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RESEARCH REPORT

The Key Practice, Building and Sharing Stories and Social Understandings: The Intrinsic Value of Narrative

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One of the major goals of the English Language Arts is to teach students to read, understand, and write narratives. This report examines the ways in which the skills that support narrative develop during the school years, outlines a model of narrative as a “key practice” in which the ability to model social situations supports narrative understanding, and feeds into the ability to use stories to reflect about stories and the classes of social situations they represent. Narrative is important precisely because it helps people develop their understanding of the social world and reason about their place in it. Assessments of narrative reading and writing need to take this broader construct into account.

Keywords reading; writing; assessment; English language arts; narrative; story; storytelling; theory of mind; cognitive; social; emotional; comprehension; interpretation; reflection; inference; event structure; character; perspective-taking; theme

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Everyone tells stories—they are part of the fabric of everyday life. People tell stories during conversations, in their letters and emails, and in nearly every other communication format that exists. People consume stories for entertainment, record them as case studies in legal cases and the professions, record them as histories, and use them in a variety of other ways to make sense of experience. The ubiquity of stories makes them central to literate life and thus to the assessment of literate achievement.

Our goal in this report is to review the literature on storytelling, especially written narrative, to understand how children normally progress in their understanding of narrative and to motivate an assessment framework for narrative within the key practice framework proposed by Deane et al. (2015). This framework proposes that the major targets of literacy instruction are a small number of key practices, such as storytelling, argumentation, and research, that have the following characteristics:

- They are a coherent set of social practices that people carry out to achieve some well-defined social purpose, such as recounting experiences, convincing other people to accept a conclusion on rational grounds, or finding and sharing reliable information about a topic.
- They can be subdivided into phases that correspond to a natural sequence of steps that an expert in the practice would follow.
- They draw upon well-defined constellations of skills that support effective performance during each phase within the key practice.

Earlier publications have set forth domain analyses for several key practices, including argumentation (Deane & Song, 2015), informational reading and writing (O’Reilly, Deane, & Sabatini, 2015), and research (Sparks & Deane, 2015). This report seeks to provide a similar analysis for narrative. Like the aforementioned documents, it presents an analysis in terms of phases in a key practice, reviews the literature on the domain, and maps the results into a series of learning progressions that hypothesize how students demonstrate increasingly high levels of knowledge and ability in the domain.

We will argue that proficient storytelling moves naturally among three phases: (a) *narration*, where people present specific sequences of events in order to convey their understanding of those events to other people; (b) *social modeling*, where people build mental models of people, their purposes, and social interactions, and the causal event sequences that result from human interaction; and (c) *reflection on the meaning of narrative*, where people think about what stories mean, extract themes that capture those meanings, and apply those themes to enrich their understanding of the social

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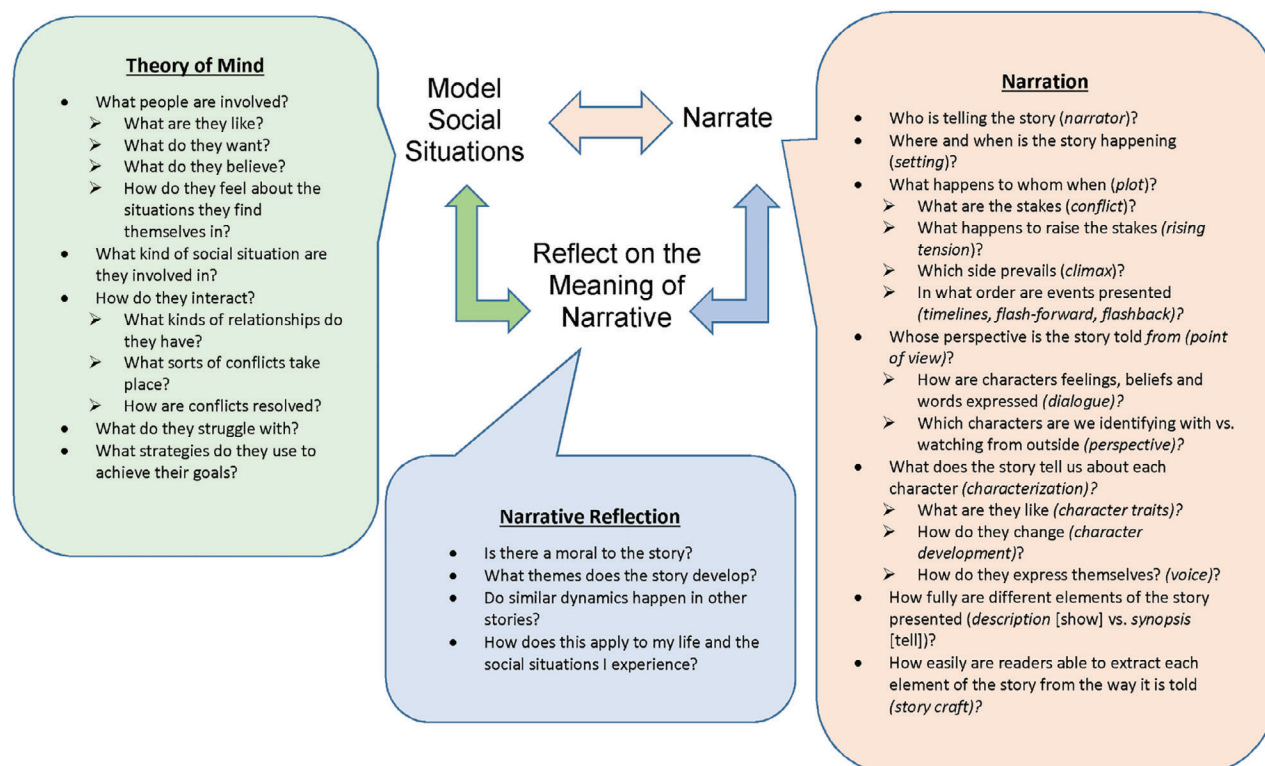


Figure 1 Phases of storytelling as a social practice.

world they inhabit. The view of narrative that emerges emphasizes the idea that these three phases are recurring and recursive. People may tell and retell a story to themselves or to others until they arrive at an understanding that satisfies them. They may tell many stories that illustrate a common theme, reflecting an issue of importance to them. They may use stories to frame events within a common narrative that helps a social group establish and maintain its identity or define a personal narrative and identity—a life story that helps them make sense of their lives. In its developmentally earliest phases, narration may involve relatively little social modeling or reflection, but as the ability to understand and tell stories increases in sophistication, the way people develop and tell stories increasingly reflects richer social understandings and greater reflection about the themes that emerge across stories and social situations.

The critical idea that underlies all of this is the notion that storytelling is a uniquely human activity that draws critically upon the human ability to model social situations and events. This is an idea that has broad support from a variety of disciplines, as we shall see in the literature review that follows.

Figure 1 presents the model that we propose for the key practice *building and sharing stories and social understandings*, or *storytelling* for short. In it, telling stories (*narration*) occupies a middle place between modeling social situations (*theory of mind*) and reflecting on the meaning of narrative (*narrative reflection*). Social modeling is the process by which we apply the ability that psychologists and neuropsychologists term *theory of mind* to understand the social world. Narrative reflection is a deliberate, strategically controlled process in which people try to extract meaningful themes from narratives, generalize them to create meaningful models of experience, and apply them to their lives. Narration, on the other hand, is the way we structure and present events in ways that reflect a social model, while suggesting morals, meanings, and themes.

It is important to note that in the overall sequence of key practices outlined in previous publications, storytelling is a *distinct* practice from the practice of justifying interpretations. Like any complex text, a story has an interpretive structure, and literary scholars devote considerable attention to understanding how authors achieve rhetorical and literary effects and to understanding the interpretive possibilities that particular literary works create. That said, when people use stories as a natural part of everyday life, they seldom focus on justifying interpretations. They build models of social worlds in their heads and use those models to reason about social situations. People find stories deeply engaging, and they do

so even when most of the interpretive processes that make stories effective remain under the surface of consciousness. Literary and rhetorical interpretation of texts is, we argue, a different key practice, at least to the extent that the ability to recognize and reason about the conscious deployment of rhetorical devices and literary techniques is not intrinsically restricted to narrative. That is, the practice of formulating and justifying interpretations of texts is important in a variety of disciplines that deal with nonnarrative texts, including the law. Like argumentation, this kind of rhetorical reasoning is an important literacy skill but is quite distinct from the social meaning-making instinct that makes narrative a core element of the human condition.

In the sections that follow, we review the literature that supports the view of narrative that we have just sketched. We start by considering the abilities that underlie our understanding of people and their actions (*social modeling*, which is founded on the abilities commonly termed *theory of mind* in the psychological literature). We then consider how people create and structure stories and the ways people reflect upon stories to extract meanings and apply them more broadly. When this review is complete, we briefly consider the implications our approach has for assessment and how it affects our understanding of a widely adopted assessment framework, the Common Core State Standards, as applied to reading literature and writing narratives.

Social Modeling and Theory of Mind

People model social situations by mentally representing what other people are doing and thinking. The ability to model social situations is exercised not only when people think about the social world within which they live but when they understand narratives and decide how to express their ideas in speech or writing (Oatley, 1999b). Social modeling skills are closely linked to emotional intelligence (Mayer, Caruso, & Salovey, 2016; Mayer, Salovey, Caruso, & Sitarenios, 2001) and play a critical role in understanding unstated (but clearly implied) meanings, the primary subject of linguistic pragmatics (Mey, 2001; Östmann & Verschueren, 2016). Social models specifically support inferences about intentionality, perspective, and affect (Zwaan, 1999, 2004). Neurologically, theory of mind may be supported by neural circuits (mirror neurons) that detect purposeful movements (Gallese & Goldman, 1998; Rizzolatti & Craighero, 2004).

Theory of mind is central to most theories of social inference (Apperly, 2012; Wellman, 1990; Wellman & Gelman, 1992) and involves the ability to develop mental models of the workings of other people's minds (Gopnik & Wellman, 1992). It appears to follow consistent developmental sequences and to be reasonably stable across national cultures (Hughes et al., 2014; Wellman, Fang, & Peterson, 2011), though with some shifts reflecting different cultural priorities and perspectives (Shahaeian, Peterson, Slaughter, & Wellman, 2011). Thus, between the ages of 2 and 6 years, children first recognize that people can have different desires, then that they can have different beliefs, and then they move to more complex distinctions involving real versus apparent beliefs and emotions (Wellman & Liu, 2004).

Theory of mind is implicated in ordinary social situations, in fictional narrative situations (Altgassen, Vetter, Phillips, Akgün, & Kliegel, 2014; Mar, 2004; Mar, Djikic, & Oatley, 2008; Mar, Oatley, Hirsh, dela Paz, & Peterson, 2006; Surian, 1996), and when writers deal with audience and purpose. The depth of the connection is demonstrated by the fact that disorders of theory of mind affect not only social cognition but also comprehension of narratives, the ability to make pragmatic inferences, and writing (Baron-Cohen, 1997; Hale & Tager-Flusberg, 2005; Happé & Loth, 2002; Langdon, Davies, & Coltheart, 2002; Leslie & Happé, 1989; Mitchell, Robinson, & Thompson, 1999; Peterson & Siegal, 2000; Winner, Brownell, Happé, Blum, & Pincus, 1998). Overlapping brain regions are activated during theory of mind tasks and comprehension of narrative (Fletcher et al., 1995; Maguire, Frith, & Morris, 1999) and are implicated in neurologically impaired narrative processing (Benowitz, Moya, & Levine, 1990; Rehak et al., 1992).

Construed broadly, we can conceptualize theory of mind as including the ability to mentally represent one's own and other people's beliefs, desires, feelings, and intentions. This ability is closely tied to *perspective taking*—the ability to imagine the world from multiple points of view (Epley, Keysar, Van Boven, & Gilovich, 2004)—and empathy (Mehrabian & Epstein, 1972; Zaki, 2014). This complex of abilities underlies not only the ability to understand the social world but also prosocial abilities to empathize, form relationships, and form moral judgments (Eisenberg, 2014; Wellman & Miller, 2008). This conclusion is supported by the fact that a number of conditions, including brain damage to the right hemisphere (Winner et al., 1998), autism, and mental retardation, lead to deficits on theory of mind tasks compared to normally developing individuals (White, Hill, Happé, & Frith, 2009; Yirmiya, Erel, Shaked, & Solomonica-Levi, 1998). In fact, children with autism perform poorly on ostensive reference tasks (Leslie & Happé, 1989), which require a pragmatic

interpretation of gestures, and at chance on complex pragmatic inference tasks, which involve violations of the Gricean norms for social communication (Surian, 1996).

There is, in fact, also considerable reason to believe that development of the ability to make moral judgments is closely linked to the development of theory of mind (Cushman, Sheketoff, Wharton, & Carey, 2013; Fu, Xiao, Killen, & Lee, 2014; Lagattuta, 2014). The more people develop the ability to understand other people's feelings and beliefs and empathy toward the perspectives of other people, the more likely they are to demonstrate more sophisticated moral judgments (Eisenberg, 1986; Lane, Wellman, Olson, LaBounty, & Kerr, 2010) and to behave prosocially (Imuta, Henry, Slaughter, Selcuk, & Ruffman, 2016).

Factors That Support Theory of Mind

Three major factors appear to support earlier acquisition (and stronger individual performance) of theory of mind: language skills, social interaction, and executive function (Derksen, Hunsche, Giroux, Connolly, & Bernstein, 2018; Jenkins & Astington, 1996). The paragraphs that follow examine the roles of each of these factors.

The development of theory of mind is scaffolded by language learning; that is, theory of mind develops in part because students try to infer the meaning and usage of words and grammatical constructions that presuppose theory of mind concepts (San Juan & Astington, 2012). Even among 3 year olds, language development predicts later growth in theory of mind (Astington & Jenkins, 1999). Children who demonstrate a stronger theory of mind tend to acquire the relevant syntactic structures, such as tensed complement structures (*believe that X*), relatively early (De Villiers & Pyers, 2002), though this may be an effect rather than a cause of theory of mind development (Cheung et al., 2004; Ruffman, Slade, Rowlandson, Rumsey, & Garnham, 2003). Comprehension of metacognitive language appears to be a significant predictor of theory of mind ability, above and beyond general verbal ability (Grazzani & Ornaghi, 2012). However, Harris, de Rosnay, and Pons (2005) argued that much of the impact of language learning on theory of mind may be related to learning how to interpret utterances pragmatically, not just from the acquisition of relevant vocabulary and syntactic structures. Regardless of how it is mediated, language development has a moderate to large effect on theory of mind performance, at least among younger children (Milligan, Astington, & Dack, 2007).

Theory of mind appears to develop most strongly in a social context where managing interpersonal relationships and internalizing social norms is of critical importance (Carpendale & Lewis, 2004; Hughes & Dunn, 1998). Perhaps as a result, theory of mind development seems to be affected by parental behavior (Pavarini, de Hollanda Souza, & Hawk, 2013) as well as socioeconomic factors. For instance, Cutting and Dunn (1999) found that children whose parents held professional, managerial, or technical jobs tended to score significantly higher than other children on false-belief theory of mind tasks, that is, the ability to recognize when someone else is operating in terms of a belief about the world one knows to be false.

Development of theory of mind skills appears specifically to be stimulated by social interactions involving shared attention in infants and very young children (Derksen et al., 2018) and by conversational interaction throughout childhood and adolescence (Lecce, Bianco, Devine, Hughes, & Banerjee, 2014). Conversational interaction with caregivers and siblings is particularly important for developing theory of mind in younger children (de Rosnay & Hughes, 2006). Both at home and at school, a critical role appears to be played by explicit metacognitive discussion about feelings and causality (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991). In such metacognitive discussions, children are exposed to mental-state vocabulary and its associated grammatical constructions, for example, mental-state verbs followed by sentential complements such as "believe that" or "wonder whether" (Hale & Tager-Flusberg, 2003; Ornaghi, Brockmeier, & Gavazzi, 2011). Even more importantly, they are encouraged to use that vocabulary to discuss and explain the mental states of characters in stories (Lecce, Bianco, Demicheli, & Cavallini, 2014; Ornaghi et al., 2011; Symons, Peterson, Slaughter, Roche, & Doyle, 2005). The effect of metacognitive discussion in improving theory of mind appears to generalize to middle childhood (Bianco, Lecce, & Banerjee, 2016; Lecce, Bianco, Devine, et al., 2014). This effect appears to be an effective basis for intervention in school, since explicit theory of mind training appears to have an overall effect size of .75 that is not mediated by age (Hofmann et al., 2016).

As might be expected, there is also a significant connection between theory of mind and various forms of play that involve role-playing and pretense. In particular, Goldstein and Winner (2011) found that children who engaged more frequently in role-playing and pretend play tended to score higher on tests of theory of mind. Similarly, children who were enrolled in acting classes were likely to score higher on tests of theory of mind and empathy (Goldstein & Winner, 2012).

There is also evidence that engagement with reading for pleasure is associated with higher levels of empathy (McCreary & Marchant, 2017).

The maturation and development of executive functions also appear critical to the development of theory of mind (Oswald, 2012), particularly false-belief understanding (Devine & Hughes, 2014; Lecce, Bianco, Devine, & Hughes, 2017). A. M. Bock, Gallaway, and Hund (2015) found that advanced theory of mind skills are significantly associated with language development (as measured by a test of vocabulary knowledge) and with cognitive flexibility, an aspect of executive control (as measured by multidimensional card-sorting tasks). Children in this study demonstrated significant growth in cognitive flexibility between ages 6 and 10 years.

The development of self-awareness appears to be closely linked to theory of mind, although the two skills are not identical (Dimaggio, Lysaker, Carcione, Nicolo, & Semerari, 2008). Stronger theory of mind appears to draw upon many of the same cognitive capabilities and activate the same specific regions in the brain as those observed when people engage in self-reflection (Saxe, Moran, Scholz, & Gabrieli, 2006). Self-awareness seems to grow significantly during the elementary school years, with little introspection among preschoolers gradually giving way to more extensive and accurate introspective abilities among older children and adults (Flavell, Green, & Flavell, 2000). The degree to which children develop high levels of executive function appears to be significantly influenced by cultural factors (Wang, Devine, Wong, & Hughes, 2016).

Contributions of Theory of Mind to Cognitive and Social Development

As might be expected, higher levels of theory of mind are associated with increased social competence later in childhood (Devine, White, Ensor, & Hughes, 2016). This includes more sophisticated abilities among preadolescents in the articulation of self-concepts (Bosacki & Astington, 1999). Theory of mind ability contributes to stronger sentence comprehension and greater metacognitive awareness of reading (Guajardo & Cartwright, 2016; Lecce, Zocchi, Pagnin, Palladino, & Tau-moepeau, 2010) and to reading comprehension (Pelletier, 2006), both in young children (Atkinson, Slade, Powell, & Levy, 2017) and throughout life. In addition, stronger theory of mind is associated with the ability to coordinate peer interactions (Grueneisen, Wyman, & Tomasello, 2015) and build stronger relationships with peers (Caputi, Lecce, Pagnin, & Banerjee, 2012; Slaughter, Imuta, Peterson, & Henry, 2015), whereas weaker theory of mind is associated with greater levels of peer rejection (Banerjee, Watling, & Caputi, 2011).

Stronger theory of mind also appears to have significant impact on various forms of metacognitive thought. For instance, development of epistemological reasoning (reasoning about when, how, and why people know what they do) is supported by development in underlying theory of mind abilities. Students with stronger theory of mind skills more accurately distinguish between physical causes for a state of affairs and the reasons that might cause a person to believe that a particular state of affairs holds true (Astington, Pelletier, & Homer, 2002). Similarly, prospective memory (remembering an intention to carry out later) is a critical developmental variable for children and adolescents. Students perform better on prospective memory tasks when they have more sophisticated theory of mind abilities and greater executive control (ability to switch from other tasks to carry out an intention; Altgassen *et al.*, 2014). Metamemory—knowledge of one's own ability to remember—also appears to be facilitated by stronger theory of mind skills (Lockl & Schneider, 2007). And finally, students with stronger theory of mind appear to be more sensitive to feedback, which moderates stronger academic achievement (Lecce, Caputi, & Hughes, 2011; Lecce, Caputi, & Pagnin, 2014).

Dimensions of Theory of Mind

Theory of mind, read broadly, covers a range of related skills, including emotional reasoning, perspective taking, simulating mental states, recognizing character traits, and various other forms of social reasoning, and it is closely linked to the acquisition of social/emotional vocabulary. There appears to be a significant difference between social-emotional perception (which ultimately supports empathy) and cognitive theory of mind, both functionally and in the brain resources recruited (T. Singer, 2006). The two systems can be dissociated in some conditions, such as Williams syndrome, a developmental disorder that can cause significant intellectual disabilities (Tager-Flusberg & Sullivan, 2000), but both must be coordinated to achieve full comprehension of people and social situations.

Perspective Taking

Information about both the physical and social worlds can be represented either *egocentrically* (from the perspective of a particular agent) or *allocentrically* (in relation to other objects; Frith & De Vignemont, 2005). For instance, spatial terms like *left* and *right* can be used to describe the placement of objects either relative to the self or relative to other objects or locations. An egocentric perspective can be centered either on oneself (in which case, it can be described as a *first-person* perspective) or on some other person (Choudhury, Blakemore, & Charman, 2006; Frith & De Vignemont, 2005). Adjusting one's perspective to match another's develops in stages, with the ability to reason about differences between perspectives appearing relatively late—for many students, not until fifth grade or later (Dixon & Moore, 1990). It appears to be an active process, requiring effort and motivation (Epley et al., 2004), and can be negatively impacted by competing cognitive processes, such as the linguistic processes necessary to producing or understanding complex sentences (Wang, Ali, Frisson, & Apperly, 2016).

Perspective-taking skill can be developed, and it appears to be more developed in some cultures than in others (Wu & Keysar, 2007). The ability to shift perspectives contributes to the ability to feel empathy for others, though whether someone will experience empathy in a specific situation depends on situational and motivational factors (Zaki, 2014).

In general, people tend to default to an egocentric, first-person perspective. This is particularly visible among young children, who often default to their own perspectives on tasks that require them to take the perspective of another. Despite the development of basic theory of mind abilities by age 6 or 7 years, the ability of school-aged children to interpret the perspectives of others can be limited by a persistent egocentric (and, specifically, first-person) bias that while decreasing with age may continue into adulthood (Keysar, Lin, & Barr, 2003). Children (ages 9–13 years) make significantly more errors in perspective-switching tasks than adolescents (ages 14–18 years), who make significantly more perspective-switching errors than adults (ages 19–29 years; Symeonidou, Dumontheil, Chow, & Breheny, 2016).

