One Half of the Story

Media Framing of Adolescent Development

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Introduction

Adolescents have long been portrayed as dangerously out of control—as a threat to social stability and order. More than a century ago, G. Stanley Hall—the pioneering child psychologist—famously characterized adolescence as a period of "storm and stress." And long before then, Aristotle decried youth as "heated by Nature, as drunken men by wine." These depictions have proven remarkably durable, despite experts' and advocates' concerted efforts to change the public discourse—and public thinking— about this critical period of life.

Media coverage plays a large role in determining how the public understands and responds to adolescents and adolescence[1]—and much of it has been, and remains, highly negative. News reports stoke fears about challenges facing the next generation, and pundits reflect on the excesses of youth culture and the threat that modern life poses to adolescent development. The November 7, 2016, cover of *Time* magazine ties up these depictions in a tidy headline: "Anxiety, Depression, and the Modern Adolescent."

And yet, a new, more hopeful narrative is emerging. In the wake of the devastating school shooting in Parkland, Florida, a national, youth-led movement for gun safety has ushered in a more positive narrative about adolescent leadership and civic engagement. Whether this new narrative will stick and grow is unclear—and certainly in question. Patterns in public thinking are highly durable and persist in the face of blips in media discourse, and thinking about adolescence is no exception. Media narratives are also durable. Indeed, the findings presented here echo those of a study of television coverage of adolescents conducted over a decade ago.[2] Then, as now, youth often appeared in stories as problems in need of a solution.

These media portrayals undermine efforts to build support for policies and programs to support adolescents. Media coverage, public opinion, and social policy are closely linked. The media act as information gatekeepers that filter, amplify, and mute messages about social issues. They shape people's beliefs and attitudes by repeating certain stories and excluding others, a phenomenon that scholars refer to as the "drip, drip" effect.[3] Over time, these incessant drips carve deep channels in our culture's collective conscience and shape public opinion, outlook, and action on social issues.

Changing these opinions, and ultimately reshaping the policy context for young people, requires a new narrative. This report takes a step toward that end by identifying the frames that are embedded in media coverage of adolescents. It provides experts and advocates with a detailed

understanding of the media environment in which they operate and demonstrates how media practices impact public thinking about adolescents. Media coverage is, of course, a double-edged sword: it can distort messages and undermine support for change, or it can spread productive messages and advance change. Experts and advocates who understand patterns in media coverage—and how to influence them—are better able to use the media to build public understanding and drive positive social change.

This report paints a picture of those patterns. The research presented here was conducted by the FrameWorks Institute and sponsored by the Funders for Adolescent Science Translation (FAST), a consortium that aims to develop communications strategies to build public understanding of adolescence. The consortium includes The Annie E. Casey Foundation, the Bezos Family Foundation, the Chan Zuckerberg Initiative, the Conrad N. Hilton Foundation, the Ford Foundation, the National Public Education Support Fund, the Raikes Foundation, and the Robert Wood Johnson Foundation.

This report is part of a larger project to design and test framing strategies to build public understanding of adolescent development, increase support for policies to improve adolescent outcomes, and fuel a movement for change on this vital social issue. In the first phase of this project, researchers identified differences between the ways that experts in adolescent development and members of the public understand issues related to adolescence.[4] The findings were summarized in *Building Opportunity into Adolescence*, a research report that "maps the gaps" between expert and public thinking about adolescence. This report draws on those findings to examine the effects of media discourse on public thinking and recommends how to shift media discourse to advance public thinking on adolescent issues.

Methods and Data

This research addresses two questions:

1. What stories and framing strategies do the media use to communicate about adolescents and adolescent development?
2. What are the implications of these stories for public thinking?

The media sample includes articles from an ideologically diverse range of newspapers, magazines, websites, and blogs. Sources include the *Atlantic*, BBC, *Breitbart*, CNN, *Forbes*, Fox News, the *Guardian*, the *Houston Chronicle*, the *Miami Herald*, the *New Yorker*, the *New York Post*, the *New York Times*, *Newsweek*, NBC News, NPR, *People*, the *Salt Lake Tribune*, *Slate*, *Teen Vogue*, *Time*, *US News & World Report*, *USA Today*, the *Washington Post*, and *Wired*.

Researchers used Topic Mapper, an online, open-source media content analysis tool developed by the MIT Media Cloud to identify relevant articles. Using a search query designed to capture a broad range of articles related to adolescence,[5] Topic Mapper first searches through a database of influential news outlets to identify an initial corpus of articles. The initial search was restricted to stories published between October 16, 2017, and January 16, 2018, by top US mainstream media and online news publications. Next, Topic Mapper identifies and follows hyperlinks within articles to locate additional reporting that matches the original search query. This process is repeated three times. The end result is a picture of the media ecosystem on adolescence that extends beyond the outlets and date ranges specified in the initial search.

Researchers selected the most influential stories in the sample based on the number of shares on social media and the number of clicks (measured by the bit.ly URL shortening service). They removed duplicate articles (the same article published in multiple news outlets) and stories that did not deal substantively with adolescence. This process resulted in a final sample of 249 stories, which were coded and analyzed.

Analysis

Researchers coded stories for the presence or absence of each narrative component in Table 1.

