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PER LO SVILUPPO E LA COMUNICAZIONE

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Faculty of Medicine

THE SCIENCE OF EDUCATION FOR PEACE

TOOLS TO SOW PEACE IN AND AROUND US

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ADELE
DIAMOND

INDEX

5. PEACE IS A STATE OF MIND: ACTIVATING OUR FRONTAL LOBES AND OUR EXECUTIVE FUNCTIONS.

Executive functions refer to a family of mental processes needed when you must concentrate and pay attention, when it would be impossible or ill-advised to go on autopilot or rely on instinct or intuition. There are three core categories of executive functions. The first category is inhibitory control, which includes both attentional control (focused attention) and self-control. Another category is working memory (holding information in mind and working with it), both verbal and non-verbal information. The third core executive function, which builds on the other two, is cognitive flexibility, both seeing the same thing from different perspectives and switching between different mindsets. From these the higher-order executive functions of creative problem-solving, logical reasoning, and planning are built.

Executive functions can be a great aid in attaining and maintaining a state of peace within yourself and between you and others. Let us take inhibitory control first. For example, when someone hurts our feelings, a natural immediate reaction is to want to lash out and hurt that person in return. We can use self-control, however, to resist that tendency and avoid getting in the cycle of tit for tat. Many of us have had the experience that our initial interpretation of the intention behind someone's words or actions was not correct, and we have either been grateful we exercised the self-control to wait until we learned more or regretted that we acted before waiting. We can also use self-control to avoid blurting out the first thing that comes to mind when that would hurt someone's feelings or embarrass us. It takes self-control to wait until our initial annoyance has subsided before pressing 'send' on an angry email message.

The subcomponent of inhibitory control referred to as interference control or attentional control involves resisting internal or external distractions. For example, it can involve resisting extraneous or unwanted thoughts, ruminating, or mind-wandering. As we have seen in the previous chapter, ruminating about something that is bothering you, something you did wrong, or something wrong that was done to you only magnifies your pain and suffering. We need to be able to let the past go.

Let's turn to cognitive flexibility next. Cognitive flexibility is very related to the chapter "There is nothing wrong with changing your mind". How can it help build peaceful social relations and peace within ourselves? One example would be instead of focusing on the differences between you and someone else, such as in political views, you could use cognitive flexibility to switch to thinking about the similarities between you and that person, such as in both wanting the best for your children. Employers and educators can switch from focusing on workers' or students' weaknesses to instead, much more productively, focusing on their strengths. We can use our cognitive flexibility to see things from others' perspectives. Or, instead of worrying about the future, we can switch to focusing on, and enjoying, the present moment. It takes cognitive flexibility to admit: "I was wrong and you were right." We can get terribly upset when a job, opportunity, or trip we were really hoping for does not materialize; but then we can take advantage of our cognitive flexibility to explore what new opportunities this has opened up for us.

We are hard-wired to get upset when we detect danger in the environment. At the first sign of danger, the brain's "fire alarm," the amygdala, starts blaring. Often however, we have gotten alarmed over something that turns out to be benign, such as when what sounded like gunfire was actually just a car backfiring or when screams that alarmed us turn out to be screams of joy. When that happens, the area of the brain most important for executive functions (the area known as prefrontal cortex) relays signals to the amygdala telling it to stop

firing. It's as if prefrontal cortex tells the amygdala, "You can calm down now. I've got this; there's no cause for concern."

When a student isn't grasping a concept, we often blame the student: If only the student were brighter, or better in this subject, he or she would have grasped the concept. We can exercise cognitive flexibility, however, and consider: "What might I do differently? How can I present the material differently, or word the question differently, so this student can succeed?"

How can we stop ourselves from getting really upset when a child misbehaves? We can use cognitive flexibility to re-frame since what we usually get upset about is the intent we think is behind an action. Please allow me to provide a couple of examples.

Suppose a youngster of 3, 4, or 5 years knows exactly what he or she should do, but doesn't do that. Our first inclination is to the think the child is intentionally misbehaving and should perhaps be disciplined. However, using our cognitive flexibility we can change perspectives and remember that young children have very immature self-control. A preschooler may know what he or she should do, and very much want to do that, but still not be able to act accordingly. When there's a strong competing response, that response must be inhibited; a young child may be misbehaving because he or she is not yet able to do that.

Suppose a school-age child is being an absolutely insufferable brat. Instead of reacting with anger we can re-frame and consider that perhaps that youngster is acting in this awful manner because he or she has been terribly hurt and is afraid of being hurt again. To protect himself, the youngster may be pushing us away before we have a chance to reject him, or the youngster may be testing us to see if we are *really* people he can feel safe with. If we see the misbehavior as coming from hurt, we can react completely differently.