Even among adults, the tendency to take an egocentric, first-person perspective may result in failure to recognize the validity of alternative factual or ethical perspectives, an inability to understand how a naive observer might interpret a situation once exposed to information that favors a particular interpretation (Barquero, Robinson, & Thomas, 2003), and a lack of understanding of what would make a person more or less prone to a biased interpretation (Lagattuta et al., 2015; Miller, 2012). Critical perspectives that recognize the dangers of biased judgment begin to emerge around fourth grade but remain limited into the middle school years (Heyman, Fu, & Lee, 2007; Heyman & Legare, 2005; Mills & Keil, 2008). Even adults, who are capable of switching perspectives, may experience interference from information available to them but not accessible from an alternate perspective (Epley et al., 2004).

Overall, the greatest changes in perspective-taking ability appear to happen in adolescence. Dumontheil, Apperly, and Blakemore (2010) found that the ability to take another's perspective into account on a spatial reasoning task increased significantly from preadolescents to adolescents and from adolescents to adults, though even adults made errors when their perspectives conflicted with another perspective they needed to take into account. Similarly, Choudhury et al. (2006) found that adolescents responded more quickly than preadolescents, and adults than adolescents, on perspective-taking tasks that required the participants to judge the emotional responses of characters to narrated events. The variability of adults' reaction times to first-person versus third-person narrated events was much less than adolescents' reaction times, which in turn had less variability than preadolescents'.

Representing Emotional States

People make emotional inferences at all ages (Diergarten & Nieding, 2016). Recognition of emotional states develops very early, being well established among very young children (Fischer, Shaver, & Carnochan, 1990). One way to describe the development of emotional state representations considers the interaction of three factors: the number of emotions (single or multiple), the valence of emotions (positive or negative), and the target of the emotion (the same individual or different individuals). Harter and Buddin (1987) presented evidence for a five-step developmental sequence: (a) Level 0, representing emotions singly, without representation of simultaneous emotions (around 5 years of age); (b) Level 1, representing simultaneous emotions of the same valence directed toward the same target (around 7 years of age); (c) Level 2, representing simultaneous emotions of the same valence directed toward different targets (around 9 years of age); (d) Level 3, representing simultaneous emotions of different valence directed toward different targets (around 10 years of age); and (e) Level 4, representing simultaneous emotions of different valence directed toward the same target (around 11

years of age). In Harter and Buddin's data, the frequency of basic terms for emotional states like *happy* and *sad* in children's discourse decreases with age, while the frequency of more differentiated emotional state terms like *excited* or *disgusted* increases. Larsen, To, and Fireman (2007) reported similar results, with steady increases in children's perceptions of mixed emotions between ages 5 and 12 years.

The ability to recognize that situations can evoke mixed emotions, or be *equivocal*—evoking very different emotions for different people—also appears to develop significantly in middle childhood but can be a challenge for many individuals even in adulthood (Gnepp & Klayman, 1992; Gnepp, McKee, & Domanic, 1987). Similarly, the ability to recognize that mental states and past experience can significantly modify people's emotional responses, positively or negatively, also develops significantly in the elementary school years (Bamford & Lagattuta, 2012; Lagattuta, 2014). Situations that add strong emotions to a theory of mind task or add a dimension of moral evaluation also appear to pose additional challenges (Lagattuta et al., 2015). In fact, children may be aware that a character in a story is ignorant of certain information yet attribute emotions to the character that would only be evoked if the character were actually aware of the information (Ronfard & Harris, 2014). These later developments in affective theory of mind, especially during adolescence, may be linked to the development of higher degrees of executive function, particularly the ability to inhibit irrelevant information (Carlson & Moses, 2001; Vetter, Altgassen, Phillips, Mahy, & Kliegel, 2013).

Representing the Perceptions, Beliefs, Desires, and Motives of Others

Reasoning about perceptions, beliefs, desires, and motives is affected by several variables:

- It is easier to reason in terms of one's own perceptions, beliefs, and desires than in terms of the perceptions, beliefs, and desires of others (Nichols & Stich, 2003).
- The most salient explanations for action tend to reference desires or emotions. Desired-based reasoning emerges very early, and is already evidenced among 2- or 3-year-old children. Belief-based explanations emerge somewhat later (Bartsch & Wellman, 1995).
- It is easier to reason in terms of positive desires (e.g., to approach someone) than it is to reason in terms of negative desires (e.g., to avoid someone; Apperly, Warren, Andrews, Grant, & Todd, 2011).
- It is easier to retrieve and process information that one believes to be true than information one knows to be false (Birch & Bloom, 2004).
- The relation of belief to action is more indirect and emerges from the need to explain situations involving true and false beliefs (Wellman, Cross, & Watson, 2001). Using knowledge of a false belief to predict a character's actions is therefore more challenging than using a false belief as an explanation for a character's actions (Bartsch, Campbell, & Troseth, 2007).
- It is easier to retrieve and process information about first-order mental states (e.g., *she thinks it is going to rain*) than information about second-order mental states (e.g., *he thinks that she thinks it is going to rain*). It is likewise easier to retrieve and process information about second-order mental states than third- or fourth-order mental states (e.g., *you know that I know that you know it is insulting to ignore someone*; Liddle & Nettle, 2006). Like Perner and Wimmer (1985), Miller (2012) found that 6- to 7-year-old children could successfully perform second-order theory of mind tasks under supportive task conditions. Liddle and Nettle (2006) observed that 10- to 11-year-old children mastered first- and second-order theory of mind tasks but were barely above chance on third-order tasks and were at chance on fourth-order tasks. Valle, Massaro, Castelli, and Marchetti (2015) observed that young adolescents (14 year olds) did significantly worse than adolescents (17 year olds) on third-order theory of mind tasks and that adolescents did significantly worse than young adults (20-year-olds) on the same tasks. There thus appears to be a steady increase in the ability to handle complex theory of mind tasks during the school years.
- Inferring the motives of others is more complex than inferring their desires or beliefs, since inferring motives requires one to link beliefs and desires to an understanding of how another person may use causal information to decide on a course of action (Malle, 2011; Reeder & Trafimow, 2005). Judgments of motive primarily based on outcome are common among young children (Feinfield, Lee, Flavell, Green, & Flavell, 1999). However, the ability to make accurate inferences about more complex forms of intention develops extensively in middle childhood (Lagattuta, Elrod, & Kramer, 2016; Mull & Evans, 2010). As a result, elementary-aged children have difficulty in correctly inferring character motives when those are not made explicit in a story, especially in the early elementary grades (Shannon, Kameenui, & Baumann, 1988).

These variables interact, both in the order of acquisition of the relevant distinctions among young children and in the cognitive load these tasks impose on older children and adults. For instance, young children can have a great deal of difficulty representing the beliefs of others when those beliefs contradict what they know to be true (Wellman *et al.*, 2001). This kind of egocentricity decreases rapidly during the preschool years and continues to decline in older children as executive function supports more efficient switching between perspectives (Austin, Groppe, & Elsner, 2014), but even adults have more difficulty processing false beliefs than true ones (Apperly *et al.*, 2011; Apperly, Back, Samson, & France, 2008), especially under conditions of cognitive load (Newton & de Villiers, 2007).

Similarly, young children achieve accuracy in belief reasoning earlier when beliefs are linked to positive desires instead of negative desires (Cassidy, 1998). But even though they can handle both positive and negative desires accurately, older children and adults also find it harder to reason about negative desires than positive desires and have particular difficulty when the task requires them to represent the negative desires of others, as informed by their false beliefs (Apperly *et al.*, 2011; Leslie, German, & Polizzi, 2005). In addition, children's mental models of others emphasize physical traits more at earlier ages and emphasize personality traits and relational information more as children mature (Komolova, Pasupathi, Wainryb, & Lucas, 2017).

Advanced Theory of Mind

Theory of mind has been most extensively studied among children below school age. By age 5 or 6 years, most children can perform reasonably accurately on first- and second-order belief tasks, with relatively little cross-cultural variation in technologically advanced cultures (Callaghan *et al.*, 2005), though there may be some cultural variation in the speed at which theory of mind develops across a broader range of cultural types (Slaughter & Perez-Zapata, 2014; Vinden, 1999). Continued development of theory of mind begins to link theory of mind to richer understandings of the social world. For example, older children, adolescents, and adults must be able to reason about second-, third-, and even fourth- or fifth-order beliefs, intentions, and desires in complex social situations where there may be well-established norms. In addition to assessments of student theory of mind capability collected from teachers and other observers (Bosco, Gabbatore, Tirassa, & Testa, 2016), a number of direct assessments of advanced theory of mind have been developed. These studies have suggested that several additional variables affect children's ability to interpret the kinds of complex social situations that draw on advanced theory of mind skills: (a) the familiarity of the situation, or social script, that is to be interpreted; (b) the degree of ambiguity in the situation—whether it is open to just one or multiple interpretations. (The ability to detect ambiguity develops rapidly in the elementary school years, though there is also considerable individual variation in sensitivity to ambiguity [Yuill, 2009]); (c) the degree to which more than one mental state or emotion is perceived simultaneously, resulting in perception of complex mental and emotional states; (d) the extent to which the situation involves a violation of social norms, for various purposes, such as deception, rudeness, or irony (Massaro, Valle, & Marchetti, 2014); and (e) more generally, when the situation requires the resolution of conflicting desires, emotions, and beliefs (Lagattuta & Weller, 2014). Advanced social reasoning skills, such as interpreting irony, require individuals, first, to recognize what an utterance means; second, to detect a mismatch between what was said and what the person believes to be true, which may violate cultural norms favoring truthful speech in specific situations; third, to infer the correct communicative intent; and finally, to infer the attitude or belief implied by that communicative intent (Filippova & Astington, 2008). This process draws on executive functions, most notably the flexibility that supports rapid switching between different foci of attention, which becomes particularly important to theory of mind skills during adolescence and adulthood (Apperly, Samson, & Humphreys, 2009; Im-Bolter, Agostino, & Owens-Jaffray, 2016). However, differing cultural expectations about truth telling versus politeness may affect the age at which children acquire some of these skills (K. Lee, Cameron, Xu, And, & Board, 1997).

These complexities may pose an insuperable barrier to children with severe theory of mind deficits who may show an inability to interpret social situations even when they are familiar, unambiguous, and straightforward. Even normal children may show weaker performance when these factors are in play. The literature supporting this summary follows.

Muris *et al.* (1999) suggested a three-level interview assessment of theory of mind that attempts to measure (a) at Level 1, precursors of theory of mind, for example, recognition of emotion, ability to pretend to do various actions; (b) at Level 2, recognition of first-order beliefs and understanding the consequences of false beliefs; and (c) at Level 3, understanding second-order beliefs and comprehension of understanding humor. Performance on this assessment increases steadily between ages 5 and 12 years, with success rates on Level 3 tasks transitioning gradually from less than 24% for normal 5 year

olds to 60% for normal 7 year olds to more than 80% for normal 12 year olds. By contrast, more than 70% of normal 7 year olds achieved greater than 80% success on Levels 1 and 2. Similar patterns of growth can be seen on other advanced social inference skills, such as interpreting irony, where performance increases steadily with age and older children (around 9 years of age) have not yet come anywhere near adult levels of performance (Filippova & Astington, 2008, 2010).

In their perception of emotions, older children, adolescents, and adults must be able to move beyond the recognition of simple first-order emotions like anger or sadness and begin to recognize and correctly categorize mixed emotional states, such as being jealous, nervous, perplexed, or playful. There is evidence that groups with theory of mind deficits, such as those diagnosed with autism, are significantly less sensitive to cues for such mixed emotional states. For instance, while they may be able recognize simple emotions, such as anger, from a photograph of a whole face, they cannot reliably recognize mixed emotions from a partial cue, such as a photograph showing only the eyes (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997). By contrast, normally developing individuals can usually recognize mixed emotions on such tasks, though those normal individuals who score better on such tasks also score better on measures of social awareness and communication skill (Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001).

Baron-Cohen, O’Riordan, Stone, Jones, and Plaisted (1999) observed that older children and adults vary in their ability to recognize violations of social norms and can infer whether the violation was intentional, though their abilities in this area increase with age (Banerjee *et al.*, 2011; Caputi *et al.*, 2012). These variations are associated with differences in the extent to which children are accepted or rejected by their peers (Banerjee, 2005; Banerjee *et al.*, 2011).

In particular, there are a variety of social situations in which people do not tell the truth, for a variety of reasons. To understand why someone makes a false statement, it is necessary to make a pragmatic inference, which draws on theory of mind. Depending on the situation, the false statement could be classified as a misunderstanding, a failure of memory, a lie, a joke, playing a role (pretense), a figure of speech, sarcasm, or one of a variety of other specific social situations. When older children and adults are asked to explain their interpretations of such situations, they can usually offer an appropriate explanation in terms of mental states. By contrast, children with autism and other theory of mind deficits often fail to provide an appropriate explanation, while younger school-aged children appear to be more likely to provide an explanation in terms of physical facts instead of mental states (Happé, 1994). The ability to recognize social situations that involve false belief or violations of social norms does not have to be presented in verbal form. For instance, theory of mind can be measured by examining inferences about people’s beliefs and motives in cartoons (Gallagher *et al.*, 2000; Hayward, Homer, & Sprung, 2018); or in silent films that contain humorous examples of deception, misunderstandings, and other kinds of false belief (Devine & Hughes, 2013, 2016); or even by the inferences people make about animations in which the movements of simple geometric figures suggest intentionality or even the intent to deceive (Castelli, Happé, Frith, & Frith, 2000).

Humor, irony, and other forms of indirect communication require the use of theory of mind to infer meanings that cannot be recovered from a literal understanding of words. Noncompositional idioms are another example. When the meaning of an idiom cannot be inferred from the meaning of its parts and must be learned by observing the social situation in which the idiom is used, there is a delay in acquisition, such that 4- or 5-year-old children generally do not show comprehension of noncompositional idioms, but most 7 year olds appear to do so (Caillies & Le Sourn-Bissaoui, 2006, 2008).

Bosacki and Astington (1999) extended Happé’s (1994) work to ambiguous social situations and showed that school-aged children with stronger theory of mind skills tended to produce more correct mental state descriptions of ambiguous social situations than those with weaker theory of mind skills. Hayward *et al.* (2018), combining Happé’s work with Bosacki and Astington’s (1999), found that school-aged children become more flexible (and fluent) in their interpretation of social situations as they age, as evidenced by the number of mental-state words they are able to offer for any given situation (and the speed with which they do so). They also found that children find ambiguous social situations harder to interpret, as evidenced by their offering more mental-state explanations for unambiguous social situations than they do for ambiguous ones. Similar results are reported by Eisbach (2004), who reported that, unlike 5 year olds, 9 year olds are generally aware that individuals exposed to the same situation may have divergent trains of thought.

Fictional narratives can provide rich examples of social interactions where the reader must infer the motives and beliefs of characters. In many fictional narratives, the actual thoughts and feelings of the characters may not be directly described (and may be both ambiguous and complex), forcing the reader to actively build a mental model of the evolving social situation. Probing the inferences older children and adults make about fictional narratives thus provides an opportunity

to measure theory of mind skills (Dodell-Feder, Lincoln, Coulson, & Hooker, 2013). By contrast, younger children often focus more on the physical elements of social situations described in stories and fail to describe or make appropriate inferences about characters' inner states (Pelletier & Wilde, 2004).

Character Traits and Other Social Categories

Character (or personality) traits form a part of theory of mind, to the extent that they enable people to predict how people are likely to react in novel situations. Thus, if a person has behaved generously in a number of situations, people may infer that he or she is more likely to be generous in the future. Making this kind of generalization creates a generalized link between likely motives and likely behavior (Westra, 2017).

Somewhere between ages 5 and 7 years, children consistently see character traits as causal factors in other people's minds (Yuill & Pearson, 1998) and start using that knowledge to infer motives and make predictions about future behavior (Heyman & Gelman, 1999; Rosati *et al.*, 2001; Ruble & Dweck, 1995). After that point, the use of character traits and other social categories becomes more and more central to social reasoning (Rapp, Gerrig, & Prentice, 2001). Some of the major trends across the school years include the following:

- increasingly frequent and consistent use of trait terms to describe oneself and others: The accurate prediction of behaviors based on traits is well established by second or third grade. The accurate prediction of emotions or internal mental states based on traits develops later, typically by fourth grade for the majority of students (Gnepp & Chilamkurti, 1988);
- a greater likelihood of generalizing predictions to new situations based on trait inferences (Kalish, 2002; Rholes & Ruble, 1984), though with a bias that requires more evidence of a negative trait than a positive (Boseovski, 2010; Boseovski & Lee, 2006);
- the development of the ability not only to infer traits from behaviors and predict behaviors from known traits but to predict future behavior from past behavior via an intermediate trait inference (Liu, Gelman, & Wellman, 2007);
- by fourth grade, the ability to differentiate multiple dimensions of trait evaluation, where earlier children may have focused on a single good–bad dimension (Alvarez, Ruble, & Bolger, 2001);
- the use of reported thoughts and feelings to make inferences, even when an individual's actions would support a different inference (Rosati, 1999);
- greater skepticism when individuals self-report traits among older children (at or older than age 10 years) than among younger children (age 7 years or younger), for traits where there might be a motivation to lie (Heyman *et al.*, 2007; Heyman & Legare, 2005); and
- the ability to resolve conflicts between personality traits that would suggest that different behaviors in a specific situation develop in middle school and continue to increase in flexibility, so that by the end of high school, most individuals can coordinate situational information that might affect emotional states with information about conflicting traits and can use that information to make flexible predictions about how a person is likely to react differently under varying circumstances (Marini & Case, 1994).

The overall trend can be described as a rapid consolidation and increased sophistication of trait reasoning among elementary school–aged children.

The Development of Cognitive and Social-Emotional Vocabulary

Although much of the literature we have reviewed focuses on early and middle childhood, considerable evidence shows that there is a growth in the knowledge of social-emotional categories, and the vocabulary associated with those categories continues to develop rapidly during middle childhood and adolescence and into adulthood at a rather slower rate. Presumably this reflects continued acquisition of a deeper, more nuanced understanding of the social world, which in turn necessary to support comprehension and production of narrative.

The Development of Emotional Vocabulary

The literature indicates a rapid development of children's emotion vocabulary during early and later childhood. Ridgeway, Waters, and Kuczaj (1985) showed rapid increase of children's mastery of 107 relatively common emotion words between

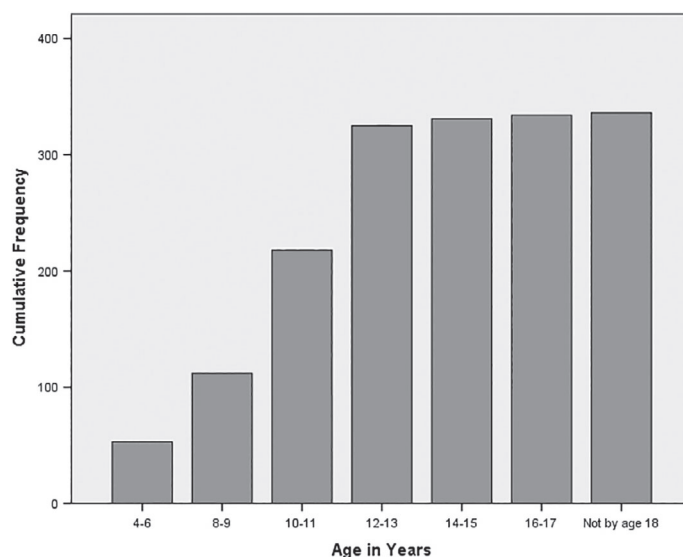


Figure 2 Number of emotion words understood by at least two-thirds of children in each age band, ages 4–17 years. Adapted from “Emotion Word Comprehension From 4 to 16 Years Old: A Developmental Survey,” by S. Baron-Cohen, O. Golan, S. Wheelwright, Y. Granader, and J. Hill, 2010, *Frontiers in Evolutionary Neuroscience*, 2, p. 7. Copyright 2010 by S. Baron-Cohen, O. Golan, S. Wheelwright, Y. Granader, and J. Hill.

18 months and 6 years of age. Baron-Cohen, Golan, Wheelwright, Granader, and Hill (2010) provided norms for the comprehension of 336 emotion words between 4 and 16 years of age. According to their results, the size of children’s emotion vocabulary doubles in size every 2 years between ages 4 and 11 years, and then levels off, showing much slower growth thereafter (see Figure 2). Among adults, emotion words are also retrieved more quickly than typical concrete or abstract words (Altarriba & Bauer, 2004; Vinson, Ponari, & Vigliocco, 2014).

However, these studies focus on emotion adjectives. We can get a sense of how well these conclusions generalize by taking a list of 327 psychological reaction verbs drawn from Levin (1993)—words like *admire*, *abuse*, *bother*, *care*, *dread*, *enrage*, *gloat*, *honor*, *irritate*, *like*, *mope*, *need*, *offend*, *please*, *rejoice*, *scare*, *trouble*, *vilify*, *want*, and *yearn*—and combining these data with information on word acquisition from Dale and O’Rourke (1981). Dale and O’Rourke’s Living Word Vocabulary captured information from a representative national sample drawn from Grades 4, 6, 8, 10, 12, 13 (first-year college), and 16 (college graduating). They assigned each word to a grade level, based on the lowest grade in which two thirds of students correctly answered questions probing knowledge of the targeted word. The resulting pattern of growth is consistent with the results shown in Figure 1, with the number of social-emotional verbs known by sixth grade nearly doubling that known in fourth grade. After that, there is continued steady growth, but at a slower pace (see Figure 3).

The Development of Mental-State Vocabulary

While the literature on theory of mind in this review thus far contains a variety of studies that focus on mental-state verbs, few studies have examined the acquisition of an extended inventory of mental-state verbs or other words for mental phenomena across grades. Schwanenflugel, Fabricius, and Noyes (1996) examined how children’s and adults’ semantic judgments differed with respect to a set of frequent mental-state verbs. They found that older children and children who were more likely to monitor their own comprehension closely placed greater weight on the degree of certainty entailed by mental-state verbs. Olson, Antonietti, Liverta-Sempio, and Marchetti (2006) presented cross-sectional data about the comprehension of nine Italian mental-state verbs from primary school to university. Their data indicated that growth in comprehension of mental-state verbs varies quite a bit, with some verbs mastered in elementary school, some mastered at intermediate grades, and some not even being fully mastered at the university level. But there do not appear to be any studies that specifically established norms for acquiring the full range of mental-state verbs for English or any other language.

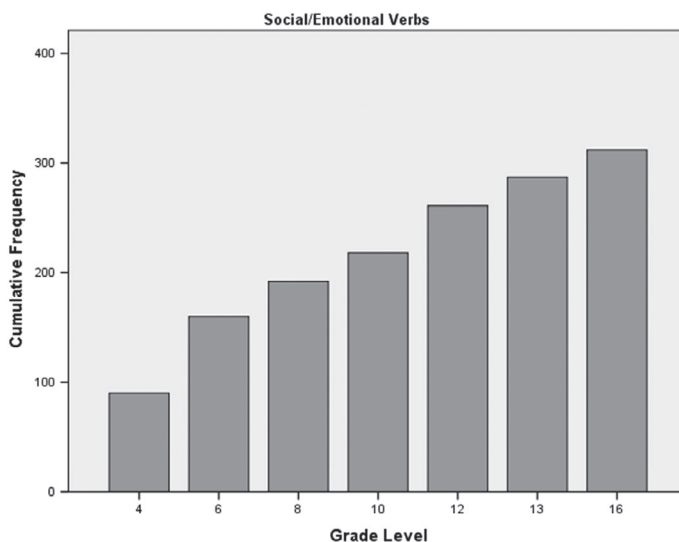


Figure 3 Number of social-emotional verbs understood by schoolchildren, Grades 4–16.

