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## A Social-Developmental Model of Radicalization: A Systematic Integration of Existing Theories and Empirical Research

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Radicalization and violent extremism are pressing problems across the world. After initially addressing problems in defining radicalization and extremism, this article sketches a new social-developmental model based on a systematic integration of theories and empirical findings. We propose a three-step model of radicalization starting with ontogenetic social-developmental processes during the most dynamic period for social development, from early childhood to late adolescence. These processes include the interaction of societal, social, and individual risk and protective factors. In adverse cases this interplay encourages the establishment of proximal radicalization processes between early adolescence and middle adulthood. We assume that four interrelated but distinct social-developmental processes are central conditions for radicalization and extremism: identity problems, prejudice, political or religious ideologies, and antisocial attitudes and behavior. These proximal processes are triggered by actual societal, social, or individual conflicts (such as economic crisis, victimization) and marked by continuous intergroup processes. The more intense the proximal processes, the greater the likelihood of extremist attitudes and behavior. The article closes by discussing implications for early prevention and an outlook for further research.

Keywords: radicalization, extremism, social development, review, prevention

Radicalization and violent extremism are major problems for societies throughout the world. According to the Global Terrorism Index (GTI), about 100,000 people died as a result of terrorist attacks between 2014 and 2017 (see Institute for Economics and Peace 2018). Although annual numbers have been decreasing since their peak in 2014 and most attacks have been in the so-called MENA states (Middle East and North Africa), more than one hundred states worldwide were affected in 2017 and numbers are still much higher than in the early 2000s. Of course, terrorism and terrorist attacks are only one specific form of extremism (McCauley and Moskalenko 2017), but closer examination of a wider range of extremist attitudes

and behavior also gives great cause for concern. For example, according to Germany's domestic intelligence service (Verfassungsschutz), there were about four thousand politically or religiously motivated criminal acts in the country in 2017 (BMI 2018). In addition, systematic surveys conducted in recent years have determined that between 5 and 10 percent of adults in Germany possess extreme right-wing worldviews (Best et al. 2016; Zick, Küpper, and Krause 2016). Similar or even higher percentages can be found throughout Europe and in other OECD states (see for example, Lubbers, Gijsberts, and Scheepers 2002; or OECD hate crime reporting at http:\\hatecrime.osce.org). For example, a representative survey in France found that 16 percent of the adult population and 27 percent of 18- to 24-year-olds agreed with the aims of ISIS (Fischer 2014). These and other results, although based on different definitions and operationalizations of radicalization and extremism, indic-

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ate the need to take a closer look at the ways in which such phenomena emerge and develop. How do such attitudes and offences come about? And what moves young people in particular to radicalize, join extremist groups, and, in the worst case, engage in terrorist attacks? What individual, social, and societal conditions trigger such a course of development, and how can such phenomena be prevented from a social science perspective—particularly when the control and surveillance strategies of state agents seem to have reached the limits of what they can do in democratic societies ruled by law?

# 1 Radicalization and Extremism: Definition and Definitional Problems

The terms radicalization and extremism have various definitions (Neumann 2013; Sedgwick 2010; Schmid 2013). On the broadest level, we define political, religious, and otherwise conceived *extremism* as a significant deviation in attitudes and behavior from basic legal and political norms and values within a social system (society or state) that seek their (at least partial) abolition and replacement (Beelmann, Jahnke, and Neudecker 2017). The process by which such patterns of attitudes and action emerge individually and ontogenetically over the course of development can then be labeled *radicalization*.

