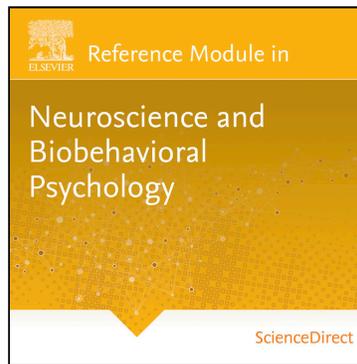


Provided for non-commercial research and educational use.
Not for reproduction, distribution or commercial use.

This article was originally published in the online Reference Module in Neuroscience and Biobehavioral Psychology, published by Elsevier, and the attached copy is provided by Elsevier for the author's benefit and for the benefit of the author's institution, for non-commercial research and educational use including without limitation use in instruction at your institution, sending it to specific colleagues who you know, and providing a copy to your institution's administrator.



All other uses, reproduction and distribution, including without limitation commercial reprints, selling or licensing copies or access, or posting on open internet sites, your personal or institution's website or repository, are prohibited. For exceptions, permission may be sought for such use through Elsevier's permissions site at:

<https://www.elsevier.com/about/our-business/policies/copyright/permissions>

From Zimmer-Gembeck M.J., van Petegem S., Andrew Collins W. Autonomy, Development of. In Reference Module in Neuroscience and Biobehavioral Psychology, Elsevier, 2018. ISBN

9780128093245

ISBN: 9780128093245

© 2018 Elsevier Inc. All rights reserved.

Elsevier

Autonomy, Development of[☆]

Melanie J Zimmer-Gembeck^a, Stijn van Petegem^b, and W Andrew Collins^c, ^aGriffith University, Gold Coast, QLD, Australia; ^bUniversité de Lausanne, Lausanne, Switzerland; and ^cUniversity of Minnesota, Minneapolis, MN, United States

© 2018 Elsevier Inc. All rights reserved.

Introduction	1
Theoretical Views of Autonomy and Autonomy Development	2
Autonomy as Independence	2
Autonomy as Volition	2
Comparing and Contrasting Autonomy as Independence and Autonomy as Volition	3
Relationships and the Need for Autonomy	4
Parents and Offspring's Need for Autonomy	5
Peer Relationships and the Need for Autonomy	6
Leisure and Organizational Influences	6
Conclusions	7
References	7

Introduction

When asked, parents often say that their greatest wishes for their children are that they grow into happy, healthy adolescents and adults who establish connection to their communities. Ideal societies provide the opportunities for such progress among all children. Parents expect that their children's progress will reflect personal choices and interests, make contributions to society, and include connections to family and others, and they hope the society will support such outcomes. These parental aspirations are in some ways linked to children's autonomy development, given that autonomy pertains to adolescents' independence as well as the expression of their personal values and interests. Autonomy is then realized within a context of the needs and desires of others at many levels of society – from family to neighborhood to community to culture. This makes the study of autonomy development during adolescence (and throughout the lifespan) a field that includes many lines of research and much progress, but it is also one that is rife with diverse definitions, theories, frameworks, and controversies.

The expression and development of autonomy is typically seen as an extremely challenging task for adolescents, sometimes referred to as a critical developmental task (Noom et al., 2001; Zimmer-Gembeck and Collins, 2003). Although autonomy is a developmental and individual process influenced by changes in competencies, skills, and social conditions at any age (Baltes and Silverberg, 1994), adolescence is often described as a time when the task of autonomy development comes to the forefront, due to multiple normative developmental changes experienced by adolescents. The onset of puberty, cognitive development and brain maturation processes influence how adolescents see and think about themselves, and how they interact with others (Steinberg, 2005). Moreover, societies and families around the world recognize this and increasingly afford adolescents more rights and responsibilities as well (Eccles et al., 1993). These individual and societal changes explain why autonomy and its development become central themes during the adolescent years, as they offer adolescents an opportunity to find a synthesis between these changing societal opportunities and demands and their personal interests, values, and goals. Successful negotiation of this developmental milestone may considerably affect the quality of adolescents' selected pathways, their personal adjustment during later developmental stages, and the quality of their interpersonal relationships within and outside the family. Failures in these tasks are at the very least correlates, but may also be causes, of many internalizing and externalizing problems and relational difficulties (e.g., Allen et al., 2007; Ryan et al., 2016; Soenens et al., 2007; Zimmer-Gembeck et al., 2018).

For decades, researchers have studied the nature of autonomy and its development, the successes and failures of social contexts to promote autonomy, and the advantages and disadvantages of autonomous functioning. Overall, interest in the topic of adolescent autonomy does not seem to be waning. Although such topics and research efforts are very diverse, they seem to converge on a smaller number of overarching themes, which we address in this contribution. We begin by introducing two prominent approaches to the study of adolescent autonomy. We discuss how autonomy has been conceptualized and operationalized within each approach, and identify and briefly summarize some research findings founded in each approach. We next compare these two conceptualizations of autonomy and examine whether an integrative framework may facilitate the study of adolescent autonomy. Finally, we review research on the interpersonal foundations of autonomy, including relationships with parents and peers, and the influence of involvement in organizations and leisure activities.

Theoretical Views of Autonomy and Autonomy Development

Definitions of autonomy have ranged from actions that are initiated and regulated by the core self to disengagement from parental ties and control. The various definitions also imply how autonomy should be operationalized, how autonomous functioning is important at all ages but still evolves with age, whether and how the social context affects autonomy development, whether autonomy is (always) beneficial for one's personal and interpersonal adjustment, and whether experiences of autonomy are universally important or culture-specific. In this section, we briefly describe two approaches to the study of autonomy that have been influential when studying adolescents or emerging adults. The first perspective is the most classic, but still relevant, approach to the study of autonomy development in developmental psychology. In this classic approach, autonomy is conceptualized as independence from the parents. The second perspective, which is rooted in motivational theories, proposes a conceptualization of autonomy as volitional or self-endorsed functioning. Although a newer approach, this second approach is now one of the most prominent perspectives in studies of adolescents' expression and development of autonomy.

Autonomy as Independence

In classic adolescent psychological theory, autonomy often is defined as independence or self-reliance, that is, the extent to which one acts, decides, feels or thinks without depending on others (e.g., [Blos, 1979](#); [Steinberg, 2005](#)). The opposite of such a definition of autonomy involves dependence, that is, the reliance on others and on parents, in particular. Typically, this perspective is said to be largely rooted in psychoanalytic and neo-analytic theories of adolescent development, which portray adolescence as a second phase of separation-individuation ([Blos, 1979](#)). During this individuation process, adolescents are expected to relinquish their childish representations of their parents, which should result in a decreased psychological dependency on the parents for approval and standards of conduct. This normative process of individuation is believed to manifest itself through increased independent functioning at the behavioral, emotional, and cognitive level ([Collins and Steinberg, 2006](#)). At the behavioral level, independence refers to the degree to which adolescents are able to solve problems and manage their personal affairs without relying on others (i.e., functional independence), as well as to independence in family decision-making ([Dornbusch et al., 1990](#)). Thereby, youth-alone decision-making would reflect complete independence, whereas parent-alone decision-making would reflect complete dependency. Emotional independence would involve adolescents' freedom from excessive needs for approval and emotional support from the parents ([Beyers and Goossens, 1999](#)), whereas cognitive independence would include a belief that one has control over one's own life and an increasing capacity for independent thought ([Beckert, 2007](#)).