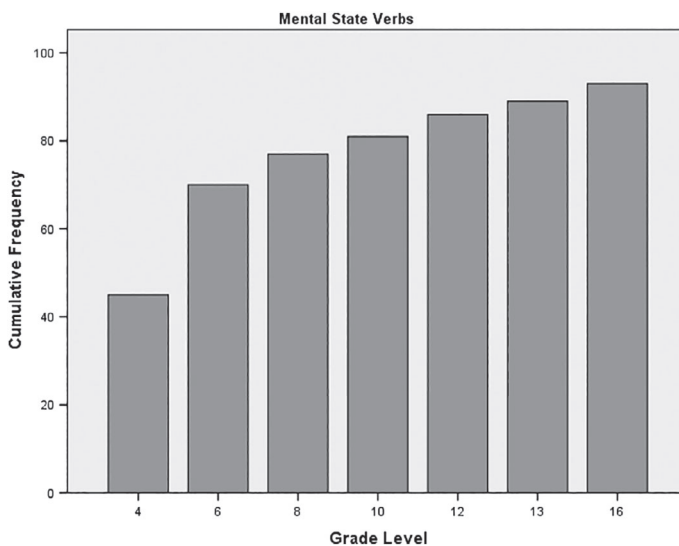


Figure 4 Number of mental-state verbs mastered by school-aged children, Grades 4–16.

To get a sense of the pattern of development in English, we extracted a list of 93 knowledge and perception verbs from the verb class lists in Levin (1993)— words like *admit, believe, confirm, discover, evaluate, feel, guess, judge, know, learn, notice, observe, perceive, regard, see, and think*— and once again combined that information with grade-level information from Dale and O’Rourke (1981). The pattern of development is similar to the development of emotional state verbs, with nearly half the list known by fourth grade and the majority of the rest known by sixth, followed by gradual increases thereafter (see Figure 4).

The Development of Personality/Character Trait Vocabulary

A somewhat different pattern, involving steady growth throughout the school years, can be found among English terms for character and personality traits. This vocabulary has been studied intensively, as it forms the basis for the Big Five theory of personality (Cattell, 1943; Goldberg, 1990), though relatively little work has been done on the order of acquisition of terms for personality traits. However, by combining the list of personality traits from Goldberg (1990) with information on word acquisition from Dale and O’Rourke (1981), we can obtain an approximate picture of how personality-trait

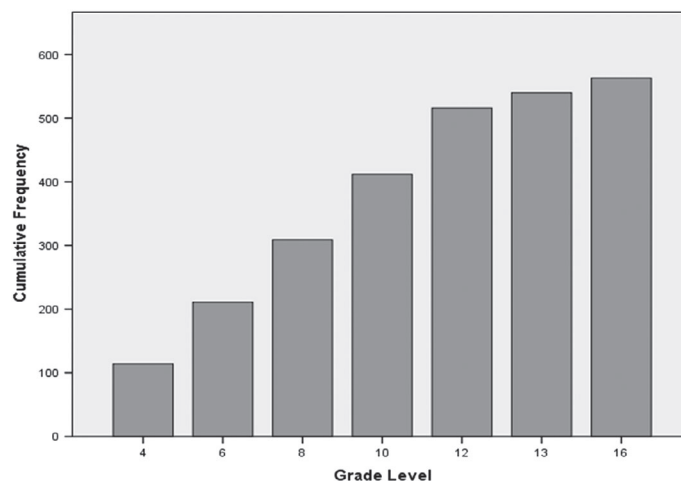


Figure 5 Number of personality-trait words mastered by school-aged children, Grades 4–16.

vocabulary is acquired. Figure 4 shows the Living Word Vocabulary grade levels for 563 personality-trait words studied in Goldberg (1990). As this figure demonstrates, by fourth grade, students had acquired only 20% of the total number of words. New words were steadily acquired through sixth, eighth, 10th, and 12th grades, with approximately 17%–18% of the total vocabulary added at each interval. The rate of growth slowed considerably for adults (4% at Grade 13 and another 4% by Grade 16).

These results suggest that the social knowledge encoded by personality-trait words is growing steadily throughout childhood along with the personality-trait vocabulary. Even though fourth graders (10 year olds) have mastered many of the conceptual distinctions targeted by the theory of mind literature, the elaboration of their social knowledge appears to continue throughout older childhood and adolescence (see Figure 5). This pattern, where we observe a steady growth in the size of personality-trait vocabulary in the elementary school years, is part of a more general pattern in which social-emotional vocabulary undergoes major elaboration in middle childhood and adolescence.

The Development of Abstract (but Socially Relevant) Vocabulary

The specific vocabulary categories we have discussed thus far do not cover the full range of words that depend on social and emotional experience. The remaining socially relevant vocabulary consists mostly of abstract (rather than concrete) vocabulary, including words like *risky*, *advantageous*, *justice*, *distrust*, or *respect* and, as such, tends to be acquired relatively late, mostly during the school years and beyond. The general pattern of acquisition for abstract and concrete words can be observed by examining the Living Word Vocabulary grade levels of 10,000 English words selected to sample equally from the most abstract and most concrete words in English, controlling for frequency and word length (Pexman, Heard, Lloyd, & Yap, 2017), as displayed in Figure 6. As this chart demonstrates, concrete words are often learned earlier, with the acquisition of abstract vocabulary mostly happening between fourth and 12th grades. This overall pattern is very similar to the pattern of acquisition for personality-trait words. By contrast, terms for emotions and mental states, even though abstract, skew much younger, more so than the overall trend for concrete vocabulary.

Not all abstract vocabulary is emotionally charged. In fact, abstract vocabulary is less emotionally charged on average than concrete vocabulary (Warriner, Kuperman, & Brysbaert, 2013). This may account for later acquisition of abstract words, since vocabulary with strong emotional valence tends to be processed more easily than more neutral vocabulary (Kousta, Vinson, & Vigliocco, 2009; Vinson et al., 2014). But after other variables, such as imageability, are controlled for, strength of affective valency is a significant positive predictor for abstract but not concrete words (Kousta, Vigliocco, Vinson, Andrews, & Del Campo, 2011), which suggests that emotional context may play a stronger role in the acquisition of abstract than of concrete vocabulary.

This hypothesis is supported by the fact that abstract words activate areas of the brain associated with emotional processing (Vigliocco et al., 2013). Ponari, Norbury, and Vigliocco (2018) also presented evidence that words with strong emotional valence are acquired earlier than more neutral terms and that emotional valence facilitates the acquisition of

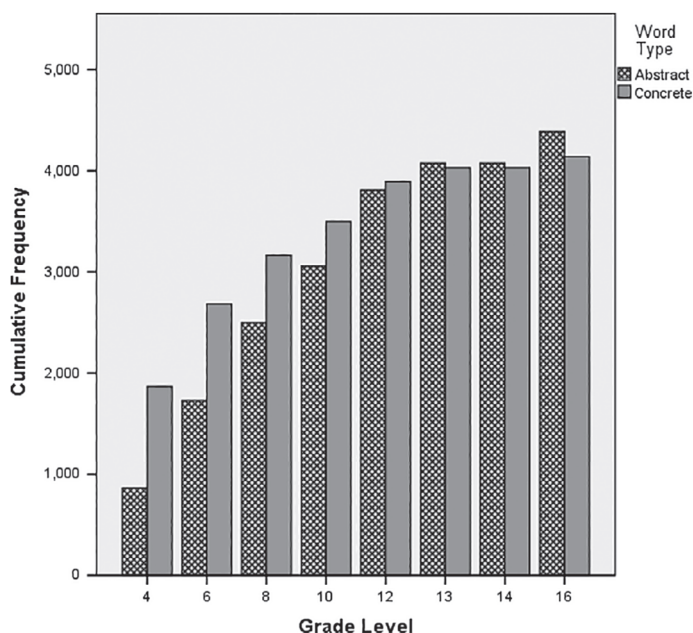


Figure 6 Number of concrete versus abstract vocabulary by Living Word Vocabulary grade level, using a balanced list of words drawn from Pexman et al. (2017).

abstract but not concrete words. As a result, Vigliocco, Ponari, and Norbury (2018) argued in favor of a theory in which the affective dimensions of words are a basic part of the semantic representation of abstract words. In support of this, they presented evidence that the abstract vocabulary (other than emotion words) that is learned early, between 4 and 12 years of age, shows the same kind of steep slope of acquisition that Ridgeway et al. (1985) and Li and Yu (2015) observed for pure emotion words.

These considerations suggest that much of the acquisition of abstract vocabulary during the elementary school years is driven by the acquisition of social/emotional vocabulary and reflect children's maturing social cognition, rooted in their cognitive and affective theory of mind.

Why Stories Matter: Links Between Theory of Mind and Narrative

It should be clear by this point why there is a link between theory of mind and narrative. While narrative focuses on events, these are events that take place between people in social situations, and the way that stories unfold is driven by social causes. Thus, to understand stories is to understand the people and their actions in the stories, and the ability to do so necessarily draws on theory of mind (Mar, 2004, 2011). The literature on theory of mind has certainly suggested such a connection; Fletcher et al. (1995) observed that areas of the brain associated with theory of mind are critically activated during story comprehension (see also Mason & Just, 2009; Tamir, Bricker, Dodel-Feder, & Mitchell, 2015). Guajardo and Watson (2002) provided evidence that storybook reading combined with discussion about the mental states of the characters in the story can improve young children's theory of mind performance. Reading and thinking about narrative may even be of benefit for individuals on the autism spectrum (Navona Calarco, Rain, & Mar, 2017). It is thus natural to consider what effects reading and thinking about stories may have on people's ability to understand social situations and take unfamiliar perspectives.

The implications of theory of mind for our understanding of narrative have been studied by a range of disciplines concerned with narrative, including neuropsychology (A. M. Jacobs, 2015) and literary theory (Herman, 2013; Herman, Phelan, Rabinowitz, Richardson, & Warhol, 2012). Writing skill, especially narrative writing, depends on social knowledge (Dray, Selman, & Schultz, 2009). Zunshine (2003) argued that fiction is made possible at least in part by the ease and speed of the social inferences supported by theory of mind but that, on the other hand, literary fiction may demand incredibly sophisticated and difficult exercises of theory of mind abilities, such as constructing a series of fourth- and fifth-order inferences about a group of fictional characters' understandings of social situations. In fact, Zunshine (2011) argued even

the stylistic choices made by an author in a piece of literary fiction can suggest the mental states of the characters. Keen (2006) highlighted the fact that stories do not just require us to model thoughts; they evoke emotional responses toward and empathy with story characters (Goldstein, 2009), which makes the experience of reading very much a simulation of real social interaction. Zunshine (2006) further argued that much of the pleasure of reading fiction comes from the way that literary reading stimulates and exercises theory of mind capabilities, resulting in a sensation of being transported into the fictional world (Green & Carpenter, 2011; Parsons, 2013) and of taking on perspectives (Morrow, 2001) and social identities suggested by the narrative (Gabriel & Young, 2011). These hypotheses are supported by the fact that children prefer stories with richer social content (Barnes & Bloom, 2014) and prefer types of nonfiction that have strong narrative qualities (Leavitt, Ryazanov, & Christenfeld, 2014).

All of these considerations suggest that reading fiction may have a profound impact upon readers' social comprehension and their perceptions of themselves and others. Koopman and Hakemulder (2015) presented evidence for a multiple-factor theory of the social-emotional impact of narrative. In their view, it is important to distinguish whether a text's effects are due to its narrative structure, its status as fiction, and the extent to which it aims for specifically literary effects. They argue that texts are most likely to have a strong impact on readers when the texts evoke high degrees of narrative engagement. On the other hand, they argue, highly literary texts may be more effective at promoting self-reflection as a result of reading. Mar (2018) argued that reading narrative develops social background knowledge and social cognition, both by exercising theory of mind and other social thinking skills and by providing instances and models of social categories that readers learn to apply first in a narrated world. Carroll (2017) extended these arguments by situating narrative within an evolutionary framework, such that storytelling is viewed as a cognitive tool that supports social learning and transmission of cultural norms.

The emotional impact of narrative is central to its effects on the reader. Mar, Oatley, Djikic, and Mullin (2011) highlighted the extent to which narrative can evoke emotions of sympathy, identification, and empathy with the protagonist. The major vehicle for this kind of powerful emotional impact is the experience of transportation, in which the reader is entirely caught up in the protagonist's experience and emotions (Bal & Veltkamp, 2013; D. R. Johnson, 2012; Stansfield & Bunce, 2014), with a significant impact on personal perceptions and feelings.

One of the major effects of this kind of transportation appears to be an increase in empathy (Djikic, Oatley, Zoeterman, & Peterson, 2009), which may have a direct impact on the readers' social perceptions (Djikic & Oatley, 2014), possibly leading to more openness to people coming from different backgrounds (Kaufman & Libby, 2012). As a result, literary reading may help people deal with conflict and make sense of social situations in their personal lives (Bal, Butterman, & Bakker, 2011; Dill-Shackleford, Vinney, & Hopper-Losenicky, 2016; Mar *et al.*, 2008).

The idea that reading narrative helps engender stronger social reasoning skills is supported by a variety of studies that show a correlation between social skills and lifetime exposure to narrative fiction. In particular, Mar *et al.* (2006) found that lifetime exposure to fiction positively predicted (and lifetime exposure to nonfiction negatively predicted) measures of social ability, specifically empathy. J. E. Black and Barnes (2015a, 2015b) found similar results. In addition, experience reading fiction appears to predict general verbal ability more strongly than experience reading nonfiction (Mar & Rain, 2015). In two meta-analyses, Mumper and Gerrig (2017) and Dodell-Feder and Tamir (2018) indicated that regular fiction reading has a small but consistent positive association with stronger social abilities.

Presumably, not all forms of fiction provide equal opportunity for readers to exercise theory of mind skills. Evidence for variation across fiction genres is reported by Fong, Mullin, and Mar (2013), who distinguished readers by their prior reading of nonfiction in four categories of fiction: domestic fiction, romance, sci-fi/fantasy, and suspense/thriller. Their results indicated different degrees of strength of association between prior reading and fiction genres, with the strongest association for romance, with its focus on interpersonal relationships. Kidd and Castano (2013) attempted a more direct experimental manipulation, contrasting the accuracy of individuals on a test of advanced theory of mind (the Reading the Mind in the Eyes test; cf. Happé, 1994) after reading literary fiction (defined as texts that won a literary award), popular fiction (defined by best-seller status), or nonfiction and found that literary fiction, but not popular fiction or nonfiction, directly primed performance.

However, these results are somewhat controversial, with some researchers reporting successful replications (van Kuijk, Verkoeijen, Dijkstra, & Zwaan, 2018) and others reporting failure to replicate (De Mulder, Hakemulder, van den Berghe, Klaassen, & van Berkum, 2017; Panero *et al.*, 2016, 2017; Samur, Tops, & Koole, 2018). It should be noted that the authors of the original study identified specific features they believed accounted for the failures to replicate (Kidd,

Ongis, & Castano, 2016) and have conducted further studies that extended their original results (Kidd & Castano, 2017, 2018).

It seems quite possible that the variability in results may be linked to specific textual features and specific genre expectations that may lead readers to put more or less effort into social-emotional inferencing. For instance, Koopman (2016) reported that the manipulation of specific textual features of a literary text (foregrounding and imagery) can reduce the strength of readers' empathic responses. Similarly, Gavaler and Johnson (2017) showed that manipulating a literary text to make it seem more like a genre text (e.g., by manipulating a few words describing the setting to create a science fiction rather than a real-world context) directly affected the number of inferences that readers tended to draw about characters and character motives.

Overall, the literature has strongly suggested that narrative in general, and fiction narratives in particular, encourages readers to immerse themselves in an imagined world that exercises and develops theory of mind capabilities while building knowledge about social situations and relationships. This may encourage greater openness to experience, empathy for others, and other prosocial abilities and behaviors.

As our review shows, theory of mind and related abilities, such as emotional inferencing and perspective taking, are strongly linked to the development of human narrative abilities. Appendix A summarizes in the form of a series of developmental tables what the literature has suggested about the development of social modeling skills. Table A1 is a summary of how the social scripts people use to model social situations increase in sophistication during childhood and adolescence. Table A2 summarizes the development of perception of emotional states and vocabulary for emotional states. Table A3 summarizes the development of character trait terms and related vocabulary. Table A4 summarizes the development of perspective-taking abilities, and Table A5 summarizes the development of recursive theory of mind abilities and the development of the mental-state verb vocabulary that can be used to describe mental-state contents.

Telling Stories: The Structure and Development of Narrative

In the picture we are developing, people build mental models of social situations as a matter of course. We have postulated that this activity is integrated with storytelling as one phase in a larger practice, since people may create mental models of social situations, and then tell stories about them, or listen to stories, and use their social modeling capabilities to understand the social situations described in the narrative. This ability is a critical background to the ability to construct narratives but actually expressing events in story form is a different activity, involving additional skills. In what follows, we seek to explore how these skills develop.

The Elements of Narrative

Narrative is the subject of many different literatures, ranging from literary criticism to psychology, though they generally converge on similar conclusions. In the reading comprehension literature, it is posited that people understand a narrative by creating a *situation model*, a mental representation of the situation and events described by a story (Graesser, Golding, & Long, 1991; Zwaan, 1999, 2004; Zwaan, Langston, & Graesser, 1995; Zwaan & Radvansky, 1998). The comprehension of narratives seems to develop earlier than the comprehension of other text genres, such as expository text (Kaplan, 2013).

According to this literature, the elements of a situation model include more than the propositional content (what happened, to whom, and why). For instance, Zwaan (1999) proposed that events are mentally indexed: location in time and space, the protagonist they affect, their causal relation to other events, and their relation to the protagonist's goals. Understanding a narrative thus requires the comprehender to understand the perspective of specific characters in the story. The basic ability to take the perspective of characters emerges well before children enter school (Nicolopoulou & Richner, 2007; O'Neill & Shultis, 2007), but developmental limitations in social cognition reduce the ability of children and, to some extent, adolescents to understand narrative (Pavias, van den Broek, Hickendorff, Beker, & Van Leijenhorst, 2016).

Linguistic, cognitive, and literary theories propose similar framings (Abbott, 2008; Bernaerts, Vervaeck, de Geest, & Herman, 2013; Britton & Pellegrini, 2014; Copley, 2013; Dancygier, 2011; Gallese & Wojciewowski, 2011; Herman, 2011; Holland, 2009; Mullin, 2011; Oatley, 2011; Stockwell, 2009; Toolan, 2012). Given the complexities of the subject, we can usefully organize our discussion using the framework proposed by Bruner (1991). As Bruner argued, narrative is structured in terms of the physical world in which events take place; the social-emotional world in which characters interact and have beliefs, feelings, and attitudes about the events in which they are involved; and the acts of interpretation necessary to

construct these worlds in a story. While some genres of narrative may emphasize one element more than another, both elements are always present (e.g., folktales present events and event sequences, leaving character motivations almost entirely implicit, and some forms of literary narrative explicitly present streams of consciousness). Bruner posited several critical characteristics of narrative, linked to three levels of representation: event structure, intentional structure, and interpretive structure. We now explain them in detail.

Event Structure

Narrative Diachronicity (Timelines)

Narratives involve a sequence of events and their causes tracked through time (what Bruner termed *narrative diachronicity*). In the default case, events are expressed in the text in the order in which they occurred, but other orders are possible, and there are a variety of linguistic devices for expressing temporal relationships, including verb tenses, time adverbs, and other elements. In the extreme case, large parts of the narrative may be presented out of order, giving rise to flashbacks and flash-forwards. Scholars vary about the complexity of the event sequence necessary to distinguish narrative from other communicative modes (Abbott, 2008), such as description or explanation, but prototypical narratives involve multiple events (Herman, 2009). Critically, the events in a narrative are understood by default to be causally related. As a result, comprehension of narratives focuses on inferring these causal relations (Fletcher & Bloom, 1988; Trabasso, 1991, 2005; van den Broek, 1989, 1990), using background knowledge about canonical cause–effect sequences to infer the most likely causal connections between events in a narrative (Kintsch, 1988; Schank & Abelson, 2013). As people read or hear a narrative, they focus on a character’s immediate goals and push prior goals into the background as they are resolved (Linderholm et al., 2004). Specific information about events, such as information about times and places, comes to the foreground primarily when it is causally relevant (Sundermeier, van der Broek, & Zwaan, 2005).

Particularity (Description Versus Synopsis)

A narrative is about specific events that happen to specific individuals (real or fictional), in specific places and times; that is, event structure intrinsically references not only events and states but also entities, times, and locations (Van Benthem, 2013). This feature expresses what Bruner termed the *particularity* of narrative. A narrative, even a very generic fable, is told as if all the events happened to particular individuals on a particular occasion. However, narratives differ in the extent to which they describe these elements or merely summarize them. A novel may go into great detail, providing description and details that flesh out the characters, actions, dialogue, and setting. A much shorter narrative may provide little more than a bare-bones recounting of events at a high level of abstraction. But the specifics of a narrative are always framed against more general schemata or scripts (Nelson, 1981; Schank & Abelson, 2013) that help the comprehender to interpret the events narrated.

Intentional Structure

Narratives are organized around the protagonist and other participants who have critical causal roles in the events described by a narrative (Morrow, Bower, & Greenspan, 1989). Information about events and facts from a narrative is most easily retrieved when it can be directly linked to event participants, particularly the protagonist (Sanford, Clegg, & Majid, 1998; Sanford & Garrod, 1981, 1998; Sanford, Moar, & Garrod, 1988), and can be interpreted in terms of character goals (M. Singer & Halldorson, 1996; Trabasso & Wiley, 2005). In Bruner’s account, this organization critically involves the intentional states of characters and interactions (often conflicts) among them that draw on social norms and canonical patterns of social interaction.

Intentional State Entailment (Character Traits and Motivation)

Narratives are primarily concerned with characters perceiving and acting in accordance with goals. Narratives are therefore interpreted in terms of the intentional states of the characters who participate in the events described (Vermeule, 2010). This is what Bruner referred to as intentional state entailment. As Herman (2009) argued, it is precisely this focus on mental experience and accounting for the reasons for people’s actions that distinguishes narrative from other types of

discourse that present events in temporal order. Understanding a narrative not only requires the reader to represent the mental worlds in which the characters live but enables them to empathetically experience those events from the characters' perspectives (Zunshine, 2006).