However, although this approach integrates several definitions, it still leaves open questions that need to be addressed, especially when developing prevention and intervention measures (see Beelmann 2012; Wilson et al. 2014). For example, one obvious question is whether the fundamental deviation from normative principles assumed for extremism depends on the currently valid legal, social, and political system, that is, on the given political status quo; or whether it should be defined independently from the current political system. In the first case, all significant deviations within a society or a state would also be defined as extremist, thus for example including resistance fighters opposing a totalitarian regime; in the second case, the concept of radicalization and extremism is linked to specific political norms and values (such as universal human rights). In addition, and linked directly to these issues, is the question of what degree and which forms of deviation (populism, civil disobedience, violent vs. nonviolent forms, right- vs. left-wing extremism) should be assumed to represent a significant shift away from the given fundamental systems of norms and values; in other words, which manifestation of attitudes and actions is considered to mark the beginning of radicalization or extremism? The concern is not so much with the endpoints of such a development (for example, violent attacks on political actors or "foreigners"), but far more the question where the threshold lies between attitudes and actions that are viewed as normative and those that are judged to be non-normative. For example, one can ask whether certain forms of right-wing populism should be labeled as radicalization or extremism, or whether these phenomena should simply be accepted as part of democratic freedom of opinion. In the field of left-wing extremism, one can ask whether certain forms of illegal activity such as civil disobedience are extremist acts or actually have a justification when fundamental rights are at risk. It is easy to conceive very different answers to these questions, and see that there is no consensus in society or science. These and other examples show that judging whether something is the beginning of a nonnormative development or can be justified by higher order norms and values (such as freedom of speech) has to be weighed carefully. Nonetheless, both explanations (what are the relevant phenomena?) and the conception of prevention and intervention measures (which attitudes and actions should be prevented or modified?) crucially depend on answers to these questions (Beelmann 2012).

The developmentally oriented model of radicalization starts by defining extremism in three ways as: (1) significant deviation in attitudes and actions from specific fundamental, political, legal, and humanitarian systems of norms and values. This refers specifically to the concepts of democracy (consisting of at least the basic principle of the sovereignty of the people, multiparty system, and free and secret elections), rule of law (separation of powers, independence of the judiciary), and human rights (as defined in the Universal Declaration of Human Rights). A significant deviation occurs when, for example, democratic principles or general human rights are actively or latently rejected, and the aim is to impose or support a system of laws and norms that deviates from them. This normative

definition implies that as well as individuals and groups, states, societies, and even companies can be labeled extremist. In addition, (2) the primary concern when specifying the definition is the values and goals underlying the attitudes and actions and not primarily the means-such as violence-used to achieve them. By itself, the propensity for, and the legitimation and use of illegitimate or violent means is neither a sufficient nor a necessary condition for radicalization and extremism, because the primary issue is the purpose for which these means are applied. For example, if a democratic state uses its police or armed forces to defends itself against attack by terrorists or a totalitarian state, this would surely not be called extremism, even though force is used to serve a political objective. Finally, (3) judgment of radicalization and extremism must not necessarily be based on the articulated goals of attitudes and actions. In certain cases, feigned, nonconscious, and latent goals can also be decisive for judging whether one is dealing with radicalization and extremism. However, this is a matter of correctly assessing or interpreting real action goals of individuals and groups.

# 2 Social Science Conceptions of Radicalization and Extremism

There are now a number of theories and models aiming to explain radicalization processes and extremism (for example, Borum 2011a, 2011b; McCauley and Moskalenko 2017). One prominent example is Fathali Moghaddam's (2005) process model known as the "staircase to terrorism." It describes various developmental steps from the beginning of radicalization up to terrorist offenses. Moghaddam postulates six successive steps, starting with the interpretation of material conditions within society and attempts to fight inequalities (Levels 1 and 2), and proceeding through the displacement of aggression (as a result of failed attempts to overcome inequalities) and moral engagement with terrorism (Levels 3 and 4), to legitimizing and joining terrorist organizations, and, finally, terrorist acts (Levels 5 and 6). Each of these steps is accompanied by distinct psychological features that can be explained through well-confirmed psychological theories (for example, relative deprivation theory, rational choice theory, terror management theory). Although empirical analyses deliver strong evidence for the individual steps in this model, there is still no evidence confirming the transitions between them (see Lygre et al. 2011). Doosje et al. (2016) have adopted and modified this process model by distinguishing three phases of radicalization: In Phase 1, individual sensitization can be influenced by a quest for significance, uncertainty, relative deprivation, and societal factors such as globalization. In Phase 2, the individual joins a radical group and adopts its ideology. Finally, in Phase 3, the individual engages in violent acts against other groups. Both models, like other stage models (for example, Wiktorowicz 2005), describe radicalization as an ongoing stage process. However, other researchers have criticized not only the linearity of such stage models but also their exclusivity, maintaining that there are several paths to radicalization (McCauley and Moskalenko 2011).