Table 1: Codebook

Narrative Component	Brief Description	Codes
Demographics	What demographic groups are mentioned?	- Low-income adolescents - Middle/high-income adolescents - Middle school, high school, post-high school - Adolescents of color - Adolescent boys or girls - LGBTQ adolescents
Setting	What setting and/or context does the story focus on?	- Home - School - Community - At-risk settings (e.g., crime scene, court room) - Health care setting (e.g., hospitals, clinics) - Online
Development	What type of developmental process is described?	- Neurobiological - Pubertal - Socio-emotional - Moral - Cognitive
Issue	What is the main focus of the story?	- Risk behaviors - Criminal behavior - Traumatic experience - Parental conflict - Leadership/extracurricular activities - Racial inequity/discrimination - Health - Stress and mental health
Influences	What factors influence adolescents or adolescent development?	- Parents - Peers - Schools - Communities - Society/culture
Consequences	What are the implications of healthy adolescent development?	- Individual-level (e.g., positive and negative effects on mental and physical health, education, employment, relationships, criminality) - Societal-level (e.g., criminal justice system, economy, health care, social welfare)

Messengers	Who are the people and/or organizations quoted?	- Politicians, government officials - Parents - Organizational spokespeople
Responsibility	Who is responsible for improving adolescents' outcomes?	- Government - Educators - Justice system - Health care system - Individual adolescents/youth - Family - Society/communities

After coding the data, analysis proceeded in three stages:

- **Frequency analysis.** To begin, researchers examined the frequency of each code among media stories and calculated the percentage of stories that contained each code.

- **Latent class analysis.** Next, researchers used a statistical method called latent class analysis (LCA) to identify unique subgroups (or "classes") within the sample. LCA is used to discover whether a sample of observations (in this case, media stories) can be divided into distinct groups based on categorical data (in this case, the presence or absence of our codes).[6] In keeping with the scholarly literature on narrative and framing, FrameWorks defines a complete narrative as one that describes a problem or issue, states why it is a matter of concern, explains who or what causes it, provides a clear vision of a change in outcomes, and delineates actions that can be taken to create change. Narratives influence how people make sense of, remember, and transmit information about a given topic.

- **Cognitive analysis.** Finally, researchers interpreted the implications of findings against the backdrop of the first phase of research, which examined public and expert thinking about adolescence. This research included the "untranslated" story of adolescence: the core principles that experts and advocates want to communicate to the public (see Appendix). This analysis allows researchers to identify how media frames affect public understanding of adolescence.

Findings

This section draws on evidence from the frequency and LCA to unearth key findings about media communications. This process reveals what *is being said* and what is *not being said* in the media about adolescence. It also sheds light on how different frame elements are combined and integrated to form consistent narratives. Researchers identified three narratives: *Criminal Justice, Social Media and Mental Health,* and *Public Health*. These narratives were mutually exclusive, meaning that each story was categorized into only one of the three narrative types.

Figure 1: Narrative Classes in Advocacy Materials

43% Public Health

39% Criminal Justice

18% Social Media and Mental Health

*Percentage of articles within class

FINDING 1:

Media stories emphasized adolescents' susceptibility to negative influences.
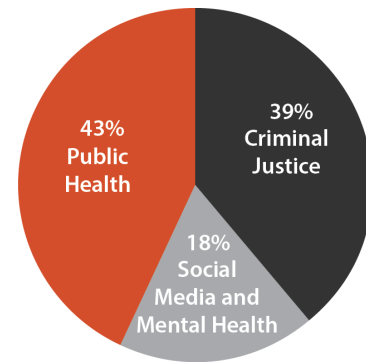
Media stories were more than twice as likely to discuss negative influences on adolescents (48 percent of the sample) than positive ones (21 percent). Negative influences included peers, gangs, technology, social and entertainment media, and sexual predators. Consider the following passages:

> The largest and most rapid maturational changes in the brain occur during childhood and adolescence, making it more vulnerable to trauma, stresses and toxins, and creating more opportunities for things to go wrong during these periods. The environmental pressures that are associated with growing up— social and academic pressures, the internet, social media and recreational drugs, to name a few—have become greater in the modern age. Growing up has never been easy, but it seems more hazardous now.[7]

> "We know girls are very vulnerable to defining themselves in comparison to others," she says. Her young female patients often tell her they get their "entire identity" from their phone, she says, constantly checking the number of "tags, likes, Instagram photos and Snapchat stories."[8]

As these excerpts show, media stories tended to fixate on the risks that confront youth. This framing presents adolescents as highly susceptible to negative influences and is often accompanied by explicit language about the "riskiness" of adolescence.

