

# The Importance of Mental Functions and Autobiographical Memory in the Development of Identity and Life Story in Adolescence: Their Role in Preventing Identity Diffusion, Aggressiveness And Depression Among Adolescents

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## Abstract

The structuring of one's own identity is a fundamental and demanding evolutionary task of adolescence. The positive resolution of this task, that is the acquisition of a healthy and integrated identity, is closely linked to adolescents' ability to develop one's own Life Story, namely an internalized and evolving self-story. The structuring of one's own identity, which is the foundation of positive development, requires adolescents to develop a good level of mental functioning and access to autobiographical memory. This work aims to deepen the importance of mental functions and autobiographical memory in the development of adolescents' identity and life story and, accordingly, in preventing identity diffusion, aggressiveness and depression among adolescents. Specifically, given their relevance in relation to this, it has been decided to examine the mental functions of 1) Differentiation and Integration, 2) Mentalization and Reflexive function and 3) Meaning and directionality and the Self defining memories, a particular class of autobiographical memories.

## The development of a stable and coherent identity and Life story: a really difficult evolutive task of adolescence

The development of a stable and a coherent sense of one's identity is a fundamental developmental task of adolescence<sup>1</sup>. Adolescence is also the period in which people begin to reconstruct their personal past, perceive the present and anticipate the future in terms of an internalized and evolving self-story. The term Life Story (or Narrative Identity) refers to an internalized and evolving self-story, an integrative narrative of self that provides modern life with some modicum of psychosocial unity and purpose<sup>2</sup>.

Identity and life story are two closely related scopes of human development. The positive development of one's identity and the emergence of one's life story in adolescence require a good level of mental functioning and the ability to recall autobiographical memories, both of which affect adolescents' well-being. Mental

functions constitute a set of capacities referring to different areas of individual mental functioning<sup>1</sup>. Autobiographical memory is defined as the set of explicit memories relating to events which occurred at a specific time and place in one's personal past<sup>3</sup>.

This work aims at outlining how mental functions and autobiographical memory are involved in the structuring of identity and the emergence of the life story in adolescence and how being able to fully accomplish this task may prevent the manifestation of pathology such as, for example, identity diffusion, aggressiveness and depression. For this purpose, three mental functions (*Differentiation and integration, Mentalization and reflective function, Meaning and directionality*), self-defining memories (SDMs).

### Identity and Life Story in adolescence

Construction of a personal identity is the main task of adolescence<sup>4</sup>. Adolescence is the phase of life between childhood and adulthood from the age of 10 to the age of 19. It is a unique stage of human development and an important time for laying the foundations of good health<sup>5</sup>. Adolescence years are characterized by profound changes which occur at the bodily, cognitive, socio-emotional and interpersonal levels<sup>1</sup>. These changes question the system of representations and schemes that up to that moment have regulated adolescent's relations with one's own body, with other individuals and groups, with activities, social objects and institutions; on the whole, they push adolescents to critically review their self-image and to undertake the formation of a mature and responsible self<sup>6</sup>. This clarifies why the question "Who am I?" becomes so relevant in this phase of human life and why adolescence represents a critical period for identity development<sup>7</sup>.

Identity provides a lot of critical functions: first, it provides individuals with a sense of structure with which to understand self-relevant information; second, it provides a sense of consistency, coherence, and harmony among one's chosen values, beliefs, and commitments; third, it provides individuals with a future orientation and a sense of continuity among past, present, and future; fourth, it offers goals and direction through commitments and chosen values; finally, it provides a sense of personal control, free will, or agency that enables active self-regulation in the process of setting and achieving goals, moving towards future plans, and processing experiences in ways that are self-relevant<sup>8</sup>.

As anticipated, development of a stable and a coherent sense of one's identity is a fundamental developmental task of adolescence<sup>1</sup>. Adolescents who adequately resolve this task reach a condition of identity achievement (identity integration) combining and integrating relevant earlier identifications in a unique and personal mold<sup>8</sup> which turns into an ever more realistic, integrated and purely positive self-definition<sup>1</sup>; such adolescents are likely to have an agentic approach, to be faithful to their values and to struggle for reaching their goals<sup>7</sup>. Identity integration is considered to be the basis for positive youth development<sup>8</sup>. In contrast, young people who fail in this task remain in a state of identity confusion in which they move from one identification to another and miss meaningful commitments that could provide them with a sense of direction<sup>4</sup>. The failure of this process constitutes the syndrome of *identity diffusion*. Such syndrome is clinically reflected in the incapacity to convey an integrated description of self and significant others and is associated with severely compromised levels of functioning and well-being<sup>9</sup>.

The construction of personal identity is captured in quite distinct ways by different developmental theories and methodologies, including the Narrative Approach<sup>10</sup>.

*The ability to create your own coherent and personal story: the Narrative approach*

According to the Narrative approach, identity is closely related to the evolving narrative people create about their life. Defining oneself biographically allows the integration of self-aspects in a more complex, flexible and individualized way, the development of multiple and flexible identifications and the bridging of personal discontinuities into a somewhat coherent and continuous identity<sup>11</sup>. Such approach derives from McAdams' *life story theory of identity*, according to which «Identity is a life story»<sup>12</sup>. The term *Life Story* refers to an internalized and evolving self-story, an integrative narrative of self that provides modern life with some modicum of psychosocial unity and purpose; the question of identity integration is thus the problem of arriving at a life story that makes sense, namely providing unity and purpose<sup>12</sup>.