Arie Kruglanski's research team has formulated a general social psychological model of extremism. Their significance quest theory emphasizes the motivational bases of radicalization, such as personal revenge or social grievance, arguing that these play an important role in explaining why people become involved in the radicalization process (Kruglanski et al. 2014, 2017; Kruglanski, Bélanger, and Gunaratna, 2019). The theory proceeds from the empirically confirmed assumption that people have a basic need for recognition, significance, and positive self-esteem (Baumeister and Leary 1995). Radicalization occurs when, for various reasons (individual, social, societal), people suffer a loss of significance. This not only heightens their motivation but also increases their efforts to compensate the loss. Should individual attempts fail due to inadequate personal competencies and social resources or because the causes of loss of significance cannot be compensated individually, totalitarian narratives and ideologies and extremist social groups offer a possible way of regaining it. These assumptions have been confirmed in empirical studies -at least on the attitude level (Webber et al. 2017).

McCauley and Moskalenko (2008, 2011, 2017) criticize universal models, postulating instead twelve different paths to radicalization. They distinguish between individual, group, and mass radicalization. They see individual radicalization as, for example, a

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consequence of personal victimization, a reaction to political dissatisfaction, or a gradual process of drawing closer to an extremist group. They distinguish this from the group radicalization that can emerge in certain social group situations such as a threat to the ingroup or group competition over resources. Forms of mass radicalization emerge, for example, in situations of war or as a consequence of martyrdom. Each of these forms is also backed by social-psychological theories (for example, social movement theory) and illustrated by analyses of existing groups and individual offenders. In their two-pyramid model, Mc-Cauley and Moskalenko (2017) propose separate radicalization paths leading to either extremist opinions or extremist action. The opinion pyramid is composed of neutral persons at its base and then-with decreasing group size-sympathizers, justifiers, and finally people who feel morally obliged to engage in extremism. The action pyramid has inert persons at its base and proceeds through activists and radicals to terrorists.

This selection of different models illustrates the heterogeneity of explanations for radicalization processes and extremism. All the models have a certain theoretical backing or at least theoretical plausibility as well as (even if only in part) direct and indirect empirical support. In the social sciences, these approaches are also frequently understood not as mutually exclusive theoretical alternatives, but more as complements to or emphases on specific aspects of radicalization and extremism.

The models describe important processes and have decisively influenced our understanding of radicalization and the emergence of extremism. However, they all suffer from shortcomings: First, existing models are not very good at explaining why some people become radicalized whereas others living under the same conditions do not. In other words: They lack a differential perspective. Second, most empirical evidence stems from cross-sectional experimental research or from case studies and biographical research. Therefore, the models have difficulties in making causal inferences, especially with regard to radicalization processes. Third and most importantly, all models lack an explicit ontogenetic perspective; that is, they have little to say about the developmental preconditions of radical-

ization processes and which features are characteristic for such a process. All cited models are based on concepts referring to what is called the actual genesis. This means that they try to explain how radicalism and extremism develop at a certain age (generally adulthood). However, an ontogenetic and thereby lifelong perspective would aim to determine how such patterns of opinions and action emerge during the first two decades of life. Fourth, some models (for example, significance quest theory) focus on discussing the specific influence of a certain factor or characteristics. However, central findings in developmental science show that social problems are a result of complex multicausal transactional processes between biological, individual, social, and societal factors (see Cicchetti 2016a); and they demonstrate not only that the same factors can lead to different outcomes (multifinality) but also that different factors can lead to the same developmental outcome (equifinality). Why should this be any different for radicalization processes and extremism? And, finally, lacking a clear developmental perspective, existing radicalization models do not generate concepts for the universal or primary prevention that needs to be applied before radicalization processes even start.

#### 3 A Social-Developmental Model of Radicalization

These shortcomings lead us to a new social-developmental model of radicalization. The underlying assumption from a developmental perspective is that radicalization and extremism (like any other developmental domain) can be described as the outcome of a range of (societal, social, individual) determinants and transactional (reciprocally interdependent) ontogenetic development processes (see Lerner 2018; Sameroff 2009). Radicalization and extremism do not simply happen ad hoc or without any antecedents at some point in youth or adult development, but have to be explained through ontogenetic developmental processes from which, ideally, corresponding prevention concepts can be derived. Of course, the idea of taking a developmental perspective on attitudes and behavior problems is not new. It has already been applied successfully to a range of problems in recent decades such as explaining and preventing antisocial behavior (see Bliesener, Beelmann, and Stemmler 2012; Frick and Viding 2009; Granic and Patterson 2006) or other mental health or behavioral problems (Cicchetti 2016b; Sameroff and Lewis 2000). Therefore, the following model is not completely novel, but the outcome of systematic integration of existing theories and empirical knowledge on social and antisocial development, criminality, and the social and developmental psychology of radicalization and extremism. It draws on various sources of information to integrate theories, empirical findings, and prevention outcomes.

