

Creative deep thinking:

Talent support networks fostering the discovery of unexpected simplicity and the development of autonomy, integrity and wisdom

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The 21st century regularly produces situations and challenges that have never been experienced during the written history of humankind. The increasing global impact on Earth's ecosystems, 24-hours-a-day global social presence, artificial intelligence surpassing several aspects of human thinking, the incoming medical revolution and robot-world are just a few of those entirely new situations that need novel solutions both at the level of the individuals and the society. This pressing need makes gifted people the 'life insurance' of our planet in the coming decades.

Daniel Kahneman (2011) introduced the concept of “fast and slow thinking” a few years ago. Fast thinking is mobilized if we encounter a situation that was experienced prior. However, a slower, contemplative thinking is required if we would like to discover a new solution for a novel situation. This contemplative, deep thinking is related to creativity, since it allows the mind to free itself from social pressure and conventional solutions. Creative, deep thinking is generally considered to be important for a successful life (Byers, 2014). It is a warning sign that contemplation has become increasingly difficult in the rush of our century.

Wisdom – as an orienting knowledge about what is good and right – may be considered as a major help to solve the most important problems of mankind (Fischer, 2015). Practicing deep thinking helps the gradual development of wisdom.

Importantly, deep thinking is not only useful to induce creative ideas at the level of the individual, but also mobilizes the wisdom of crowds at the society level (Surowieccki, 2004) in the process of deliberative democracy (Bessette, 1980; Dewey, 1927; Guttman & Thompson, 2004; Habermas, 1984; 1987; Neblo, Esterling, Kennedy & Lazer, 2010). Deep thinking combines our starting idea with a high number of potential contexts. This process helps to rephrase the starting idea and leads to its creative, novel versions (Byers, 2014; Fischer & Hommel, 2012).

Deep thinking is – by far – not only complicating the original idea, but often embarks to its much simpler, much more elegant form. As the 1932 Nobel physics laureate Werner Heisenberg noted in a conversation with Albert Einstein: *"If nature leads us to mathematical forms of great simplicity and beauty ... we cannot help thinking that they are "true," that they reveal a genuine feature of nature. . . . You must have felt this too: The almost frightening simplicity and wholeness of relationships which nature suddenly spreads out before us and for which none of us was in the least prepared"* (as cited in Thiessen, 2011, p. 156). This unexpected simplicity may lead to especially powerful forms of novel solutions that are able to mobilize people and may soon become a generally accepted and established response as a part of human culture.

Gifted people have a special responsibility to use their talent to participate in finding out novel solutions to the challenges of our century. This chapter focuses on the practices of talent

support actions that may foster contemplation, creative, deep thinking, and deliberative discussions of gifted people. Importantly, the chapter links these practices to the development of wisdom, as an emergent property of mind that can be obtained by the successful integration of life experiences, where successful means balanced, impartial and independent and is guided by universal love – as explained in the next section. Summarizing three case studies of talent support programs the chapter shows that developing deep thinking and wisdom is an important, but heretofore not well developed aspect of gifted education.

Creative, deep thinking as a part of giftedness helping the development of wisdom

Creativity is often considered as a centerpiece of the multiple ingredients of giftedness (Gardner, 1993; Kaufman, Plucker & Russell, 2012; Renzulli, 1986; Sternberg & Davidson, 2005). Deep thinking requires repeated cycles of the creative process allowing both divergent and convergent thinking periods (Campbell, 1960; Csermely, 2015; Osborn, 1953; Simonton, 1999; Sowden, Pringle and Gabora, 2015). Many types of talented young people make, select and re-select thousands of combinations of ideas in each hour (if not in each minute). How could this intensive thinking process contribute to the development of wisdom? This section will try to find some initial segments of a possible answer to this question.

Characterization of the concept of wisdom

The content of wisdom is often specified as a list of propositions that were endorsed by wise people of many cultures (Fischer, 2015). Table 1 lists a few key quotations on the nature of wisdom. Table 2 summarizes nine common propositions of the Buddha, Confucius, Jesus Christ and Socrates (Carter, 1998; Confucius, 1190/2010; Plato, 390 BC/2014; The Holy Bible, 1837; Xenophon, 371 BC/2001) about wisdom adapted from the excellent summary of Fischer (2015). Wisdom can be understood as an orienting knowledge about what is virtuous, good and right leading to inner peace and lasting happiness (Fischer, 2015).