This risk framing was also found in the LCA, where researchers identified a *Social Media and Mental Health* narrative. This narrative, identified in 18 percent of the articles surveyed, describes how social media and technology have radically altered adolescent life. In this narrative, the influence of social media on adolescents was framed as negative, with social media usage often likened to an addiction or pathology. Adolescents, one story stated, are "like zombies, glued to their phones." Here's another example:

> Nelson, the doctor at Cincinnati Children's, said he's amazed at how much information youth has access to—some of which can be traumatizing. In addition to things like cyberbullying, he said, kids can now easily access information about how to hurt themselves. "The media that children are exposed to gets more and more sophisticated and more and more graphic and so kids get exposed to more and more things," he said. … Although the CDC [Centers for Disease Control and Prevention] says that the majority of young people report little to no involvement in electronic aggression, it is still an emerging public health problem. Any form of bullying, whether face-to-face or online, is known to be connected to depression and suicidal behaviors in young people.[9]

These stories framed the effects of social media as a crisis, using statistics to describe the scale of the problem and its impact. This framing is apparent in the following passage:

> A new study has found that teenagers who engage with social media during the night could be damaging their sleep and increasing their risk of anxiety and depression. Teenagers spoke about the pressure they felt to make themselves available 24/7, and the resulting anxiety if they did not respond immediately to texts or posts. Teens are so emotionally invested in social media that a fifth of secondary school pupils will wake up at night and log on, to make sure they don't miss out.[10]

In focusing on the threat of social media and connecting it to anxiety and depression, this narrative positions excessive social media use as an important problem without clear solutions.

FINDING 2:
Media stories often focused on adolescents' involvement with the criminal justice system.

Media stories also include a *Criminal Justice* narrative (comprising 39 percent of the articles in our sample). This narrative positions adolescents as victims and perpetrators of crime, often within the same article. It takes place in the justice system (at crime scenes and in courtrooms and prisons), often lacks a developmental perspective, and uses individualized stories and examples. The few stories that did mention the causes of adolescent involvement with the justice system also evoked the negative influence of peers and drug and alcohol use.

Stories in this narrative were predominantly episodic,[11] spotlighting particular events or discrete occurrences but not providing context or connections to broader trends. The following excerpt typifies the *Criminal Justice* narrative:

> A 16-year-old has been arrested in connection with the murder of a Dickinson High School student last week, the Hudson County Prosecutor's Office announced this evening. Rondell J. Rush, 17, was fatally shot in the head shortly after 5pm on Tuesday. He died at Jersey City Medical Center-Barnabas Health the following day. Hudson County Prosecutor Esther Suarez said the Jersey City teen was arrested yesterday at a relative's home. The teen—whose name was not released due to his age—was charged with a delinquent act, but Suarez said she is working to have the teen tried as an adult for murder.
>
> "Taking someone's life in a criminal act is murder regardless of age," Suarez said in a statement. "My office is prepared to use every prosecutorial tool available to charge this juvenile as an adult."[12]

In this excerpt, and others like it, adolescent criminal activity is framed as a rational act and a matter of individual responsibility. Involvement with the criminal justice system is cast as a matter of poor personal choices, and adolescents are described as old enough to know better. The assertion that "taking someone's life in a criminal act is murder regardless of age" suggests that youth are indistinguishable from adults in their ability to make sensible decisions and therefore equivalent in terms of their criminal culpability. As prior FrameWorks research has shown,[13] "rational actor" framing assigns responsibility to individual character and willpower and, at the same time, downplays the importance of contextual factors, such as different access to resources, neighborhood contexts, and quality of schools and housing.

FINDING 3:
The media focus on adolescent health at the population level.

Researchers identified a third narrative about adolescents. The *Public Health* narrative (found in 43 percent of articles) focuses on population health and the social and structural factors that shape adolescent outcomes. Stories that fit this narrative category took place in health care settings, such as clinics and hospitals. A significant proportion focused on reproductive health and, specifically, access to and availability of contraception. The following passage exemplifies this narrative type:

> Three in 10 teenage girls in the U.S. become pregnant each year—a rate far higher than in other industrialized countries. But when girls are counseled about the most effective contraceptives and given their pick of birth control at no cost, their rates of pregnancy drop by 78% and they get 76% fewer abortions than the general population of sexually active teens.

> That's what a new study published in the *New England Journal of Medicine* suggests, in which researchers at Washington University School of Medicine in St. Louis attempted to see what would happen when they tore down the three main barriers to teenage birth control—ignorance of options, limited access and prohibitive cost.[14]

Sometimes, this narrative frames health care services and the government as key pillars of support for adolescents, and particularly girls and young women. More often, though, it describes the *failure* of government to provide adequate provisions to support adolescent health. The absence of services is cast as a problem caused by government inaction and ineffectiveness. In other words, this narrative depicts government as both responsible for adolescent health and, at the same time, unable to meet its responsibilities in this regard, as in the following:

> In its latest move to roll back reproductive care and education for Americans, the White House has brought an early end to Obama-era grants aimed to help many of our youngest, most at-risk citizens take control of their bodies and lives.
>
> Last week, the Center for Investigative Reporting broke the news that the Trump administration had "quietly axed" a hefty $213.6 million in grants for teen pregnancy prevention and research at dozens of institutions across the country. According to Reveal's investigation, the US Department of Health and Human Services (HHS) recently sent letters to at least 81 programs and institutions announcing that the grant money they'd been promised for fiscal years 2015 through 2019 would cease halfway through the 2018 calendar year, much to the groups' surprise.[15]

While highlighting the need for government action, this passage also reinforces the idea that policies necessary to support adolescents are both expensive and highly politicized. And, as prior FrameWorks' research has shown, the focus on government inaction and partisanship are strong cues for unproductive thinking about social issues and solutions, which makes it difficult to build a sense of efficacy for long-term systems reform.[16]

FINDING 4:
Media stories rarely described adolescence as a process of development.