- 1. General and development-related models of behavior problems and criminality (for example, General Strain Theory, Agnew 2006; Problem Behavior Theory, Jessor 2016). These argue that developmental problems are predominantly outcomes of societal, social, and individual factors and that the risk of undesirable developments is due particularly to a negative relation of risk to protective factors. Fundamental findings from developmental psychopathology (see Cicchetti 2016a) integrate the flexibility and dynamic nature of human development by assuming multicausality (several interacting factors cause a developmental problem), equifinality, and multifinality (see above).
- 2. Specific radicalization theories, in particular, the models by McCauley and Moskalenko (2011, 2017), Kruglanski et al. (2014, 2017), and Doosje et al. (2016). These address the possibility of different paths and motivational foundations of radicalization, and emphasize the social group context of radicalization processes.
- 3. Fundamental motivational and social-psychological theories on human needs such as social movement theory, terror management theory, social identity theory, and relative deprivation theory (Borum 2011a; Walther 2014). These describe the basic principles of social identity, prejudice, and other intergroup processes that are necessary for an understanding of radicalization processes.
- 4. Specific theories on normative and deviant social development of identity, prejudice, and antisocial behavior (Beelmann and Raabe 2007; Fairchild et al. 2013; Killen and Rutland 2011; Levy and Killen 2008; Quintana and McKown 2008). These address special developmental trajectories and central development processes that are indispensable for a developmentally oriented model of radicalization.

- 5. Biographical, cross-sectional, and longitudinal research on risk and protective factors for radicalization and extremism (Borum 2014; Lösel et al. 2018; Mc-Cauley and Moskalenko 2011; Wolfowicz et al. 2019). These supply important information on relevant developmental factors for radicalization and extremism and are recognized at least partially in the aforementioned radicalization theories.
- 6. Results of systematic evaluations of radicalization prevention programs (Beelmann and Lutterbach 2020; Beelmann et al. 2019; Feddes and Gallucci 2015; International Center for the Prevention of Crime 2015; Pistone et al. 2019). These permit estimations of which measures with which content may exert a positive influence on developmental trajectories and thereby identifying potential protective factors.

This is the background for proposing a new social-developmental model of radicalization, which starts by assuming that extremist attitudes and behavior involve certain necessary motivational, cognitive, and social-developmental conditions that can be attributed to deviant ontogenetic developmental processes resulting from an interplay between societal, social, and individual risk and protective factors. These causal chains are sketched in Figure 1.

According to this model, radicalization involves three general steps: ontogenetic developmental processes, proximal radicalization processes, and, as a result, extremist attitudes/opinions and behavior/action. The basic assumption is that radicalization is an outcome of adverse developmental processes within the first three decades of life. Therefore, political or religious extremism (in the sense of the present definition) cannot be viewed as a form of political opinion or a religious orientation, but, above all, as an expression of deviant social development. In concrete terms, these processes can be described as follows.

Figure 1: A social-developmental model of radicalization

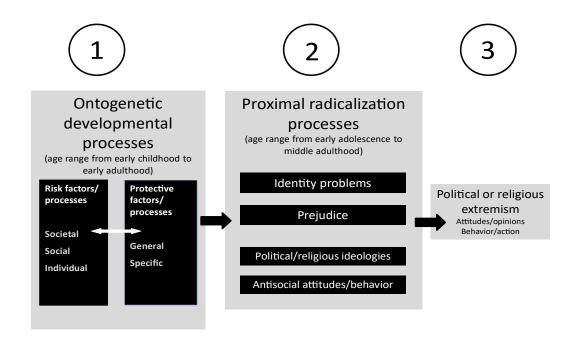
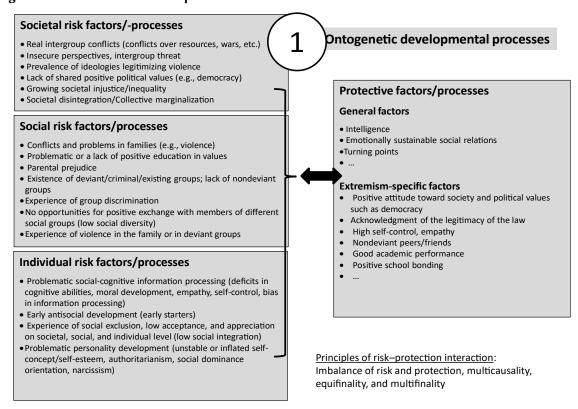