As Patrizio wrote above in "Change the narration of suffering," while pain is an inescapable reality of human life and an inevitable aspect of our experience as humans, we have the power to change our relationship with it. In fact, one of the most profound ways we can use cognitive flexibility to be more at peace is to shift from focusing on how difficult and rotten the hand we've been dealt is, to instead focusing on making the best of it. As Alan Watts[7] wrote:

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[7] Watts, A. M. (1951). The wisdom of insecurity: A message for an age of anxiety. NY: Vintage Books.

You want to escape from pain, but the more you struggle to escape, the more you inflame the agony….

Sometimes, when resistance ceases, the pain simply goes away or dwindles to an easily tolerable ache, or the pain is no longer problematic….

I am chained to the fear only so long as I am trying to get away from it.

Similarly, we tend believe that the unacceptable aspects of ourselves, the parts of ourselves of which we are ashamed, create our suffering and keep us from forming a close relationship. With cognitive flexibility, however, we can realize that it is actually our non-acceptance and disowning of those aspects of ourselves that create our unhappiness. Inner peace requires that we acknowledge and make peace with *all* the different parts of ourselves including the parts we wish weren't there. Further, to paraphrase Brene Brown, what keeps us out of connection is the fear we are not worthy of connection. Those in loving relationships have the courage to accept themselves, imperfections and all. They have the compassion to be kind to themselves. They are willing to let go of who they think they should be in order to be themselves. We are all imperfect; yet each of us is wonderful in our own way.

How to do it?

Jamie Pennebaker[8] has shown that by writing about what is bothering you day after day, trying to wrap your head around what happened so you can let it go, can do wonders to end ruminating, relieve stress, and improve physical health.

Instead of focusing on what's rotten, switching each day to take a few minutes to note the wonderful things, the things you are grateful for, helps reduce stress and depression, increases happiness, improves interpersonal relationships and sleep, and lowers the risk of heart disease.[9]

To improve any of the executive functions, you need to practice them and challenge them. Executive functions suffer if you are sad, stressed, lonely, sleep-deprived, or not physically fit. Conversely, executive functions are generally best when you are happy, not stressed, follow a healthy life style, and feel there are people around who care about you, believe in you, and will be there for you.

In deepening:

- Diamond, A. (2020). Executive functions. Handbook of Clinical Neurology, 173, 225-240. ISBN:978-0444641502 https://www.frontiersin.org/articles/10.3389/fpsyg.2020.548813/full
- Diamond, A. & Ling, D. S. (2020). Review of the evidence on, and fundamental questions about, efforts to improve executive functions, including working memory. In J. Novick, M.F. Bunting, M.R. Dougherty & R. W. Engle (Eds.), Cognitive and working memory training: Perspectives from psychology, neuroscience, and human development, (pp.143-431). New York, NY: Oxford University Press. ISBN:978-0199974467 https://www.sciencedirect.com/science/article/pii/S1878929315300517
- Diamond, A. (2013). Executive Functions. Annual Review of Psychology, 64, 135–168. doi:10.1146/annurev-psych-113011-143750 https://www.annualreviews.org/doi/full/10.1146/annurev-psych-113011-143750#_i28
- Diamond, A. (2014). Executive functions: Insights into ways to help more children thrive. Zero to Three, 35, 9–17. https://pdfs.semanticscholar.org/b1ff/13bd88a92a73938ad9b84b88d037a944a27d.pdf

[8] Pennebaker, J. W. (1990). *Opening up: The healing power of expressing emotions*. NY: Guilford Press.

[9] Wood, A. M., Froh, J. J., & Geraghty, A. W. (2010). Gratitude and well-being: a review and theoretical integration. *Clinical psychology review*, *30*(7), 890–905. https://doi.org/10.1016/j.cpr.2010.03.005

7. REFERENCES

- Armed Conflicts Location & Event Data Project, https://acleddata.com
- Ben-Soussan, T. D., Mauro, F., Lasaponara, S., Glicksohn, J., Marson, F., and Berkovich-Ohana, A. (2019). Fully immersed: state absorption and electrophysiological effects of the OVO whole-body perceptual deprivation chamber. *Prog. Brain Res.* 244, 165–184. doi: 10.1016/bs.pbr.2018.10.023
- De Fano, A., Leshem, R., and Ben Soussan, T. D. (2019). Creating an internal environment of cognitive and psycho-emotional well-being through an external movement-based environment: an overview of Quadrato Motor Training. *Int. J. Environ. Res. Public Health* 16:2160. doi: 10.3390/ijerph16122160
- Diamond, A. (2013). Executive Functions. *Annual Review of Psychology, 64,* 135–168. doi:10.1146/annurev-psych-113011-143750
- Diamond, A. (2014). Executive functions: Insights into ways to help more children thrive. *Zero to Three, 35*, 9–17.
- Diamond, A. (2016). Developing and supporting "executive function." *The World Ensemble: Newsletter for the Worldwide El Sistema Movement, 3,* 1. http://www.devcogneuro.com/Publications/The-World-Ensemble.Issue3_2016_correct_footnotes.pdf
- Diamond, A., Lee, C., Senften, P., Lam, A., & Abbott, D. (2019). Randomized control trial of Tools of the Mind: Marked benefits to kindergarten children and their teachers. *PloS One, 14*, 1-27. doi:10.1371/journal.pone.0222447
- Diamond, A. (2020). Executive functions. *Handbook of Clinical Neurology, 173,* 225-240. ISBN:978-0444641502
- Diamond, A. & Ling, D. S. (2020). Review of the evidence on, and fundamental questions about, efforts to improve executive functions, including working memory. In J. Novick, M.F. Bunting, M.R. Dougherty & R. W. Engle (Eds.), *Cognitive and working memory training: Perspectives from psychology, neuroscience, and human development*, (pp.143-431). New York, NY: Oxford University Press. ISBN:978-0199974467