Only 13 percent of news stories in the sample described the neurobiological, pubertal, socio-emotional, moral, or cognitive changes that unfold during this time of life (see Table 2).

Table 2: Mentions of Development in Media Stories

Developmental Domain	Percent of Media Stories
Neurobiological	4%
Pubertal	2%
Socio-emotional	5%
Moral	1%
Cognitive	2%
None mentioned	87%

Some stories *refer* to particular aspects of development but do not *describe* how development happens, what changes when, or the implications of these changes, as in the following excerpts:

> Americans have accepted that juveniles are different from adults. Scientists confirm this, showing that there are significant differences in reasoning abilities, impulse control, and neurological development. Courts across the country have separate justice systems for most juvenile suspects, and in 2005 the Supreme Court said that even if tried as an adult, a juvenile cannot be sentenced to death. Now the justices are again grappling with how to punish juveniles for serious crimes. For the second time in two years, they are poised to rule on the constitutionality of sentencing juveniles to life in prison with no possibility of parole.[17]

> But the U.S. Surgeon General was clear last December, saying "e-cigarettes have the potential to cause lasting harm to the health of young users," notes NPR. Health officials are concerned the nicotine found in the devices could hurt developing brains, reports the Associated Press.[18]

Despite invoking language from the science of adolescent development, such as "neurological development" or "developing brains," passages like these fail to tell a full story about brain plasticity, adolescents' heightened sensitivity to certain environments and experiences, and the effects of these changes for lifelong learning and health.

FINDING 5:

Media stories don't frame adolescent development as an issue that warrants collective concern.

The media is largely inattentive to the fact that healthy adolescent development is a social or public issue. Across the sample, only a small proportion of articles (24 percent) connected adolescent wellbeing to broader social and economic outcomes, including impacts on the labor

market and the education, health, justice, and welfare systems (see Table 3). In comparison, almost 70 percent of articles in the sample described individual-level outcomes and effects. In short, media coverage of adolescent issues lacks clear statements of the collective importance and societal benefits of supporting young people.

Table 3: Mentions of Societal Consequences in Media Stories

Effect on Society	Positive Effect	Negative Effect
Justice system	1%	17%
Health care	1%	4%
Social welfare	0%	1%
Economy	1%	2%

FINDING 6:

Media stories didn't explain the structural inequalities that affect adolescent development and wellbeing, such as poverty, racism, and other forms of discrimination.

Few stories mentioned demographic information; only 3 percent discussed adolescents in low-income families, 7 percent discussed adolescents in the LGBTQ community, and 11 percent explicitly referred to adolescents of color. Those that *did* reference marginalized groups didn't explain how laws, policies, and other contextual factors fuel inequity. Consider this *Los Angeles Times* article on government cuts to teen pregnancy programs, which mentions race and socioeconomic status only once, in this paragraph:

> Another factor is that the pregnancy rates for some teens in some socioeconomic environments are still way out of line with the national average. Figures from the Centers for Disease Control and Prevention, which document a decline in the national teen birth rate to 22.3 births per 1,000 women aged 15 to 19 in 2015 from 41.5 in 2007, also show that the rates among Black, Hispanic, and American Indian/Alaska native teens remain stubbornly higher than the national average, which itself shows that nearly a fourth of U.S. women give birth before they're 20.[19]

This excerpt notes racial and socioeconomic disparities teen pregnancy but does not explain *why* disparities exist and how to remediate them.

Implications

Based on a [previous analysis of the cultural models](#)—deeply ingrained and widely shared assumptions and patterns of thinking—that Americans use to reason about adolescents and adolescent development, exposure to the frames and narratives will likely have the following effects:

1. **By focusing on the riskiness of adolescence, media communicators limit understanding of important and effective supports for adolescents.** Experts see adolescence as a period of vulnerability *and* opportunity, when environments and experiences exert an especially strong effect on development and shape long-term outcomes. Media discourse, in contrast, tells half of this story, focusing only on the threats posed to young people but not opportunities for growth and development. This framing leads the public to selectively support interventions and public policies that shield adolescents from risk but not those that provide a range of experiences that promote interdependence and autonomy.

2. **Lack of discussion of disparities undercuts thinking about equity.** Very few articles in our sample drew attention to, or explained, how systemic and structural inequalities affect adolescent development and drive disparities. Equity issues that pertain to adolescence are not on the public's radar, and the media reinforce this absence. Without this explanatory content, people will likely fall back on existing beliefs that explain race and class disparities as the result of deficient values or a weak work ethic, as has been demonstrated in prior research.[20]

3. **Crisis messaging is counterproductive.** The media focus on the most serious problems facing adolescents, such as rising levels of violence, sexual assault, and suicide. This strategy may grab public attention and raise awareness of these problems, but social science research shows that crisis framing actually *depresses* support for solutions. This phenomenon is often attributed to "compassion fatigue"— the difficulty people have sustaining heightened levels of concern and attention to multiple, ongoing emergencies. Calling attention to challenges facing youth also makes problems seem intractable, leaving people fatalistic about change. Stories that emphasize problems strengthen beliefs that adolescents are destined to struggle and weaken faith in the power of social services to improve adolescents' lives and long-term outcomes.