Given the importance of goals in a narrative, they tend to be salient during the process of narrative comprehension and to be remembered more clearly than other aspects of story content (Bower & Rinck, 1999; Fletcher & Bloom, 1988; Lynch & van den Broek, 2007). However, emotionally important information is also more strongly activated (Wassenburg, Beker, van den Broek, & van der Schoot, 2015). During the time course of reading a narrative, a character's current goals are more strongly activated than goals that have already been accomplished (Lutz & Radvansky, 1997; Trabasso & Suh, 1993; Trabasso & Wiley, 2005). In short, understanding why the characters in a narrative behave the way they do appears to be a basic element of narrative comprehension (Graesser, Singer, & Trabasso, 1994; Long & Golding, 1993; M. Singer & Halldorson, 1996).

Inferring intentional states leads directly to the reader forming mental impressions of characters and creating mental models of those characters as if they were persons. Narratives thus intrinsically involve *characterization*, providing information that enables the reader to build a mental model of the character that then allows them to account for and/or predict the character's mental states and actions within the text (Abbott, 2008). As Forster (1963) argued, depending on the richness of the information provided, a character may be *flat* (meaning that the character's actions and attitudes can be predicted from a simple model that specifies only a few traits) or *rounded* (where the character's actions and attitudes have more of the complexity we associate with real people). Much of the potential complexity of narrative arises from the complexity of the mental states readers ascribe to the characters in a story and from the complexity of the mental models readers build to understand the characters presented in a particular narrative. However, it is common for narratives to use stereotypical traits as shorthand, presenting characters as flat types at least initially, even if they unfold and develop into more realistic depictions as a narrative develops (Schneider, 2001).

Normativeness, Canonicity, and Breach (Plot)

Critically, Bruner (1991) argued, narratives are judged against a background of normative expectations about what people want and do and in terms of canonical event sequences that reflect the usual ways people behave and interact. These are the properties Bruner referred to as *normativeness* and *canonicity*. Characteristically, narratives involve violations of norms and breaches that disrupt the expected sequence of events. Bruner argued that the dynamic structure of narrative revolves around the response of the characters to that disruption (or breach) and the ways in which the characters in the narrative seek to bring the situation back into equilibrium. Typically, breaches to canonicity are caused by conflicts between characters, and the return to equilibrium happens as the conflicts are resolved.

This dynamic between conflicting characters is at the center of what literary theory terms *plot* (Tomashevsky, 2002). It is heavily implicated in a variety of related concepts, such as *suspense* (which develops between the breach that introduces a conflict and the subsequent climax and resolution) and *closure* (which is experienced when conflicts are resolved in a satisfying way; Abbott, 2008). Plot is another major contributor to the complexity of narratives, since plots can be structured both simultaneously and hierarchically, yielding multiple plot threads and subplots.

Interpretive Structure

The final, critical point about narrative is that understanding a narrative intrinsically involves an act of interpretation in which the reader must construe the content presented in the narrative in a set of nested contexts that include both the story world and the worlds of the author and/or narrator. The act of building the interpretive structure links closely to what Bruner termed the context sensitivity, referentiality, hermetic composability, and negotiability of narrative. By *context sensitivity*, Bruner referred to the fact that people interpret narratives contextually from specific perspectives. By *referentiality*, Bruner meant that readers will interpret the material in a narrative as if it refers to actual entities and events (at least after an appropriate suspension of disbelief). By *hermeneutic composability*, Bruner referred to the presumption that the parts of a narrative are meant to go together and should be interpreted as a whole. Hermeneutic composability licenses a variety of interpretive principles, such as *Chekhov's gun*, the idea that if a gun is introduced at the beginning of a narrative, the reader is going to expect it to be used before the narrative reaches closure (Simmons, 1962). By negotiability, Bruner meant the extent to which people's interpretations of a story are influenced by their prior knowledge and the

assumptions they make about context, and the ways in which those reactions reflect an implicit negotiation between the author and the reader about how the story is to be positioned relative to their shared social understandings.

Context Sensitivity (Deixis, Point of View, Perspective, Stance, Voice, and Positioning)

Context sensitivity is a design feature of natural language, and because narrative explicitly references times, places, and people, these context-sensitive features are central to the comprehension of narrative. Comprehension of referential language in a narrative presupposes a *deictic center*, or reference point, relative to which a variety of grammatical elements, such as verb tense and personal pronouns, are interpreted (Fillmore, 1975; Rapaport et al., 1989). In oral language, the deictic center is implicitly *me*, *here*, and *now* (the speaker, the location of the speaker, and the time at which the speech events happens, respectively). In narrative, the deictic center is the time and place at which the narrator is presented as recounting the story. However, stories can be told from the point of view of one or many narrators, potentially at different locations or points in time, who may or may not also be characters in the story (Graesser, Olde, & Klettke, 2002). This fact can lead to deictic shifts in which the reader interprets different parts of the text as presupposing different deictic centers, leading to shifts in the interpretation of pronouns, tenses, and other deictic elements.

Critically, people appear to code information as they process narratives so that information close to the current deictic center is kept salient. This can lead to specific literary effects, such as the tendency of first-person narratives to seem more vivid than third-person narratives (Graesser, Bowers, Olde, & Pomeroy, 1999). Similarly, events that are close in time or space to the current deictic center tend to be more accessible when people are reading a narrative (Kelter, Kaup, & Claus, 2004). By contrast, events that require the reader to shift focus from the deictic center to more distant events tend to be accessed more slowly (J. B. Black, Turner, & Bower, 1979; Zwaan, 1996).

In narrative, the *protagonist* plays a special role. Even in a third-person narrative, readers treat the main or presumed viewpoint character as an implicit deictic center and organize information around that character's perspective. This effect can be observed for spatial information, which appears to be coded by readers in relation to the protagonist's position in space (Tversky, 1996). Readers can more easily access information about locations nearer to the protagonist or toward which the protagonist is moving (Morrow & Clark, 1988; Morrow, Greenspan, & Bower, 1987) and may shift perspectives to interpret a text from the viewpoint of the character with whom they most identify (Ziegler, Mitchell, & Currie, 2005). Essentially, readers of narratives appear to be imputing a specific perspective to the protagonist or other character with whom they are identifying, and as the narrative goes along, they are calculating whether specific pieces of information are accessible from the vantage point of that character (Bryant, Tversky, & Franklin, 1992; Rall & Harris, 2000; Rinck & Bower, 1995; Rinck, Williams, Bower, & Becker, 1996).

Similar observations apply to perceptions and beliefs, that is, to the elements of theory of mind. It is clear that when people comprehend a narrative, they not only model the mental states of participants, but also empathize with the protagonist and other characters. The mental operations involved are very similar to those involved in spatial perspective taking, where individuals naturally take an egocentric perspective but are capable of adjusting their thinking to take a different person's standpoint into account (Decety & Jackson, 2004; Ford, 1979; Mead, 1934). In fact, linguistic theorists postulate that the mental mechanisms that support spatial perspective taking are generalized to support mental modeling of what other people think and perceive, more generally (Fauconnier, 1985, 1997; Fauconnier & Turner, 1998, 2002; Sanders & Redeker, 1996). As the discussion of perspective taking in previous sections highlighted, perspective taking requires exertion of executive control to inhibit self-oriented cognition, which can be quite effortful and prone to error (Ickes, 1997). As also discussed in previous sections, one of the effects of narrative is to induce the reader to adopt the protagonist's perspective, which can induce increases in empathy and changes in social perspective and belief (Green & Brock, 2000; Mar et al., 2008; Peskin, Mar, & Bischoff, 2010). There is similar evidence that readers process emotional information from the perspective of the protagonist. For instance, while they are reading a story, readers automatically infer the protagonist's current emotional state and react more quickly to emotion words that correspond to that emotional state (Bourg, 1996; Gernsbacher, Goldsmith, & Robertson, 1992; Gernsbacher, Hallada, & Robertson, 1998; Gernsbacher & Robertson, 1992; Rall & Harris, 2000). However, this may take the form of a general emotional response rather than an inference pinpointing the protagonist's precise emotional state (Gygax, Oakhill, & Garnham, 2003).

Finally, it is important to note the fact that all of the social agents in a narrative—the narrator, protagonist, and other characters—will be perceived by the reader as social agents. The language attributed to a character (or the narrator) will

be interpreted as taking specific stances toward the events and characters in a narrative (Jaffe, 2009) and as positioning them socially on a variety of dimensions (Goffman, 1981; Harré & Van Langenhove, 1998).

Berman, Ragnarsdóttir, and Strömquist (2002) characterized the concept of linguistic stance as involving multiple dimensions: (a) *orientation* (toward the receiver of a communication, toward the sender of a communication, or toward the text), (b) *attitude* (which may focus on beliefs, judgments, feelings, or some combination of these elements), and (c) *generality* (the extent to which the stance is expressed personally, more generally, or in entirely impersonal terms). For example, an adverb like *unfortunately* expresses the speaker's negative evaluative stance toward the action described by the verb it modifies. Stance is automatically built into the language used by a narrator or character to describe an event or to address another character (or, in rare cases, the audience). The stances reflected in a character's linguistic choices may ultimately be perceived as a specific *voice*—a pattern of stances and other linguistic choices that present a character as having a particular social identity or combination of identities (Agha, 2005; Koven, 2015).

Positioning is another social aspect of discourse that is central to the interpretation of narrative (Davies & Harré, 1990; Deppermann, 2015). When one character performs a speech act, such as giving an order to a second character, the first character is positioning himself or herself as having authority over the second. Responses of other characters to an act of positioning can confirm, challenge, or modify the implied matrix of social relations. Interpreting a narrative depends in large part on understanding the ways that the narrator positions the narrative relative to the audience and the ways in which the characters position themselves with respect to one another and their larger social world (Bamberg, 1997). When a narrative presents a particular utterance or interaction, its significance may depend critically on how it fits into the larger social dynamic defined by previous interactions in the text.

Referentiality (World-Building and the Storyworld)

People act on the presumption that a narrative refers to events (and therefore people, places, and things). This presumption means that the reader must reconstruct the world as perceived by the protagonist, by other viewpoint characters in the story, or by a reliable external observer (if the narrator's or individual characters' perceptions do not seem to be trustworthy). The net effect is that reading a narrative can have the effect of *transporting* the reader into a world quite unlike his or her own (Gerrig, 2018; Young, 2012).

This kind of world-building happens in part because of the context sensitivity of story, which can be inverted, so that the writer invites the reader to create in his or her mind a world in which the story successfully refers to elements that the reader would not otherwise have imagined (Herman, 2004; Werth, 1999). Where the world of the story contradicts what the reader knows about the real world, this process induces the reader to “recenter” the world he or she is imagining into one where the assumptions being made by the narrator, the protagonist, and other characters seem to make sense (Ryan, 2001).

Hermetic Composability (Gaps and Cruxes; Overreading and Underreading)

To tell a story is to make choices. Some details are included; others are dropped. Some inferences are made explicit; others are left for the reader to fill in. Some points of view are centered in the narrative; others are observed only by implication. This feature gives rise to the presumption that the elements included in a story were included for a reason, which in turn licenses a variety of inferences. To take the simplest of examples, merely juxtaposing two facts (*At midnight, Person A was in the kitchen, hungry. The next morning, several apples and an orange were missing.*) licenses the construction of a mental scenario involving a chain of actions that is never explicitly asserted or described. The effect is the normalization, or naturalization, of the events described in the narrative (Culler, 1975; Kermode, 1983) through the construction of an interpretation that makes sense of the information provided and the way it has been phrased. This kind of knowledge-based inference is a central element in reading comprehension (K. Cain, Oakhill, Barnes, & Bryant, 2001; Graesser et al., 1994). However, the inferential demands of narrative can be quite different from the inferential demands of expository texts (Graesser, McNamara, & Louwerse, 2003).

The general pattern we observe as a result is that there are *gaps* in the narrative that readers fill in. There may be equally reasonable ways to fill critical gaps (or *cruxes*) that allow for entirely different readings of a story. When confronted with these gaps, readers may *overread* (make inferences that go well beyond what is supported by the text) or *underread* (fail to make inferences that the text clearly justifies). A well-constructed narrative can make the reader's job easy by providing

enough cues that only one interpretation really makes sense, or it can make the reader's experience more complicated, and less determinate, by structuring the narrative so that it suggests and, indeed, supports multiple, possibly conflicting interpretations (Abbott, 2008).

Negotiability (The Implied Reader and the Implied Author)

The hermetic composability of narrative leads directly to its negotiability. To make inferences, readers must make assumptions and draw on background knowledge. The choice of assumptions and the privileging of specific background frames depend on the author and the audience sharing background knowledge and a variety of presuppositions. To the extent that those do not match, the reactions of the audience may not match those the author may have intended. Thus the rhetorical choices that an author makes are designed at least in part to induce a specific reception from readers, which may or may not be forthcoming (Booth, 2010; Eco, 1984).

As a result, it is useful to think not only of actual authors and readers, but also of a text's *implied author* and *implied reader*. The implied author is the way the author will be perceived by the reader, based on the way the author presents himself or herself in the text; the implied reader is the idealized person who is most likely to interpret the text in line with the cues and framings encouraged by the implied author's choices (Iser, 1978; Rimmon-Kenan, 1983).

These constructs represent one pole in a larger space of interpretive possibilities, which Abbott (2008) termed *intentional* readings, as opposed to symptomatic and adaptive readings. In Abbott's account, symptomatic readings are those where evidence in the text is used to draw inferences that go beyond the created world of the narrative, perhaps to draw conclusions about the author's values and priorities. Adaptive readings are interpretations that go beyond the text, but in ways that may nonetheless resonate with an audience.

Most of these complexities are present in the background, rather than in the foreground, of the act of understanding a narrative. To the extent that a narrative is well structured and well presented, readers will typically build an interpretation without conscious awareness of the way the text is angling to obtain a specific readerly response or the way their own reactions may reflect specific values and framing assumptions.

The Development of Narrative Competence

The Expression of Event Structure

The development of children's ability to process and express information about events in narratives has been studied extensively. Van den Broek (1997) summarized the major developmental trends in children's comprehension of event structure as follows: (a) a rapidly increasing centrality of event structure during the elementary school years, (b) a shift from a focus on sequences of events within single episodes to a hierarchical (episodic) structure with a focus on causal connections both within and between episodes, and (c) a shift from a focus on concrete actions to a focus on internal mental states and goals.

Causal relationships play a similarly critical role in how events are described in writing (van den Broek, Linzie, Fletcher, & Marsolek, 2000). The ways in which children produce oral and written narratives follow similar developmental trends and show a transition from relatively atomistic stories with a focus on physical events to richly articulated causal sequences with a focus on mental states and goals (Aksu-Koç & Aktan-Erciyes, 2018; Bamberg, 2011; Schick & Melzi, 2010). We present an overview of developments in children's ability to understand and produce narratives in Table B1 in Appendix B.

A critical resource for the study of narrative writing has been an extended series of studies documented in Berman and Slobin (1994) and Verhoeven and Strömquist (2004), which elicited narratives from children of many different ages and from many different language communities, using a common stimulus: the picture book *Frog, Where Are You?* by Mercer Meyer. In this protocol, children work their way through the picture book and retell the story in their own words.

This line of research emerged from earlier structural analyses of story development in children, focusing on such concepts as story grammar (Botvin & Sutton-Smith, 1977; Mandler & Johnson, 1977) and other structural models, including *high point analysis*, which identifies a timeline of critical events (Peterson & McCabe, 1983), and Labov's (2003) conversational analysis of story structure. These lines of research emphasize the critical role that causal relationships among events play in narrative comprehension. In psychological terms, narrative is built on the mental capacity to create episodic memories (T. S. Anderson, 2015). The memorability of story elements is critically related to their being central to the cause-effect structure of the narrative (Trabasso & Van Den Broek, 1985).

Peterson and McCabe (1983) found that children generally learn how to narrate events effectively by late childhood. In particular, they found that in early childhood (around age 3 years), children may present events in isolation or in listlike formats, with little sense of sequence, but that they progress rapidly, learning how to present events in clear temporal sequence between ages 4 and 5 years and producing reasonably well structured narratives by age 6 years. Before third grade (between ages 9 and 10 years), students' narrative performances may vary considerably depending on scaffolding and the type of narrative to be produced, but by third grade, most students can produce well-formed narratives across a range of genres (Hudson & Shapiro, 1991; Shapiro & Hudson, 1997). Full control of event structure (i.e., grouping information hierarchically into clearly marked episodes, with appropriate development of structural elements, such as openings and endings) tends only to emerge in later childhood (Bamberg & Marchman, 1990, 1991; Berman, 1995, 2001, 2008; Berman & Nir-Sagiv, 2007; Berman & Slobin, 1994). Complications to the basic event structure, such as flashbacks, where events are not presented in sequence, become gradually more common and take on more sophisticated, interpretive roles in narrative during and after adolescence (McKeough & Genreux, 2003; Sun, 1998).

Comprehension of narratives develops somewhat independently from other early reading skills, such as word decoding and vocabulary development (Lynch et al., 2008), and is predictive of the emergence of narrative structure in children's written production (Pinto, Tarchi, & Bigozzi, 2016). Control over story elements in production is closely associated and may follow after stronger comprehension of narratives (K. Cain, 2003; K. Cain & Oakhill, 1996), though, of course, specific groups, such as English language learners, may show delay in the acquisition of skills necessary to produce effective narratives (Shrubshall, 1997).

The emergence of clearer story structure is linked to increasing elaboration of students' narratives and inclusion of richer information beyond the bare bones of the event sequence. Ravid and Berman (2006) found that in grade school, student narratives consisted primarily of event information, supplemented by ancillary descriptive information. The proportion of the narrative devoted to event information steadily decreased with age, from 55%–70% in grade school to approximately 40% in middle school to 30% in high school and among adults. The proportion of descriptive information increased somewhat from grade school (35%–45%) to middle school (50%–55%) but leveled off thereafter, ending at 45%–50% of adult narratives. On the other hand, the proportion of ancillary interpretative information increased slightly from grade school to middle school, became more than 15%–20% of total text in high school, and maxed out at nearly 30% of the total text content among adults. Similar results have been reported in a variety of studies (e.g., Bamberg & Damrad-Frye, 1991; Bento & Befi-Lopes, 2010; Berman & Katzenberger, 2004; Drijbooms, Groen, & Verhoeven, 2017; Ukrainetz et al., 2005).

On the other hand, the grammatical resources that support effective communication of event structure develop more slowly and tend not to mature until after the onset of adolescence. Some formal features of narrative, such as the use of a consistent anchor tense (past or present) and the use of connectives to mark clause-level temporal, causal, and other relationships, emerge relatively early. In elementary school children, connectives may actually be overused relative to adult usage since children appear to use some connectives, such as the conjunction *and*, to signal the difference between events on a timeline and other kinds of information (Peterson & McCabe, 1987, 1988, 1991). However, the sophisticated use of grammatical resources to mark segment boundaries within a narrative indicates the choice of a specific viewpoint or manages information flow within and across text segments and is a marker of adolescent and adult writing (Berman, 1995, 2008; Berman & Slobin, 1994).

These developmental trends are summarized in the learning progression form found in Table B2. The evidence shows that by middle childhood, children have mostly learned how to express event sequences, with later development linking more strongly to the expression of intentional and interpretive structure.

The Expression of Intentional Structure

One of the critical things to understand about narratives is that children understand the intentional structure of stories long before they systematically express it in their narratives. When appropriate scaffolding is provided, even preschool children can demonstrate that they have made appropriate inferences about characters' intentions and emotions in a story (Stein & Albro, 1997), though children's empathetic reactions to narrative do not appear to track protagonists' emotional states as closely as they do in adults (Mouw, Van Leijenhorst, Saab, Danel, & van den Broek, 2017).

Increases in the complexity of the intentional structure of a narrative can increase the complexity of the reading task, resulting in slower reading (Whalen, Zunshine, & Holquist, 2015). So the development of students' ability to express

intentional structure necessarily lags behind their comprehension, and their ability to produce narratives that make intentional structure explicit may increase when students are first given scaffolding activities that make them more aware of intentional structure (Veneziano & Hudelot, 2009).

Anne McKeough (1992, 1996, 1997, 2000) developed a theory of narrative development in which children in preschool and the early school grades first learn to express event structure but leave intentional structure implicit or undeveloped. According to her account, children typically acquire the ability to express complex intentional structures in the upper elementary grades, but do not learn how to control the interpretive structure of narrative until adolescence. Individual differences fall along the same scale, such that low-literacy individuals tend to produce narratives whose story structures are characteristic of folk tales, where intentional structure is present but often left implicit, and not subjected to detailed interpretation. By contrast, highly literate individuals are likely to construct narratives where interpretive structure is carefully manipulated and metacognitive, interpretive commentary is explicitly presented (McKeough, 2000; McKeough, Genereux, & Jeary, 2006; McKeough, Templeton, & Marini, 1995).

In particular, McKeough and colleagues (McKeough & Genereux, 2003; McKeough, Palmer, Jarvey, & Bird, 2007) fleshed out this theory by providing a developmental scale for narrative that focuses on changes in the thinking that underlies students' explicitly expressed content. In their analysis, most of the changes to school-aged students' narratives that happen before adolescence have to do with the complexity of intentional states represented in the story and their interaction to form the plot. In preschool, the focus is on event structure, with causal/temporal event sequences emerging by age 4 years. By age 6 years, stories are understood in intentional terms, such that a protagonist is trying to solve some sort of problem that needs to be resolved by the end of the story. By age 8 years, children have elaborated their understanding of character intentions enough to produce stories that follow multiple failed attempts to solve a problem before a final, successful attempt and track how the protagonist may go through a series of mental states as the situation unfolds. By age 10 years, they are beginning to have a clear sense of which problems are particularly important and meaningful for characters to resolve and can build narratives in which there is a key problem and a satisfying solution to that problem, even though the narrative may also contain other problems and complications. As adolescence begins, the scope of children's thinking expands in space and time so that actions are interpreted in context rather than happening in the moment. By age 12 years, the focus of children's storytelling shifts to explaining why characters think and act as they do and how character traits unfold across time. By age 14 years, stories may involve multiple traits that conflict with one another, leading to more complex narratives. By age 18 years, people are able to build a picture of people with complex personalities with multiple traits and to use that picture to integrate the disparate events in a narrative into a coherent whole, which can play an important role in social development (McKeough & Malcolm, 2011; Sanderson *et al.*, 2016); see Figure B1.

While this account posits development that involves first event structure, then intentional structure, and then interpretive structure, it is primarily focused on cause–effect relationships among the actions in stories, as explained first by characters' intentions and then by character traits that account for their intentions. It does not address many of the complexities of interpretive structure we find in literary accounts of narrative, such as Abbott (2008). The focus in all the narrative development their theory posits is on an unfolding understanding of how people act in situations where there are conflicts or problems they must resolve, with increasing richness in understanding how character's actions are influenced by their goals, and then how their goals are influenced by character traits and other factors. It is, in other words, focused on increasingly rich understandings of intentionality (Case, Okamoto, Henderson, McKeough, & Bleiker, 1996; McKeough & Griffiths, 2010) and its effects on the plot complexity.