Forming a life story involves integration of one's past, present and future by using important past events to weave a personal story of one's life<sup>12</sup>. Firstly, therefore, individuals must be able to access the set of their autobiographical memories, namely their autobiographical memory. Such memory constitutes «the set of explicit memories relating to events which occurred at a specific time and place in one's personal past»<sup>3</sup> and plays a critical role in individuals' psychological functioning through the construction of a personal story that relates the self through the past, present, and future<sup>13</sup>. Secondly, they must develop *autobiographical reasoning*. Such term refers to a wide set of interpretive operations through which people draw on autobiographical memories to make inferences about who they are and what their lives mean<sup>14</sup>; autobiographical reasoning therefore relies on autobiographical remembering, but goes beyond it by enhancing understanding through actively creating coherence between events and the self<sup>11</sup>.

The ability to develop and narrate one's life story only emerges in adolescence<sup>11, 12, 15</sup>. Long before adolescence, children are able to communicate “who they are” and relate personal memories in a story form<sup>3</sup>; however, if they attempt to provide a life narrative, they fail: their accounts consist of several episodes or stories that are not integrated with each other or with their life as a whole<sup>2</sup>. That is because earlier forms of remembering are only implicitly linked to the self, but not tied to identity in a causal-motivational or thematic way as it is by autobiographical reasoning; up to early adolescence, both self and others are indeed basically described in terms of synchronic attributes (i.e. physical characteristics, preferences, attitudes and habits, personality traits) but not in terms of their individual life experiences and how they have formed the development of their personalities<sup>15</sup>. During adolescence, a significant growth in autobiographical reasoning skills occurs, which allows the creation of a coherent and globally integrated life story<sup>11, 15</sup>.

Life stories are expected to relate life events to their context, to each other, and to the individual's personality and development so as to present a meaningful, coherent life<sup>15</sup>; namely they should be globally coherent. Habermas and Bluck<sup>11</sup> defined four major aspects of life story's overall global coherence: temporal coherence (the degree to which events are temporally related each other), causal-motivational coherence (the degree to which events are explained by referring to external or internal causes which depend on individuals' personality, needs and aspirations over time), thematic coherence (the presence of implicit and explicit connections between various elements of a life) and the cultural concept of biography (the degree to which a person uses, in one's life story, the culturally shared sequence of “standard events and facts” which should be included in biographies). Several studies have examined the evolution of them over time. Overall, they show that each of these types of coherence significantly increase from childhood to adolescence<sup>15-18</sup>, thus confirming the conception of adolescence as the critical period for the emergence of Life Story.

### Three key mental functions in adolescence

PDM-2 is a manual that aims to offer a diagnostic framework that can describe individuals' full range of functioning -the depth as well as the surface of emotional, cognitive, interpersonal and social patterns-. To this end, the manual offers an accurate description of the healthy and pathological functioning of an individual's personality, one's mental functioning profile and symptomatological patterns a person may present<sup>1</sup>.

Since adolescents' personality is not sufficiently stable to function as the first organizer of diagnosis, mental functioning is the first aspect that must be evaluated to provide an overall assessment of adolescent functioning. In the PDM-2, adolescents' mental functioning profile is organized into twelve categories which are accompanied by descriptions illustrating the various levels of functioning, from the healthiest to the most compromised one. Although conceptually distinct, the twelve mental functions are not completely independent of each other; indeed, mental functioning should rather be conceived as a set of interconnected and integrated processes<sup>1</sup>.

For the purposes of this work, the three mental functions most directly involved in the development of identity and life story have been selected.

#### *A complex formulation of the identity construction: Differentiation and integration (identity)*

The capacity for *Differentiation and integration* involves the ability to distinguish the self from the other, fantasy from reality, internal representations from external objects and circumstances, the present from the past and the future, and to delineate connections between these elements without confounding them. It reflects, specifically, the ability to construct and maintain a differentiated, realistic, coherent and complex representation of self (identity) and other people, and to connect these internalized representations in a manner that facilitates adaptation and functioning<sup>1</sup>. This capacity has been selected in this work as it constitutes the mental function most directly involved in the development of identity in adolescence. A good level of functioning in this mental domain is furthermore required for adolescents to mature a globally coherent life story.

Adolescents who have developed high capacity for differentiation and integration show a stability of identity-giving goals, inclinations, commitments, roles and relationships and have good and stable access to emotions. They dispose of a clear self-definition -as a result of self-reflective awareness-, consistency in self-image, autonomy/ego strength and differentiated mental representations<sup>1</sup>. Such condition reflects a positive resolution of the evolutionary task of developing one's identity, namely identity integration.