4. **The *Public Health* narrative highlights environmental factors that shape health outcomes but cues unproductive thinking about government**. The *Public Health* narrative is a promising finding. It draws attention to the ways in which systems and policies positively influence the lives of adolescents, and especially their health. It helps people understand how development, and especially adolescent health, is embedded in and affected by systems and institutions. However, communicators should avoid characterizing adolescent health as a politically polarizing issue; otherwise, they risk cuing unproductive thinking about government. As FrameWorks' research has shown, the public associates government with ineffectiveness and partisanship, which makes it difficult for people to see the value of meaningful policy change.

5. **Adolescent development is framed as an individual rather than a collective issue.** The media's failure to describe the social impacts of adolescent development causes people to see adolescent development as an individual or family issue but not a social one. In the absence of media coverage explaining how adolescent development reverberates beyond youth and their families and affects communities and society, the public will assume that adolescent development is an individual, rather than a collective, issue. Unless adolescence is framed as an issue that warrants collective concern, the public will hold adolescents themselves—or their families—responsible for problems they experience. It will also be difficult for advocates and experts to build public support for policy solutions to help young people successfully transition to adulthood.

6. **The lack of focus on development exacerbates the public's lack of understanding of adolescence as a vital developmental period.** Media stories rarely contained information about adolescent development. In the absence of a fuller, developmentally informed account of *why* adolescents differ in critical ways from children and adults, the public is likely to "fill in" thinking with incorrect beliefs. FrameWorks research has shown that the public has a thin understanding of how development happens, what happens when, and what influences it. When people *do* think about development, they talk about it in two starkly different ways. First, people think it is a passive process, where adolescents are simply a product of their environments. Second, they think that adolescents develop automatically, with only basic inputs from parents, communities, and society. This is a critical framing challenge that needs to be addressed in order to build a full understanding of what adolescents need to thrive. The current media discourse about adolescent development, however, does not deepen public understanding of adolescent development and leaves people to fill in the story with their own—often misguided—understandings.

Conclusion

Those seeking to translate the science of adolescent development face steep challenges. As the [first phase of research](#) shows, the public holds a set of powerful cultural models that shape reasoning about adolescence. These models reliably inform public understanding of what adolescence is, how development happens, and what young people need. This reasoning unfolds in ways that often diverge starkly from the information that developmental scientists and other experts seek to communicate.

As this report shows, the media echo and amplify these cultural models, strengthening their power in the collective conscience. The public is served a steady diet of stories about dangerous teenagers or adolescents glued to their smartphones—stories that conform to and deepen dominant ways of thinking. This creates a vicious cycle: members of the public hold negative and inaccurate models of adolescents; they encounter these models when they read a newspaper, watch television, or log on to the internet; and, over time, these models become ever more deeply etched into culture.

A better understanding of the media landscape around adolescence is key to moving public thinking forward. This view of the landscape highlights the need for new framing strategies that dislodge folk wisdom and reshape the public's dominant ways of thinking of adolescents. Communicators need to advance a new narrative that deepens understanding of adolescents' need for positive supports and enriched environments and moves beyond discourses centered around danger and protection. They also need to correct misperceptions of development; advance it as a systemic issue with collective implications; and highlight the ways in which adolescents' exposure to structural inequalities fuels disparities in health, wealth, and education. These frames will produce a more favorable climate for reform and culture change, ensuring that adolescents have the resources they need to thrive.

FrameWorks' research on related issues, such as early childhood development,[21] suggests that a new public narrative that clarifies the foundations of healthy adolescent development is within reach. FrameWorks is in the process of developing narrative strategies to help experts, advocates, and media communicators advance the public discourse, improve public understanding, and increase public support for the actions necessary to fully support adolescent development.

About the FrameWorks Institute

The FrameWorks Institute is a think tank that advances the nonprofit sector's communications capacity by framing the public discourse about social problems. Its work is based on Strategic Frame Analysis®, a multi-method, multidisciplinary approach to empirical research. FrameWorks designs, conducts, publishes, explains and applies communications research to prepare nonprofit organizations to expand their constituency base, build public will, and further public understanding of specific social issues—the environment, government, race, children's issues and health care, among others. Its work is unique in its breadth, ranging from qualitative, quantitative and experimental research to applied communications toolkits, eWorkshops, advertising campaigns, FrameChecks® and in-depth study engagements. In 2015, it was named one of nine organizations worldwide to receive the MacArthur Foundation's Award for Creative & Effective Institutions. Learn more at www.frameworksinstitute.org.

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Appendix: The "Untranslated" Story of Adolescent Development

To distill key messages from the science of adolescent development, FrameWorks' researchers conducted 18 one-on-one, one-hour interviews with experts in the field and six focus groups with researchers studying this period of development. The list of participants was compiled in collaboration with the Center for the Developing Adolescent and FAST and was designed to reflect a diversity of perspectives and areas of expertise within the field of adolescent development. Interviews were conducted in late 2016 and early 2017 and, with participants' permission, were recorded and transcribed for analysis.

This section distills the key themes that emerged from analysis of interviews, focus groups, and feedback sessions with those studying adolescent development from a variety of perspectives. These themes constitute the "untranslated" expert story of adolescence: the core set of understandings that researchers want to be able to communicate.