Essentially, McKeough's theory of how student narratives increase in complexity ties plot to theory of mind. Since, as previous sections of this report demonstrated, theory of mind varies in response to developmental and social variables, we expect to see similar variations in narrative development. It is thus not surprising that variations in the development of narrative are linked to culture and class differences (Peterson, 1994), and reading comprehension deficits (Cragg & Nation, 2006). Similarly, reading comprehension deficits and deficits in narrative production are more frequent among students with autism, where theory of mind is known to be weak, and students with attention-deficit hyperactivity disorder (ADHD; Losh, 2003; Tannock, Purvis, & Schachar, 1993). There are expected results, because ADHD is associated with deficits in executive control, and these are known to reduce the complexity of the theory of mind inferences that people are likely to make (Perner & Lang, 1999), while also making it harder to organize information sequentially (van Lambalgen, van Kruistum, & Parigger, 2008).

It is thus important to recognize that the developmental stages McKeough and colleagues proposed are not intended as strict developmental timelines but as stages that people can move through earlier or later, depending on their experiences and involvement in narrative. Even before students enter school, social context can have a powerful impact on the development of storytelling abilities and autobiographical memory (Boland, Haden, & Ornstein, 2003; Cleveland, Reese, & Grolnick, 2007; Fivush, Haden, & Reese, 2006; Peterson & McCabe, 2004). And when students enter school, interventions that enrich children's understanding of character action and intentionality can also enhance children's storytelling abilities. For instance, Nicolopoulou (1997) argued that social contexts that encourage rich narrative thinking can significantly improve student narrative. Nicolopoulou (2002) showed that narrative development can be enhanced by classroom practices that make heavy use of well-structured peer group interaction to encourage students to think about stories and characters. In her study, students reached levels of performance far above what would have been expected for their age levels. Similarly, McKeough and Sanderson (1996), McKeough, Davis, Forgeron, Marini, and Fung (2005), McKeough et al. (2008), and (McKeough, 2013) presented evidence that developmental interventions focused on improving students' understanding of the intentional structure of stories yielded significant improvements in narrative quality.

The Expression of Interpretive Structure

Interpretive structure in students' narrative appears primarily to develop during and after adolescence. Narrative writing after adolescence is distinguished by an increase in structural complexity and the appearance of coherent stretches of explicit interpretive text (Berman & Nir-Sagiv, 2007; Genereux, 1997; Genereux & McKeough, 2007; McKeough & Genereux, 2003). In early childhood, the content of children's stories happens in the moment; that is, it is primarily focused on actions and intentions at the time of narration. During adolescence, there is a shift to an interpretive focus in student narratives (Applebee, 1978) such that a character's previous history, deep-seated character traits, and social and cultural factors are integrated with events and characters' immediate thoughts and feelings.

Typical developments during adolescence include a significant increase in the number of character descriptions that are intentional in nature, tripling in frequency (from 2% to 6% of all descriptions) between ages 10 and 17 years (McKeough & Genereux, 2003). Narratives in late adolescence and adulthood are also marked by a greater frequency of explicitly metacognitive language, including references to the point or moral of the story and segments of explicit commentary (Berman & Nir-Sagiv, 2007). Before adolescence, when students insert flashbacks into their stories, they primarily serve an informational function, such as filling in missing information, recapitulating information already presented, or providing similar content for purposes of comparison. After adolescence, students are able to handle greater interpretive complexity and ambiguity when asked to explain stories they have read (Genereux & McKeough, 2007). Similarly, they produce more flashbacks and other complications to the basic story structure; moreover, the vast majority of flashbacks now fulfill an interpretive function, such as helping the reader to understand a character's motivations or reactions, revealing a key character trait, or providing a new way to interpret information already presented in the story (Genereux, 1997; McKeough & Genereux, 2003).

Most of these changes are consistent with the development of theory of mind during adolescence, as discussed earlier in the section, "Advanced Theory of Mind." Development of advanced theory of mind abilities entails the ability to switch perspectives relatively easily and the ability to hold contradictory perspectives in mind and reason about the differences between them, thus producing a greater likelihood of introducing plot twists and ironic effects that depend on manipulating the readers' understanding of different perspectives within the narrative (Sun, 1998). However, it appears likely that control over many of the interpretive elements of narrative may develop gradually and partially even among adults (see Figure B2 for a partial list).

Context Sensitivity (Deixis, Point of View, Perspective, Stance, Voice, and Positioning)

Concomitant with the increase in explicit metacognition about narrative is a rapid movement in adolescence toward adult levels of control over the grammatical resources that signal perspective, stance, voice, and social positioning within a narrative. Wigglesworth (1990, 1997) found that preadolescent children have not yet acquired adult devices for maintaining reference to characters in narrative through the use of pronouns, articles, and other deictic elements, implying a shift toward greater control over the grammatical elements linked to perspective switching during adolescence. In middle school and high school, this shift is reflected in the rapidly increasing complexity of what Berman and Nir-Sagiv

(2009) called “clause packaging” (the construction of clause sequences where multiple clauses are subordinated implicitly or explicitly to a single main idea). Reilly, Zamora, and McGivern (2005) observed a developmental trend toward the more frequent use of linguistic elements starting in the junior high school level that express subjective attitudes, for example, the author’s or narrator’s stance, especially among high school students and adults, and toward greater frequency of impersonal constructions, implying a more detached stance. Among adults, there also appears to be more frequent use of hedging expressions that express the author’s or narrator’s judgment about the accuracy of content (Bamberg & Damrad-Frye, 1991). As people mature, they also appear to make more systematic use of the grammatical subsystems for marking counterfactual and hypothetical situations (Ragnarsdóttir, Aparici, Cahana-Amitay, van Hell, & Viguié-Simon, 2002).

Referentiality

One of the chief effects of the interpretive structure of text is the invocation of imagined story worlds, which may be vast in scope, representing alternative timelines, alternative realities, or our world modified by the inclusion of a variety of imagined elements. Constructing stories and story worlds is considered an important way that adolescents construct new social identities (Bamberg, 2004; McLean, 2005). There is, however, relatively little literature that focuses on assessing when children begin to engage deeply with richly imagined worlds outside their immediate social sphere; there is some evidence that engagement with imagined story worlds blossoms during adolescence (R. W. Black & Steinkuehler, 2009). For instance, the vast majority of participants on a popular fan fiction site, FanFiction.net, are reported as being between the ages of 13 and 17 years (Sendlor, 2011).

Hermetic Composability and Negotiability

As noted in our discussion of the basic elements of narrative, the hermetic composability and negotiability of narrative entail that texts may not have a single interpretation. Multiple interpretations might arise in several ways: (a) because information is underspecified and must be inferred using clues in the text or background information provided by the reader (Kintsch, 1988); (b) because the reader can approach the text from different perspectives, which will change what information is salient and easily recalled, and modify what inferences are likely to be made based on background information (R. C. Anderson & Pichert, 1977; Glenberg, Meyer, & Lindem, 1987; Pichert & Anderson, 1977); or (c) because the text itself involves an interplay between multiple perspectives that must be considered to achieve a full understanding of the story.

There is evidence that children in the early elementary grades are capable of generating multiple interpretations of text when the interpretations are supported by textual clues. Following up on work by Ackerman (1988), Ackerman and Jackson (1991), and Ackerman and McGraw (1991) on the mechanisms that drive student inferences during reading, Bonitatibus and Beal (1996) and Casteel (1997) examined whether elementary-aged children could generate alternative causal inferences for a physical event, based on multiple clues in a short text narrative. Both studies found that both second- and fourth-grade children were able to generate multiple interpretations, with a preference in favor of the more recent clue, but that fourth-grade children were more likely to generate multiple explanations based on clues in the story than the second-grade children. The implication is that primary-aged children’s failure to recognize potential interpretations of stories may reflect such causal factors as lack of necessary background knowledge or developmental limits, such as an immature theory of mind or difficulty in adopting the necessary perspective. For instance, a younger reader might fail to recognize sarcasm (Capelli, Nakagawa, & Madden, 1990) or fail to see alternate readings or potential pragmatic interpretations due to developmental difficulties in distinguishing between literal meaning and communicative intent (Beal & Flavell, 1984).

In fact, many of the interpretive features of narrative intrinsically draw on theory of mind. Consider, for instance, the concepts of an *unreliable narrator*, *implied author*, and *implied reader* (Booth, 2010). To recognize that the narrator cannot be trusted and to attempt to reconstruct what really happened, one must be able to hold multiple perspectives in tension and evaluate them against one another. Similar considerations hold when one must recognize that the author, as presented in the text, is distinct from the author in real life or that a text is written as if intended to be read by a certain kind of reader. When a narrative is sufficiently complex, one may need to hold in tension mental models of the author, the narrator, and multiple characters and reason about how each is positioned relative to the events and the social world(s) depicted in the narrative. These aspects of story construction almost by definition require advanced theory of

mind capabilities, which implies that the ability to understand and respond to the interpretive dimensions of a text will develop primarily in adolescence and adulthood.

But the ability to recognize potential ambiguities and interpretive complexities in a text is not the same thing as exploiting interpretive structures in a story. At least basic abilities to create narratives that integrate multiple plotlines and multiple perspectives appear to develop by late adolescence. McKeough and Genereux (2003) observed that 17-year-olds' narratives are more likely to integrate multiple plotlines that involve both an external and an internal conflict or use flashbacks or other narrative techniques that explicitly recast or reinterpret content that has already been presented. On the other hand, awareness of interpretive structure and methods for creating and exploiting it are explicitly taught to adolescent and adult writers, as evidenced by its central role in textbooks designed to support creative writing classes, such as *Imaginative Writing: The Elements of Craft* (Burroway, 2014).

The Development of Narrative Reflection: Making Sense Out of Stories

We have now discussed two of the three phases in our proposed key practice. The third phase matters because people integrate stories into their lives. In other words, they participate in storytelling because stories matter. Narrative plays a central role in how people negotiate the world. The stories people tell make sense of experience, provide models that can be used by analogy to understand other social situations, and help people understand and empathize with other people. As a result, reflecting on narrative is an important social tool.

The following points are considered: (a) how people extract the theme, or point, of a story; (b) how the ability to recognize themes develops during the school years; (c) how people can use their understanding of theme to reason analogically about other stories, and comparable social situations; (d) how other aspects of narrative interact with the development of moral reasoning and the formation of people's moral imaginations; and (e) how reflection on narrative therefore serves a crucial role in developing rich emotional and social lives.

Cognitive Approaches to Theme in Narrative

Stories have themes. In a simple case, such as a fable, the theme of a story may be a simple moral, like "look before you leap." In more profound cases, themes may be more subtle and more complex, and becoming consciously aware of such themes may shed light on one's own life, leading to significant social or emotional transformations.

But themes have to be inferred. It is not necessarily easy to extract themes from a story. Thematic analysis takes work, and people do not automatically do that work (Graesser et al., 1994; Graesser, Pomeroy, & Craig, 2002; Kurtz & Schober, 2001). Even if people are aware of themes below a conscious level, making them explicit is a form of summary, and constructing any kind of summary requires conscious effort (Afflerbach, 1990).

Literary experts and literary novices differ in their willingness to reflect on a story to identify its themes (Goldman, McCarthy, & Burkett, 2015). An expert is willing to take an interpretive stance (Zeitz, 1994). Nonexperts may be able to make thematic inferences but often fail to do so unless they are provided with appropriate scaffolding and support (Burkett & Goldman, 2016; Levine, 2018).

But what is a theme? The concept of theme is cognitively complex, and many different definitions of theme have been adopted in the literature. Zwaan, Radvansky, and Whitten (2002) drew a distinction between *theme as a topic* and *theme as a motif*. Theme as a topic refers to general ideas cued by specific story content. Theme as a motif is a more complex understanding of theme and focuses on the fact that people can recognize similar themes in what might on the surface seem like completely unrelated stories.

Kintsch (2002) provided a theoretical account of thematic topics, focusing on the idea that the theme of a text encapsulates general ideas cued by text content. For instance, a reader might infer that a story is about greed because the main character refuses to give his employees time off for the holidays. While there is some evidence in the literature that thematic topics can easily be inferred during text processing (Zhang, 2005), there is also evidence that thematic inferences are not automatically constructed unless the purpose and context of reading encourage it (McKoon & Ratcliff, 1992). There is also evidence that thematic topics are more easily inferred when salient text clues are provided, such as a title (Zhang & Hoosain, 2001).

Theme as motif focuses on the deep structure of narrative—how the pattern of goals and outcomes unfolds and what kinds of cause–effect relations are established between events. Very different stories can share a common motif (e.g., the

idea that greed causes people to lose the things they most deeply cherish). Recognizing such motifs is a form of analogical reasoning.

The idea that thematic similarity involves similarities in the relational structure of events is well supported in the literature. For instance, Black and Lehnert (1985) and Seifert, Dyer, and Black (1986) showed that people are able to generate stories based on a common structural pattern and can sort stories into thematic groupings based on the same structures. However, analogical processing of story structure appears to be under strategic control. Sentences from one story do not facilitate processing of sentences from a thematically related story unless people have been explicitly instructed first to compare them (Gick & Holyoak, 1980; Seifert, McKoon, Abelson, & Ratcliff, 1986). Even when reading a single story, people do not appear to explicitly calculate the theme, unless it has been explicitly prompted by some other cue, such as a story title (Dooling & Mullet, 1973). Zwaan et al. (2002) argued that structural similarity is most important when people are trying to match a story to a wide range of competing models. Under those circumstances, people are most likely to associate a story with structurally similar scenarios, consistent with the analogical model proposed by Wharton et al. (1994).

But there is more to theme than structure. One of the key differences between a story and a mere chronology is that stories have points—themes that make them meaningful and interesting to the audience.

Shen (2002) sought to systematize the idea of story points and postulated the existence of at least three different kinds of points: (a) *structural points* (roughly the same as Zwaan and colleagues' idea of theme as motif), such as the presence of a conflict that makes a story interesting (Mandler & Johnson, 1977; Rumelhart, 1975; Wilensky, 1982, 1983); (b) *thematic points* (roughly the same as Zwaan and colleagues' idea of theme as topic)—thematic points, such as the idea that the pointlessness of revenge or the importance of justice, have been extensively studied in literary criticism (Greimas, 2015; Perry, Schwartz, & Sabah, 1985; Rimmon-Kenan, 1983; Sollors, 2002); and (c) *affective points*, that is, feelings and other affective responses evoked by the story, such as suspense, surprise, and the satisfaction of curiosity (Andringa, 1996; Brewer & Lichtenstein, 1982; Davis & Andringa, 1995). Shen (2002) linked these concepts of point to the concept of *conversational point* introduced in Labov (1972). According to Labov's analysis, moves in a conversation always have a point. When people participate in a conversation, they use various stance elements (evaluative devices) to position their utterances and link them to the points they are trying to make. In Shen's theory, the thematic elements in a story express the point that the storyteller is trying to make and are typically highlighted within the narrative by the use of evaluative devices. In other words, the way a story is structured and the stylistic choices made by the author serve to foreground thematically important points (Emmott, 2002).

Shen's (2002) theory can be elaborated by considering a set of categories proposed by Schank et al. (1982). In this proposal, people may try to make seven different kinds of points: (a) affective points (showing how someone's feelings are affected), (b) empathetic points (showing that one understands someone else's feelings), (c) need points (showing that one understands what someone needs or desires), (d) explanatory points (providing an explanation for a something people wish to understand), (e) prescriptive points (providing a rule for action), and (f) argument points (linking the information one provides to an argument one wishes to support).

It is easy to see how the theme(s) of a story can fulfill any of these purposes, though, of course, a story may be read for purely informational purposes or simply to enjoy the plot (Vipond & Hunt, 1984).

Graesser, Pomeroy, and Craig (2002) emphasized that when people talk about the theme of a story, they typically mean the most important theme, which may combine structural, topical, and affective elements. On this view, a theme is a complex (if schematic) conceptual structure designed to support analogical reasoning about events. One of the best developed theories of this type was originally conceived by Lehnert (1981) and further elaborated in Dyer (1982), Lehnert, Dyer, Johnson, Yang, and Harley (1981), and Seifert et al. (1986). In Lehnert et al.' (1981) framework, themes are complex structures built from simple plot units that combine information about goals, outcomes, and affect.

In other words, themes are generalizations about purposeful action. Stories describe how people go about solving particular problems. Story themes are ways to generalize from one specific story to an entire class of similar situations, where similar conflicts exist and the protagonist applies similar strategies to solve similar problems.

The Development of Children's Ability to Extract Themes

People's ability to extract themes from a story are affected by a wide range of variables other than age: (a) the familiarity and realism of the context, with greater generalization across more familiar and realistic contexts (Lehr, 1988; Walker, Gopnik,

& Ganea, 2015); (b) the nature of the theme, with moral themes being recognized more accurately than themes focused on prudent decision-making (Narvaez, Gleason, & Mitchell, 2010); (c) the complexity and reading level of the story itself (Grueneich & Trabasso, 1979; Zhang & Hoosain, 2001); (d) the presence of a title, explicit moral, or other cue (Dooling & Mullet, 1973; Dorfman & Brewer, 1994; Hanauer & Waksman, 2000; Zhang & Hoosain, 2001); (e) individual reading level and level of vocabulary development (Pelletier & Beatty, 2015); (f) presence or absence of learning disabilities (Abrahamson & Sprouse, 1995; Williams, 1993); (g) individual mastery of second-order Theory of Mind (Pelletier & Beatty, 2015) and development of general moral reasoning skills (Narvaez et al., 2010; Narvaez & Gleason, 2007); (h) ethnic and cultural factors (T. Bock, 2006); (i) prior exposure to literature (Lehr, 1988); (j) level of instructional support (Williams et al., 2002); (k) interest and engagement with the specific story or series of stories tested (Whitney, Vozzola, & Hofmann, 2005); and (l) whether people were actively engaged in generating explanations of character motivations and actions before they were asked to identify the theme (Walker & Lombrozo, 2017). However, there are also clear developmental trends:

- Young children (kindergarten and the early grades) tend toward a very literal interpretation of stories, and their attempts to state story themes tend to be stated specifically within the story context (Lehr, 1988; Walker & Lombrozo, 2017). This is true even for highly didactic television shows aimed at young children (Mares & Acosta, 2008; McKenna & Ossoff, 1998) and for fables (Goldman, Reyes, & Varnhagen, 1984; D. F. Johnson & Goldman, 1987; Pelletier & Beatty, 2015; Walker & Lombrozo, 2017).
- There appears to be rapid, but not necessarily consistent, growth in children's ability to infer general themes during the middle grades. Older children (around ages 8–10 years) are much more likely than younger children to spontaneously report the major themes of a children's television show (McKenna & Ossoff, 1998) or to extract moral lessons from fables (Chia, 1995; Goldman et al., 1984; D. F. Johnson & Goldman, 1987; Lehr, 1988). The literature is less clear on the rate at which children's ability to extract themes grows during the middle grades. Significant increases in theme recognition performance between third and fifth grades are reported by Narvaez, Bentley, Gleason, and Samuels (1998), Narvaez, Gleason, and Mitchell (1997), and Narvaez, Gleason, Mitchell, and Bentley (1999). On the other hand, Pelletier and Beatty (2015) observed relatively flat performances between second and fifth grades, with larger increases in theme recognition performance happening between kindergarten and first grade, and then later between fifth and sixth grades.
- The ability to recognize themes is reasonably consistent across a wide range of story types by age 14 years (Van den Broek, 1997). However, theme perception may develop further in adulthood, since significant differences have been reported between college and graduate populations (Narvaez & Gleason, 2007; Whitney et al., 2005).

These trends are consistent with the general thesis that understanding of themes is constrained by theory of mind development. Younger children in kindergarten and the early grades, who are consolidating their understanding of second-order theory of mind and have not yet developed advanced theory of mind abilities, are more likely to focus on the physical events of the story and neglect the intentional information necessary to construct thematic interpretations. After advanced theory of mind abilities have consolidated during adolescence, people are far more likely to generate thematic understandings of stories spontaneously across a wide range of story types and situations. We present a summary of our understanding of the development of children's ability to understand themes in Appendix C.

The Role of Theme Understanding in Moral and Social Development

The way we have described theme recognition emphasizes the idea that when people recognize themes, they are recognizing patterns in how people interact purposefully with one another. In other words, themes in stories have much in common cognitively with the scripts that underlie social knowledge (Schank & Abelson, 2014; Schank & Berman, 2002). It follows that stories, by simulating social situations in people's minds, may function much like actual social experience in providing the basis for social learning and the development of social values and identities (Hakemulder, 2000; Oatley, 1999b). Thus, the themes that people extract from stories are likely to influence the social categories, scripts, and identities they adopt and the way they perceive their place in society. And in fact, when people read or listen to stories, they are typically actively engaged in inferring social norms, linking story events to scripts for social interaction and integrating story events with other forms of social knowledge (László, 2008; Wyer, Adaval, & Colcombe, 2002).

The idea that stories can play a critical role in transmitting social and moral understandings is not a recent development. It is the fundamental idea in many traditional approaches to social and moral education (Bennett, 1993; Guroian, 1996;

Kilpatrick, 1992; Lickona, 2009) and is the source of a great deal of controversy in the selection of textbooks and in opposition to the inclusion of specific narratives in school curricula (DelFattore, 2002). The idea that particular virtues should be modeled and developed among children is particularly salient and relevant in this context (A. Cain, 2005; Seroczynski, Johnson, Lamb, & Gustman, 2011; Vitz, 1990).

There appears to be some evidence that exposure to narratives designed to communicate specific themes can have a small to moderate impact on student attitudes (Adler & Foster, 1997; Montgomery & Maunders, 2015). However, the simplest version of traditional views—which assume that simply exposing children to appropriate templates for moral action will lead to the internalization of moral values—runs up against the developmental complexity of story understanding. How children understand themes even in a simple fable depends on the level of development they have reached in their understanding of narratives and of morality and on the social and moral schemes they have already developed and actively use in story comprehension (Narvaez, 1998, 2002; Narvaez et al., 1999; Narvaez & Gleason, 2007).

Overall, the evidence suggests that people are most likely to induce general schemas, or themes, from stories when they are exposed to multiple examples of the same schema (Gick & Holyoak, 1983) and when they are explicitly engaged in tasks, such as generating explanations, that require them to reflect on, and explicitly reason about, themes (Walker & Lombrozo, 2017). Consistent with the literature on effective literacy instruction in general (Langer, 2001), these conclusions suggest that students should be encouraged to reflect on themes across multiple stories and as they apply to real-world social situations.

Cognitive Approaches to Identification and Transportation in Narrative

Narratives can have a powerful impact (Stahl, 1975; Trabasso, 1994). The impact may affect not just isolated individuals but whole societies, as seen, for instance, by the power of the novel *Uncle Tom's Cabin* in affecting the slavery debate in the nineteenth century (Strange, 2002) or the extent to which the nineteenth-century novelist Charles Dickens's works helped induce social change (Harrison, 2008). Narratives can affect the reader through multiple mechanisms. As we have already discussed in previous sections, narratives can present models that people can emulate, can directly embody moral lessons, and can provide simulated experiences that help develop people's understandings of social situations. But much of the power of narrative comes from its potential impact on emotions, imagination, and beliefs and as the starting point for self-reflection about personal experience (Brock, Strange, & Green, 2002; Hakemulder, 2000).