Figure 2: Overview of risk and protective factors for radicalization



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#### 3.1 Ontogenetic Developmental Processes

Stage 1 consists of developmental processes characterized by the interplay between different risk and protective factors in development. Risk factors are those societal, social, and individual features that are linked causally to radical and extremist attitudes and actions. Protective factors are those that can counterbalance the effect of a risk factor. The model conceives ontogenetic (biographically related) development as the outcome of all these factors influencing each other. In radicalization, as in other developmental problems (for example antisocial behavior), a series of risk factors that exert a negative influence can be identified. These have either been confirmed empirically or are assumed to be central factors in previous radicalization theories (for overviews see Figure 2; Beelmann, Jahnke, and Neudecker 2017; Borum 2014; Lösel et al. 2018; Wolfowicz et al. 2019).

On the societal level, phenomena such as real intergroup conflicts, civil wars (see McCauley and Moskalenko 2008), or intergroup threat (Doosje et al. 2012; Stephan and Stephan 2017) increase the probability of radicalization processes. Further societal radicalization factors include existential insecurity due to, for example, economic crisis or social inequality and associated problems of societal disintegration and marginalization (Kruglanski et al. 2014; Urdal 2006; Verkuyten 2018). On the social level risk is increased by access to and contact with deviant (extremist) groups-also through the internet and social media (Pauwels and Schils 2014; Schils and Pauwels 2016)and specific family socialization features (for example, failure to impart values, prejudiced parents; Degner and Dalege 2013). Social or collective experiences of discrimination and social exclusion also contribute to radicalization (Doosje et al. 2012; van Bergen et al. 2015) as do experience of low levels of social diversity and contact opportunities (Raabe and Beelmann 2011). Finally, on the individual level, problems with self-esteem, for example, or certain personality characteristics (such as authoritarianism, social dominance orientation) are confirmed risks (Borum 2014; Wolfowicz et al. 2019). In addition, longitudinal studies have shown that early antisocial behavior problems are associated with extremist attitudes in late adolescence (Ihle, Esser, and Schmidt 2005; Nivette,

Eisner, and Ribeaud 2017). As in any antisocial development, confirmed systematic links exist between, on the one side, deficits or biases in social information processing or a lack of social and social-cognitive competencies (such as empathy) and on the other, extremist attitudes and behavior (Doosje et al. 2012; Feddes et al. 2015).

Naturally, human developmental history is not just based on the strength of risk factors. Indeed, a research tradition that focuses more on coping with negative influences in development and addresses resilience and positive youth development has emerged during recent decades (Masten 2016; Silbereisen and Lerner 2007). However, far more research has been carried out on risk factors compared to protective factors, with the result that knowledge about protection is very limited. Nonetheless, factors that generally have a protective effect on human development (for example intelligence, emotionally supportive social relations) and radicalization-specific protective factors (such as good relationship with school, democratic values, law abidance) can be identified (see Lösel and Farrington 2012; Lösel et al. 2018; Wolfowicz et al. 2019) and are potentially able to compensate for the effect of the aforementioned risk factors in the form of individual competencies or social resources (Figure 2).

Although these and further risk and protective factors have a constant empirical relationship to radicalization parameters (attitudes, behavior), this relationship is relatively weak and many people are exposed to these factors without becoming extremists. The crucial point is that such developmental processes lead to an increased risk of radicalization only when, over the long term, risk effects become stronger than protective effects (Jessor 2016). This means it is necessary to observe the entire span of ontogenetic development from early childhood to young adulthood, as particularly dynamic phases of social development, and not just limited life phases. The imbalances between risk and protection (through different constellations of risk and protective factors) can emerge in very different ways. What is decisive and predictive is the extent of the stressors and risks, along with a chronic imbalance toward risk factors at the expense of protective processes, rather than the

influence of specific causal factors. The consequence of this imbalance is an increasing probability that the following four proximal radicalization processes will be triggered.

