LESSON 1: RESILIENCE IS COMMON.

Resilience is all around us. Certainly as risk levels increase, the rates of resilience fall, and there are conditions under which no child can survive or flourish. However, early risk researchers did not expect to observe so much variation or so many good outcomes among children who experienced poverty, violence, disaster, or trauma.

In our current research on academic resilience in children from homeless or highly mobile families, for example, we observe the expected achievement gaps. Poor children on average show much worse reading and math performance over time than more advantaged children. Homeless/highly mobile children show even lower achievement, consistent with the idea of a continuum of risk. Yet we also find striking variability in achievement over time. A substantial proportion of the disadvantaged children who are poor, homeless, or highly mobile nonetheless manifest...
La résilience est omniprésente. Évidemment, lorsque le niveau de risque augmente, les taux de résilience baissent, mais une grande proportion d’enfants défavorisés font preuve de niveaux de réussite et d’apprentissage équivalents ou supérieurs aux moyennes nationales. Les études récentes portant sur la résilience passent présentement de modèles axés sur des lacunes à des cadres positifs de changement mettant à profit des systèmes adaptatifs existant dans le domaine du développement humain et des systèmes sociaux. Certains de ces systèmes adaptatifs sont fondés sur le cerveau et d’autres découlent des relations et des ressources faisant partie des multiples contextes de vie d’un enfant. Lorsque ces systèmes fondamentaux fonctionnent normalement, les jeunes sont très résilients; lorsque les systèmes sont endommagés – ou détruits sans être restaurés – les jeunes sont à risque. Il est donc prioritaire de nourrir, de soutenir et de rester ces systèmes adaptatifs fondamentaux de développement humain pour favoriser les compétences ou la résilience et préparer les jeunes à traverser les tempêtes de la vie.

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RESILIENCE DOES NOT REQUIRE EXTRAORDINARY RESOURCES IN MOST CASES, BUT INSTEAD IS THE RESULT OF WHAT MIGHT BE CALLED ‘ORDINARY MAGIC’.

The pervasiveness of these predictors of resilience suggests that there are fundamental protective systems for human adaptation and development that, when operating normally, afford considerable capacity for resilience in the face of many kinds of adversities. In other words, resilience does not require extraordinary resources in most cases, but instead is the result of what might be called ‘ordinary magic’. It arises naturally from the interaction of basic adaptive systems that foster and protect human development. The multiplicity of adaptive systems – which is likely the result of many thousands of years of biological and cultural evolution – accounts for the diversity across individuals and also explains the many different pathways to resilience. ‘Ordinary magic’ refers to the power of these basic systems to facilitate adaptation and recovery in development. Some have been studied more extensively than others.

The attachment system, for example, has been the focus of many studies in the developmental sciences, ever since it was first observed by John Bowlby and others that humans (like other closely related species) form close social bonds, initially with their caregivers in the first year of life. These bonds provide a sense of security and afford protection from threats of many kinds. Many studies over the years have corroborated the importance of attachment relationships for normal human development and resilience, both for very young children and for adolescents and adults. As young people grow up, they form attachment relationships with people other than their caregivers, including spiritual figures and romantic partners.

Given the pervasive significance of attachment relationships, it is not surprising to find that positive school-based relationships – with teachers, friends, coaches, and mentors – are implicated in many studies of resilience. Schools provide many opportunities for youth to form relationships with competent and caring people who have the potential to promote positive development. These relationships can work in many ways to facilitate resilience in children. Most fundamentally, they provide the sense of security and belonging that frees a child to explore and learn.

In fact, schools, along with families, play a central role in nurturing all the tools of resilience. While caregivers and families carry the greatest responsibility in early life, as children grow older, the importance of schools increases. Both parents and teachers contribute to the development of intellectual and self-control skills as young brains gain the capacity to control attention, emotion, and behaviour. In these ways, children gain human capital along with social capital in the context of family and school.

The human brain is central to the adaptive systems supporting resilience. It is a powerful learning and problem-solving tool that affords individuals with many cognitive, social, and emotional skills for resilience, as well as the motivation to adapt and recover. Good intellectual functioning and good self-control of attention and behaviour are widely implicated as predictors of resilience in human development. Adaptive behaviour is also supported by a powerful system of ‘mastery motivation’, whereby we experience pleasure in agency, or being effective in the world. Teachers, as well as parents and coaches, often motivate children for learning by engaging this system. They create opportunities for successful mastery experiences, building a sense of mastery in graduated steps. In this way, they scaffold the development of competence over time, as the child gains confidence and a stronger motivation to learn, solve problems, and engage successfully in the world.

The mastery motivation system is a powerful engine for development, but, like all the systems supporting resilience, it can be shut down or harmed by bad experiences. Children who experience severe neglect or repeated trauma may lose their feelings of agency and the motivation that grows from pleasure in mastery.

Cultural traditions, including religion, also clearly play a role in resilience, although protective factors rooted in cultural beliefs and practices have been neglected in research until recently. Belief systems imbue life (and death) with meaning and may sustain adaptive behaviour in the face of great adversity. Religions also offer attachment relationships (spiritual and human), rituals of comfort and self-regulation (such as services for major life events, prayer, meditation), and many other kinds of emotional and physical assistance.