Theories of narrative impact emphasize the role of *transportation*—the experience of being imaginatively carried away into the story world (Gerrig, 2018). Highly transported individuals will vividly experience story imagery and events almost as if they were happening to themselves (Sarbin, 2004). The strongest transportation is associated with (a) a strong sense of empathy with the protagonist (Green, 2007; Kashima, Gurumurthy, Ouschan, Chong, & Mattingley, 2007; Keen, 2006), (b) a deeper engagement with the storyline (De Graaf, Hoeken, Sanders, & Beentjes, 2012; Slater, 2002; Slater & Rouner, 2002), and (c) a greater sense of enjoyment of the narrative (Igartua, 2010). People who experience transportation are likely to view major characters within the story more positively, are less likely to be critical of story content, and are more likely to experience changes in beliefs as a result (Green & Brock, 2000; Mazzocco, Green, Sasota, & Jones, 2010).

When a narrative produces changes in attitude and belief, it is a consequence of the story's emotional impact (Oatley, 2002; Sklar, 2008). As Oatley (1995, 1999a) argued, understanding a story activates the brain's capacity for theory of mind and has the effect of running a directly experienced mental simulation of the story events. The process of experiencing that simulation increases empathy with people who would otherwise seem very different from oneself (Djikic, Oatley, & Moldoveanu, 2013) and has the immediate effect of inducing temporary shifts in beliefs and feelings in the direction of the protagonist's perspective (Djikic et al., 2013). In experimental studies, even very short narrative descriptions of individuals who belong to an outgroup can increase empathy significantly (Bruneau, Cikara, & Saxe, 2015). But when a story has a particularly powerful emotional impact, these usually temporary effects may intensify and stabilize over time (Appel & Richter, 2007), yielding significant transformations in attitude (Djikic & Oatley, 2014).

The emotional impact a story makes can be affected by a wide range of variables, including features of the story, features of the reader, features of the reader's attitude toward the story, and the situation in which the reader hears or reads the story.

People appear to vary in their susceptibility to transportation while reading or listening to a story. This variability appears to be related to people's capacity to experience vivid imagery and their susceptibility to other experiences that

take people out of their normal states of consciousness, such as hypnotic states (Busselle & Bilandzic, 2009; Dal Cin, Zanna, & Fong, 2004; Tellegen & Atkinson, 1974).

Individual stories also vary in their intrinsic capacity to move the reader (Green & Brock, 2000). Thirty-four to 69% of the variance in transportation associated with reading a story is due to the story, as opposed to latent traits of the individuals reading the story (Gnambs, Appel, Schreiner, Richter, & Isberner, 2014). Features of the story that can affect emotional response include the following:

- Imagery: The more vividly a story calls up mental images of the unfolding events from a particular character's perspective, the more easily people will identify with and feel empathy for that character (Green & Brock, 2002; Nell, 1988a, 1988b).
- Verisimilitude: The more realistic the events in a narrative seem to the reader, the more likely they are to have an effect on the reader's attitudes and beliefs. The effect of verisimilitude is much stronger than the effect of knowledge of the actual truth or falsity of the story (Green & Brock, 2000).
- Location of information in the story: The more closely connected information is to the main causal sequence of events in a story, the more likely it is to induce emotional reactions in the reader (Dahlstrom, 2010).
- The effect of literary craft: Literary devices can have the effect of foregrounding aspects of the story that would otherwise fade into the background, which can cause the reader to process and perceive them in new ways (Hakemulder, 2004; Miall & Kuiken, 1994). Well-constructed stories also give rise to feelings of aesthetic enjoyment, which appear to intensify other feelings evoked by a narrative (Miall & Kuiken, 2002).

People's attitudes toward a story, and the situation within which they read or listen to the story, also appear to affect how likely people are to experience transportation. Known variables include the following:

- The similarity between the protagonist and the reader: Transportation takes place most easily when the protagonist is very similar to the reader. However, if the protagonist is less similar to the reader but has traits associated with the reader's idealized would-be self, strong transportation may still occur and have a transformative impact on the reader (Shedlosky-Shoemaker, Costabile, & Arkin, 2014).
- The stance the audience takes toward the story: People do not always experience a story from an internal perspective. They often react to a narrative as if they are side participants in the unfolding drama — part of the scene even if not the main characters (Polichak & Gerrig, 2002). For instance, they could view themselves like the audience in a fight, cheering the protagonist on. The impact of a story may be lessened if the reader takes a side participant stance rather than identifying with the protagonist (Oatley, 1999b).
- Emotional state: The emotions people experience while they are reading a story will affect their transportation and emotional response to it, even if those emotions are induced by external variables, not by the story itself (Vaughn, Hesse, Petkova, & Trudeau, 2009).
- Attentional state: Transportation into a story is reduced when people are distracted by other tasks that also require focused attention (De Graaf, Hoeken, Sanders, & Beentjes, 2009).

Given these models, it is useful to think of the persuasive effects of narrative as evoking a form of indirect persuasion (Bilandzic & Busselle, 2013) that bypasses the usual centers of resistance to new or disfavored ideas (Dal Cin *et al.*, 2004). Narrative does not overtly signal persuasive intent; it moves the reader to adopt the protagonist's perspective (which reduces the propensity to generate counterarguments from one's own perspective) and maintains suspense (which means that the persuasive point of a story may only become clear after the story has been heard through to the end; Green, Garst, & Brock, 2004; Hoeken & Fikkers, 2014). Experimental studies have shown that the effects of transportation into a story can be strong enough to modify even highly entrenched views, such as opinions about capital punishment (Mutz & Nir, 2010). Regular exposure to narratives that embody a particular perspective, such as television shows that feature members of minority groups, tend to promote greater acceptance of people from diverse backgrounds (Appel, 2008). However, the effects appear to be relatively small. For example, Braddock and Dillard (2016) reported correlations between television viewing and shifts in attitude ranging between .17 and .23.

Identification and Transportation as Catalysts for Moral and Social Development

Identity can be viewed as a kind of narrative about the self (Hall, 1991), and in fact, group identity can be strongly linked to identifying with particular narratives (R. N. Jacobs, 2002). Choosing which stories to make part of one's identity appears

to be an important aspect of identity development, such as gender identity (Radway, 2002). Those choices matter, since the effects of transportation can induce changes in self-concept, such as a sense of femininity (Ashby & Wittmaier, 1978; Richter, Appel, & Calio, 2014). Theorists have therefore attempted to link children's and adolescents' responses to narrative to patterns of moral and emotional development. For instance, Bettelheim (1976) argued that fairy tales recapitulate conflicts and struggles that children normally experience during childhood and provide them important tools with which they can make sense of childhood experience and promote their moral development.

Kohlberg (1984) presented a major milestone in theories of moral development. Kohlberg hypothesized universal stages of moral development that children move through. According to Kohlberg's theory, in infancy, children think in entirely egocentric terms, in terms of avoiding punishment and seeking to obtain rewards. During childhood, this is replaced by a focus on conformance and approval and on the internalization of social rules. Then, in adolescence, Kohlberg posited a move toward a less rigid understanding of morality, focusing on negotiation and reciprocity, culminating in understandings of morality in terms of generally applicable principles of fairness and justice. Within this framework, narrative can play an important modeling role, where children and especially adolescents can be exposed to characters at varying levels of moral development. While the Kohlbergian framework did not postulate a primary role for narrative, some theorists have argued that children's experiences in reading and responding to stories can help them move toward later stages of moral development. For instance, reading stories might encourage children to identify with characters at a more advanced stage of moral development (Binnendyk & Schonert-Reichl, 2002), or it might make it easier to scaffold their understanding of moral dilemmas (Biskin & Hoskisson, 1974, 1977; Clare, Gallimore, & Patthey-Chavez, 1996).

However, Kohlberg's perspective has been challenged on several fronts, all of which trend toward giving narrative a more central place in moral development:

- Stein and Trabasso (1982) pointed out that the kinds of information children use to make moral judgments about characters in stories seem to differ more in degree than they do in kind between older and younger children. Essentially, Stein and Trabasso argued that even younger children were making theory of mind inferences about the goals, motivations, and moral status of story characters.
- Hoffman (2001) emphasized the idea that empathy motivates people to take altruistic, prosocial moral stances, and as we have just shown, empathy with protagonists is encouraged when people are transported into story worlds.
- Jonathan Haidt (Haidt, 2001; Haidt & Joseph, 2007) argued that morality revolves around a small set of innate dimensions (harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, purity/sanctity). Haidt, Graham, and Joseph (2009) in particular presented evidence that these dimensions organize the themes that distinguish life story and group identity (especially ideological) narratives.
- Gibbs (2013) and Gibbs, Basinger, Grime, and Snarey (2007) presented evidence that moral development is profoundly affected by social opportunities to engage in perspective taking and by experiences that provide a deeper understanding of the social bases for living in a complex society. In fact, perspective taking appears to be critical for nearly every aspect of moral and emotional development (Malti & Ongley, 2014).
- Day and Tappan (1996) emphasized the extent to which moral development takes place in socially constructed interactions, is socially embedded, and emerges in dialogue between individuals. They argued that moral experience is, in fact, constituted by stories—that we understand our own actions and the actions of others primarily by telling stories. In this view, nearly all social phenomena will benefit from narrative analysis, which examines the contexts, motives, and content of the stories people tell about their social experiences (Daiute & Lightfoot, 2004; Labov & Waletzky, 2003).

These approaches suggest that narratives may have a particularly powerful impact on the process of constructing social identities and life narratives (McLean & Pratt, 2006; Phinney, 2000). Overall, because narratives encourage identification with potential role models and have powerful emotional impacts, their potential to affect adolescent moral and social development may be profound.

As children move through adolescence, their theory of mind development rapidly approaches an adult level. During the same period, they are actively engaged in constructing narratives that make sense of their lives and that identify key turning points that suggest future life directions; their success in doing so seems to be strongly related to the development of positive self-esteem (McLean, 2005; McLean, Breen, & Fournier, 2010). This transition is associated with significant qualitative shifts in the structure of children's attempts to produce life stories. As late as 8 to 10 years of age, children's autobiographical narratives tend to have little clear temporal sequence, little indication of how their personalities have

changed over time, and little thematic coherence across incidents. But by later adolescence, life narratives are chronologically structured around coherent themes that describe how they have personally changed and developed (Habermas & Reese, 2015; Reese, Yan, Jack, & Hayne, 2010). See Appendix C for a summary of what research has suggested about the development of children's ability to build life narratives.

The Power of Story as an Opportunity for Reflection

The preceding sections suggest a model in which engagement with narrative promotes social and moral reflection. This is a theme that recurs in qualitative studies of the impact of stories in people's lives (Coles, 1989; Culp, 1977; Levitt, Rattanasampan, Chaidaroon, Stanley, & Robinson, 2009; Shirley, 1969; Sorensen, 1999; Waxler, 2008; Waxler & Hall, 2011). Much of this effect may be due to the power of identification with a character to evoke empathy (Barnes, 2017; Mar, 2018; Mumper & Gerrig, 2017; Navona Calarco et al., 2017) and increase engagement (Cupchik, Leonard, Axelrad, & Kalin, 1998). Emotional, engaging reading experiences may also evoke emotionally charged memories associated with similar themes (Halász, 1991; Koopman, 2015; Seilman & Larsen, 1989). The power and complexity of the resulting reaction may then modify future responses to those themes (Kuiken, Miall, & Sikora, 2004; Miall & Kuiken, 2001, 2002; Sikora, Kuiken, & Miall, 2010).

However, other aspects of readers' responses to narrative, especially literary narrative, have a more conscious critical aspect. This is the kind of response encouraged in education in reading literature (Beach & Hynds, 1991; Scholes, 1989). It requires readers to distance themselves from the world of the story to reflect on both personal and social larger implications. However, readers may also use features of narrative as a kind of problem-solving tool, treating the events in stories as simulations of situations they may need to deal with themselves in other contexts (Herman, 2003a, 2003b). There is also evidence that the ability to reflect about one's own thoughts and feelings increases the ability to understand the thoughts and feelings of others (Dimaggio et al., 2008).

Koopman and Hakemulder (2015) proposed a theory of how narrative evokes reflection that posits two major causal pathways. In the first pathway, understanding a story evokes theory of mind, which causes readers to place themselves mentally in the role occupied by a character. This role-playing process can cause readers to distance themselves from their usual preoccupations and assumptions, especially because they perceive the world as fictional and therefore less directly tied to their own self-perception and self-image. Readers then enter a detached state in which more cognitive resources are available to reflect on themes present in the narrative. Koopman and Hakemulder termed this state *stillness* and postulated that it involves a slowing down of readers' perceptions of the fictional world. In Koopman and Hakemulder's theory, increased stillness facilitates reflection and enables readers to make thematic connections between the stories they are reading and other situations and experiences.

In the second pathway, the use of literary devices in a story foregrounds elements of the story that are usually accorded little attention. This leads to what Koopman and Hakemulder termed *defamiliarization*—a situation in which aspects of the situation described by the story are perceived through new eyes, without applying the usual categories and filters. In their account, defamiliarization not only can directly stimulate reflection, but also helps to slow down the reading process, thereby increasing stillness.

All of these aspects of reader response to narrative support the idea that reflecting on narrative is an important social practice that people regularly exploit to deal with social and emotional problems and to impose order on their own personal experiences. In fact, the value of narrative reflection appears to extend well beyond everyday life. Over the past 40 years, developments in the social sciences and humanities have led many scholars to emphasize the importance of reflection about stories as a central form of inquiry (Bruner, 1991; Clandinin & Connelly, 2000; Georgakopoulou, 2006).

In an educational context, the potential power of narrative, especially when combined with reflective practice, helps to reinforce the importance that has historically been placed on literature in education. Arguably, reading and thinking about stories can help to develop important human capabilities, including empathy, social perception, and moral judgment.

Assessing Narrative Comprehension and Production: A Consideration of the Common Core State Standards in the Light of the Literature

Thus far, we have mostly considered narrative and narrative understanding as a domain to understand, not as a skill to be assessed. In an assessment context, educators usually assess performance against specific standards, which are used

to design the assessments. In this context, it is critical to understand how well the assessment standards fit the domain. A specific choice of standards may overemphasize some skills or neglect others, and a key step in assessment design is understanding exactly what the decision to emphasize certain standards may be.

For our purposes, we can take the Common Core State Standards (CCSS) as a point of departure (National Governors Association, 2010). While the CCSS are not universally accepted among U.S. states, they are broadly accepted (J. Lee & Wu, 2017), and many states that have developed their own standards have used the CCSS as a starting point. It rapidly becomes apparent, when we do this comparison, that the conception of narrative we have advanced highlights elements that tend to be downplayed or even omitted from the CCSS. In particular, the CCSS emphasize neither the idea that understanding narrative is an exercise in modeling human thought and interaction nor the idea that narratives provide useful models for moral reflection and social learning. As a result, the developmental sequences we have discussed are only partly reflected in the standards.

In what follows, we examine each phase of the narrative key practice as we have defined it and link it to specific CCSS. We then examine the extent to which the learning progressions we have hypothesized are reflected in the grade-level standards.

Phase 1: Modeling Social Situations (Theory of Mind)

Many of the CCSS for reading literary texts are framed in ways that make them directly or indirectly applicable to narrative. Many of the narrative-specific reading skills implicated by these standards correspond to the first phase of narrative as a key practice—the ability to build mental models of social situations. These involve the ability to extract information about the event structure, the intentional structure, and the interpretive structure of a narrative.

Understanding Event Structure and Intentional Structure

In the account of narrative we have developed, the skill that is most critical to reading and understanding a narrative is the ability to build a mental model of the causal structure of the events described, which necessarily draws on theory of mind. This skill corresponds to the third strand in the CCSS reading standards for literature. This strand is displayed in Table 1, with separate lines for grades: first through eighth, nine and ten, and eleventh and twelfth. Many features of this sequence of grade-level standards can be justified by referring to the developmental progressions we found in the literature. Overall, however, the learning progressions in Appendix A provide rather greater detail about developmental patterns than does Table 1:

- The standards only make explicit reference to character traits, motivations, and feelings in third grade and ask students to compare characters only in fourth grade. This is consistent with the findings in the literature that event structure emerges early. Children in the K–2 range tend to focus on physical events and to make simple, minimal assumptions about character emotion and motivation without a rich differentiation of character trait concepts. However, the standards do not make it clear that there is an ongoing shift toward a greater understanding of internal mental states and emotions throughout the middle grades, as students become more fluent at understanding mixed emotions, conflicting character traits, and the ways characters can change and develop in response to story events.
- The standards make explicit reference to the organization of narratives into a hierarchical structure of episodes only in sixth grade, reflecting the fact that simpler, linear ways of understanding story structure dominate in the primary grades. However, the standards do not clearly capture the fact that students are beginning to develop an understanding of episodic structure from at least fourth grade and gradually become better at integrating interpretive and explanatory elements with the main story structure in the upper grades.
- The standards, however, make explicit reference to the resolution of the plot surprisingly late (only in sixth grade), even though students are able to express clearly organized plots around rising and falling action no later than age 8 years (third grade). McKeough's learning progressions for students' ability to express story information strongly suggest that the major transitions in students' ability to handle the plot in the middle grades happen as students develop more richly nuanced representations of personality and motivation.

The standards ask students to analyze complex characters with conflicting motivations or to differentiate the author's or narrator's perspective from those of individual characters only in the secondary grades. This is consistent with the fact

Table 1 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 3: Analyze How and Why Individuals, Events, or Ideas Develop and Interact Over the Course of a Text

Standard no.	Standard description
K.3	With prompting and support, identify characters, settings, and major events in a story
1.3	Describe characters, settings, and major events in a story, using key details
2.3	Describe how characters in a story respond to major events and challenges
3.3	Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events
4.3	Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions)
5.3	Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact)
6.3	Describe how a particular story's or drama's plot unfolds in a series of episodes as well as how the characters respond or change as the plot moves toward a resolution
7.3	Analyze how particular elements of a story or drama interact (e.g., how setting shapes the characters or plot)
8.3	Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision
9–10.3	Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme
11–12.3	Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed)

Table 2 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 5: Analyze the Structure of Texts, Including How Specific Sentences, Paragraphs, and Larger Portions of the Text (e.g., a Section, Chapter, Scene, or Stanza) Relate to Each Other and the Whole

Standard no.	Standard description
2.5	Describe the overall structure of a story, including describing how the beginning introduces the story and the ending concludes the action
3.5	Refer to parts of stories, dramas, and poems when writing or speaking about a text, using terms such as chapter, scene, and stanza; describe how each successive part builds on earlier sections
5.5	Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem
6.5	Analyze how a particular sentence, chapter, scene, or stanza fits into the overall structure of a text and contributes to the development of the theme, setting, or plot
9–10.5	Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise
11–12.5	Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact

that understanding of interpretive structure only develops during adolescence, as advanced theory of mind capabilities emerge.

Strand 5 in the CCSS reading standards for literature is concerned with students' ability to analyze the structure of texts. However, the grade-level standards make it clear that the standard is concerned both with formal structure (e.g., stanzas in a poem) and with the underlying organizational structure (which, in the case of narrative, constitutes the plot). As a result, not all of the grade-level standards are specifically relevant to assessing students' grasp of the structure of narrative. Table 2 presents those that are.

Overall, these standards are consistent with what the literature says about the ages at which students typically develop control over different aspects of plot. The standards assume that by second or third grade, students can describe basic formal elements of stories (especially opening and endings) and have some sense of plot development. They require students to be able to analyze the hierarchical, episodic structure of a story by fifth or sixth grade, which is about when control of episodic structure typically emerges. And they focus on complexities in the story timeline (parallel plots, flashbacks,

Table 3 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 6: Assess How Point of View or Purpose Shapes the Content and Style of a Text

Standard no.	Standard description
K.6	With prompting and support, name the author and illustrator of a story and define the role of each in telling the story
1.6	Identify who is telling the story at various points in a text
2.6	Acknowledge differences in the points of view of characters, including by speaking in a different voice for each character when reading dialogue aloud
3.6	Distinguish their own point of view from that of the narrator or those of the characters
4.6	Compare and contrast the point of view from which different stories are narrated, including the difference between first- and third-person narrations
5.6	Describe how a narrator's or speaker's point of view influences how events are described
6.6	Explain how an author develops the point of view of the narrator or speaker in a text
7.6	Analyze how an author develops and contrasts the points of view of different characters or narrators in a text
8.6	Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor
9–10.6	Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature
11–12.6	Analyze a case in which grasping a point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement)

mystery, suspense) and the writer's strategy in choosing among these kinds of options only in high school, after students are likely to be able to juggle multiple timelines and perspectives while maintaining a coherent understanding of the overall narrative.

Understanding Interpretive Structure

In the account of narrative we have developed, perspective taking is a critical skill and plays a critical role in people's ability to appreciate the interpretive structure of narrative. When they read a narrative, people must be able to infer and empathize with the thoughts and feelings of multiple people. This includes story characters, the narrator or narrators, and the actual author and intended audience. The sixth strand of the CCSS reading standards for literature is most closely linked to this set of skills (see Table 3). And at a broad level, the major features of Table 3 are consistent with the literature.

In the lower grades, the CCSS only ask students to recognize whose perspective is being taken at a specific point in the text or to make formal distinctions, such as between first- and third-person narrative. In other words, little analysis of surface features of text is required, and students do not need to switch perspectives to succeed at the tasks implied by the standards.

In the middle grades, starting in fifth grade, the CCSS ask students to link perspective/point of view with text details. This is consistent with the fact that children begin to develop control of the linguistic devices that signal stance and perspective as they approach adolescence.

Finally, in the higher grades, we encounter tasks that require the reader to hold the perspectives of multiple people in tension. These include explicit comparison of multiple perspectives in seventh grade; the use of perspective to create suspense and humor in eighth grade; holding one's own perspective in contrast with that of another culture or country in ninth and 10th grades; and the ability to explain satire, sarcasm, irony, and understatement in 11th and 12th grades.

Relevant Common Core State Standards That Do Not Explicitly Track Growth in Narrative Comprehension

Two strands in the CCSS literary reading standards do not explicitly track growth in children's ability to understand narrative but are still relevant. These are the first strand, focusing on use of textual evidence, and the fourth, focusing on vocabulary.