#### 3.2 Proximal Radicalization Processes

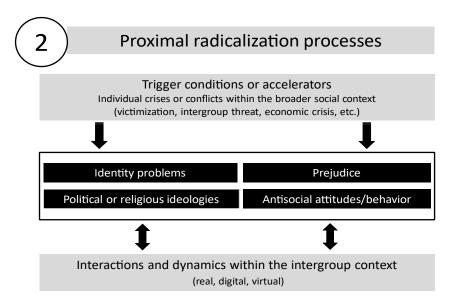
These processes characterize Stage 2 of the developmental model. They are proximal because they are linked to radicalization in a narrower sense and represent the central preconditions for political or religious extremism to emerge (see Figure 3). Hence, they form the core of radicalization processes and emerge during a long phase of development extending from early adolescence to middle adulthood (from fourteen to about thirty years of age), and thereby in a life span within which more than 90 percent of all extremist offenders become radicalized (Borum 2014; Urdal 2006). This does not mean that later radicalization is impossible, but, on the one hand, it is very unlikely, and, on the other hand, it is linked to psychological preconditions that must have originated earlier in the person's biography.

The model comprises four proximal processes of radicalization that not only influence and reinforce each other, but also have their own distinct and genuine influences on extremist attitudes and actions. Problematic identity processes are characterized by

an unfulfilled need for appreciation that may express itself in, for example, feelings of injustice, marginalization, insignificance, threatened identity, or specific identity constellations (narcissism) (see Hogg 2014; Kruglanski et al. 2014). These feelings form the motivational foundation for radicalization processes (why does a person think or act in this way?). The most important risk factors for this process (in Model Stage 1) are low or excessive self-esteem and massive social, individual, and collective experiences of rejection and discrimination.

Prejudice takes the form of strongly derogatory schemata regarding members of other social groups ("foreigners," "refugees," unbelievers," etc.). Here, the definition of the social group may be based in reality -or merely in a virtual reality. Prejudice addresses the social-cognitive conditions of radicalization and extremism that accompany social categorization and evaluation processes (how do people think about themselves and other people and social groups?). These are expressed in negative intergroup attitudes that forge a social link to extremist offences (for example by referring to the nationality or ethnic origins of the ingroup or the victim's group). Such ideas about inequality are then revealed in attributions of negative characteristics, low levels of sympathy, or discriminatory treatment (Brown 2010). The most im-

Figure 3: Proximal radicalization processes



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portant risk factors for prejudice processes are a social context (societal or social proximal space) that establishes these structures, lack of experience of social diversity, and specific social-cognitive deficits (low cognitive differentiation, lack of empathy).

Processes toward the acquisition of political or religious extremist ideologies serve to justify assumptions of inequality and also to legitimize the use of violent and illegitimate means to reach extremist goals. This does not necessarily mean adopting or constructing coherent ideologies; vague ethnocentric or diffuse religious ideas or narratives may suffice. Frequently, such ideological principles are provided through the social ingroups that also play an important role in the development of prejudices. The most important risks for adopting ideologies are deficits in social information processing, specific personality characteristics such as authoritarianism, and the dissemination and acceptance in society of political or religious ideologies and access to groups that profess these ideologies.

Finally, antisocial attitudes and behavior characterize a development marked by infringements of age-related social rules and norms, and by specific behavioral problems such as oppositional behavior, aggression, and delinquency. This is the development for which the most extensive and by far the most differentiated developmental models are available (for a detailed account, see Beelmann and Raabe, 2007). Particularly significant risks are presented by early deviance (already in preschool age) that emerges, in turn, through a combination of unfavorable temperament characteristics and parenting deficits, and when behavioral problems are already present, also through access and ties to deviant groups in adolescence (Farrington et al. 2017).