The process that leads to integration involves the ego's ability to collect and integrate previous identifications in a new, unique and personal form, which turns into a definition of self increasingly realistic, integrated and purely positive. The positive outcome of this process is supported by the advent of formal operational thought and abstract thinking<sup>1</sup>; adolescents, indeed, gradually develop the capacities for hold multiple variables in mind at one time, engage in scientific reasoning, metacognition, and think about abstractions<sup>19</sup>. Such capacities allow them to imagine what the future could be and to consider future "possible identities" that they might wish to become (or to avoid becoming)<sup>1</sup>, to hold different ideas of the self in mind (particularly in terms of past and present self) and to make causal connections between experience and the self, a critically important process in developing their life story<sup>19</sup>.

The creation of one's life story, that is a self-defining story, requires adolescents to have developed a

conception of themselves as unique and distinct individuals and a stable and coherent self-definition. The lack of integration of self-concept, in fact, interferes with complete integration of one's past and present and prevent people's ability to use this integration to predict their future behavior<sup>20</sup>. The possibility of finding a coherent and integrated life story, therefore, is reduced the lower adolescents' capacity for differentiation and integration.

Adolescents whose functioning in this capacity is seriously impaired lack a self-related perspective and a sense of belonging or affiliation. They have limited emotional access and do not trust emotions' stability. They have very little ability to move through a range of emotional states either autonomously or with others, without experiencing intense anxiety, resorting to acting out or other maladaptive defense mechanisms. Internal experience of such adolescents appears fragmented or rigidly compartmentalized and oversimplified most of the time; in extreme cases, internal experience may be detached from external context and representations of self and other may be confused<sup>1</sup>. As anticipated, when adolescents' functioning in this capacity is completely compromised, a condition called *identity diffusion* occurs.

#### *The syndrome of identity diffusion as a serious problem in promoting a troubled adolescence*

The syndrome of identity diffusion represents the opposite of identity integration. Erikson<sup>21</sup> described this condition as the absence or a loss of the normal capacity for self-definition. Adolescents with identity diffusion are unable to convey an integrated description of themselves and significant others. This incapacity is reflected, psychopathologically, in chaotic behavior patterns, severe feelings of insecurity, rapidly fluctuating self-assessments and degrees of self-regard, uncertainty about one's major interests and commitments, severe difficulties in commitment to work or profession and to intimate relations<sup>9</sup>.

Otto F. Kernberg, one of the first and most significant researchers of identity diffusion, identified this syndrome as the typical identity pathology of borderline patients; specifically, he recognized identity diffusion as the main etiological factor of the borderline organization of personality traits found in severe personality disorders<sup>20,9</sup>. The DSM-5 identifies the presence of identity alteration (expressed in the form of a markedly and persistently unstable image or perception of oneself) as a central aspect of the Borderline Personality Disorder; such an alteration constitutes indeed one of the criteria for the diagnosis<sup>22</sup>. In line with Kernberg's conceptualization, several studies have shown identity alteration (i.e. identity diffusion) is crucial in BPD<sup>23-25</sup>. Because identity diffusion in adolescents is one of the most important symptoms that can lead to a subsequent diagnosis of BPD and because identity formation is one of the crucial tasks of adolescence, focusing on early signs of identity diffusion in adolescence with respect to BPD seems therefore crucial<sup>26</sup>.

#### *Identity integration and Life story's development*

Previously, reference was made to the relationship between identity and life story. According to Kernberg<sup>26</sup>, life stories can be used to diagnose identity integration in clinical contexts. Particular attention was paid by the author to the way in which adolescents described themselves and others, recognizing it as an important tool for understanding the level of identity integration<sup>20</sup>. «In the case of identity diffusion, descriptions of the most important persons in his/her life by an adolescent with borderline personality organization are vague and chaotic, and so is the description of the self»<sup>20</sup>.

Narrative incoherence and identity diffusion in adolescence were examined in association with BPD in a recent study by Lind and colleagues<sup>25</sup>. Findings of the study suggest that both identity diffusion and

low narrative coherence (of autobiographical memories) were related to the characteristics of BPD, which supports the idea that adolescents who have symptoms attributable to this disorder "struggle" with many aspects of a distorted sense of self<sup>25</sup>. Overall, the assessment of narrative coherence in adolescence, in association to a careful investigation of the level of individual's identity integration, can constitute valid support in identifying a potential borderline disorder condition of personality in adolescence.

#### *The importance of imagining what others think: Mentalization and reflective function*

The capacity for *Mentalization and reflexive function* refers to the ability to infer and reflect upon one's own and others' mental states (e.g., needs, desires, feelings, beliefs, goals, purposes and motivations) and use this competence in interpersonal and social interactions<sup>1</sup>. The term *mentalization* reflects such form of mental activity, which is imaginative and mainly preconscious, whereas the construct of *reflexive function* represents the operationalization of mentalization, namely the way it is measured<sup>1</sup>. This mental capacity has been selected in this work as it is important for identity development and the emergence of life story in adolescence; mentalization constitutes indeed a means of understanding and organization of the self and a prerequisite for adolescents to mature autobiographical reasoning and develop a coherent life story.

The importance of mentalization in the organization and understanding of the self has been recognized<sup>27-29</sup>. In this regard, some considerations have been reported below. The ability to understand the self as a mental agent is not a genetic given and grows out of interpersonal experience<sup>28</sup>: children's perception of their self-states derives from the apperception of others' mental states<sup>27</sup>. Exploring the meaning of others' actions (i.e. attributing mental states to them) is then a precursor of children's ability to label and find meaningful their own psychological experiences. This ability arguably underlies the capacities for affect regulation, impulse control, self monitoring, and the experience of self-agency, namely the building blocks of the organization of the self<sup>27</sup>.