This untranslated story is organized around four broad questions:

1. What is adolescence and why is it important?
2. What changes occur during adolescence?
3. What are the key factors that influence adolescent development?
4. How can policy and practice better support adolescent development?

What is adolescence and why is it important?

- Adolescence is a period of multiple phases and transitions that begins with the onset of puberty and ends when individuals assume the roles, rights, and responsibilities of adulthood. Experts noted that when adolescence begins and ends can vary substantially across individuals and cultures. They also noted that, globally, the period of adolescence is elongating due to an earlier onset of puberty and a delay in assuming adult rights, roles, and responsibilities.

- Adolescence is a time of significant and, at times, rapid change in physical, neurobiological, and psychosocial development. These changes may occur at different times for different people. Many of the changes that take place during this period of life, such as increases in risk-taking behavior or heightened sensitivity to social status and rewards, are adaptive parts of the developmental process; they are vital for the learning

and change that takes place during this time of life. These features of adolescence are not and should not be viewed as inherently problematic.

- Adolescence is a time for individuals to become purposeful, self-reliant, and socially engaged. One strategy to support adolescence is facilitating exploration and cultivating adolescents' physical, emotional, social, and intellectual needs. Promoting these domains helps facilitate a successful transition to adulthood.

- Adolescent development lays the foundations for lifelong wellbeing. Experts noted that adolescence has far-reaching implications for physical and mental health throughout life, involvement with the justice system, educational attainment, and economic productivity. Both positive (such as good study habits, love of a sport) and negative (such as substance misuse, or physical inactivity) behaviors that begin in adolescence can become habitual and persist throughout the lifespan. While these core life skills can be built throughout the lifespan, it becomes harder and more expensive as we age.

- Adolescent development has social, economic, and public health implications for society. Experts emphasized that the process of adolescent development has effects and implications that extend beyond the individual. When adolescent development goes well, the effects are felt by communities, states, and the nation in the form of increased contributions to the labor market and to civic and community life. The opposite is also true: when adolescents do not have the support they need for positive and healthy development, negative effects are experienced by the whole of society.

What changes occur during adolescence?

Experts focused on the following changes that occur during adolescence:

- Adolescence is a period when the social factors that influence individuals and the influence that they have on their social environment expand. The social environment includes adolescents' friends and peers, teachers and schools, communities and wider cultural influences (including the media). While adolescents increasingly seek out and are influenced by their social environments, families remain a critical influence during this time of life.

- Autonomy and social integration are central components of adolescent development. Experts described a complicated balancing act between the need to assert independence

from parents and family, the need for parental support, and the need to fit into various groups. Parents play an important role in scaffolding adolescents' exploration of the world in ways that are autonomous, but safe, structured, and age appropriate.

- Identity formation is an important component of adolescence. Adolescents' identities are forged through interactions with others, especially peers. Adolescents become increasingly capable of formulating and articulating their values, goals, and interests, which inform their understanding of their own position within society.

- Social and economic inequities can be widened during adolescence, affecting education, economic attainment, and social relationships. For example, adolescence is a time when different rates of health problems, particularly mental health issues, emerge between young men and women. This is likely caused by the interaction of biological (e.g., differences in average onset of puberty) and social-cultural factors (e.g., harmful gender norms).

- Puberty contributes to important biological, social, and behavioral changes. During puberty, the body releases hormones that result in rapid physical growth (including the emergence of sex-specific physical characteristics), sexual maturity, increased metabolism, and changes in sleep and circadian rhythms. This rise in hormones affects neural structure and function and may influence adolescents' behaviors in response to changes in their environment and social context.

- Adolescence is an important period when cognitive, social, and affective skills are integrated. This includes the integration of skills related to the ability to monitor, inhibit, and modify behavior in the service of long-term goals, and encompasses emotion regulation, goal-setting, and self-monitoring with a growing proficiency for abstract thought, sophisticated reasoning, social perspective-taking, and emotion regulation.

- Adolescence is a time of important changes to the brain. These changes underlie many of the learning and behavior changes that take place during this period of life.

    - Adolescence is a period of high neuroplasticity when the brain's development is particularly sensitive to environmental influences. Experiences during this time of life are particularly formative and can have significant and lasting effects.

- During adolescence, the brain refines and stabilizes its neural connections for later efficiency. New connections form to integrate disparate brain regions. This refinement and stabilization process allows adolescent learning in various areas to integrate and consolidate. New information and experiences occurring at this time may therefore play a particularly powerful role in sculpting the adult brain. An increase in exploration, experimentation, and risk-taking may occur during adolescence to enhance the information gathered for this process. In this way, exploration and risk-taking support successful development and, at the same time, increase vulnerability.

- The changes in the brain occurring during adolescence lead to changes in motivation and increased sensitivity to certain types of learning experiences. At the same time, individual experience also shapes the developing brain. This is a two-way process where brain changes affect adolescent behavior and adolescent behavior affects the ways in which the brain changes.

What are the key factors that influence adolescent development?