The standards for use of textual evidence, shown in Table 4, primarily focus on the growth of children's ability to use, identify, quote, and eventually cite specific pieces of evidence in the text, both to support analysis of what the text says

Table 4 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 1: Read Closely to Determine What the Text Says Explicitly and to Make Logical Inferences From It; Cite Specific Textual Evidence When Writing or Speaking to Support Conclusions Drawn From the Text

Standard no.	Standard description
K.1	With prompting and support, ask and answer questions about key details in a text
1.1	Ask and answer questions about key details in a text
2.1	Ask and answer such questions as <i>who</i> , <i>what</i> , <i>where</i> , <i>when</i> , <i>why</i> , and <i>how</i> to demonstrate understanding of key details in a text
3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers
4.1	Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text
5.1	Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text
6.1	Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text
7.1	Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text
8.1	Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text
9–10.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
11–12.1	Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain

explicitly and to justify inferences from its wording and content. They do not distinguish what kinds of inferences students at different ages or levels of performance are likely to make. But the literature on narrative indicates that there are major qualitative shifts in the inferences children make as their theory of mind capabilities mature and they become more sophisticated in their understanding of character, motivation, and social expectations. In the lower grades, they are most likely to make inferences about physical causation and simple, highly predictable reactions to external situations. In the middle grades, they begin to make deeper inferences about intentions, character traits, and motivation, though they may still make inaccurate inferences about mixed emotions, conflicting motivations, or highly idiosyncratic patterns of motivation that are specific to an individual and not predictable by reasoning from stereotypes. Beginning in adolescence, they are much more likely to build elaborate interpretations based on detailed inferences about specific characters and their perspectives on the situation described in the text and are much more likely to make inferences that generalize from specific situations to general themes or ideas. Thus, in any assessment of narrative skills, it will be important to consider both the use of evidence and the developmental appropriateness of inferences students are being asked to make.

Similarly, the fourth strand in the CCSS literary reading standards focuses on the ability to interpret words and phrases in context (see Table 5).

Once again, the emphasis in the standards is on the development of the ability to represent language metalinguistically and to reason explicitly about what words or phrases mean in context. But these abilities depend on the ability people have to interpret words automatically in context and make (often quite sophisticated) social and psychological inferences from the language used in a text. This tacit sensitivity to the nuances of language depends critically on the development of children's emotional and social vocabulary. Thus, the patterns of vocabulary development tracked in Tables A2, A3, and A5 are directly relevant to producing accurate assessments of students' understanding of narrative. If children have not developed the vocabulary necessary to describe their own and other people's internal emotions and mental states or place them accurately with respect to adult social categories, their comprehension of narrative is likely to be limited.

Of the remaining CCSS literary reading strands, the seventh strand (concerned with multiple interpretations and adaptations of text across media) is minimally focused on narrative and much more concerned with issues of literary interpretation more generally. Two others—the second strand, focused with identifying themes, and the ninth strand, focused on comparing them—are in our framework associated with reflecting on the meaning of narrative and will be discussed under that heading.

Table 5 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 4: Interpret Words and Phrases as They Are Used in a Text, Including Determining Technical, Connotative, and Figurative Meanings, and Analyze How Specific Word Choices Shape Meaning or Tone

Standard no.	Standard description
K.4	Ask and answer questions about unknown words in a text
1.4	Identify words and phrases in stories or poems that suggest feelings or appeal to the senses
2.4	Describe how words and phrases (e.g., regular beats, alliteration, rhymes, repeated lines) supply rhythm and meaning in a story, poem, or song
3.4	Determine the meaning of words and phrases as they are used in a text, distinguishing literal from nonliteral language
4.4	Determine the meaning of words and phrases as they are used in a text, including those that allude to significant characters found in mythology (e.g., Herculean)
5.4	Determine the meaning of words and phrases as they are used in a text, including figurative language such as metaphors and similes
6.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of a specific word choice on meaning and tone
7.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of rhymes and other repetitions of sounds (e.g., alliteration) on a specific verse or stanza of a poem or section of a story or drama
8.4	Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts
9–10.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone)
11–12.4	Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors)

Phase 2: Telling Stories (Narrative)

The third strand in the CCSS writing standards focuses on narrative writing. This strand contains multiple substrands that correspond, roughly, to aspects of narrative previously discussed in the section “Telling Stories: The Structure and Development of Narrative.” A detailed review suggests that while many of the developmental sequences built into the standards are consistent with the literature, there are important gaps.

Let us start by examining Table 6, which describes an overall pattern of narrative development in which events may be recounted in loose sequences in kindergarten, involve presentation of short sequences in first and second grades, and develop “real or imagined experiences or events” by third grade. This is roughly consistent with the literature, which agrees that by the end of the early elementary years, children have developed the ability to present stories in which events are presented in sequence, following a single timeline. The other major shift included in the standards in Table 6 is a shift from “details to describe actions, thoughts, and feelings” in second grade to “descriptive details” in the upper elementary grades, “relevant descriptive details” in middle school, and “well-chosen details” in high school.

It is not clear exactly how these descriptors are intended to be interpreted, and our literature review found little evidence about exactly how students improve the particularity of their narratives (other than a general increase in fluency and variety of words produced). However, one of the key achievements of the upper elementary years is the elaboration of children’s understanding of character traits, resolution of conflict, and other capabilities that depend on maturing theory of mind capabilities. It thus seems reasonable to hypothesize that “descriptive details” would be details that help to reinforce the intentional inferences that would enable readers to build these kinds of mental models.

Similarly, in the secondary grades, the development of advanced theory of mind capabilities and fluent perspective switching means that writers are better prepared to switch between their communicative intentions and a mental model of how a reader might understand the text. The development of this kind of rhetorical control would make it easier for students to select details that we could describe as “relevant” or “well chosen.”

Table 6 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Write Narratives to Develop Real or Imagined Experiences or Events Using Effective Technique, Well-Chosen Details, and Well-Structured Event Sequences

Standard no.	Standard description
K.3	Use a combination of drawing, dictating, and writing to narrate a single event or several loosely linked events, tell about the events in the order in which they occurred, and provide a reaction to what happened
1.3	Write narratives in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure
2.3	Write narratives in which they recount a well-elaborated event or short sequence of events, include details to describe actions, thoughts, and feelings, use temporal words to signal event order, and provide a sense of closure
3.3, 4.3, 5.3	Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences
6.3, 7.3, 8.3	Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences
9.3–10.3, 11–12.3	Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences

Table 7 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Transition Words

Standard no.	Standard description
3.3.C	Use temporal words and phrases to signal event order
4.3.C	Use a variety of transitional words and phrases to manage the sequence of events
5.3.C	Use a variety of transitional words, phrases, and clauses to manage the sequence of events
6.3.C, 7.3.C	Use a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another
8.3.C	Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events

Event Structure

The portion of the CCSS that addresses event structure in narrative includes Substrand 3.C, focusing on use of transitional elements to mark temporal relationships, and Substrand 3.D, focusing on the use of descriptive detail.

Narrative Diachronicity

Table 7 shows the portions of CCSS Writing Strand 3.C that directly focus on the linguistic marking of event structure. This substrand captures several transitions that are well documented in the literature, for example, (a) the gradual elaboration of students' knowledge of connective elements between upper elementary school and adolescence and (b) the emergence of episodic structure by sixth grade, which makes it easier to express complex temporal relationships between episodes (e.g., shifts in time frame or setting).

Particularity

We have already discussed how the general statements about narrative postulate a significant, ongoing shift in use of descriptive detail starting in the upper elementary grades. Table 8, which contains all of the narrative-relevant standards from CCSS Writing Strand 3.D, essentially recapitulates the same progression. But there are other, notable shifts that are not well explained in the standards. Thus, there is a shift from “concrete words and phrases” and “sensory details” in the fourth- and fifth-grade standards to “precise words and phrases” and “relevant descriptive details” in the middle school standards (sixth through eighth grades). There is, similarly, a shift from “relevant descriptive details” in the middle school standards to “telling details” in the high school standards. Once again, these seem most naturally explained by an upsurge of intentional descriptions of character traits and other internal mental states during adolescence and by the development of advanced theory of mind capabilities by later adolescence, enabling writers to make more carefully considered, audience-appropriate choices of details to present.

Table 8 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Descriptive Detail

Standard no.	Standard description
4.3, 5.3.D	Use concrete words and phrases and sensory details to convey experiences and events precisely
6.3.D	Use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events
7.3.D, 8.3.D	Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events
9–10.3.D, 11–12.3.D	Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters

Table 9 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Character Development

Standard no.	Standard description
3.3.B	Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations
4.3.B	Use dialogue and description to develop experiences and events or show the responses of characters to situations
5.3.B	Use narrative techniques, such as dialogue, description, and pacing, to develop experiences and events or show the responses of characters to situations
6.3.B, 7.3.B, 8.3.B	Use narrative techniques, such as dialogue, pacing, and description, to develop experiences, events, and/or characters
9–10.3.B, 11–12.3.B	Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters

Intentional Structure

Intentional structure is primarily represented by Strand 3.B of the CCSS writing standards and by part of Strand 3.A. In particular, Strand 3.B can be interpreted as focusing on intentional state information and part of Strand 3.A as focusing on plot coherence (what Bruner, 1991, termed *normativeness*, *canonicity*, and *breach*).

Intentional State Entailment

Table 9 shows the standards that belong to CCSS Writing Substrand 3.B. It begins with reference to “dialogue and description of actions, thoughts, and feelings”; adds references to narrative techniques, such as *pacing*, starting in fifth grade; and adds references to character development, reflection, and multiple plotlines in high school. Pacing is a concept that depends on the existence of episodes and on making decisions about how much ancillary information—description or interpretive reflection—can or should be added to specific episodes. Its appearance in fifth and sixth grades is thus consistent with the development of episodic structure in narrative at around this time. The features associated with high school correspond roughly to changes that emerge with adolescence: more complex characterization, more interpretive text, and more complex temporal structuring. However, the standards fall far short of capturing the richness of the transitions in theory of mind capabilities or in the ability to structure a narrative in ways that incorporate complex theory of mind elements, which we obtained in our literature review.

It thus seems reasonable to suggest that any assessment of narrative production should be enriched by considering the developmental patterns in theory of mind outlined in Appendix A and the corresponding shifts in narrative production outlined in Appendix B.

Plot Structure (Normativeness, Canonicity, and Breach)

Rather strikingly, there is very little in CCSS Writing Strand 3 that addresses the developmental patterns of students’ written plots (see Table 10), even though this is a major theme of research on children’s writing development, as summarized in Figure B1.

Table 10 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Plot Coherence

Standard no.	Standard description
3.3.A, 4.3.A, 5.3.A	... organize an event sequence that unfolds naturally
6.3.A, 7.3.A, 8.3.A	... organize an event sequence that unfolds naturally and logically
9–10.3.A, 11–12.3.A	... create a smooth progression of experiences or events

Table 11 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Plot Coherence

Standard no.	Standard description
9–10.3.C	Use a variety of techniques to sequence events so that they build on one another to create a coherent whole
11–12.3.C	Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution)

Table 12 Common Core State Standards English Language Arts Writing Standards, Anchor Standard 3: Closure

Standard no.	Standard description
3.3.D	Provide a sense of closure
4.3.E, 5.3.E, 6.3.E	Provide a conclusion that follows from the narrated experiences or events
7.3.E, 8.3.E	Provide a conclusion that follows from and reflects on the narrated experiences or events
9–10.3.E, 11–12.3.E	Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative

It is not immediately obvious what exactly it means for an event sequence to “unfold naturally,” “unfold naturally and logically,” or be “a smooth progression of experiences or events.” Presumably this has to do with the kinds of transitions we see in Figure B1, which focuses on whether events are organized (a) naturally, in terms of characters’ motives for action; (b) logically, because the events in the narrative represent a series of attempts to solve a specific problem; and (c) as a “smooth progression,” if the tension between character states and traits acts “as an integrating device lending a greater sense of coherence to the story” (McKeough & Genereux, 2003, p. 541).

At the high school level, further information is provided by Standards W.9–10.3.C and W.11–12.3.C, which address the issue of plot coherence directly (see Table 11).

Finally, Writing Strand 3.D provides information focused on story endings, which are intrinsically linked to plot (see Table 12). The major shifts we see involve (a) the concept of plot resolution emerging in the middle to upper elementary grades, consistent with the literature, which indicates that students begin to provide plot resolution around Grade 8, and (b) the emergence of reflective elements in conclusions during the middle school years, consistent with an increase in interpretive text during adolescence. Overall, therefore, CCSS Writing Strand 3 provides several standards that can be interpreted as capturing changes in plot structure associated with student developmental patterns observed in the literature.

However, given the relative vagueness of the standards that address the intentional structure of narrative, it seems reasonable to make extensive use of the developmental progressions in Appendices A–C to clarify what kinds of performances are above or below the usual norms for students in each grade.

Interpretive Structure

Interpretive aspects of student narratives are primarily addressed by Writing Strand 3.A, which primarily references story openings (see Table 13). However, the standards here focus on several of the elements that clearly belong to interpretive structure: the emergence of a narrator separate from the author, the emergence of the ability to situate the story contextually, and the emergence of multiple points of view. The transitions these standards presume are largely consistent with the literature we have reviewed. This includes the emergence of this substrand in third grade, when second-order theory of mind abilities are mostly mature; the establishment of control over point-of-view elements

Table 13 Common Core State Standards English Language Arts Writing Standard Anchor Standard 3: World-Building and Perspective

Standard no.	Standard description
3.3.A	Establish a situation and introduce a narrator and/or characters
4.3.A, 5.3.A	Orient the reader by establishing a situation and introducing a narrator and/or characters
6.3.A	Engage and orient the reader by establishing a context and introducing a narrator and/or characters
7.3.A, 8.3.A	Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters
9.3 – 10.3A	Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters
11 – 12.3.A	Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters

during adolescence; and the emergence of fluent perspective shifting, and hence multiple points of view, in late adolescence, for example, high school. Once again, the evidence we have about patterns of development in theory of mind and in students' ability to produce written narratives provides a rich elaboration of the skeletal picture provided in Table 13.

Phase 3: Reflecting on the Meaning of Narrative

As we discussed in the introduction and in the section, “Reflecting on Narrative: Making Sense out of Stories”, the concept of theme in narrative is very different from the concept of topic in informational writing. Themes are inferred; they are not automatically extracted, especially by younger students. Themes are also important because they make narratives meaningful and make it possible for people to think about their own lives or about other story situations in ways that develop their ability to reason about social situations. The CCSS literary reading standards have two strands that focus on this phase of the narrative key practice: Strand 2 (identification of themes) and Strand 9 (comparison of themes).

Table 14 focuses on the ability to identify themes. The major transitions we see in in this table are the transition from kindergarten (where no real expectation of theme understanding is included) through to third grade, where students are expected not only to determine what the major theme of a text is, but also to explain how the text conveys that theme. In the upper-middle grades, the language of the standard shifts to speaking of “a” theme, allowing for the possibility of multiple themes. Then, starting in middle school, the idea emerges of analyzing a theme and showing how the characters, setting, and plot of a text support it, with explicit analysis of multiple themes only showing up in upper high school. These transitions are at least consistent with what the literature indicates about the development of students' ability to recognize themes, which is severely limited before third grade, unstable and situation dependent until adolescence, and fully established only by high school (see Appendix C).

Table 15 contains the last set of standards, which focuses on students' ability to compare themes and connect them to knowledge about the world, such as knowledge of other cultures or of historical times and places. The specifics of the standards are hard to relate to developmental trends in the literature, but the general trends (from comparison within or across familiar stories, to comparisons within and across authors, genres, or cultures, or historical time periods) seem reasonable. However, the CCSS reading standards do not connect thinking about themes with the development of students' ability to construct life stories and social identities using narrative. This idea — that narratives are meaningful and function as tools for social reflection — is important and may suggest additional angles for thinking about themes either in instruction or assessment, such as taking themes from stories and comparing them to patterns in current events or to students' own lives.

One of the key issues that should be addressed in this context, and which is not addressed by the comparisons described in CCSS Literary Reading Strand 9, is the role that narrative can play in enabling students to widen their horizons and to understand what life is like for people across gender, race, class, ethnicity, culture, and religion. To the extent that reflecting on narrative can improve students' social skills and their ability to empathize with people from outside their specific place in society, it has an important role to play.

Table 14 Common Core State Standards English Language Arts Reading Standard, Anchor Standard 2: Determine Central Ideas or Themes of a Text and Analyze Their Development; Summarize the Key Supporting Details and Ideas

Standard no.	Standard description
K.2	With prompting and support, retell familiar stories, including key details
1.2	Retell stories, including key details, and demonstrate understanding of their central message or lesson
2.2	Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral
3.2	Recount stories, including fables, folktales, and myths from diverse cultures; determine the central message, lesson, or moral and explain how it is conveyed through key details in the text
4.2	Determine a theme of a story, drama, or poem from details in the text; summarize the text
5.2	Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic; summarize the text
6.2	Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments
7.2	Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text
8.2	Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text
9–10.2	Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text
11–12.2	Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text

Table 15 Common Core State Standards English Language Arts Reading Standards, Anchor Standard 9: Analyze How Two or More Texts Address Similar Themes in Order to Build Knowledge or to Compare the Approaches the Authors Take

Standard no.	Standard description
K.9	With prompting and support, compare and contrast the adventures and experiences of characters in familiar stories
1.9	Compare and contrast the adventures and experiences of characters in stories
2.9	Compare and contrast two or more versions of the same story (e.g., Cinderella stories) by different authors or from different cultures
3.9	Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters (e.g., in books from a series)
4.9	Compare and contrast the treatment of similar themes and topics (e.g., opposition of good and evil) and patterns of events (e.g., the quest) in stories, myths, and traditional literature from different cultures
5.9	Compare and contrast stories in the same genre (e.g., mysteries and adventure stories) on their approaches to similar themes and topics
6.9	Compare and contrast texts in different forms or genres (e.g., stories and poems; historical novels and fantasy stories) in terms of their approaches to similar themes and topics
7.9	Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history
8.9	Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new
9–10.9	Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare)
11–12.9	Demonstrate knowledge of eighteenth-, nineteenth- and early-twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics

Conclusions

This document only barely begins to do justice to the rich literatures on narrative that exist across a broad range of fields. But it begins, we hope, to suggest what should be the focus of an assessment of narrative: people's ability to make sense of people, social situations, and the causal structure of events that involve interactions among human agents. This sense-making ability develops significantly during childhood, is deeply reflected in our human ability to tell and understand stories, and forms the basis for human reflection about the meaning and significance of people and their stories.

Ultimately, stories provide a rich array of models people can use to understand themselves and their world, and an assessment of this ability should help educators to understand how well prepared people are for this quintessentially human activity.

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Appendix A

Social Modeling Learning Progressions

The learning progressions presented here focus on ability to understand social situations and make inferences about mental and emotional states. As such, they underlie a significant aspect of reading comprehension for narrative but generalize far beyond reading comprehension. The ability to simulate social situations mentally is important in its own right and feeds other abilities, such as storytelling, by enabling people to model imagined situations. These progressions do not cover all aspects of social modeling but do cover most key elements.

Table A1 Developmental Sequences of Social Scripts

Characteristic level	Interpretation	Deliberation	Expression
Preliminary K–2	Can interpret the action of others by imagining what one would do oneself in the same situation. Thus, when reading, one may predict the comprehensibility and interest of a text by one's own immediate reaction to it.	Can apply mental simulation strategies based upon the assumption that other people will act very much like oneself.	Can produce sentences or utterances that reflect one's own motivations and purposes.
Foundational 3–5	Can interpret the actions of others by applying general schemas that define prototypical patterns of social interactions. Thus, when reading, one may assume that the purpose and content of a text is entirely that which would be predicted by the genre to which it belongs.	Can apply social prediction strategies that use prototypes and schemas to simulate how people may behave in a relatively small set of stereotyped, standardized situation types.	Can produce sentences and short texts that reflect conventional purposes for writing.
Basic 6–8	Can interpret the actions of others by building and applying a different mental model for each person. Thus, when reading, one may interpret a text by inferring what the author is attempting to accomplish and imagining how the audience is likely to react.	Can apply social simulation strategies that posit individual attributes for each participant in a social situation.	Can produce situationally focused texts that are aimed at and responsive to a specific occasion for writing.
Intermediate 9–12	Can interpret a text by considering multiple potential purposes and multiple potential audiences, thus raising the possibility that a text will give rise to multiple layers of meaning.	Can apply perspective-based strategies to simulate multiple participants in a discourse.	Can produce rhetorically focused texts that are designed to have different (but simultaneous) effects on different potential audiences.
Advanced adult	Can interpret a text by considering its antecedents and precedents within a discourse community, thus raising the possibility that a text will have very different significance to members of that community than it will to outsiders.	Can model community structure and values and use these to simulate likely rhetorical moves within a discourse community.	Can produce texts that are finely tuned to the issues and concerns most of interest to particular discourse communities, without assuming particular individuals as the target audience.

Note. Generalizing over all theory of mind development, given in more detail in the following pages.