The capacity for mentalizing change across the lifespan<sup>1</sup>. The increasing of mentalization requires the development of numerous cognitive skills, including understanding of emotional states, attention and effortful control, the capacity to make judgments about subjective states and thinking explicitly about states of mind<sup>28</sup>. Adolescence is a significant evolutionary period for the maturation of these abilities. Such maturation makes adolescents more capable of integrating mental state knowledge and the ability to make explicit references using mental state language, which allows them to become hypersensitive both to their own and other mental states<sup>1</sup>.

Adolescents differ in their capacity for mentalization. That constitutes an important factor underlying individual differences in self-organization, which is intimately involved with many defining features of selfhood and identity<sup>27</sup>. Many studies have examined the role of mentalization in adolescent identity development. In a recent study<sup>30</sup>, reflexive function has been found inversely associated with adolescents' identity conditions characterized by discontinuity and inconsistency. These results confirm that reflexive function constitutes a fundamental component of identity and that lack of mentalization significantly interferes with identity integration. Reflexive function is indeed suggested to be one candidate treatment target to help promote healthy identity among adolescents. Specifically, Penner, Gambin and Sharp<sup>31</sup> found that targeting reflexive function may help build a healthy identity among adolescents who are at high risk of identity diffusion.

#### *Aggressiveness in adolescence as a potential result of impaired mentalization*

Aggressiveness is one of the main forms of individual acting out. It is highly prevalent among the



adolescent population so much that constitutes one of the most significant problems facing society today<sup>32</sup>. From an evolutionary perspective, developmental pathways implicated in aggressive behavior typically involve temporary or enduring impairments in social cognition, in particular in the capacity for mentalization<sup>33</sup>.

Mentalization is essential for preventing acting out and, therefore, aggressive behavior. Adolescents highly mentalizing are able to symbolize affectively meaningful experience (i.e., to organize experience via mental representation rather than somatically or behaviorally), and to use this experience effectively both for self-regulation and in interpersonal interactions; they are able to use internal representations to modulate and inhibit their impulses and express them in an adaptive and appropriate way; conversely, adolescents lacking mentalization tend to misunderstand, misinterpret or be confused about others' actions and reactions and not to be able to form representations of their emotions, which leads them to a greater fragility in impulsive acts (acting out)<sup>1</sup>.

Impairment in RF leads individuals to a diminished empathic capacity, which might remove key constitutional inhibitions over violence<sup>34</sup>; if mentalizing is inhibited, and consequently adolescents have difficulties to recognize others' distress, the threshold for aggression and violent behavior might indeed be lowered<sup>35</sup>. Moreover, RF help regulate behavioral impulsivity by allowing the emergence of alternative explanations for our own and others' behavior through reflective perspective-taking<sup>36</sup>. Inaccuracy about mental states may thus lead adolescents into social difficulties and interpersonal problems; they may, for example, judge interactions as threatening when they are actually benign<sup>34</sup>.

#### *Mentalization and Life story's development*

As previously mentioned, mentalization is needed for the development of adolescents' life story. Reflexive function (RF) captures indeed socio-cognitive skills that develop earlier and on which autobiographical reasoning (AR) and the ability to narrate a coherent life story build<sup>29</sup>.

RF and AR are related but distinct concepts: a) RF helps reflecting upon and understanding the mental self-aspects that influence experiencing situations and motivating behavior. AR, however, connects life events to the self and its development and provides an external and highly sophisticated autobiographical perspective of the self because autobiographical arguments link events with the individual's personality and development. Hence, while RF is operational in specific situations or in comparing specific situations, AR creates coherence in a life from a biographical perspective; b) the RF dimension of inferring reciprocal connections between mental states and behavior in any given situation is more basic than the creation of connections between distant life events and the self, which, however, is the core of AR; c) AR conceptualizes the self in more complex terms, such as situation-specific vulnerabilities due to biographical experiences, personality traits, or values. Thus, RF seems as a likely candidate to be a prerequisite of or at least facilitate AR<sup>29</sup>.

Reflexive function in life stories has been found to increase with age throughout adolescence and contribute to the causal-motivational coherence of adolescent life stories<sup>29, 15</sup>. Furthermore, it was found that greater mentalization not only contributes to higher coherence in adolescents' life stories but also discrete event narratives. Thus, the ability to mentalize one's own and others' mental states seems fundamental to tailor a structured and reflective narrative of one's past<sup>37</sup>.

#### **The importance of knowing and making sense of one's life story: Meaning and directionality**

The capacity for *Meaning and directionality* reflects the ability to construct a narrative that gives

cohesion and meaning to personal choices. Adolescents having a high level of functioning show a clear, unwavering sense of purpose and meaning, along with an intrinsic sense of agency and self-direction and the ability to look outside the self and transcend immediate situational concerns. Subjectivity and intersubjectivity play a major role in the life of these adolescents, who manage to have a critical involvement in personal and general projects<sup>1</sup>. Such capacity has been selected in this work because the presence of a sense of purpose and meaning in one's life in adolescence is fundamental for an integrated identity and, therefore, a coherent life story.