For most of these indicators of independent functioning, age-related increases across time have been documented in research (e.g., [Qin et al., 2009](#)). Such findings underscore the development of autonomy, defined as independent functioning, as a normative developmental task for adolescents. However, it is not clear from research whether an increase in adolescent independence from parents is a positive for psychosocial functioning. Higher levels of independent functioning sometimes have been linked to better psychosocial adjustment ([Qin et al., 2009](#)), yet most often, more independence has been found to relate to more maladjustment, including lowered subjective well-being and more behavioral problems in particular (e.g., [Dishion et al., 2004](#); [Haase et al., 2008](#); [Kuhn and Laird, 2011](#); [Parra et al., 2015](#); [Smetana et al., 2004](#)).

Given these findings, two issues with this approach have emerged. First, children's age must be taken into account. That is, too much autonomy too early would be especially predictive of behavioral problems. In line with this, research has shown that premature behavioral independence, defined as a relaxed curfew and other freedoms from parental monitoring at age 14, has been linked with more deviant peer involvement, drug use, and antisocial behavior at age 18 ([Dishion et al., 2004](#)). Second, adolescents' development towards more independence is problematic when it means significantly reducing ties with parents. Ideally, independence is best when it increases gradually within a positive and supportive parenting context, characterized by involvement, warmth and support ([Cooper and Grotevant, 2011](#); [Zimmer-Gembeck et al., 2011a](#)). When such a family context is actually or perceived to be lacking, adolescents' elevated levels of self-reliance can be reflective of problematic detachment from parents, which would involve an excessive striving for independence, active disengagement from parents, mistrust, and alienation ([Beyers et al., 2003](#)).

Autonomy as Volition

The second perspective on autonomy focuses especially on aspects of self-development and motivational processes. These approaches traditionally have been developed in the social psychological and experimental literature, but are increasingly applied in the developmental psychological literature. Most prominent here is Self-Determination Theory (SDT; [Deci and Ryan, 2000](#); [Ryan and Deci, 2000, 2017](#)). In SDT, autonomy is defined as self-endorsed functioning or the extent to which one acts upon personally endorsed values, goals and interests. Thus, this conceptualization especially pertains to the motivational basis of a certain behavior (i.e., the underlying reason why one acts in a certain way). Autonomous action then is marked by the experience of the self as the origin of action (i.e., an internal locus of causality; [Ryan et al., 2006](#)). The opposite of self-endorsed functioning is controlled or coerced functioning, in which one acts in a certain way because one feels compelled, forced or coerced to do so. This does not only imply control or coercion by external sources; one may either feel forced by certain external obligations, such as to avoid threatening punishments or parental criticism, but one may put oneself under pressure as well, such as to avoid feelings of guilt or shame or because one's ego is involved. In both cases, behavior is not congruent with the inner self, and is therefore expected to be lacking in autonomy.

This perspective on autonomy argues that self-endorsed actions would yield adaptive outcomes, as they would satisfy the basic need for autonomy (Ryan and Deci, 2017). The need for autonomy then refers to the need to experience a sense of volition, personal choice, and psychological (i.e., inner) freedom. In addition to the need for relatedness and for competence, SDT theorists claim that the need for autonomy (i.e., volition) is a basic psychological need, the satisfaction of which would be fundamentally important for every human being. In line with this, numerous studies have shown that self-endorsed regulation and experiences of volition relate to adaptive functioning in a variety of domains, across the lifespan, and even across cultures. Controlled functioning or coercion, by contrast, consistently yields problematic outcomes and even psychopathology (for an overview, see Ryan et al., 2016).

Comparing and Contrasting Autonomy as Independence and Autonomy as Volition

The above theories identify autonomy as a positive and necessary part of growth and well-being. However, these conceptualizations of autonomy can be differentiated in a number of ways. For instance, they differ in the degree to which autonomy development is seen as a developmental task, or rather as a lifelong task. That is, acquiring independence especially is a developmental task, which comes to the forefront during certain developmental periods, such as during adolescence and emerging adulthood. In line with this, several studies showed that adolescents increasingly make independent decisions and choices as they grow older, as they seek to expand the boundaries of what they believe should fall under their personal (vs. their parents' or others') legitimate jurisdiction (e.g., Smetana et al., 2006). By contrast, according to SDT, the need for autonomy is argued to be universal and acting volitionally is important at any age. However, self-awareness does increase with age, particularly in the first two decades of life (Harter, 2012). Thus, in line with this, studies have shown that adolescents and adults tend to increasingly experience volition in their actions, which could be due to a greater awareness and understanding of one's personal values and interests (Sheldon and Kasser, 2001).

Further, the approach to autonomy as independence versus volition also can be differentiated in their claims about universality versus culture-specificity. Cross-cultural psychologists stress that autonomy would be valued differently in different cultural contexts (Markus and Kitayama, 2003). In that sense, the study of autonomy has been criticized for its possible cultural specificity. Autonomy and personal freedom are strong cultural values in most Western industrialized societies. Other cultures, and even cultural groups living within a single country, have their own unique normative values and practices that form a society and shape an individual, their family, and the community at large. Some struggle with unsafe neighborhoods or other factors that can restrict opportunities for independent action. For example, Mexican, Chinese, Filipino, and European adolescents residing in the United States report different acceptability of disagreements with parents, endorsement of parental authority, and expectations for independent decision-making (Fulgini, 1998). Later studies documented similar differences between different cultural groups. Overall, the broad picture is that cultures described as more individualistic and independence-oriented have adolescents who expect more independence earlier and have parents who grant this earlier. In contrast, interdependent or collectivist cultures – most often studied are Asian cultures – place somewhat more value on relational harmony, collective well-being, and conformity, and emphasize less independent functioning (Greenfield et al., 2003). These differences between cultural groups (within or between countries) are often simply described as a difference in independent (individualistic) versus interdependent (collectivistic) cultural expectations and norms, although relatively little research has directly tested these assumptions.