Table A2 Learning Progressions for Emotional State Perception and Emotion Vocabulary

Level	Grade level	Emotional state perception	Emotion vocabulary
1	3	<p>May still focus on situations as explanations for emotion with less reference to internal mental states.</p> <p>Can accurately perceive or predict when someone simultaneously feels two different emotions about two different things, as long as both emotions are either positive or negative</p>	<p>Most common psychological evaluation verbs understood, such as <i>admire, accept, admit, adore, agree, alarm, amaze, anger, appeal, applaud, argue, bore, bother, care, caution, charm, cheer, comfort, confess, confuse, convince, delight, desire, disagree, disappoint, disapprove, disgrace, dislike, displease, distrust, encourage, enjoy, excite, excuse, favor, fear, feel, forgive, frighten, glory, guess, hate, honor, hurt, insult, interest, joke, like, love, matter, need, pain, pardon, pity, please, prize, punish, puzzle, rage, reject, rejoice, relax, respect, reward, sadden, satisfy, scare, scold, shame, shock, spook, startle, stump, suffer, surprise, suspect, tease, terrify, thank, thrill, treasure, treat, trouble, trust, value, want, warn, wonder, worry, worship.</i></p> <p>Most emotional adjectives understood. However, most children fail to comprehend more difficult emotion adjectives like <i>affectionate, anticipating, approving, assessing, assured, astounded, baffled, bashful, betrayed, bewildered, bliss, calculating, charitable, charmed, cocky, commiserating, compassionate, complacent, conceited, condescending, confrontational, confronted, contempt, content, contrary, cranky, craving, critical, cunning, dazed, defensive, desire, despair, detached, detesting, devious, devoted, dictating, dignified, discontented, discouraged, discouraging, disheartened, dismayed, dispirited, disregard, distaste, dominated, enthusiastic, fired up, flattered, forbidding, heartache, hollow, humored, mocking, modest, mystified, needy, overpowering, overwhelmed, vain.</i></p>
2	4	<p>Less reference to situations and desires as causes for emotion; increase in reference to mental states.</p> <p>Sophistication of emotional explanations is greater for negative than positive emotions.</p> <p>Can accurately perceive or predict when an individual simultaneously feels two different emotions about two different things, even if one is positive and the other is negative.</p>	<p>Most emotion adjectives understood, though difficult emotion adjectives may not yet be mastered, such as <i>condescending, confrontational, commiserating, conceited, complacent.</i></p> <p>Most children will understand simple psychological evaluation verbs like <i>admire, adore, alarm, amaze, anger, appeal, applaud, bore, bother, charm, cheer, comfort, confess, confuse, delight, desire, disappoint, disapprove, disgrace, dislike, displease, distrust, dread, encourage, enjoy, excite, excuse, favor, fear, flirt, forgive, frighten, hate, honor, hurt, insult, interest, joke, like, love, matter, need, pardon, pity, please, prize, punish, puzzle, rage, reject, rejoice, relax, respect, reward, sadden, satisfy, scare, scold, shame, shock, spook, startle, suffer, surprise, tease, terrify, thrill, treasure, trouble, trust, value, want, warn, wonder, worry.</i></p>

Table A2 Continued

Level	Grade level	Emotional state perception	Emotion vocabulary
3	5	Continued shift toward reference to internal mental states as causes of emotion. Can accurately perceive or predict when an individual has mixed (conflicting) feelings about a single thing he or she is reacting to.	Many children may fail to comprehend harder psychological evaluation verbs like <i>agonize, astound, bewilder, bicker, confirm, crave, designate, dismay, esteem, evaluate, gratify, haunt, idolize, incense, infuriate, inspire, intrigue, jest, madden, muddle, mystify, pacify, peeve, reassure, resent, ridicule, rile, scandalize, snub, spellbind, stimulate, stupefy, tem.</i>
4	6–8	Spontaneously focuses on internal mental states as causes of emotion, for positive as well as negative emotional states. Can accurately perceive or predict when different people may have different emotional reactions to an equivocal social situation Can make fine-grained distinctions about emotions felt from partial cues, such as pictures of the eyes, not the whole face, or descriptions of unconventional situations.	Many adolescents may fail to comprehend difficult psychological evaluation verbs like <i>abhor, afflict, aggravate, antagonize, appall, appease, assert, assess, beguile, boggle, chasten, chide, commend, compensate, cringe, daunt, defame, demoralize, denounce, deride, detest, devastate, discern, discombobulate, dispirit, disquiet, dissent, dumbfound, electrify, engross, enlighten, enliven, enrapture, enthrall, entice, exalt, exasperate, exult, faze, fluster, frustrate, gall, gloat, hanker, harass, hearten, impeach, intimidate, invigorate, irk, lambaste, lament, laud, loathe, lull, lust, luxuriate, mortify, obsess, overawe, perceive, perplex, portray, preoccupy, proclaim, rankle, rebuke, rue, savor, scrutinize, seethe, solace, squabble, stigmatize, tantalize, tolerate, unnerve.</i>
5	9–12	Can use knowledge about individual and group differences to accurately perceive or predict how individuals from backgrounds unlike one's own react to an equivocal social situation. Can overcome negative emotions toward or negative evaluations of a person to make accurate evaluations of his or her emotional state.	Many high school students may fail to comprehend very difficult psychological evaluation verbs like <i>abash, acclaim, admonish, affront, alienate, anguish, assuage, avow, awe, calumniate, captivate, castigate, chastise, commiserate, confound, console, covet, decry, deject, denigrate, deplore, deprecate, discomfit, discompose, disconcert, disdain, disgruntle, dishearten, disillusion, disparage, dissatisfy, elate, embolden, execrate, exhilarate, extol, felicitate, flabbergast, jollify, lampoon, malign, mesmerize, miff, mollify, niggle, outrage, perturb, pique, placate, reprimand, reproach, reprove, repudiate, revel, revere, revile, titillate, unsettle, upbraid, venerate, vex, vilify.</i>

Table A3 Character Trait Perception and Character Trait Vocabulary

Level	Grade level	Character traits perception	Character trait vocabulary
1	3	<p>Can infer character traits from the way people behave.</p> <p>Can predict people's behavior in a situation if given a description of their character traits.</p> <p>May have more difficulty if they have to infer character traits and then directly infer future behavior</p> <p>There may still be some tendency to assume that positive or negative traits go together on a good/bad dimension, rather than differentiating them.</p>	<p>Common character/personality-trait words understood, including <i>active, bossy, brave, bright, calm, careful, cheerful, clever, cold, cool, cranky, cruel, dishonest, forgetful, friendly, greedy, grumpy, helpful, honest, impatient, jealous, kind, lazy, loud, merry, messy, nervous, patient, peaceful, playful, pleasant, polite, proud, quiet, relaxed, rude, selfish, shy, silent, sloppy, smart, strict, stubborn, suspicious, tender, tough, truthful, understanding, unfriendly, unkind, warm, wild, wise.</i></p>
2	4	<p>Can probably make accurate predictions of people's emotional reactions and internal mental states based upon knowledge of character traits.</p> <p>Perception of traits tends to be well differentiated even when both are positive or both are negative.</p> <p>May still have difficulty inferring a character trait and then using it immediately to predict behavior.</p>	<p>A somewhat broader range of personality-trait words understood, including words like <i>alert, anxious, artistic, awkward, bashful, bitter, bold, bullheaded, carefree, careless, changeable, childlike, controlled, courageous, cowardly, crabby, daring, deep, dependable, distant, excitable, explosive, firm, flexible, frank, humorous, impolite, industrious, insecure, jolly, joyless, just, lively, loyal, mannerly, musical, narrow, natural, outgoing, peppy, responsible, rough, rugged, shallow, simple, sincere, sly, social, sour, steady, superstitious, talkative, thoughtful, thoughtless, unreliable.</i></p>
3	5	<p>By this point, ability to use single traits to predict behavior is well developed, even when the trait has to be inferred and then immediately used to predict behavior.</p> <p>At this level, it may be very difficult to make predictions of behavior when a character has two traits that would predict opposite courses of action in a specific situation.</p> <p>Skepticism about bias and self-interest can influence evaluations of whether to believe people's self-reports about their own personality traits.</p>	<p>Growth in knowledge of personality-trait words is likely to include words like <i>adventurous, affectionate, aggressive, agreeable, boastful, calm, cautious, coarse, considerate, cooperative, courteous, curious, dependent, detached, direct, disorderly, disrespectful, energetic, enthusiastic, expressive, fearful, fearless, feminine, finicky, forceful, fussy, generous, hearty, humble, immature, inconsiderate, independent, informed, intelligent, inventive, irritable, magnetic, mature, mischievous, moral, negative, orderly, organized, possessive, quarrelsome, rash, reasonable, reckless, reliable, respectful, restless, rowdy, scheming, serious, severe, snoop, stern, stingy, sympathetic, thorough, tidy, touchy, wasteful.</i></p>
4	6–8	<p>Coordination of reasoning about traits has progressed to the point where it is possible to infer which of two conflicting traits is likely to prevail in a specific situation. However, flexibility of this reasoning process may be limited, where it is hard to take into account both the general trait properties and specific situational factors that might affect mood.</p>	<p>Growing knowledge of personality-trait words is likely to include words like <i>abrupt, abusive, adaptable, aimless, analytical, argumentative, boisterous, calculating, casual, communicative, competitive, complex, conceited, confident, consistent, contrary, cordial, coy, creative, critical, cultured, cunning, defensive, demonstrative, diplomatic, earthy, easygoing, economical, efficient, eloquent, emotional, envious, excessive, extravagant, formal, gruff, idealistic, ignorant, illogical, imaginative, impersonal, impulsive, indirect, inefficient, inflexible, informal, innovative, inquisitive, insensitive, literary, logical, meek, modest, moody, negligent, passionate,</i></p>

Table A3 Continued

Level	Grade level	Character traits perception	Character trait vocabulary
5	9–12	Reasoning about traits is flexible and sensitive to situational factors that might favor one personality trait being expressed over another.	<p><i>pessimistic, poetic, poised, practical, precise, purposeful, rebellious, reverent, rigid, ruthless, sarcastic, scornful, selfless, sensitive, sexy, sociable, solemn, sophisticated, spirited, studious, systematic, tactless, temperamental, timid, traditional, undemanding, undependable, underhanded, unemotional, unpredictable, unruly, unsophisticated, vague, verbal, worldly.</i></p> <p>Growing knowledge of personality-trait words is likely to include words like <i>abrasive, aloof, amiable, antagonistic, apathetic, articulate, assertive, autonomous, belligerent, benevolent, bigoted, blasé, callous, careworn, catty, chaste, combative, compassionate, compulsive, concise, conscientious, contemplative, courtly, curt, cynical, deceitful, decisive, demure, devout, discreet, dogmatic, dominant, domineering, down-to-earth, egocentric, egotistical, enterprising, erratic, ethical, fastidious, fickle, flamboyant, flippant, flirtatious, folksy, foolhardy, foresighted, frivolous, genial, genteel, gullible, hypocritical, impartial, impudent, inconsistent, indecisive, individualistic, inhibited, insincere, intellectual, intolerant, intrusive, irreverent, jovial, lax, lenient, lustful, malicious, manipulative, masochistic, meditative, melancholic, meticulous, miserly, mistrustful, moderate, moralistic, morose, mystical, naive, negativistic, nonchalant, nonconforming, objective, obsessive, obstinate, opinionated, opportunistic, optimistic, outspoken, oversensitive, passionless, patronizing, pensive, perceptive, perfectionistic, persistent, philosophical, placid, pliant, prankish, prejudiced, pretentious, principled, profane, prudish, punctual, rational, reserved, sadistic, self-disciplined, self-indulgent, sensual, shrewd, skeptical, slothful, somber, suave, submissive, suggestible, tactful, tempestuous, terse, tolerant, unadventurous, unaffectionate, unambitious, unbiased, uncharitable, uncommunicative, unconventional, uncouth, unflinching, ungenerous, unimaginative, uninhibited, uninquisitive, unintellectual, unintelligent, unrefined, unreflective, unrestrained, unscrupulous, unstable, unsympathetic, unsystematic, vain, vengeful, verbose, versatile, vindictive, vivacious, volatile, wary, wily, zealous, zestful.</i></p>

Table A4 Perspective Taking Learning Progression

Level	Grade level	Description
1	1–4	<p>Perspective taking may be very limited. In particular,</p> <ul style="list-style-type: none"> students may have great difficulty switching perspectives and therefore may fail to draw appropriate inferences or substitute inferences based on an egocentric perspective when asked to imagine a situation from a different point of view making inferences about emotions and thoughts of others may be relatively slow and effortful many students may be unaware of ambiguities and uncertainties of interpretation and assume that the interpretation accessible to them is the only available one ability to recognize bias or false assumptions is limited, particularly when they are consistent with an egocentric perspective. <p>Overall, perspective-switching tasks may be too difficult for a significant portion of the total population to accomplish without step-by-step scaffolding and support. There is a gradual shift toward greater flexibility and speed of perspective shifting over the course of the elementary grades.</p>
2	5–8	<p>Perspective shifting is a task most students are capable of doing, but it still requires significant effort. Students are aware that ambiguous situations may be susceptible to multiple interpretations but tend to stick with one interpretation even when others are plausible. It may be difficult to impossible for students to discount what they know when imagining what a naive observer might think or feel. However, the ability to recognize bias and false assumptions may be emerging, especially when applied to the perspectives of others.</p>
3	9–12	<p>Speed and ease of perspective shifting approaches adult levels. Recognition of ambiguity is often automatic and relatively effortless. However, it may be difficult to discount what one knows when considering alternative perspectives. The ability to recognize bias and false assumptions has emerged but is generally applied fluently only to the perspectives of others.</p>

Table A5 Recursive Theory of Mind and Mental State Verb Learning Progressions

Level	Grade level	Recursive theory of mind	Mental state verbs
1	3	<p>Can recognize emotions, pretense, and other precursors of theory of mind. Performance on first-order theory of mind tasks is more accurate than not, but weaker than performance on emotional recognition and pretense tasks.</p> <p>Inferences about unfamiliar social situations or situations that involve violations of social norms may be inaccurate, though students are more accurate than not in recognizing when a student has unintentionally committed a faux pas. Inferences about the beliefs, attitudes, and desires of others are strongly influenced by stereotypical scripts for familiar social situations.</p>	<p>Understands common verbs of mental state like <i>admit, assume, believe, guess, imagine, know, recognize, remember, sense, suppose, suspect, think, wonder.</i></p>

Table A5 Continued

Level	Grade level	Recursive theory of mind	Mental state verbs
2	4	<p>Performance on first-order theory of mind tasks is just as accurate as performance on emotional recognition and pretense tasks. Performance of higher order theory of mind tasks is at chance.</p> <p>Inferential ability may be somewhat better when applied to unfamiliar social situations but is still relatively weak, though with increasing ability to recognize violations of social norms. Inferences about the beliefs, attitudes, and desires of others are still mostly driven by stereotypical scripts for familiar social situations.</p>	<p>Understands most mental state verbs, though may still have difficulty with words like <i>conjecture</i>, <i>consider</i>, <i>discern</i>, <i>envisage</i>, <i>perceive</i>, <i>recollect</i>, <i>regard</i>.</p>
3	5	<p>Performance on first-order and second-order theory of mind tasks is accurate, including recognition of humor, but performance on higher order theory of mind tasks is barely above chance.</p> <p>Inferences about the beliefs, attitudes, and desires of others are still mostly driven by stereotypical scripts for familiar social situations, though students are generally accurate in recognizing unintentional violations of social norms. Inferential ability may continue to improve when applied to unfamiliar social situations but is still weak.</p> <p>Some students may make appropriate inferences about purposeful violations of social norms, such as are entailed in irony and hyperbole, but a more literal-minded approach is still common.</p>	
4	6–8	<p>Performance on first-, second-, and third-order theory of mind tasks is accurate, including recognition of humor. The ability to make pragmatic inferences has developed so that students are able to infer much of the time why someone has intentionally violated a social norm, enabling him or her to recognize irony, sarcasm, hyperbole, bluffs and double-bluffs, and other forms of indirect communication.</p> <p>Reasoning about the thoughts and beliefs of others is significantly less likely to be successful if it must take place in situations that evoke strong emotions or requires reasoning about strategies that will help to resolve conflict.</p>	
5	9–12	<p>Accurate performance on theory of mind tasks may include fourth- or even fifth-order reasoning about beliefs. The ability to make pragmatic inferences is well developed so that students can accurately infer why someone has intentionally violated a social norm, enabling them to recognize irony, sarcasm, hyperbole, bluffs and double-bluffs, and other forms of indirect communication.</p> <p>Use of social reasoning about the beliefs, desires, and motives of others has matured enough to support self-regulated deployment of strategies to manage disagreements and resolve conflicts.</p>	

Appendix B

Storytelling Learning Progressions

Table B1 General Pattern Linking Story Comprehension and Storytelling to Social Modeling

Level	Interpretation	Deliberation	Expression
Preliminary (oral)	Can interpret a sequence of sentences as expressing a sequence of events.	Can apply memory and recall strategies that mentally simulate or list sequences of events and therefore predict what will come next in a text purely in terms of temporal sequence.	Can formulate a simple story that presents at least one character and a sequence of events involving that character.
Foundational (fundamental literacies)	Can interpret a text by making default assumptions about motivation and action in ordinary social situations.	Can apply inference strategies that assume standard, prototypical motives for actions and therefore predict stereotyped sequences of events in a text that follow standard social scripts.	Can write a narrative in which characters interact in socially plausible ways, with a clear beginning, middle, and end.
Basic (text-based literacy)	Can interpret a text by building a mental model of each character, specifying that individual's knowledge, motivations, personality, and character, and considering how the characters interact and develop over the course of the story as the plot moves toward resolution.	Can apply predictive strategies that anticipate what will come next in a text by foretelling a character's future actions on the basis of that character's motivations and the situation in which the character is placed. Can apply analytical strategies that examine how the formal features of a work affect its meaning and impact.	Can write a complex narrative with well-defined plot, setting, characters, and theme.
Intermediate (multiple perspectives)	Can interpret a text by considering the author's use of literary devices and strategies (such as foreshadowing, symbolism). Can consider alternate interpretations that privilege or emphasize particular elements of the text.	Can apply analytical strategies that examine how the author's choices (at the level of both content and style) produce literary effects.	Can write sophisticated narratives where the author's and the narrator's perspectives do not necessarily coincide and it makes sense to analyze how the author has manipulated the storytelling to produce specific intended effects.
Advanced (discourse communities)	Can interpret a text by considering how a literary community will respond to that text's use of genre conventions and other literary elements that are current in a specific literary community. Where appropriate, can interpret a text in the light of different communities that have an interest in the work.	Can apply analytical strategies that determine how the author's choices within the moves specified by a particular style, genre, or mode produce predictable literary effects. Can apply analytical strategies that consider how similar themes or ideas have been treated by different artists in the same communities, in different communities, or in different media.	Can write narratives that take advantage of the interpretive machinery and conventions that derive from particular styles, genres, and modes of writing and manipulate that machinery for literary effect.

Table B2 Developmental Scale for Expression of Event Structure

Age (grade)	Typical pattern	What is missing
3 (pre-K)	Events are presented in isolation, either singly or in a list.	No clear sense of sequence or of organization in terms of cause and effect.
4–5 (K)	Events are presented in sequential order.	Causal connections are not explicit; unconnected events may sometimes be presented in temporal sequence without regard for causal coherence. Content is almost exclusively event focused, with few ancillary explanations or descriptions.
6–8 (G1–G3)	Events are presented sequentially in causal chains, without hierarchical structure. Ancillary explanations and descriptions may constitute a significant portion of the text. Simple formal cues to story structure, such as a consistent anchor tense and sequence of tense to mark time shifts, are provided.	Mostly objective information is presented. Little mental state or interpretive information is provided. Ability to present story effectively may vary considerably, depending on scaffolding and the exact nature of the narrative task. Temporal and causal connectives tend to be overused to mark local clause-level relations rather than being used more selectively to mark boundaries between episodes.
9–11 (G4–G5)	Events are grouped hierarchically into episodes. Key structural elements of narrative are varied appropriately, depending on the type of narrative to be produced.	Little setting/background information tends to be provided (where, when, and why). Children have not yet fully mastered the linguistic devices that mark episode boundaries, subordinate and coordinate events into episodes and timelines, and integrate ancillary information with event information.
12+ (G6+)	Events are explicitly grouped hierarchically into episodes, with episode boundaries clearly marked and with ancillary information formally subordinated to the core story content. Stories consistently adhere to genre conventions, including elaborated openings and endings and inclusion of appropriate explanations and evaluations of the events described. Complications to the narrative structure, such as flashbacks, become more frequent and more interpretive in nature.	Until late adolescence or adulthood, ancillary information is less likely to include commentary, generalizing, interpretive, or evaluative material and other text that does not follow the basic organizing principles of narrative.

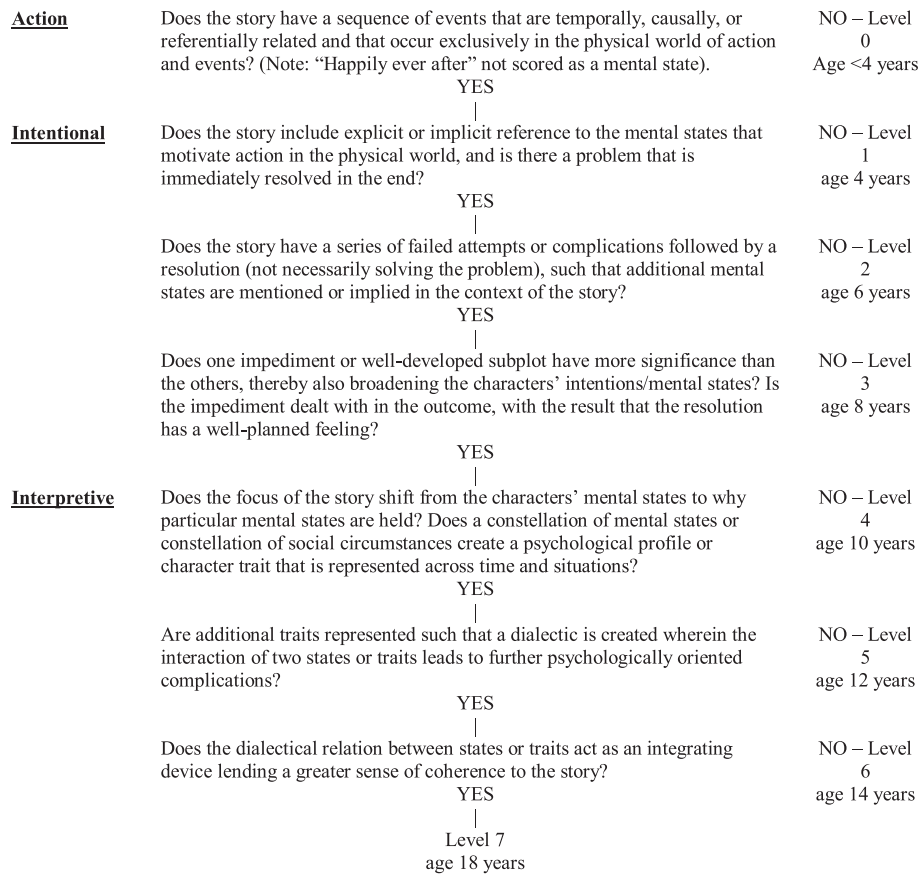


Figure B1 Developmental scale for expression of intentional and basic interpretive structure. Reprinted from “Transformation in Narrative Thought During Adolescence: The Structure and Content of Story Compositions,” by A. McKeough and R. L. Genereux, 2003, p. 541. Copyright © 2003, American Psychological Association.

- Building coherent narratives with complex embedded structures (flashbacks, flash-forwards, multiple viewpoints and timelines)
- Including appropriate interpretive and explanatory segments and commentary while keeping such elements subordinated to the narrative
- Consistently presenting a narrative from a particular character’s perspective using appropriate lexical and grammatical devices
- Creating narratives that present rounded characters whose particular voices and individual traits and states of mind are communicated effectively by story details and organization
- Creating narratives that depend for their effect upon tensions between the implied perspectives of the author, narrator, and the protagonist or upon a reversal or change in perspective on the part of the protagonist or the reader

Figure B2 Narrative performances often achieved only in late adolescence (or not at all).

Appendix C

Patterns of Thematic Recognition and Life Story Development

Grade	Typical pattern for perception of themes	Typical pattern of life story development (Habermas & Reese, 2015)
K–2	Themes when constructed tend to be narrow and literal, stated in terms of the immediate story context.	No coherent concept of life story— typical pattern of personal story is producing fragmentary autobiographical memories.
3–5	Spontaneous construction of themes that generalize to other contexts may occur, but it is far more likely to happen in contexts where it is strongly supported or scaffolded.	Attempts to produce a life story will tend to be fragmented, with little thematic coherence, chronological sequencing, or attempt to show how one’s life has changed.
6–8	Theme recognition becomes automatized as a normal part of story comprehension, but individuals will vary in the speed and consistency with which this happens.	Attempts to produce life stories will show a mixed pattern: frequent presence of clear event sequences, explicit descriptions of personality change, implicit thematic coherence, and explicit chronological structure, but not consistently across the whole population.
9+	Most individuals automatically interpret stories in terms of general themes and can effectively transfer those themes to new situations and contexts.	Autobiographical narratives typically contain clear, causally connected event sequences, explicit descriptions of personality change, implicit thematic coherence, and explicit chronological structure, including clear beginnings and endings.

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