The ability to develop and attribute personal meaning to one's existence (*Meaning in life*) and the presence of a stable intention to pursue one's purpose and an active commitment in achieving it (*Purpose in life*) are two critical personal resources in determining a good level of functioning in this capacity. Purpose and meaning in life share an intention to see one's life as guided by an overarching aim<sup>38</sup>. Generally, adolescents having meaning in life also have purpose in life and vice versa; such personal resources, in fact, are different but associated with each other. Having a sense of meaning in life suggests one has the ability to form coherent worldviews explaining why events occur and the ability to identify aspirations and goals people may strive to achieve<sup>39</sup>. Purpose is a part of one's personal search for meaning but it also has an external component: the desire to make a difference in the world, to contribute to matters larger than the self; moreover, unlike meaning alone, purpose is always directed at an accomplishment towards which one can make progress<sup>40</sup>.

Healthy identity formation in adolescence is closely linked to searching for and gradually acquiring meaning and purpose in life. In adolescence, the capacity for *Meaning and directionality* is indeed strongly related to identity development<sup>1</sup>. Such link was initially brought forward by Erikson<sup>4</sup>. According to Erikson, allegiance to a coherent worldview, which is conceptually similar to meaning in life, offers adolescents a sense of direction in life and helps them in exploring and negotiating social and age-graded requirements (e.g., choice of an occupation, choice of friends), namely in developing their identities<sup>4</sup>.

Identity formation is critical to the establishment of meaning and purpose in life and, conversely, they support positive identity formation and consolidation<sup>39</sup>. Meaning in life is strongly related to adolescents' identity development<sup>41,4</sup>. Longitudinal proofs of such link have been recently provided by Negru-Subtirica and collaborators<sup>39</sup>. The authors found that the paths towards the acquisition of one's identity and the search for the meaning of one's life in adolescence were strongly interrelated: when adolescents explored various identity alternatives or deepened the choices they already made, they were also engaged in a process of search for meaning in their lives and vice versa. Specifically, it was found that identity commitment promotes presence of meaning and vice versa, whereas identity exploration promotes search for meaning and vice versa<sup>39</sup>. Even purpose in life is strongly linked to adolescents' identity development. Purpose in life may be interwoven with one's identity and therefore provide individuals with essential guidance on how to allocate their finite set of resources toward meaningful accomplishments and promoting and maintaining well-being<sup>41</sup>. A sense of purpose helps adolescents to resolve identity crises by offering a meaningful ideal to which they can dedicate themselves and direct time, energy, and effort<sup>4</sup>. Furthermore, successfully resolving identity crises can result in the development of new assets, capabilities, or talents, such as initiative and efficacy, that are likely to facilitate the growth of purpose<sup>38</sup>.

Additional proof for the complex relations between identity processes and meaning in life comes from narrative identity studies that have conceptualized meaning making in the context of the construction of



a personal life story<sup>39,12</sup>. Research studies have linked changes in identity processes with changes in the complexity, depth, and content of narrative meaning making in adolescents<sup>42</sup>: adolescents actively involved in the exploration of identity alternatives and/or of present identity commitments tend to have richer and more comprehensive life stories<sup>39</sup>.

### **The importance of accessing to one's own personal memories: Autobiographical memory**

So far, the importance of mental functions in adolescent development of identity and life story has been discussed. Now, the contribution of autobiographical memory will be investigated. Autobiographical memory is defined as «the set of explicit memories relating to events which occurred at a specific time and place in one's personal past»<sup>3</sup>. As anticipated, it plays a critical role in an individual's psychological functioning through the construction of a personal story that relates the self through the past, present, and future<sup>13</sup>. Self defining memories and Overgeneral autobiographical memory will be examined to analyze how autobiographical memory contributes to the development of adolescent identity and life story.

#### *Memories that are crucial to an individual sense of identity: Self defining memories*

Self defining memories are a special class of autobiographical memories, particularly important to an individual's sense of identity<sup>43</sup>. Such memories, namely the memories used to define oneself, are highly relevant to the current self<sup>44</sup> and occupy a central position in one's life story<sup>45</sup>. SDMs are highly likely to be from late adolescence and early adulthood<sup>43</sup>. According to Conway and colleagues<sup>46-48</sup>, this can be explained by the fact that most of the memories from this period, usually form an enduring relation with the self, becoming self-defining experiences and preserving self-coherence over time.

Compared with general autobiographical memories, SDMs are more likely to be important to the individual, tap themes of self-discovery and self-understanding, and focus on unresolved conflicts or enduring concerns<sup>49</sup>. Such memories are distinguished by the following features: they evoke strong emotions, not merely at the time of occurrence, but also at the time of recollection; are vivid in the mind's eye, filled with sensory details; are repetitive and readily accessible; are strongly linked to related memories that share similar emotions and themes; are also relevant to the individual's most important, enduring concerns and conflicts (such as, unrequited loves, sibling rivalries, successes and failures, moments of insight and disillusionment)<sup>44</sup>. Thematic continuity especially, is a distinctive characteristic of SDMs: even when varying in content, these memories reflect similar motivational themes that are linked to the individual's current self<sup>13</sup>.