When defining autonomy as volitional functioning, however, autonomy has been described as a need that is universally important, but which may be met and expressed differently in different cultures (Chirkov et al., 2011). Indeed, according to SDT, autonomy (when defined as volition) is not patented for the West (Vansteenkiste et al., 2005). This is because such a definition of autonomy is not antithetical to the values of conformity, loyalty, and relational harmony. Indeed, a study conducted in South-Korea, Russia, Turkey, and the United States showed that the enactment of collectivistic cultural practices may be accompanied by a sense of volition and psychological freedom, as is the case when these practices are endorsed and congruent with one's personal values (Chirkov et al., 2003). In general, research increasingly confirms that experiences of volition and self-endorsement have positive implications for adolescents' psychosocial adjustment in many parts of the globe (Yu et al., 2017).

For a long time, these two types of autonomy have been studied in fairly distinct bodies of research, mainly pointing to their differences on a conceptual level. However, recent research increasingly shows that these two conceptualizations of autonomy can be distinguished empirically as well, and also have different implications for adolescents' psychosocial adjustment. For instance, in one encompassing investigation among middle and late adolescents, a two-dimensional structure was found to underlie a large set of autonomy-related measures (Van Petegem et al., 2013b). The first dimension referred to the degree to which adolescents experience interpersonal distance vs. proximity in the relation with their parents. The second dimension matched closely with the notion of autonomy as formulated in SDT, that is, it reflected the degree to which adolescents experienced a sense of volition and personal choice (as opposed to pressure and coercion) in the relation with their parents. Most importantly, whereas a higher degree of interpersonal distance mainly related to more problem behavior, higher levels of volition related to more adaptive functioning (i.e., higher subjective well-being, less problem behavior) – results that were not moderated by adolescents' age.

Because these two conceptualizations of autonomy are distinct, it is also possible to consider how they might work together in understanding adolescent functioning and behavior (Ryan and Deci, 2006). That is, adolescents may act independently because they value doing so, for instance when trying to solve a problem by him/herself because he/she thinks of it as a challenge (i.e., volitional independence). Yet, one may also feel coerced to do so, for instance when parents are absent and unavailable (i.e., pressured independence). Similarly, adolescents also may decide to rely upon their parents by, for instance, seeking advice when choosing a major at school, because they value the parents' opinion (i.e., volitional dependence). Yet, he/she may do so because the parents otherwise would criticize the child for not taking their opinion into account (i.e., pressured dependence). In

line with this, research on home-leaving found that it is especially important to consider emerging adults' underlying motivation for their living situation, regardless of whether they live at home (reflecting behavioral dependence) or alone (reflecting behavioral independence). Emerging adults reported lower well-being and less life satisfaction only when their choice of living situation was not based on their own volition (Kins et al., 2009). Similar results have been found in different domains (e.g., independent vs. dependent decision-making among adolescents; Van Petegem et al., 2012) and in non-Western cultures (e.g., China; Chen et al., 2013).

Relationships and the Need for Autonomy

A key research goal has been isolating the social foundations of adolescent autonomy. Such questions satisfy intellectual curiosity but their answers also have direct relevance for real-life decisions, including the implementation of best parenting and teaching practices and the design of adolescent mental health services and youth development programs.

When discussing the role of the social context in adolescents' autonomy development, it is important to recognize the complex interdependency as well as the bidirectional influence between the individual and the interpersonal context (Kuczynski, 2003). Indeed, the socialization process is a dynamic and interactional process, where social environments (e.g., parents, peers, teachers) affect an adolescent's individual development. Yet, at the same time, the developing person also has an impact on his/her environment and actively shapes his/her own development - for instance, by reacting to situations in different ways, by eliciting certain contextual reactions, as well as through their selection of specific contexts.

A simplified version of such an interactional process is illustrated in Fig. 1. This shows not only how the development of autonomy may have at its source the internalization of social beliefs, values and norms but also how autonomy results in the agentic selection of contexts. Internalization refers to the adoption of values from one's social context (e.g., culture, parents, and increasingly peers) as one's personally endorsed values (Ryan and Connell, 1989). As shown in Fig. 1, internalization and selection

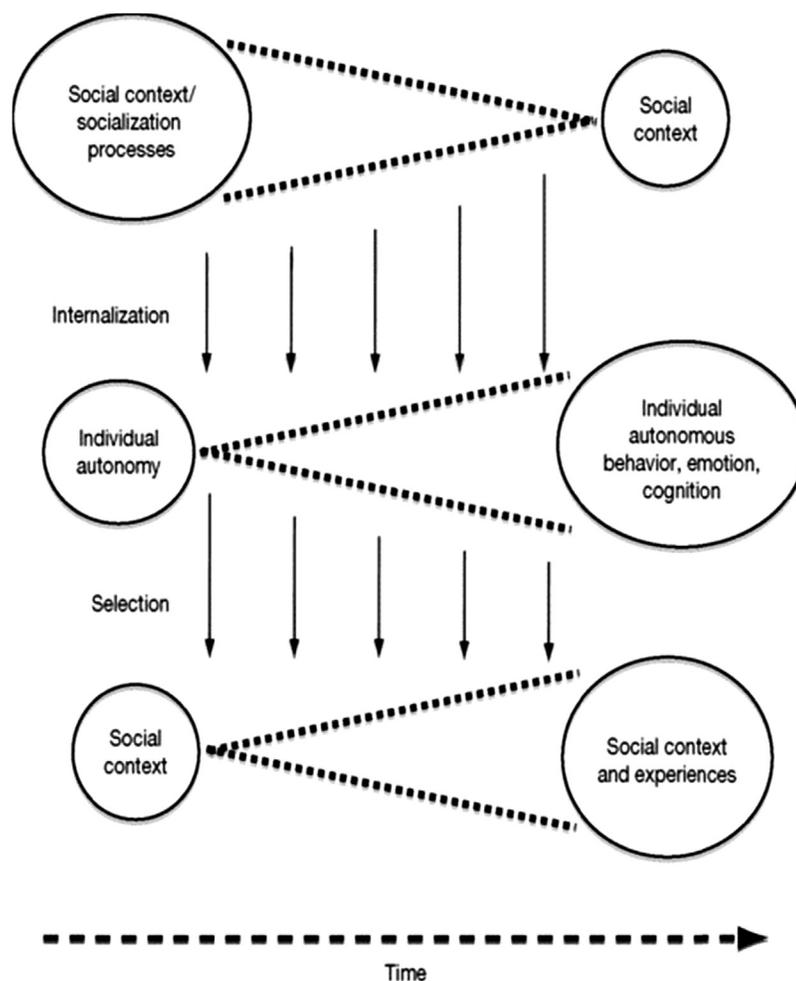


Figure 1 An illustration of how social environments influence autonomy via the internalization of social beliefs, opportunities, values, and norms, and how autonomy entails a progressive and agentic selection of contexts.

processes should wane and wax, respectively, over time with a larger influence of socialization (shown as a larger circle) at younger ages and selection opportunities becoming more available with increasing age - although few empirical studies have explicitly tested this.