From the content of Tables 1 and 2 wisdom emerges not as a thinking process, but as an emergent property of the mind that can be obtained by the successful integration of life experiences, where "successful" means balanced, impartial and independent. Wisdom, as an emergent property of mind, when emerged, directs the thinking process. The concept of "emergent property" is used here as a property of a complex system that its building blocks do not have. Life and consciousness are typical emergent properties of complex systems (Novikoff, 1945). As detailed later in this Section, integration of life experiences is not an even process: crisis events, major decisions of life, extreme joy and suffer, if their lessons became internalized in a balanced way, all play crucial role in the development of wisdom. Importantly, wise people always understood the limits of their knowledge and their bounded rationality (Fischer, 2015). This agrees well with the conceptualization of wisdom as an emergent property, which implies an endless possibility to develop wisdom as the maturing mind becomes more and more aware of the universe.

Wisdom emerges as a balanced state of mind. Identification of the "golden mean" as a source of moral virtue was a key idea of many ancient religions and philosophies, like in Buddhism (Kalupahana, 1986) in the works of Confucius (1190/2004) and Aristotle (349 BC/1926) in close relation with beauty, symmetry, harmony and truth. Horace's famous ode on The Golden Mean (13 BC/Horace, 2003) was interpreted as the expression of wisdom in the

form of internal freedom that is not following the extremities of the environment but just inversely, acts against them (Ritook, 2009). Internal freedom of the balanced mind gives independence and develops personal integrity. Independence of mind is a major element of Krishnamurti's works (Krishnamurti, 2008) and the balanced state of mind is a central concept of Sternberg's balance concept of wisdom (Sternberg, 1998). Internal freedom and independence are related to autonomy (the best developed Stage 6 of Kohlberg; Kohlberg, Levine & Hewer, 1983) and integrity.

Table 13.1. Quotations on the nature of wisdom

Quotation	Reference
the beginning of her [<i>wisdom</i>] is the most true desire of discipline	Book of Wisdom 6:18, The Holy Bible 1837, page 605
The heart that is well prepared for any fate hopes in adversity, fears prosperity	Horace, The Golden Mean, Odes 2.10, 13 BC/2003
Information, the knowledge of facts, though ever increasing, is by its very nature limited. Wisdom is infinite, it includes knowledge and the way of action	Krishnamurti, 2008, page 66
when feelings arise, wisdom is blocked	Lin-Chi, 1993, page 25
wisdom, that is from above first indeed is chaste, then peaceable, modest, easy to be persuaded, consenting to the good, full of mercy and good fruits, without judging, without dissimulation.	St. James' Epistle 3:17, The Holy Bible 1837, page 1174
the application of tacit knowledge as mediated by values toward the achievement of a common good (a) through a balance among multiple intrapersonal, interpersonal, and extrapersonal interests and (b) in order to achieve a balance among responses to environmental contexts: adaptation to existing environmental contexts, shaping of existing environmental contexts, and selection of new environmental contexts.	Sternberg, 1998, page 353
I must make myself indifferent to all created things in regard to everything which is left to my freedom of will and is not forbidden. Consequently, on my own part, I ought not to seek health rather than sickness, wealth rather than poverty, honor rather than dishonor, long life rather than a short one, and so on in all other matters. I ought to desire and elect only the thing which is more conducive to the end for which I am created	St. Ignatius of Loyola, 1548/1991, page 130
And if I should have prophecy, and should know all mysteries, and all knowledge; and if I should have all faith, so that I could remove mountains, and have not charity, I am nothing.	St. Paul's First Epistle to the Corinthians 13:2, The Holy Bible 1837, page 1117

Table 13.2. Nine common propositions of the Buddha, Confucius, Jesus Christ and Socrates about wisdom

The greatest commandment to love each other: hatred ceases by love and good deeds.
Treat others as you would like others to treat yourself.
Respect your father and mother.
Good people and children make good company.
Not material things but virtuous thoughts and actions bring lasting happiness.
Fate does not always reward virtue by material things but it is irrational not to accept fate.
Observe your own errors and learn from others'.
Knowledge about social beings is more important than knowledge about the physical universe.
Death is nothing to fear, for either it will be simply the end of consciousness or it will be a new experience. Not knowing about it for sure motivates virtuous behavior here and now. Confronting the thought of death and thinking it through, can relief from the fear of death.