Below, two aspects of SDMs that make them particularly relevant to individual identity will be presented.

#### *Self defining memories orient individual current efforts and goals*

A first aspect that makes SDMs particularly relevant to an individual's sense of identity is that these memories orient individual current efforts and goals.

As already mentioned, a typical aspect of a stable and integrated identity is that offers goals and direction through commitments and chosen values<sup>8</sup>; the lack of integration of the self-concept (typical of identity diffusion), indeed, interferes with the capacity to predict one's future behavior and decreases the capacity for stable commitment to professional goals, personal interests, work and social functions, intimate relationships<sup>20</sup>. Several models and scientific contributions have recognized such abilities associated with the functioning of memory, especially with SDMs<sup>46,50,51</sup>.

Generally speaking, memories contribute both cognitively and affectively to directing an individual's efforts and goals. Cognitively, the content of our memories informs us about the actual possibility of achieving our goals. It is possible that we selectively recall memories relevant to the achievement of desired goals as a means of self-encouragement. Affectively, memories allow us to feel what it might be like to succeed or fail in our goals by recreating in consciousness previous experiences in pursuit of a goal<sup>50</sup>. In particular, SDMs contribute greatly to directing individual efforts and goals.

Since SDMs are particularly vivid and able to evoke strong emotions when recalled<sup>44</sup>, they have the power to evoke subjective feelings and physiological states similar to those experienced in the original situation<sup>51</sup>. This is in line with Singer and Salovey's findings<sup>44</sup>, namely that memories relevant to the attainment of specific strivings are more vivid and affectively intense than other autobiographical memories. In addition to their affective quality, the motivational content of SDMs also is linked to personal strivings; this may contribute to enduring patterns of behavior by setting up expectancies of how self and others should act. Thus, the motives expressed across an individual's memories are likely to be related to how the individual construes one's personal strivings<sup>51</sup>. Furthermore, as SDMs are linked to other similar intense memories, they influence individual sense of mastery or failure, which, indeed, grows out of an accumulation of linked experiences that reinforce this self-perception<sup>45</sup>. Hence, SDMs may result in affective responses that inform us about what our strivings should be. That is, in replaying significant scenes from our personal past, we may be involved in a self-regulation process that allows us to readjust our current behavior in order to identify and to expedite our personal goals<sup>50</sup>.

Although further research is needed, available evidence suggests that SDMs can largely influence an individual's personal efforts and orientation towards future goals.

#### *Self-defining memories promote a sense of personal coherence*

A second aspect that makes SDMs particularly relevant to the maintenance of an integrated identity over time is that they contribute to promoting a sense of personal coherence.

Singer and colleagues<sup>44,52</sup> have identified SDMs as a special class of autobiographical memories particularly important for self-coherence. Such memories are repetitive and readily accessible<sup>44</sup>; this feature makes these memories useful sources of information about what individuals want or not and contributes to the fact that individuals return to them as touchstones in their lives<sup>45</sup>. They are indeed commonly retrieved to serve as reference points to provide guidance or reinforcement with respect to specific current situations in individuals' lives<sup>45</sup>. According to Blagov and Singer<sup>52</sup>, SDMs serve as an anchor to remind the individual of his/her identity in times of uncertainty. Recollection of the most salient, pertinent memories can thus serve as a coping resource, helping to guide thoughts and behaviors during difficult periods<sup>49</sup>.

As described above, SDMs are linked to other individual memories that share similar narrative themes and reflect individual long-term and central areas of concern or unresolved conflict<sup>44</sup>; namely, they often touch on the timeless themes that shape individuals' unique sense of identity<sup>45</sup>. Such features, which are the two distinguishing criteria for SDMs that differentiate these memories from other important and affective personal event memories, make SDMs critical to ensure a sense of personal coherence<sup>48</sup>. As anticipated, SDMs mark a touchstone for self-understanding; that is because they shed light on an individual's most important deep conflicts<sup>43</sup>. In this sense, an individual's SDMs, although expressed in different ways, will tend to share the same nuclear aspects of the person, resulting related to each other. SDMs, to the extent that they capture characteristic and significant aspects of individuals' self-understanding, are likely to be connected to a network of related memories that share similar goals,

concerns, outcomes, and affective responses<sup>45</sup>.

On the whole, these aspects highlight that SDMs, which are particularly recurrent and emotionally intense, are characterized by a certain thematic continuity which can foster the individual perception of a stable core of aspects and themes that characterize one's identity, thus contributing to the maintenance of a sense of personal coherence. Even when varying in content, SDMs reflect indeed similar motivational themes that are linked to the individual's current self<sup>13</sup>.

#### *The centrality of SDMs in Life Story*

Life story contains many references to the transitional age-period of adolescence<sup>11</sup>. What has been discussed about SDMs and identity is useful to understand why SDMs are considered the most relevant memories of life story<sup>45</sup>.

Individuals develop numerous autobiographical memories during their lifetime which can be translated in narrative products related to one's existence. Some of these are more affectively intense, important, well-rehearsed and detailed than other autobiographical memories and more significant than others in relation to specific periods of one's life. Not all of these memories, however, will be enduring and become part of a life story's narrative: only those connected to the most significant themes of one's life, namely to one's identity, will define the entire one's life story, not just a specific segment of one's existence<sup>53</sup>. This clarifies the centrality of SDMs: it is the particular connection of SDMs to the most critical narrative themes of identity that differentiates them from other types of narrative memories<sup>45</sup>. Therefore, «if life story is the autobiographical text of an entire life, SDMs are uniquely eloquent passages that dramatize the major themes of the overarching narrative»<sup>45</sup>.