Fig. 1 illustrates how autonomy and autonomous actions can be conceptualized as distinct from but inextricably linked to the influence of and interactions with others. Autonomy development involves socialization by others, usually beginning with parents and eventually including peers and intimate partners. Such socialization may promote the internalization of others' values that in turn may enhance an individual's feelings of volition and personal choice. Yet, it is individuals' abilities to make selections, as well as their perceptions of choice and willingness that make them active in their own development and social worlds. Thus, the social context is inextricably and dynamically intertwined with an individual's autonomy development.

Parents and Offspring's Need for Autonomy

When autonomy is defined as personal volition, the parent-child relationship can support or thwart adolescents' need for autonomy. In fact, parenting practices are particularly relevant to adolescents' expression and development of autonomous cognitions, emotions and behavior. Yet, it is important to underscore that parents' ways of behaving, which either do or do not meet their offspring's needs for autonomy, may begin well before the adolescent years. Even parents' support of autonomy in their preschool age children is associated with healthy psychosocial development, including better social adjustment, later achievement, and greater regulation of attention, cognition, affect, and action (e.g., Joussemet et al., 2005; Zimmer-Gembeck et al., 2015). Similarly, attachment theorists often describe the importance of children's and adolescents' attachment to parents as a core foundation that facilitates or impedes the development of adolescent autonomy (Allen and Land, 1999). Indeed, a secure parent-child attachment would have a double-barreled function, serving as a safe haven on which to depend in times of distress, but also as a secure base to explore the environment in a self-confident and autonomous manner (Bowlby, 1988; Mikulincer and Shaver, 2007; Zimmer-Gembeck et al., 2017). In other words, a secure base would foster children's and adolescents' self-development, personal growth, and personally endorsed behavior. In line with this, recent longitudinal research has found that adolescent attachment security was associated with more autonomous functioning, in terms of both increased independent decision-making and more self-endorsed reasons for depending on parents and for acting independently (Van Petegem et al., 2013a).

Autonomy-supportive parenting. Specific parenting practices can encourage or impede adolescents' autonomous functioning. In research on this topic, two types of autonomy-supportive parenting have been distinguished: parents' promotion of independence and parents' promotion of volitional functioning (Soenens et al., 2007). The promotion of independence involves parents' encouragement of adolescents' independent expression, thinking and decision-making without reliance on others, whereas the promotion of volitional functioning involves parents' awareness and sensitivity to their children's and adolescents' perspectives and choices, and their encouragement to act upon personal values and interests. This may involve, for instance, parents' provision of meaningful choice whenever possible, their consideration of the child's frame of reference, and their provision of a rationale when choice is limited (Grolnick, 2003; Rowe et al., 2015; Skinner et al., 2005). Although the relation between both types of autonomy support is modestly positive, they do differ in their associations with other variables. Specifically, the promotion of independence is weakly associated with controlling and coercive parenting, whereas the promotion of volitional functioning is negatively associated with controlling parenting (Soenens et al., 2009b). Such a pattern of associations illustrates how parents' promotion of independence may or may not be accompanied by coercive parental behaviors. By contrast, parents' promotion for volitional functioning is much more incompatible with parental coercion and psychological control. Moreover, in the prediction of psychosocial adjustment, the promotion of volitional functioning is more strongly associated with adolescents' adaptive functioning, such as less depressive symptoms and higher self-esteem (Soenens et al., 2007).

Parental regulation and rule-setting. Another body of literature focuses on whether parental practices that involve regulation of behavior are at odds with adolescent autonomy development. Parental rule-setting and other forms of guidance are considered an important aspect of the socialization process, and low or inconsistent parental regulation may create a permissive family climate, putting children at risk for developing behavioral problems (Barber and Xia, 2013). However, rules and regulations may limit adolescents' freedom and may threaten their feelings of volition as well as their growing desires for independence, and therefore may be counterproductive. Indeed, according to psychological reactance theory (Brehm, 1966), freedom restrictions can sometimes increase the likelihood of engaging in the forbidden behavior, making them more desirable. As recent research increasingly suggests, however, the effectiveness of parents' rule-setting depends upon the content of the parents' rules (e.g., what do parents set rules about?) as well as on the parents' communication style (e.g., how are rules conveyed?). According to social-cognitive domain theory (Smetana, 2018), children reason differently about obedience, resistance, and legitimacy of parental authority about issues from different social domains. The moral domain, for instance, pertains to prescriptive rules and norms about justice, rights, and others' welfare, and parents and adolescents generally agree that parents have the legitimate authority to regulate this domain (Nucci, 2001). The personal domain, by contrast, pertains to personal expression and private aspects of one's life, such as choice of clothes or hairstyle, or peer relationships. Adolescents believe that these personal issues should be regulated by adolescents themselves, rather than regulated by their parents. Hence, parental interventions in this domain are typically experienced as intrusive and autonomy-threatening, and therefore are more likely to be rejected (Smetana and Daddis, 2002).

It is also important to take into account how parents communicate and follow up upon rules and regulations. When parents use an autonomy-supportive style (e.g., by showing empathy, and providing a rationale for rules and guidance), rules are more likely to be internalized by their offspring, and this may assist adolescents to feel more volitional even when following parents' rules or

guidelines (Vansteenkiste et al., 2014). However, when parents use a controlling or coercive communication style (e.g., focusing on punishments if rules are not followed), children are more likely to feel frustrated in their need for autonomy, which may give rise to experiences of reactance and the rejection of the parents' rules and expectations (Van Petegem et al., 2015). To sum up, parental rule-setting, as such, should not be avoided. Yet, when adolescents perceive that parents are setting rules in areas where they do not have legitimate authority and when these rules are conveyed in a controlling way, they are more likely to be counterproductive, yielding increased resistance from adolescents.

Parenting and culture. Is there cultural variation in the effectiveness of parental autonomy-supportive practices? The provision of choice is one form of parental autonomy support that is highly debated. Cross-cultural researchers have argued that offering choice is only beneficial in cultural groups where independence and self-expression is highly valued (Kim and Markus, 1999). Research has shown that this notion is not so straightforward, as a difference between cultures that value independence versus interdependence (or collectivism), however. In one study conducted with Asian and European American (US) children, there were benefits from making personal choices for both groups compared to the experimenter making choices for them (Iyengar and Lepper, 1999). However, Asian American children benefited strongly as well when choices were made by trusted others (e.g., mother), whereas this was not the case for European American children. In other research, however, regardless of cultural background, higher levels of perceived autonomy-supportive parenting related to more adaptive functioning among adolescents (e.g., Chirkov and Ryan, 2001).