All four proximal radicalization processes are influenced by ontogenetic risk-protection background processes, and can be triggered or reinforced by specific current societal, social, and individual problems or events (see Doosje et al. 2016; Figure 3). For example, the so-called refugee crisis in Germany (2015) can be viewed as a societal trigger event that touched especially on identity and prejudice processes and led to a massive increase in negative attitudes toward foreigners at that time (Best et al., 2016). Beside this influence of current events and social context, the prox-

imal processes generally take place in social group contexts on an intergroup level. For example, the emergence of prejudice as an intergroup phenomenon is closely associated with an ingroup/outgroup constellation (see Brown 2010); and the acquisition of political ideologies to compensate identity problems (such as the need for significance) depends principally on access to a social group that delivers narratives and ideologies (Kruglanski, Bélanger, and Gunaratna, 2019). Hence, the strength and type of proximal radicalization processes result from the interaction of various ontogenetic risk-protection constellations with the current triggering social context, against the background of social intergroup processes.

The stronger these proximal radicalization processes, the greater the risk that extremist attitudes and actions will emerge (Stage 3). However, as within the first phase, protective factors can influence these processes and lead to desistance from radicalization, or to de-radicalization (Doosje et al. 2016). For example, a romantic partnership with a nondeviant partner or a secure job may buffer persons from becoming extremist even though they have a high general individual risk in terms of the four proximal radicalization processes. Therefore, these ideas on radicalization and extremism can be labeled as a risk-protection probability model of causality rather than a fixed monocausal model. Like McCauley and Moskalenko's (2011, 2017) model, the current model thereby implies different paths of radicalization leading to extremism, as well as different forms and severities of extremism (from sympathy with and support for extremist groups, through extremist attitudes to manifest extremist offences). At the same time, a general model of extremism is assumed within the aforementioned definition, because all four proximal radicalization processes must have deviated from normative trajectories of social development before one can talk about political, religious, or any other form of extremism. Which degrees of deviation are necessary in each case remains an open question and is also subject-with reference to developmental psychopathology-to a dimensional rather than categorical understanding of deviation. For example, the thresholds where identity problems become relevant for radicalization are located on a continuum extending from

healthy to clinically relevant and may differ between individual cases. Nonetheless, a developmental perspective and an orientation toward preventive measures will favor a low-threshold definition of deviation in order to interrupt the aforementioned development as early as possible.

#### 4 Implications for Developmental Prevention

This developmentally oriented model has numerous implications for the development, design, implementation, and evaluation of preventive measures (for details see Beelmann, 2012; Beelmann et al. 2018). First, prevention can be applied as a relatively unspecific measure to one or more risk or protective factors. Numerous possibilities can be found on the societal (for example political measures to counter poverty or ethnic conflicts), social (for example care concepts for families or new forms of youth work), and individual levels (for example social support programs). Here, "unspecific" means that the indicated risk and protective factors can also exert a relevant influence on other developmental problems (for example poverty on problematic school careers or a problematic selfconcept on depressive disorders); in this sense, they are not just significant for preventing radicalization. Prevention can in fact be directed relatively specifically by addressing one or more of the aforementioned proximal radicalization processes. Depending on the specific domain, one can sometimes draw upon a comprehensive range of research on interventions without these having a direct link to preventing radicalization. For example, there are various approaches to prejudice prevention (Beelmann and Lutterbach, 2020) in which contact interventions (providing opportunities for different social groups to meet) and promotion of social-cognitive abilities (such as empathy or moral development) have proved to be particularly successful (Beelmann and Heinemann, 2014; Lemmer and Wagner 2015; Paluck and Green, 2009; Pettigrew and Tropp 2006). Knowledge about prevention of antisocial behavior problems is even more comprehensive. Numerous research reviews and meta-analyses provide comprehensive data on prevention options whose effectiveness has been confirmed repeatedly (see Beelmann and Raabe 2009; Farrington et al. 2017). Research on the efficacy of political education or the prevention of political or religious extremist ideologies (for example citizenship education, see Lin 2013) is less comprehensive, in contrast. Regarding the prevention of identity problems, various approaches have been evaluated as being very effective (such as so-called service learning; see Celio, Durlak, and Dymnicki 2011). Others (such as public youth work) have yet to be evaluated in relation to the prevention of radicalization processes. Hence, although a broad range of potential preventions are available, they are still not widely used in practice. Practice is still dominated by de-radicalization projects that have not yet been subjected to systematic evaluations (see, for example, Feddes and Gallucci 2015). Nonetheless, such evaluations would represent a major research challenge in light of the probably long-term nature of the processes and the generally relatively low prevalence of the problems.