The centrality of SDMs in life story also lies in the fact that they are implicated in the individuals' ability to build personal meanings from one's own experiences. Such process is called *integration* and consists of spontaneous explicit meaning making<sup>52</sup>. The capacity for integration develops in adolescence and is critical to acquire a personal meaning of the different aspects of self and one's existence. It requires stepping back from an event to reflect on its implications for future behavior, goals, values and self-understanding<sup>42</sup> and is included in narrative processing whereby people draw lessons from autobiographical memories about the self, relationships, or life<sup>54</sup>. The capacity for meaning making has been found predictive of psychological health, well-being and capacity for growth<sup>53</sup>. SDMs are often involved in meaning making<sup>52,54</sup>; specifically, are called *integrative* memories those SDMs that step back from narrative events and generalizations described in the memory to make an additional statement about the specific meaning of the memory to the individual<sup>53</sup>.

Available research suggests the importance of SDMs for the creation of personal meanings, which are needed for the development of a coherent life story<sup>45,53</sup>. In the light of their characteristics, it is possible to hypothesize how SDMs can support adolescents in meaning making and therefore orient them towards the development of a coherent and integrated life story. The frequency, intensity and vividness of such memories could stimulate adolescents to question and reflect on themselves; the presence of similar aspects and themes could motivate them to grasp the common meaning of such memories; moreover, since SDMs shed light on an individual's deepest and most significant conflicts, they constitute a "touchstone", a point of reference for self-understanding<sup>43</sup>; in a similar way, the importance of the content of such memories for adolescents could promote introspection and meaning making.

#### *The inability to retrieve specific memories: the phenomenon of the Overgeneral autobiographical memory*

Until now, we have discussed the importance of autobiographical memory, especially SDMs, in the

development of an integrated identity and a coherent life story throughout adolescence. The possibility of using one's SDMs presupposes, in the first place, that individuals are able to recall specific memories of their personal past. Below, *Overgeneral autobiographical memory* (OGM) will be examined, namely the condition reflecting the failure of this ability. Particular attention will be paid to the fact that OGM constitutes in adolescence a risk factor for the emergence of depressive disorder.

Overgeneral autobiographical memory is the tendency to recall overgeneral memories (i.e., memories of extended periods or repeated events) instead of specific recollections<sup>55</sup>; in other words, individuals with OGM tend not to recall *specific memories* of their past, namely those memories related to an event that happened at a particular place and time and lasted for a day or less<sup>56</sup>. The phenomenon of OGM was first highlighted in a study by Williams and Broadbent<sup>57</sup>, which was carried out on a group of suicidal patients. It was found that the patients failed to provide a specific memory in many of their responses, to both positive and negative cue words; they responded on about half of the trials with a memory that summarized a category of similar events instead. Following such research, major depressive disorder (MDD) was the next type of emotional disorder to be studied in reference to OGM<sup>56</sup>. Mention of the relationship between OGM and depressive disorder in adolescence will be provided later.

The marked recourse to very general memories rather than specific memories of one's life, constitutes a defensive use that individuals make of one's ability to recover personal memories (i.e., the recovery of general memories that do not link too directly individuals to their specific personal experiences, which can be for them highly destabilizing, source of severe discomfort or negatively impacting on emotional level)<sup>44,47,52,56</sup>. This use of one's own memory capacity, therefore, is configured as a defensive strategy put in place by the individual, more or less consciously, to preserve oneself and one's identity. Williams and collaborators<sup>56</sup> propose that individuals interrupt their search for memory (i.e., not to proceed in a more specific search) when specific details of a negative event are remembered and that this occurs to reduce the impact of the negative emotion associated with the memory. It is important to note that the generic retrieval style will not only be used in response to negative cues, but will be applied to all memory searches, since any specific memories can lead to other negative information. This strategy will thus be applied whenever a memory is sought, regardless of whether this research is conducted from a positive or negative cue<sup>58</sup>. Staying at a more general level of research can therefore "protect" the individual from having to deal with specific memories that can potentially be "dangerous". As Conway and Pleydelle-Pearce<sup>47</sup> stated, the recollection of general descriptions may indeed produce less affect than the recollection of specific episodic memories; hence, remaining at the level of more general information reduces the impact of potentially emotional material. Finally, it should be noted that dysfacilitation as an avoidant coping style is a process that is shaped by contingencies and takes some time to develop. For someone it might remain a flexible and helpful strategy in warding off negative emotions, whereas for others it might develop into an inflexible and habitual response pattern<sup>56</sup>.