Such findings might be reconciled by considering the difference between the parents' actual behavior (i.e., the parenting practices, such as choice provision), and how these practices are perceived and experienced (i.e., as supportive of one's personal values, or rather as controlling; Soenens et al., 2015). In other words, the same parenting practice may be experienced differently in different cultures. Yet, when certain practices translate into subjective feelings of volition and encourage adolescents' to act upon their personal values, they are likely to have positive psychosocial effects, regardless of culture. In line with this, in a study conducted in Ghana, children were found to interpret parenting practices that would be called autonomy-supportive in some Western countries (e.g., choice provision) as neglectful, rather than as autonomy-supportive. However, other parenting practices (e.g., acknowledging the child's perspective) were experienced as promoting the child's volitional functioning and, hence, related to more adaptive functioning (Marbell and Grolnick, 2013). In sum, it is probably the case that autonomy support is beneficial regardless of culture, but behaviors that are deemed to be autonomy-supportive may differ by culture, just as the behaviors deemed to be autonomy-supportive may differ depending on developmental level (i.e., whether the support is being provided to children, adolescents or adults).

Peer Relationships and the Need for Autonomy

In addition to parents, peer relationships can be contexts for the exploration and enactment of autonomous behaviors, and peers can influence adolescent functioning by behaving in ways that are either autonomy-supportive or coercive (Barber and Olsen, 1997; Daddis, 2008; Eccles et al., 1997; Larson, 2000; Larson et al., 2006; Smetana and Gettman, 2006; Zimmer-Gembeck et al., 2011b). However, only a few researchers have focused on adolescents' autonomous functioning as such, when studying peer relationships (Eccles et al., 1997; Zimmer-Gembeck, 2013). Instead, most developmentalists have focused on peers' influences that may increase problem behaviors, in the form of adolescents' susceptibility to peer pressure (Erickson et al., 2000; Monahan et al., 2009; Simons-Morton et al., 2005; Steinberg and Monahan, 2007). The expectation then would be that adolescents' resistance to peer pressure is desirable and should be a positive marker of adolescent autonomy development and maturity. Such maturity is suggested by studies that show, especially throughout middle adolescence, how peers have declining influence on adolescents' opinions and decisions as they get older, while resistance to peer pressure increases (Sumter et al., 2009). In addition, adolescents who report less peer influence show less problem behavior, and are lower in substance use, externalizing behavior, and other problems. Of course, to a certain extent, parents also play a role in how adolescents relate to and are influenced by their peers (for a review on parenting and romantic relationships see Zimmer-Gembeck et al., 2018). For instance, when parents tend to discuss friendships with their offspring in an autonomy-supportive (rather than controlling) way, adolescents are less likely to affiliate with deviant friends and to engage in problem behavior (Soenens et al., 2009a). Nevertheless, peers seem to play multiple roles in adolescents' autonomy by providing a context for exploration, by serving as direct socializing agents, or as information resources about how much decisional independence to expect at certain ages and what behaviors of others are more or less autonomy-supportive (Daddis, 2011).

Leisure and Organizational Influences

Community and youth organizations can also be sources of autonomy expression and development, including assisting with adolescents' development of socially responsible behavior, engagement, and initiative. In such work, initiative, defined as internal motivation, attention and effort toward a goal, has been found to be strongly associated with autonomous behavior as described in SDT (Allen et al., 1997; Larson, 2000; Skinner et al., 1998; Watts and Caldwell, 2008).

Youth organizations seem most helpful for adolescents' development of initiative when they contain certain important design elements – they are best when they provide opportunities for choice and contain low levels of coercive interactions, allow time to share personal views and discuss perspectives, provide feedback about choices and performance, and give opportunities for meaningful investment of personal resources (Allen et al., 1997; Allen et al., 1994; Larson, 2000; Coatsworth and Conroy, 2009;

Watts and Caldwell, 2008). In this way, youth organizations can be important because they provide many opportunities for personal and interpersonal development. In fact, the benefits are usually greater than those provided by classwork and paid work (Larson et al., 2006; Zimmer-Gembeck and Mortimer, 2006). Yet, not all activities are equal. Involvement in sports and arts promote initiative, whereas sport participation also assists with the development of emotion regulation. Community, service, and faith activities stand out for their associations with greater interpersonal development (e.g., establishment of adult networks, teamwork, social skills).

It remains uncommon for organizations to explicitly state autonomous action or initiative as specific developmental goals of program involvement (Zimmer-Gembeck and Collins, 2003). What is becoming clear is that youth programs are most beneficial when adolescents have a self-generated and intrinsically motivated commitment to the purpose, can select the work they will do within limits, have adults who assist them to make their choices, and have access to an environment where they are safe to discuss their views, to be listened to, and feel respected (Larson, 2000).

Similar to what is known about autonomy support in parent–adolescent relationships, autonomy support from adult leaders also seems important (e.g., Coatsworth and Conroy, 2009). For example, a coach who provides rationale for rules and other aspects of a program, gives constructive feedback about adolescents' competence, without being controlling or excessively criticizing, encourages adolescents to set and strive for goals, reflect on their own purpose and self-identity, feel able to explore their own identities, and are more likely to experience more subjective well-being (Coatsworth and Conroy, 2009). In general, then, the picture that is emerging is that organizations can provide positive opportunities for adolescents that sometimes may not be available to them within their families or their peer groups.

Conclusions

The literature on autonomy in developmental psychology is complex and full of controversies. Nevertheless, rigorous research efforts increasingly bring clarity about what autonomy expression and development may entail. This contribution is not an exhaustive account of all subtleties and complexities in the existing theoretical and empirical developmental psychological literature. However, the present overview was designed to introduce contemporary approaches to understanding the nature of autonomy, the specific issues addressed in research on adolescent autonomy, the importance of the need for autonomy in all age groups, the universal vs. culturally specific aspects of autonomy, and the relational foundations that may play a role in adolescents autonomy development. Notwithstanding the inherent difficulties that are part of research on the complex notion of psychological autonomy, research on autonomy seems to be in full bloom. This is important, as all adolescents (and each human being) deserve the opportunity to actualize their talents, aspirations, abilities, and strengths. Research on adolescent autonomy illustrates that these processes are simultaneously a product of the individual and their social world, making autonomy expression and development difficult and complex, yet important in all parts of the world.