- Social relationships were identified as one of the primary shapers of adolescent development. Adolescents need opportunities to grow and develop identities and figure out how they fit into their social worlds. Successfully navigating this stage of life depends on quality and nurturing relationships with adults and peers, as well as opportunities for community and civic engagement. In contrast, social isolation and other forms of severe disruption to social relationships during adolescence increase risks for negative outcomes in a number of areas, from school failure to mental health problems. Positive feedback and praise from parents, educators, and other respected adults supports positive adolescent development, especially when it emphasizes effort and perseverance.

- A reciprocal relationship exists between the social environment and adolescent development. Social and cultural contexts influence how adolescents develop; in turn, their development changes the social and cultural context they experience. Social and cultural factors including beliefs, values, and practices; socioeconomic resources; and social and structural factors can support or compromise adolescent development. Adolescents' agency in the co-creation of their social and cultural contexts plays an increasingly important role in their development, but it cannot override the powerful impact of many larger factors (e.g., neighborhood resources, school quality, racism, stereotyping, and discrimination) that are beyond their control.

- Researchers voiced the need for scaffolded, safe, sequenced, and satisfying ways of engaging adolescents' need for exploration and experimentation. Parents, caregivers, schools, and communities should provide opportunities for adolescents to take "positive risks," which can include participating in unmonitored time with peers, playing team sports, meeting new people, and trying out new activities and interests. These opportunities allow adolescents to practice making healthy, independent choices, even if they carry risk and the possibility of failure.

- In contrast, some phenomena that emerge during adolescence, such as negative risk-taking and mental health problems, can have adverse effects that last into adulthood. These phenomena include behaviors such as smoking, unprotected sex, accidents, and gang involvement, and mental health problems such as depression, eating disorders, schizophrenia, and substance misuse and addiction, all of which can lead to dramatic increases in mortality and morbidity during adolescence and later in life. Understanding the trajectories of these adverse outcomes, and the factors that predict their onset, is critical for informing early intervention and prevention efforts.

- Chronic stress undermines healthy development and can stem from a variety of factors, including excessive academic pressure, conflictual and/or unsupportive family relationships, maltreatment, peer victimization, social isolation, poverty, and community violence, among others. Repeated exposure to stress can sensitize the body's response to future stressors, interfering with adolescents' capacity to regulate their emotions and behavior.

How can practice and policy better support adolescent development?

While researchers were cautious about making programmatic and policy recommendations based on the available scientific evidence, they agreed on the need to leverage developmental science to inform our understanding of the targets (timing, social contexts, etc.) for prevention, early intervention, and policy. This requires teams of researchers and practitioners with a clear focus on implementation research that tests the application of general principles from developmental science to specific outcomes (e.g., violence, sexual and reproductive health, educational attainment, etc.). The primary goal of this work must be to maximize opportunities and minimize vulnerabilities. To exemplify this approach, experts identified the following examples:

- Researchers argued that health and child welfare systems should support families more effectively during the transition to adolescence. The quality of family relationships during

early adolescence is a key predictor of many adolescent health and behavioral outcomes. However, no system-wide policies specifically support families during the period when children transition from childhood to adolescence. Yet adolescence is a time of high parental concern about children's preparedness to skillfully navigate change (thus creating readiness to access and learn from interventions). Many health and welfare systems see the transition to parenthood at birth and infancy as a key time to support families; a similar argument can be made for the need to support families during children's transition to adolescence.

- There is a need for developmentally sensitive education systems that better fit and meet adolescents' needs. Experts agreed that schools are not currently optimized to promote adolescent wellbeing. They emphasized the need for school environments that enhance young people's intellectual autonomy and creativity and provide them with opportunities to explore and experiment. Resources reflecting the social and emotional capabilities and needs of adolescents should be incorporated into teacher training and professional development. Consideration of the mismatch between the timing of the school day and the sleep and circadian rhythms of adolescents should be considered in designing school structure and schedule.

- Researchers also called for developmentally sensitive modifications to the juvenile justice system that respond to the developmental capabilities and needs of adolescents. Several experts criticized the practice of trying adolescents as adults in the justice system, arguing that adolescents have diminished responsibility for criminal acts. They also noted that there should be a greater focus on rehabilitation than punishment, given the malleability of adolescent neurobiology and behavior. Adult prisons deprive adolescents of the inputs they need to develop into successful adults, such as positive social relationships and cognitive stimulation.

- Public systems should be designed to meet the needs of adolescents. Researchers called for public services that are developmentally informed and consistent with the ways in which adolescents prefer to access services and information. Proposed changes include:

    - Avoiding what one expert called a "transition cliff" when youth age-out of services (e.g., in the foster care, mental health, and juvenile justice systems) and find themselves without the supports they need to navigate adult systems. For example, many mental health services end when youth reach age 18, which coincides with the highest incidence rate for psychiatric disorders. Experts called for a more

seamless transition in public services that is guided by developmental rather than legal or bureaucratic considerations (such as the use of a "youth" model to provide mental health services across the highest period of risk for onset, i.e., the period when individuals are between 14 and 24 years old).

- Policies and programs should take the heterogeneity of adolescent development into account. This includes recognizing that different kinds of policies and programs are appropriate at different times during adolescence and that these times vary across individuals.