- Glicksohn J. Cutting the "Gordonian knot" using absorption and dream recall. *Journal of Mental Imagery*. 1991;15(3 & 4):49-54
- Immordino-Yang, M. H., Christodoulou, J. A., & Singh, V. (2012). Rest Is Not Idleness: Implications of the Brain's Default Mode for Human Development and Education. *Perspectives on Psychological Science, 7* (4), 352–364.
- Immordino-Yang, M. H., Darling-Hammond, L., & Krone, C. R. (2019). Nurturing Nature: How Brain Development Is Inherently Social and Emotional, and What This Means for Education. *Educational Psychologist, 54* (3), 185-204. doi:10.1080/00461520.2019.1633924
- Lieberman, M. D., Elsenberger, N. I., Crockett, M. J., Tom, S. M., Pfeifer, J. H., & Way, B. H. (2007). Putting feelings into words: Affect labeling disrupts amygdala activity in response to affective stimuli. *Psychological Science, 18*, 421-428. doi:10.1111/j.1467-9280.2007.01916.x
- Mordeniz, C. (2016). Pain perception within consciousness. *NeuroQuantology* 14. doi: 10.14704/nq.2016.14.2.957
- Ostby Y., Walhovd K., Tamnes C., Grydeland H., Westlye L., Fjell A. (2012). Mental time travel and default-mode network functional connectivity in the developing brain. *Proc Natl Acad Sci USA,* 109. 16800- 4. 10.1073/pnas.1210627109
- Paoletti P. and Ben-Soussan T.D. (2020) Reflections on Inner and Outer Silence and Consciousness Without Contents According to the Sphere Model of Consciousness. Front. Psychol. 11:1807. doi: 10.3389/fpsyg.2020.01807; https://www.frontiersin.org/articles/10.3389/fpsyg.2020.01807/full
- Paoletti P., Ben-Soussan T.D., Glicksohn J. (2020) Inner Navigation and Theta Activity: From Movement to Cognition and Hypnosis According to the Sphere Model of Consciousness, [online first], IntechOpen, DOI: 10.5772/ intechopen.92755
- Pennebaker, J. W. (1990). *Opening up: The healing power of expressing emotions*. NY: Guilford Press.
- Pintimalli, A., Di Giuseppe, T., Serantoni, G., Glicksohn, J., & Ben-Soussan, T. D. (2020). Dynamics of the Sphere Model of Consciousness: Silence, space, and self. *Frontiers in Psychology*, *11*, 2327.

- Sanz, S. A., Garcia, A. M., and Garcia, A. (1993). Road traffic noise around schools: a risk for pupil's performance? *Int. Arch. Occup. Environ. Health* 65, 205–207. doi: 10.1007/BF00381157;
- Wagner, U., Gais, S., Haider, H., Verleger, R., and Born, J. (2004). Sleep inspires insight. *Nature* 427, 352–355. doi: 10.1038/nature02223;
- Watts, A. M. (1951). The wisdom of insecurity: A message for an age of anxiety. NY: Vintage Books.
- White, M. P., Alcock, I., Grellier, J., Wheeler, B. W., Hartig, T., Warber, S. L., Bone, A., Depledge, M. H., & Fleming, L. E. (2019). Spending at least 120 minutes a week in nature is associated with good health and wellbeing. *Scientific reports*, *9*(1), 7730. https://doi.org/10.1038/s41598-019-44097-3
- WHO (2011). Regional Office for Europe. European Commission Joint Reasearch Centre. Burden of disease from environmental noise-quantification of healthy life years lost in Europe. Geneva, Switzerland: WHO.
- Wood, A. M., Froh, J. J., & Geraghty, A. W. (2010). Gratitude and well-being: a review and theoretical integration. *Clinical psychology review*, *30*(7), 890–905. https://doi.org/10.1016/j.cpr.2010.03.005
- Zelazo, P. D., Blair, C. B., & Willoughby, M. T. (2016). *Executive function: Implications for education* (NCER 2017–2000). Washington, DC National Center for Education Research, Institute of Education Sciences, U.S. Department of Education.