References

- Allen, J.P., Land, D., 1999. Attachment in adolescence. In: Cassidy, J., Shaver, P.R. (Eds.), *Handbook of Attachment: Theory, Research and Clinical Applications*. Guilford Press, New York, pp. 319–335.
- Allen, J.P., Kuperminc, G.P., Philliber, S., Herre, K., 1994. Programmatic prevention of adolescent problem behaviors: the role of autonomy, relatedness, and volunteer service in the Teen Outreach Program. *Am. J. Community Psychol.* 22, 617–638.
- Allen, J.P., Philliber, S., Herring, S., Kuperminc, G.P., 1997. Preventing teen pregnancy and academic failure: experimental evaluation of a developmentally based approach. *Child. Dev.* 64, 729–742.
- Allen, J.P., Porter, M., McFarland, C., McElhaney, K.B., Marsh, P., 2007. The relation of attachment security to adolescents' paternal and peer relationships, depression, and externalizing behavior. *Child. Dev.* 78, 1222–1239.
- Baltes, M.M., Silverberg, S.B., 1994. The dynamics between dependency and autonomy: illustrations across the life span. In: Featherman, D.L., Lerner, R.M., Perlmutter, M. (Eds.), *Life-span Development and Behavior*, vol. 12. Erlbaum, Hillsdale, NJ, pp. 41–90.
- Barber, B.K., Olsen, J.A., 1997. Socialization in Context: connection, regulation, and autonomy in the family, school, and neighborhood, and with peers. *J. Adolesc. Res.* 12, 287–315.
- Barber, B.K., Xia, M., 2013. The centrality of control to parenting and its effects. In: Larzelere, R.E., Morris, A.S., Harrist, A.W. (Eds.), *Authoritative Parenting: Synthesizing Nurture and Discipline for Optimal Child Development*. APA, Washington, DC.

* *Change History:* Dr Zimmer-Gembeck and Dr van Petegem were involved in updating the chapter.

May 2017. Decision for Dr Petegem to do preliminary changes to the chapter, including new research and some reorganization.

June 2017. Dr van Petegem made initial suggestions for changes to the chapter and changes were discussed with Dr Zimmer-Gembeck. The primary change would be more focus on contemporary research on adolescent autonomy from work on volition and self-determination. In addition, the chapter will need some reduction in the length to be within the 5000 words.

June 2017. Dr Zimmer-Gembeck reviewed initial changes/additions to all sections (except the last section on leisure) proposed by Dr van Petegem. Dr Zimmer-Gembeck suggested some changes to this content.

July 2017. Dr van Petegem revised content to sections on volition (Autonomy as Volition), Comparing and Contrasting Autonomy as Independence and Autonomy as Volition, and support for parents (Parents and Adolescents' Need for Autonomy) further and sent to Dr Zimmer-Gembeck for further refining, feedback, and additions.

July 2017. Dr Zimmer-Gembeck sent an updated draft back to Dr van Petegem for review. All sections were modified, with careful attention to the Introduction and the final sections.

July 2017. Dr van Petegem made some additional minor changes, including updating the reference list.

July 2017. Dr Zimmer-Gembeck approved these changes, continued to refine sentences and content and finalized the chapter for submission.

