your boss is rude to his employees; he constantly tells everyone what to do (and how to do it), and criticizes their abilities. But, you feel that he is especially controlling with you. He requires you to complete all the jobs that no one else wants to do, without giving you any say in the matter. He barks orders and demands at you multiple times a day. When you are unable to complete tasks due to time constraints or interruptions, he does not accept your excuses and instead says that you are inadequate. To make matters worse, he often excludes you from team meetings and organized events, and plays favorites with some of your other colleagues. Finally, he frequently belittles you in front of others—pointing out your mistakes and character flaws.

Try to visualize this boss, and his behaviors. *Take a few minutes to create this scenario in your mind.*

Imagine your best, most supportive boss

Imagine that you are working for a mid-size company, as a data entry clerk. You work approximately 8 h per day—mostly recording and processing sales data. Your boss

understands that the work is not always exciting, and so he tries to support you by giving you flexible hours, and letting you choose the projects and tasks you want to work on. Your boss also helps you through the less interesting aspects of your job by explaining why the work is meaningful and helpful, and gives you training and opportunity to develop your analytic skills and other professional abilities. He also tries to make work fun by tailoring tasks to your personal preferences and goals. He provides you with constructive feedback, and believes in your potential to be promoted. Your boss generally likes you as a person and wants to see you succeed.

Try to visualize this boss, and his behaviors. *Take a few minutes to create this scenario in your mind.*

References

Adie, J. W., Duda, J. L., & Ntoumanis, N. (2012). Perceived coach-autonomy support, basic need satisfaction and the well- and ill-being of elite youth soccer players: A longitudinal investigation. *Psychology of Sport and Exercise, 13*, 51–59.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology, 4*(1p2), 1.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20.

Bostic, T. J., Rubio, D. M., & Hood, M. (2000). A validation of the subjective vitality scale using structural equation modeling. *Social Indicators Research, 52*, 313–324.

Brehm, J. W. (1966). *A theory of psychological reactance*. New York: Academic Press.

Buri, J. R. (1991). Parental authority questionnaire. *Journal of Personality Assessment, 57*(1), 110–119.

Chatzisarantis, N. L., Hagger, M. S., Kamarova, S., & Kawabata, M. (2012). When effects of universal psychological needs on health behaviour extend to a large proportion of individuals. *British Journal of Health Psychology, 4*, 785–797.

Chen, B., Vansteenkiste, M., Beyers, W., Boone, L., Deci, E. L., Van der Kaap-Deeder, J., et al. (2015). Basic psychological need satisfaction, need frustration, and need strength across four cultures. *Motivation and Emotion, 39*(2), 216–236.

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9*, 233–255.

Cumming, G. (2009). Inference by eye: Reading the overlap of independent confidence intervals. *Statistics in Medicine, 28*(2), 205–220.

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality, 19*(2), 109–134.

Deci, E. L., & Ryan, R. M. (2000). The 'what' and 'why' of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

Deci, E. L., & Ryan, R. M. (2013). The importance of autonomy for development and well-being. In B. W. Sokol, F. M. E. Grouzet, & U. Muller (Eds.), *Self-regulation and autonomy: Social and developmental dimensions of human conduct* (pp. 19–46). New York: Cambridge University Press.

Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin, 27*, 930–942.

Finkel, E. J., & Campbell, W. K. (2001). Self-control and accommodation in close relationships: An interdependence analysis. *Journal of Personality and Social Psychology, 81*(2), 263.

Flowers, P., & Buston, K. (2001). "I was terrified of being different": Exploring gay men's accounts of growing-up in a heterosexist society. *Journal of Adolescence, 24*(1), 51–65.

Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion, 27*, 199–223.

Hodgins, H. S., & Knee, C. R. (2002). The integrating self and conscious experience. In E. L. Deci, & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 87–100). Rochester, NY: University of Rochester Press.

Kashdan, T. B., Gallagher, M. W., Silvia, P. J., Winterstein, B. P., Breen, W. E., Terhar, D., et al. (2009). The Curiosity and Exploaration Inventory-II: Development, factor, structure, and psychometrics. *Journal of Research in Personality, 43*, 987–998.

Koestner, R., & Losier, G. F. (1996). Distinguishing reactive versus reflective autonomy. *Journal of Personality, 64*(2), 465–494.

Legate, N., Ryan, R. M., & Weinstein, N. (2012). Is coming out always a "good thing"? Exploring the relations of autonomy support, outness, and wellness for lesbian, gay, and bisexual individuals. *Social Psychological and Personality Science, 3*, 145–152.

Legault, L., Weinstein, N., Mitchell, J., Inzlicht, M., Pyke, K., & Upal, A. (2016). Owning up to negative ingroup traits: How personal autonomy promotes the integration of group identity. *Journal of Personality*. doi:10.1111/jopy.12277.

Lu, L., & Gilmour, R. (2007). Developing a new measure of independent and interdependent views of the self. *Journal of Research in Personality, 41*(1), 249–257.

Lynn, M., & Harris, J. (1997a). The desire for unique consumer products: A new individual differences scale. *Psychology and Marketing, 14*, 601–616.

Lynn, M., & Harris, J. (1997b). Individual differences in the pursuit of self-uniqueness through consumption. *Journal of Applied Social Psychology, 27*, 1861–1883.