Whether about memories of pleasure or pain, specific memories are textured and affectively evocative reconstructions of past experience which are fundamental so that an individual can construct and give meaning to one's own past and orient oneself in the future<sup>53</sup>. For example, the re-experiencing of a vivid memory can provide cognitive information about the probability of a desired goal outcome and, at the same time, remind the individual what the affective experience of that outcome would be like. In a related manner, one can use the affective quality of the memory to maintain a positive mood or repair a negative one<sup>53</sup>. On the whole, the ability to recall specific memories is critical for the individual functioning. Several research point to a relationship between memory specificity deficits and

psychological disorders; indeed, large effect sizes linking OGM to the presence and risk of depressive, psychotic, and trauma-related disorders and perhaps eating and personality pathology have been found<sup>59</sup>.

#### *OGM as a risk factor for depression in adolescence*

As anticipated, OGM has been extensively examined in relation to depressive disorders. Studies examining such association show that OGM is significantly greater in depressed patients than in non-depressed individuals<sup>55,56,60</sup>. OGM affects several processes that are disrupted in depression such as mood regulation, social problem solving, sense of self and self-esteem<sup>56</sup>. Thus, being unable to recall specific personal memories could promote difficulties in adaptive emotion processing, relationships with others and self-reflection, which may lead to mood disturbances over time<sup>60</sup>. OGM is indeed a consistent characteristic of patients with the diagnosis of MDD<sup>56</sup>. Specifically, a systematic review of the literature by Sumner, Griffith and Mineka<sup>61</sup> revealed that OGM constitute a factor that can predict the course of depressive symptoms: the higher the levels of OGM at baseline, the higher the level of depressive symptoms at follow-up. Consistently with the results of Sumner and collaborators, a further systematic literature review<sup>62</sup> has recently confirmed the presence of a predictive effect of OGM in the course of depressive symptoms; moreover, it was found that this effect was stronger when depressive symptomatology was clinically significant, that is in case of depressive disorder. Although the predictive effect of OGM is small/moderate and factors mediating such a relationship need to be further investigated, these findings are therefore important because they identify OGM as a possible risk factor for depressive disorder and a potential clinical target to be addressed prior to the onset or recurrence of the disorder.

Adolescence is a key vulnerability period for depression and first onsets often occur during this time<sup>55</sup>. Depression during this period of life is associated with many adverse impacts, e.g., impaired social functioning and poor academic achievement. Experiencing depression in adolescence is additionally related to long term health difficulties, including repeated episodes of depression and future development of mental health problems<sup>63</sup>.

Like adults, adolescents with current or remitted MDD recall fewer specific memories in response to both positive and negative cue words than adolescents with no history of MDD<sup>64</sup>. Specifically, a longitudinal study<sup>55</sup> showed that OGM to negative cues predicted depressive disorder and depressive symptoms over time in a sample of adolescents at familial risk for depression. Moreover, OGM for negative cues was found cross-sectionally and longitudinally associated with adolescent depressive symptoms also in a large population-based sample; memory biases for the personal past can thus precede the development of adolescent depression and may be a risk factor for later adolescent depressive symptoms. Finally, it is useful to specify that OGM remains in those people with a history of emotional disorder, even if not currently in an episode<sup>56</sup>; this suggests that OGM may represent a trait-like vulnerability that increases risk for relapse. Champagne and collaborators<sup>64</sup> found in fact evidence of OGM not only during depressive episodes (characteristic of the depressive condition), but also when adolescents were in a state of remission of the disorder (significantly more than controls).

#### **Conclusion**

In this note, we have discussed the importance of mental functions and autobiographical memory in the development of identity and life story in adolescence. Specifically, their role in preventing identity diffusion, aggressiveness and depression among adolescents has been analyzed.

Adolescence is a particularly challenging and tumultuous developmental period, characterized by problems experienced, with different intensities, by most adolescents<sup>6</sup>. At the same time, it is a stage of human development full of potential and a critical time for laying the foundations of good health<sup>5</sup>. Adolescents experience great changes in the physical, cognitive, social-emotional, and interpersonal levels; as part of an adaptive development path, such changes support adolescents in acquiring the evolutionary tasks characterizing this period (i.e. cognitive maturation, independence, sexuality), favoring an optimal entry into adulthood<sup>1</sup>.

The development of one's identity is considered the main evolutionary tasks of adolescence<sup>4</sup>. It is quite a demanding task for young people: as we argued, adolescents must be able to recognize themselves as unique and distinct individuals, reorganize their childhood identifications in a new form and select, in the different areas of their lives, the aspects that best define their person (*Differentiation and integration*); they must develop the ability to properly reflect on their mental states -which allows them to better understand and be aware of themselves and to reason in autobiographical terms- (*Mentalization and reflexive function*) and also the ability to grasp a personal meaning and a future direction of their existence (*Meaning and directionality*). Identity integration also requires adolescents to access to their autobiographical memories. Given their relevance for an individual's "current self", SDMs are critical in the maintenance of identity integration in time and constitute the most relevant passages of an individual's Life Story<sup>45</sup>.

Failures in all the aspects indicated can open the way to pathology such as identity diffusion, which leads to emotional dysregulation characteristic of the borderline side; lack of mentalization and emotional dysregulation, that might result in aggressiveness; inability to recall meaningful memories and to access specific memories, which opens the way to disturbances in emotional regulation and depressive symptoms. In view of that, it would be interesting to implement, with observation and systematic research, the study of the link between failures in mental functioning/autobiographical memory and the emergence of pathological conditions in adolescence.

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