- Beckert, T.E., 2007. Cognitive autonomy and self evaluation in adolescence: a conceptual investigation and instrument development. *North Am. J. Psychol.* 9, 579–594.
- Beyers, W., Goossens, L., 1999. Emotional autonomy, psychosocial adjustment and parenting: interactions, moderating and mediating effects. *J. Adolesc.* 22, 753–769.
- Beyers, W., Goossens, L., Vansant, I., Moors, E., 2003. A structural model of autonomy in middle and late adolescence: connectedness, separation, detachment, and agency. *J. Youth Adolesc.* 32, 351–365.
- Blos, P., 1979. *The Adolescent Passage*. International Universities Press, Madison, CT.
- Bowlby, J., 1988. *A Secure Base*. Basic Books, New York.
- Brehm, J.W., 1966. *A Theory of Psychological Reactance*. Academic Press, San Diego, CA.
- Chen, B., Beyers, W., Vansteenkiste, M., Soenens, B., Van Petegem, S., 2013. Autonomy in family decision making in Chinese adolescents: disentangling the dual meaning of autonomy in a cross-cultural context. *J. Cross-Cultural Psychol.* 44, 1184–1209.
- Chirkov, V., Ryan, R.M., 2001. Parent and teacher autonomy support in Russian and US adolescents: common effects on well-being and academic motivation. *J. Cross-Cultural Psychol.* 32, 618–635.
- Chirkov, V., Ryan, R.M., Kim, Y., Kaplan, U., 2003. Differentiating autonomy from individualism and independence: a self-determination theory perspective on internalization of cultural orientations and well-being. *J. Personality Soc. Psychol.* 84, 97–110.
- Chirkov, V., Ryan, R.M., Sheldon, K.M., 2011. *Human Autonomy in Cross-cultural Context: Perspectives on the Psychology of Agency, Freedom, and Well-being*. Springer, New York.
- Coatsworth, J.D., Conroy, D.E., 2009. The effects of autonomy-supportive coaching, need satisfaction, and self-perceptions on initiative and identity in youth swimmers. *Dev. Psychol.* 45, 320–328.
- Collins, W.A., Steinberg, L., 2006. Adolescent development in interpersonal context. In: Damon, W., Lerner, R.M. (Eds.), *Child and Adolescent Development*. Wiley, Hoboken, NJ, pp. 551–590.
- Cooper, C.R., Grotevant, H.D., 2011. Autonomy or connections? Identities as intergenerational projects. In: Cooper, C.R. (Ed.), *Multiple Worlds: Cultures, Identities, and Pathways to College*. Oxford University Press, New York, NY.
- Daddis, C., 2008. Influence of close friends on the boundaries of adolescent personal authority. *J. Res. Adolesc.* 18, 75–98.
- Daddis, C., 2011. Desire for increased autonomy and adolescents' perceptions of peer autonomy: "Everyone else can; why can't I?". *Child. Dev.* 82, 1310–1326.
- Deci, E.L., Ryan, R.M., 2000. The "what" and "why" of goal pursuits: human needs and the self-determination of behavior. *Psychol. Inq.* 11, 227–268.
- Dishion, T.J., Nelson, S.E., Bullock, B.M., 2004. Premature adolescent autonomy: parent disengagement and deviant peer process in the amplification of problem behaviour. *J. Adolesc.* 27, 515–530.
- Dornbusch, S.M., Ritter, P.L., Mont-Reynaud, R., Chen, Z., 1990. Family decision-making and academic performance in a diverse high school population. *J. Adolesc. Res.* 5, 143–160.
- Eccles, J.S., Early, D., Frasier, K., Belansky, E., McCarthy, K., 1997. The relation of connection, regulation, and support for autonomy to adolescents' functioning. *J. Adolesc. Res.* 12, 263–286.
- Eccles, J.S., Midgley, C., Wigfield, A., Buchanan, C.M., Reuman, D., Flanagan, C., Maclver, D., 1993. Development during adolescence: the impact of stage-environment fit on young adolescents experiences in schools and in families. *Am. Psychol.* 48, 90–101.
- Erickson, K.G., Crosnoe, R., Dornbusch, S.M., 2000. A social process model of adolescent deviance: combining social control and differential association perspectives. *J. Youth Adolesc.* 29, 395–425.
- Fulgini, A.J., 1998. Authority, autonomy, and parent-adolescent conflict and cohesion: a study of adolescents from Mexican, Chinese, Filipino, and European backgrounds. *Dev. Psychol.* 34, 782–792.
- Greenfield, P.M., Keller, H., Fuligni, A., Maynard, A., 2003. Cultural pathways through universal development. *Annu. Rev. Psychol.* 54, 461–491.
- Grolnick, W.S., 2003. *The Psychology of Psychological Control: How Well-meant Parenting Backfires*. Erlbaum, Mahwah, NJ.
- Haase, C.M., Tomasik, M.J., Silbereisen, R.K., 2008. Premature behavioral autonomy correlates in late adolescence and young adulthood. *Eur. Psychol.* 13, 255–266.
- Harter, S., 2012. *The Construction of the Self: Developmental and Sociocultural Foundations*, second ed. Guilford Press, New York, NY.
- Iyengar, S.S., Lepper, M.R., 1999. Rethinking the value of choice: a cultural perspective on intrinsic motivation. *J. Personality Soc. Psychol.* 76, 349–366.
- Joussemet, M., Koestner, R., Lekes, N., Landry, R., 2005. A longitudinal study of the relationship of maternal autonomy support to children's adjustment and achievement in school. *J. Personality* 73, 1215–1236.
- Kim, H.S., Markus, H.R., 1999. Deviance or uniqueness, harmony or conformity? A cultural analysis. *J. Personality Soc. Psychol.* 77, 785–800.
- Kins, E., Beyers, W., Soenens, B., Vansteenkiste, M., 2009. Patterns of home leaving and subjective well-being in emerging adulthood: the role of motivational processes and parental autonomy support. *Dev. Psychol.* 45, 1416–1429.
- Kuczynski, L., 2003. Beyond bidirectionality: bilateral conceptual frameworks for understanding dynamics in parent-child relations. In: Kuczynski, L. (Ed.), *Handbook of Dynamics in Parent-Child Relations*. Sage, Thousand Oaks, CA, pp. 1–24.
- Kuhn, E.S., Laird, R.D., 2011. Individual differences in early adolescents' beliefs in the legitimacy of parental authority. *Dev. Psychol.* 47, 1353–1365.
- Larson, R.W., 2000. Toward a psychology of positive youth development. *Am. Psychol.* 55, 170–183.
- Larson, R.W., Hansen, D.M., Moneta, G., 2006. Differing profiles of developmental experiences across types of organized youth activities. *Dev. Psychol.* 42, 849–863.
- Marbell, K.N., Grolnick, W.S., 2013. Correlates of parental control and autonomy support in an interdependent culture: a Look at Ghana. *Motivation Emot.* 37, 79–92.
- Markus, H.R., Kitayama, S., 2003. Models of agency: sociocultural diversity in the construction of action. In: Murphy-Berman, V., Berman, J. (Eds.), *Nebraska Symposium on Motivation, Crosscultural Differences in Perspectives on Self*, vol. 49. University of Nebraska Press, Lincoln, pp. 1–57.
- Mikulincer, M., Shaver, P.R., 2007. *Attachment in Adulthood: Structure, Dynamics and Change*. Guilford Press, New York.
- Monahan, K.C., Steinberg, L., Cauffman, E., 2009. Affiliation with antisocial peers, susceptibility to peer influence, and antisocial behavior during the transition to adulthood. *Dev. Psychol.* 45, 1520–1530.
- Noom, M.J., Dekovic, M.J., Meeus, W., 2001. Conceptual analysis and measurement of adolescent autonomy. *J. Youth Adolesc.* 30, 577–595.
- Nucci, L.P., 2001. *Education in the Moral Domain*. Cambridge University Press, Cambridge.
- Parra, A., Oliva, A., Sanchez-Queija, I., 2015. Development of emotional autonomy from adolescence to young adulthood in Spain. *J. Adolesc.* 38, 57–67.
- Qin, L.L., Pomerantz, E.M., Wang, Q., 2009. Are gains in decision-making autonomy during early adolescence beneficial for emotional functioning? The case of the United States and China. *Child. Dev.* 80, 1705–1721.
- Rowe, S., Zimmer-Gembeck, M.J., Rudolph, J., Nesdale, D., 2015. A longitudinal study of rejecting and autonomy-relevant parenting, rejection sensitivity, and socioemotional symptoms in early adolescents. *J. Abnorm. Child Psychol.* 43, 1107–1118. <https://doi.org/10.1007/s10802-014-9966-6>.
- Ryan, R.M., Connell, J.P., 1989. Perceived locus of causality and internalization: examining reasons for acting in two domains. *J. Personality Soc. Psychol.* 57, 749–761.
- Ryan, R.M., Deci, E.L., 2000. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am. Psychol.* 55, 68–78.
- Ryan, R.M., Deci, E.L., 2006. Self-regulation and the problem of human autonomy: does psychology need choice, self-determination, and will? *J. Personality* 74, 1557–1585.
- Ryan, R.M., Deci, E.L., 2017. *Self-determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. Guilford Press, New York.
- Ryan, R.M., Deci, E.L., Grolnick, W.S., LaGuardia, J.G., 2006. The significance of autonomy and autonomy support in psychological development and psychopathology. In: Cicchetti, D., Cohen, D. (Eds.), *Developmental Psychopathology, Theory and Methods*, second ed., vol. 1. Wiley, New York, pp. 795–849.
- Ryan, R.M., Deci, E.L., Vansteenkiste, M., 2016. Autonomy and autonomy disturbances in self-development: research on motivation, attachment, and clinical process. In: Cicchetti, D. (Ed.), *Developmental Psychopathology, Theory and Methods*, third ed., vol. 1. Wiley, New York.
- Sheldon, K.M., Kasser, T., 2001. Getting older, getting better? Personal strivings and psychological maturity across the life span. *Dev. Psychol.* 37, 491–501.
- Simons-Morton, B., Lerner, N., Singer, J., 2005. The observed effects of teenage passengers on the risky driving behavior of teenage drivers. *Accid. Analysis Prev.* 37, 973–982.