Maslow, A. H. (1954). *Motivation and personality*. New York: Harper and Row.

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*(04), 425–444.

Radel, R., Pelletier, L., Baxter, D., Fournier, M., & Sarrazin, P. (2014). The paradoxical effect of controlling context on intrinsic motivation in another activity. *Learning and Instruction, 29*, 95–102.

Radel, R., Pelletier, L., & Sarrazin, P. (2013). Restoration processes after need thwarting: When autonomy depends on competence. *Motivation and Emotion, 37*(2), 234–244.

Radel, R., Pelletier, L. G., Sarrazin, P., & Milyavskaya, M. (2011). Restoration process of the need for autonomy: The early alarm stage. *Journal of Personality and Social Psychology, 101*, 919–934.

Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology, 105*(3), 579.

Robitschek, C. (1999). Further validation of the Personal Growth Initiative Scale. *Measurement and Evaluation in Counseling and Development, 31*(4), 197–210.

Robitschek, C., & Keyes, C. L. (2009). Keyes's model of mental health with personal growth initiative as a parsimonious predictor. *Journal of Counseling Psychology, 56*(2), 321.

Rogers, C. R. (1963). The actualizing tendency in relation to "motives" and to consciousness. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (pp. 1–24). Lincoln, NE: University of Nebraska Press.

Rosario, M., Schrimshaw, E. W., Hunter, J., & Braun, L. (2006). Sexual identity development among lesbian, gay, and bisexual youths: Consistency and change over time. *Journal of Sex Research, 43*(1), 46–58.

Rose, E. A., Markland, D., & Parfitt, G. (2001). The development and initial validation of the Exercise Causality Orientations Scale. *Journal of Sports Sciences, 19*(6), 445–462.

Rusbult, C. E., Yovetich, N. A., & Verette, J. (1996). An interdependence analysis of accommodation processes. In G. J. O. Fletcher & J. Fitness (Eds.), *Knowledge structures in close relationships: A social psychological approach* (pp. 63–90). Mahwah, NJ: Erlbaum.

Rusbult, C. E., & Zembrodt, I. M. (1983). Responses to dissatisfaction in romantic involvements: A multidimensional scaling analysis. *Journal of Experimental Social Psychology, 19*(3), 274–293.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*, 397–427.

Ryan, R. M., & Deci, E. L. (2003). On assimilating identities to the self: A self-determination theory perspective on internalization and integrity within cultures. In M. R. Leary, & J. P. Tangney (Eds.), *Handbook on self & identity* (pp. 253–274). New York: The Guilford Press.

Ryan, R. M., Deci, E. L., Grolnick, W. S., & La Guardia, J. G. (2006). The significance of autonomy and autonomy support in psychological development and psychopathology. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Theory and method* (Vol. 1, pp. 795–849). New Jersey: Wiley.

Ryan, R. M., & Frederick, C. (1997). On energy, personality, and health: Subjective vitality as a dynamic reflection of well-being. *Journal of Personality, 65*(3), 529–565.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need-satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*, 482–497.

Sheldon, K. M., & Gunz, A. (2009). Psychological needs as basic motives, not just experiential requirements. *Journal of Personality, 77*(5), 1467–1492.

Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology, 91*, 331–341.

Silvia, P. J. (2006). *Exploring the psychology of interest*. New York: Oxford University Press.

Snyder, C. R., & Fromkin, H. L. (1980). *Uniqueness: The human pursuit of difference*. New York: Plenum.

Soenens, B., & Beyers, W. (2012). The cross-cultural significance of control and autonomy in parent–adolescent relationships. *Journal of Adolescence, 35*, 243–248.

Straus, M. A., Hamby, S. L., Boney-McCoy, S., & Sugarman, D. B. (1996). The Revised Conflict Tactics Scale (CTS2): Development and preliminary psychometric data. *Journal of Family Issues, 17*, 283–316.

Tremblay, M. A., Blanchard, C. M., Taylor, S., Pelletier, L. G., & Villeneuve, M. (2009). Work Extrinsic and Intrinsic Motivation Scale: Its value for organizational psychology research. *Canadian Journal of Behavioural Science, 41*(4), 213.

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*(3), 247–259.

Van Petegem, S., Vansteenkiste, M., Soenens, B., Beyers, W., & Aelterman, N. (2014). Examining the longitudinal association between oppositional defiance and autonomy in adolescence. *Developmental Psychology, 51*, 67–74.

Vansteenkiste, M., & Ryan, R. M. (2013). On psychological growth and vulnerability: Basic psychological need satisfaction and need frustration as a unifying principle. *Journal of Psychotherapy Integration, 23*, 263–280.

Weinstein, N., Deci, E. L., & Ryan, R. M. (2011). Motivational determinants of integrating positive and negative past identities. *Journal of Personality and Social Psychology, 100*, 527–544.

Weinstein, N., Przybylski, A. K., & Ryan, R. M. (2012a). The index of autonomous functioning: Development of a scale of human autonomy. *Journal of Research in Personality, 46*(4), 397–413.

Weinstein, N., Ryan, W. S., DeHaan, C. R., Przybylski, A. K., Legate, N., & Ryan, R. M. (2012b). Parental autonomy support and discrepancies between implicit and explicit sexual identities: Dynamics of self-acceptance and defense. *Journal of Personality and Social Psychology, 102*, 815–832.