Ideally, the social-developmental model sketched here should specify in which development phases or age group which measures can be applied with the greatest promise of success. This would indeed represent a significant advantage for a developmental model compared to other radicalization theories. While development-related radicalization research is only just beginning, various developmental theories do offer indications regarding optimal points in development on which prevention should focus. Findings in developmental psychology indicate, for example, that adolescence is a sensitive period of identity development and political socialization (see Kroger, Martinussen, and Marcia 2010; Sears and Levy 2013). For the development of prejudice, in contrast, middle childhood between the ages of eight and twelve years has proved to be a sensitive period (Raabe and Beelmann 2011). And for antisocial behavior, avoiding early deviance in preschool and elementary school age has proved to be a particularly worthwhile prevention strategy (Beelmann and Raabe 2009; Deković et al. 2011). However, the areas of prevention outlined here, are still scarcely interlinked but should become established fields of radicalization prevention (Beelmann 2014). In part, there is a lack of concrete findings regarding how and to what extent the proximal processes relate to each other. Nonetheless, such knowledge is essential if prevention is to be tailored successfully to focus on the appropriate targets.

#### 5 Limitations and Outlook

The new social-developmental perspective on radicalization and extremism combines ideas and concepts from developmental psychopathology with ideas derived from evidence-based theories of crime, radicalization, and extremism, by combining empirical evidence from longitudinal, cross-sectional, and biographical analyses and results of intervention studies. Although the resulting model has several advantages, it also has limitations of course, and further research is needed. First, we need more longitudinal studies to describe and further explain the causal mechanisms connecting ontogenetic background processes and proximal radicalization processes. This is essentially to identify prototypes of processes and typical developmental pathways-like those in the field of antisocial behavior (Fairchild et al. 2013). This will extend our knowledge on the kind of dynamic processes that bear the strongest risk for radicalization and extremism.

Another limitation is the lack of knowledge on how intense proximal radicalization processes need to be, and which subtypes are necessary within each category for an individual to become extremist. For example, identity problems could mean different things depending on different risk factors (marginalization, low or high self-esteem, etc.) and self-concept constellations (see for example, Wolfowicz et al. 2019). In addition, for identity problems and prejudice, we have no recognized threshold indicating that a process has gone beyond normative development and become deviant (see for example, Raabe and Beelmann, 2011). All we can say at the moment on the basis of experiences in other fields of developmental psychopathology is that problems have to be long term (not temporary) and of a certain strength. Finally, the thresholds may depend on the individual risk-protection constellation. In some cases, a relatively low prevalence of proximal problems will increase the probability of extremism, whereas in other cases, a higher level of proximal problems will do the same.

Another related issue is what kind of indicators can indicate an onset of radicalization at a point where

extremist attitudes and behavior are not yet fully developed. Again, this is an empirical question that calls for extended longitudinal studies, because the biographical analyses (often cited in the radicalization literature) risk biased interpretations due to false-positive decisions. Nonetheless, we are convinced that if adolescents or young adults exhibit problems in the proximal radicalization processes, this is a strong indication for prevention and intervention. As well as not knowing which indicators validly lead to extremism, we also know little about how the four processes are interwoven. We do know, of course, that there is some covariation-for example, between prejudice and antisocial behavior in the area of hate crimes (Dancygier and Green 2010). However, we still lack a clear concept of how and when these processes will influence each other over the course of development. Again, longitudinal research is necessary to address these questions in more depth.

Finally, and with regard to prevention, we need new initiatives that will produce and systematically evaluate developmentally appropriate programs in which we can also test our model empirically. Within this context, we should also ask whether multimodal programs (assessing all processes at the same time) or more focused programs will be more successful. These and other questions have a long tradition in prevention research (see for example Beelmann et al., 2018). At present, we would recommend first looking at different opportunities within the four proximal processes and then examining how different prevention strategies could be combined effectively. Although implementation research (Meyers, Durlak, and Wandersman 2012) has taught us that sometimes simple prevention models can be applied more successfully than complex models incorporating a range of parties (school, adolescents, teachers, communities), our radicalization model implies that in the long run sustainable long-term developmental strategies that target the four proximal radicalization processes over the course of development will effectively reduce the prevalence of political, religious, and other extremism among adolescents and young adults.

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