- Legislative efforts should simultaneously increase autonomy and learning while reducing harm, reflecting the reality that experimentation and risk-taking are normative parts of adolescent development. This requires a delicate balance of policies that promote autonomy and scaffolding for adaptive, developmentally appropriate learning (e.g., driving a car; navigating romantic and sexual relationships; assuming legal culpability for minor offences) and those that deter specific behaviors that create biological vulnerability during adolescence and do not facilitate adaptive learning (e.g., tobacco use, drug use, and unhealthy food consumption).

Endnotes

[1] Jamieson, P., & Romer, D. (Eds.) (2008). *The changing portrayal of adolescents in the media since 1950*. Cambridge, England: Cambridge University Press.

[2] Amundson, D.R., Lichter, L.S., Lichter, S.R. (2005). *What's the matter with kids today: Television coverage of adolescents in America*. Washington, DC: FrameWorks Institute.

[3] Gerbner, G., et al. (1994). *Growing up with television: The cultivation perspective*. In J. Bryant & D. Zillman (Eds.), *Media effects: Advances in theory and research*. LEA's communication series (pp. 17-41). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

[4] Busso, D., Volmert, A., & Kendall-Taylor, N. (2018). *Building opportunity into adolescence: Mapping the gaps between expert and public understandings of adolescent development*. Washington, DC: FrameWorks Institute.

[5] Using TopicMapper, the following search terms (including inflection for plural versions, etc.) were used to identify relevant articles: adolescence, youth, teen, juvenile. To ensure we captured the most relevant articles, only articles using these terms (or variants thereof) in the headline were included in the sample.

[6] To improve the stability of the model, researchers omitted codes with a prevalence of less than 10 percent from the analysis or collapsed them with other thematically related codes.

[7] Neighmond, P. (2017). Depression strikes today's teen girls especially hard. *NPR*. Retrieved from https://www.npr.org/sections/health-shots/2017/02/13/514353285/depression-strikes-todays-teen-girls-especially-hard

[8] Lieberman, J. (2016). Why and how to improve mental health services for youth. *US News & World Report*. Retrieved from https://health.usnews.com/health-news/patient-advice/articles/2016-09-23/why-and-how-to-improve-mental-health-services-for-youth

[9] Korte, L. (2017). Youth suicide rates are rising. Schools and the internet may be to blame. *USA Today*. Retrieved from https://www.usatoday.com/story/news/nation-now/2017/05/30/youth-suicide-rates-rising-school-and-internet-may-blame/356539001/

[10] Udorie, J. E. (2015). Social media is harming the mental health of teenagers. The state has to act. *The Guardian*. Retrieved from: https://www.theguardian.com/commentisfree/2015/sep/16/social-media-mental-health-teenagers-government-pshe-lessons

[11] The term "episodic" refers to storytelling approaches that apply a telephoto lens to coverage of an issue—focusing on individual case studies and discrete events. This is in contrast with "thematic" storytelling approaches, which tend to focus on trends over time and highlight contexts and environments. For more information,

see: Iyengar, S. (1991). *Is anyone responsible? How television frames political issues.* University of Chicago Press: Chicago.

[12] Mota, C. (2016). Teen arrested in connection with murder of Dickinson High School student. *NJ.com.* Retrieved from http://www.nj.com/hudson/index.ssf/2016/05/teen_arrested_in_connection_with_murder_of_dickins.html

[13] Bales, S.N., Sweetland, J., O'Neil, M., & Wald, J. (2015). *Talking juvenile justice reform: A FrameWorks MessageMemo.* Washington, DC: FrameWorks Institute.

[14] Oaklander, M. (2014). Teenage girls given choice of free contraceptives get far fewer abortions. *Time.* Retrieved from http://time.com/3453184/free-contraceptives-cut-teen-abortion-rates/

[15] Burns, J. (2017). The Trump Administration just axed $213M from teen pregnancy prevention, all by itself. *Forbes.* Retrieved from https://www.forbes.com/sites/janetwburns/2017/07/18/the-trump-administration-just-axed-213m-from-teen-pregnancy-prevention/#3147ca5b4495

[16] FrameWorks Institute. (2006). *How to talk about government: A FrameWorks MessageMemo.* Washington, DC: FrameWorks Institute.

[17] Eberhardt, J., & Rattan, A. (2012). The race factor in trying juveniles as adults. *New York Times.* Retrieved from https://www.nytimes.com/roomfordebate/2012/06/05/when-to-punish-a-young-offender-and-when-to-rehabilitate/the-race-factor-in-trying-juveniles-as-adults

[18] Oliver, D. (2017). Health buzz: Teens aren't using e-cigarettes as much, report says. *US News & World Report.* Retrieved from https://health.usnews.com/wellness/health-buzz/articles/2017-06-16/teens-arent-using-e-cigarettes-as-much-report-says

[19] Hiltzik, M. (2017). Trump makes good on threat to kill teen pregnancy prevention programs. *Los Angeles Times.* Retrieved from http://www.latimes.com/business/hiltzik/la-fi-hiltzik-trump-pregnancy-0170718-story.html

[20] FrameWorks Institute. (2008). *Talking about disparities: The effect of frame choices on support for race-based policies.* Washington, DC: FrameWorks Institute.

[21] FrameWorks Institute. (2015). *Framing child and youth development.* Washington, DC: FrameWorks Institute.