- Skinner, E., Johnson, S., Snyder, T., 2005. Six dimensions of parenting: a motivational model. *Parent. Sci. Pract.* 5, 175–235. https://doi.org/10.1207/s15327922par0502_3.
- Skinner, E.A., Zimmer-Gembeck, M.J., Connell, J.P., 1998. Individual differences and the development of perceived control. *Series 254 Monogr. Soc. Res. Child Dev.* 63 (2–3).
- Smetana, J.G., 2018. The development of autonomy during adolescence: a social-cognitive domain theory view. In: Soenens, B., Vansteenkiste, M., Van Petegem, S. (Eds.), *The Meaning and the Role of Autonomy in Adolescent Development: Toward Conceptual Clarity*. Psychology Press, Amsterdam, pp. 53–73.
- Smetana, J.G., Campione-Barr, N., Daddis, C., 2004. Longitudinal development of family decision making: defining healthy behavioral autonomy for middle-class African American adolescents. *Child. Dev.* 75, 1418–1434.
- Smetana, J.G., Campione-Barr, N., Metzger, A., 2006. Adolescent development in interpersonal and societal contexts. *Annu. Rev. Psychol.* 57, 255–284.
- Smetana, J.G., Daddis, C., 2002. Domain-specific antecedents of parental psychological control and monitoring: the role of parenting beliefs and practices. *Child. Dev.* 73, 563–580.
- Smetana, J.G., Gettman, D.C., 2006. Autonomy and relatedness with parents and romantic development in African American adolescents. *Dev. Psychol.* 42, 1347–1351.
- Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., Ryan, R.M., 2007. Conceptualizing parental autonomy support: adolescent perceptions of promotion of independence versus promotion of volitional functioning. *Dev. Psychol.* 43, 633–646.
- Soenens, B., Vansteenkiste, M., Niemiec, C.P., 2009a. Should parental prohibition of adolescents' peer relationships be prohibited? *Personal. Relat.* 16, 507–530.
- Soenens, B., Vansteenkiste, M., Sierens, E., 2009b. How are parental psychological control and autonomy-support related? A cluster-analytic approach. *J. Marriage Fam.* 71, 187–202.
- Soenens, B., Vansteenkiste, M., Van Petegem, S., 2015. Let us not throw out the baby with the bathwater: applying the principle of 'universalism without uniformity' to autonomy-supportive and controlling parenting. *Child. Dev. Perspect.* 9, 44–49.
- Steinberg, L., 2005. Cognitive and affective development in adolescence. *Trends Cognitive Sci.* 9, 69–74.
- Steinberg, L., Monahan, K.C., 2007. Age differences in resistance to peer influence. *Dev. Psychol.* 43, 1531–1543.
- Sumter, S.R., Bokhorst, C.L., Steinberg, L., Westenberg, P.M., 2009. The developmental pattern of resistance to peer influence on adolescence: will the teenager ever be able to resist? *J. Adolesc.* 32, 1009–1021.
- Van Petegem, S., Beyers, W., Vansteenkiste, M., Soenens, B., 2012. On the association between adolescent autonomy and psychosocial functioning: examining decisional independence from a Self-Determination Theory perspective. *Dev. Psychol.* 48, 76–88.
- Van Petegem, S., Beyers, W., Brenning, K., Vansteenkiste, M., 2013a. Exploring the association between insecure attachment style and adolescent autonomy in family decision making: a differentiated approach. *J. Youth Adolesc.* 42, 1837–1842.
- Van Petegem, S., Soenens, B., Vansteenkiste, M., Beyers, W., 2015. Rebels with a cause: adolescent defiance from the perspective of reactance theory and self-determination theory. *Child. Dev.* 86, 903–918.
- Van Petegem, S., Vansteenkiste, M., Beyers, W., 2013b. The jingle-jangle fallacy in adolescent autonomy in the family: in search of an underlying structure. *J. Youth Adolesc.* 42, 994–1014.
- Vansteenkiste, M., Soenens, B., Van Petegem, S., Duriez, B., 2014. Longitudinal associations between adolescent perceived style of parental prohibition and oppositional defiance and internalization. *Dev. Psychol.* 50, 229–236.
- Vansteenkiste, M., Zhou, M.M., Lens, W., Soenens, B., 2005. Experiences of autonomy and control among Chinese learners: vitalizing or immobilizing? *J. Educ. Psychol.* 97, 468–483.
- Watts, C.E., Caldwell, L.L., 2008. Self-determination and free time activity participation as predictors of initiative. *J. Leis. Res.* 40, 156–181.
- Yu, S., Levesque-Bristol, C., Maeda, Y., 2017. General need for autonomy and subjective well-being: a meta-analysis of studies in the US and East Asia. *J. Happiness Stud.* Advance online publication.
- Zimmer-Gembeck, M.J., 2013. Young females' sexual-efficacy: associations with personal autonomy and the couple relationship. *Sex. Health* 10, 204–210. <https://doi.org/10.1071/SH12139>.
- Zimmer-Gembeck, M.J., Collins, W.A., 2003. Autonomy development during adolescence. In: Adams, G.R., Berzonsky, M.D. (Eds.), *Blackwell Handbook of Adolescence*. Blackwell, Oxford, England, pp. 175–204.
- Zimmer-Gembeck, M.J., Ducat, W., Collins, W.A., 2011a. Autonomy development during adolescence. In: Brown, B.B., Prinstein, M. (Eds.), *Encyclopedia of Adolescence*. Academic Press, New York, pp. 66–76.
- Zimmer-Gembeck, M.J., Madsen, S.D., Hanisch, M., 2011b. Connecting the intrapersonal and the interpersonal: autonomy, voice and relationships with parents and romantic partners during late adolescence. *Eur. J. Dev. Psychol.* 8, 509–525.
- Zimmer-Gembeck, M.J., Mortimer, J.T., 2006. Adolescent work, vocational development, and education. *Rev. Educ. Res.* 76, 537–566.
- Zimmer-Gembeck, M.J., Van Petegem, S., Ducat, W., Clear, S., Mastro, S., 2018. Parent-child relationships and romantic development: a review and argument for research on autonomy supportive parenting. In: Soenens, B., Vansteenkiste, M., Van Petegem, S. (Eds.), *The Meaning and the Role of Autonomy in Adolescent Development: Toward Conceptual Clarity*. Psychology Press, Amsterdam, pp. 168–192.
- Zimmer-Gembeck, M.J., Webb, H.J., Pepping, C.A., Swan, K., Merlo, O., Skinner, E.A., Avdagic, E., Dunbar, M., 2017. Review: caregiver-child attachment, emotion regulation, and coping with stress. *Int. J. Behav. Dev.* 4, 74–93. <https://doi.org/10.1177/0165025415618276>.
- Zimmer-Gembeck, M.J., Webb, H.J., Thomas, R., Klag, S., 2015. A new measure of toddler parenting practices and associations with attachment and mothers' sensitivity, competence, and enjoyment of parenting. *Early Child Dev. Care* 185, 1422–1436. <https://doi.org/10.1080/03004430.2014.1001753>.