LESSON 4: RESILIENCE CAN BE PROMOTED.

Individual case studies, ‘natural’ experiments, and prevention and intervention research all indicate that resilience can be promoted. Resilience models suggest three major ways to promote resilience in young people, although in practice these approaches appear in many combinations.

Reduce risk exposure. Often it is possible to prevent or reduce exposure to risk or adversity. It does not make sense to build a beautiful new school on the grounds of a war zone until the landmines are removed. Low-birth weight
often can be prevented by good prenatal care and nutrition. Neighbourhood violence can be reduced, and schools can prevent or reduce violence and bullying within their walls, buses, and playgrounds.

**Increase resources and assets.** Even when risks have already occurred, it is often possible to increase assets and resources — or their effectiveness — in an effort to counterbalance risk. Schools, for example, may provide meals, health care, computers, books, tutors, and teachers trained to mitigate the effects of high-risk situations.

**Mobilize and facilitate powerful protective systems.** Interventions can also be directed at the most powerful adaptive systems by promoting their development or restoring their function. Programs to foster or improve the quality of parent-child, mentor, or teacher-child relationships or to provide a loving family for an orphaned child are examples of mobilizing the power of attachment relationships. Protecting the effectiveness of parents during a crisis is another example. Preventive intervention research with families going through divorce and other kinds of adversity has demonstrated that helping and supporting parents has a protective effect on their children, with positive effects that can last for years after the intervention. Recent experiments to boost the development of executive function skills in young high-risk children through training or preschool programs suggest that there is considerable potential for intervening to promote the self-regulation systems that play a central role in school success.

**LESSON 5: A POSITIVE FRAMEWORK FOR INTERVENTION IS EFFECTIVE AND APPEALING TO STAKEHOLDERS.**

Resilience research is transforming practices and policies designed to foster good outcomes in high-risk groups of young people, offering a positive framework for intervention that can be conceptualized in terms of ‘4 Ms’ as follows:

- **Mission:** Frame positive goals.
- **Models:** Include positive assets, processes, and outcomes.
- **Measures:** Include positive measures of assets, strengths, and outcomes.
- **Method:** Include strategies to reduce risk, increase resources, and/or mobilize adaptive systems.

These four components represent a major departure from deficit-focused models of etiology and intervention that dominated earlier practices and policies for young people. It is telling that contemporary evidence-based programs and interventions often feature these positive components, even though many of them were not designed with resilience research in mind.

Emphasizing these ‘4 Ms’ does not mean that risks, symptoms, vulnerabilities, and disorders are ignored but rather that the overarching assumptions and goals of a resilience framework emphasize positive development and positive processes. This positive approach appeals to stakeholders (parents, society, and young people) and also is supported by growing evidence that the promotion of positive development prevents problems.

Evidence is also growing that strategic timing is important. Competence begets competence in newly emerging domains, and failures in one domain can precipitate problems in other areas of function. As a result, problems can snowball over time, while well-timed interventions have the potential for building competence well into the future, yielding high long-term returns on investment.

There also appear to be windows of opportunity in development where the leverage for change increases. One of those windows occurs during the transition to adulthood years, when gains in cognitive capacity for planning and decision-making related to brain development coincide with opportunities afforded by new contexts (e.g., college, military service, apprenticeship). After a disastrous adolescence, Mike Maddaus began to make choices that took him away from negative peers and behaviour to military service, community college, positive mentors, university and medical school, a successful career, family, and civic engagement.

There are other potential windows of opportunity. In our current research on resilience in young children from homeless or highly mobile families, for example, we are focusing on the window of time when young children typically make the transition into school (around ages 4 to 7). We think that the development of good executive function skills (e.g., self-control, directing attention, flexible thinking) play a crucial role in early school success, with long-term consequences. Interventions to boost executive function skills during this window may prove to be especially strategic for disadvantaged children.
CONCLUSION

New frontiers are emerging in the study of resilience as we learn more about the plasticity of the human brain and the possibility of ‘turning on’ the genes for learning. Powerful new tools are emerging for research, including new methods for observing the human brain in action or measuring gene expression. There is growing attention to resilience factors in diverse cultures around the world. However, children growing up in hazardous conditions cannot wait for future research on resilience to be completed. There is a sturdy body of knowledge in place now to inform practices and policies to promote resilience.

It is reassuring to know that resilience does not appear to require extraordinary talents or resources, but instead depends on fundamental human adaptive systems. The capacity for resilience develops and changes as the protective systems of a child develop and change. Some are in the child and others arise from relationships and resources in the multiple contexts of a child’s life, including school. When these fundamental systems are operating normally, young people have a remarkable capacity for resilience. The greatest threats to young people occur when these key systems and the capacity they represent are damaged or destroyed and never restored. Nurturing, supporting, and restoring these fundamental adaptive systems for human development are top priorities for promoting competence or resilience in young people and preparing them to weather the storms of life.

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