Adapted from Table 1 of Fischer (2015) summarizing statements from the Dhammapada (Carter, 1998) the Analects (Confucius, 1190/2010) the New Testament (The Holy Bible, 1837), the Apology of Plato (399 BC/Plato, 2014) and the Memorabilia of Xenophon (Xenophon, 371 BC/2001).

In agreement with the concept of wisdom as a balanced state of mind, attaining wisdom implies 1.) a continuous and intensive attention to others (where "others" means the whole world); 2.)

recognition of others' interests; 3.) ability to induce abstract rules from repeated situations; 4.) ability of long-term thinking; 5.) prioritization, resetting of priorities and explanation of the reasons, why the priorities were reset; 6.) ability to decide whether the current situation is 'usual' or 'extraordinary' requiring to apply former rules, or just inversely to break them; 7.) ability to decide whether the environment requires adaptation, can be changed or has to be exchanged to a different environment (adapt, fight or flight) and – last but not least – 8.) an intensive and long practice of creative, deep thinking. Since the emergence of wisdom may need a life-time experience, motivation (a "most true desire"; see Table 1) to develop wisdom becomes a crucial factor in its achievement.

The statements of Tables 1 and 2 emphasize that wisdom requires impartial judgment. Mastering of impartial judgment implies a state of noble indifference. Feelings may over-emphasize some past experiences over others, and may either push the mind towards a certain, restricted path, or may forbid the mind to try others. Stoics suggested to transform passions to clear judgment, self-discipline and a peace of mind (Graver, 2009). Importantly, non-extreme emotions by emphasizing certain solutions and disqualifying others guide the mind restricting its search to a much smaller domain of possible solutions and allowing reasonably fast decisions as demonstrated by Damasio (1994).

Importantly, universal love is crucial to attain wisdom. Universal love is acting like a compass, and drives the mind continuously towards the feeling of the flow of life. This 'life-flow' is conceptually the same as living in harmony with the Tao of the world, thus with the source, pattern and substance of everything that exists taken together. Similarly, universal love-induced "life-flow" is close to the moral virtues and meditation of the Noble Eightfold Path of Buddhism extending and guiding the two paths related to insight and wisdom (Carter, 1998). "Life-flow" is also close to the concept of a life-time effort to achieve common good. However, it is important to note here that "common good" became a widely abused political category recently used in the sense of the optimal solution for a numerical majority of a certain smaller group of people (like the citizens of a country, or the inhabitants of a town). Universal love and consequently attained "life-flow" extend the meaning of the "common good" much beyond the benefits of the members of the society, and include a large number of other "extra-personal factors" in the sense of Sternberg (1998) including the protection of the environment and, ultimately, God (Tables 1 and 2).

Crucial decision points requiring a high level of wisdom are usually not equally occurring in different segments of life. Their distribution seems to follow a scale-free distribution (Barabasi, 2010; Csermely, 2009). In a usual day of ours we most probably do not have any of such crucial decision points. As a rough approximation, ten times more important decisions often come ten times less frequently. Hundred times more important decisions often come a hundred times less frequently. Crucially important decisions that may come only in a few cases in a whole lifetime, may need fast action. This is when wisdom becomes especially important. Fortunately, time is rather relative in the sense that the restricted moment of a crucially important decision can be subjectively extended. Still, the mind has to be exercised to preserve its impartial judgment, noble indifference, and – most of all – universal love and life-flow in these exceptional moments of crucial decisions. Purposeful slow-down at a moment that urges an exceptionally speedy decision, is an especially useful exercise of the impartial, autonomous, noble indifference of wise minds.

Slowing down in critical moments is especially useful in the sense that it allows the exercise of the joy and playfulness of creative, deep thinking just at the moment, when they are

needed the most. Critical slow-down is a well-known phenomenon of complex systems, when they arrive close to a crucial decision point (Scheffer et al., 2009). This decision point can be imagined as a saddle between two valleys. The complex system (e.g., the mind) stays in a saddle of the 'decision-landscape', and has the choice to go to the valley either to its right or left. In the reality the number of choices are often multiple. Thus the complex system has a high number of possibilities for where to go, which – at that very moment – do not seem to be far from each other, since they all start at the same decision point of the crucially important saddle. Creative, deep thinking explores many of these possibilities, and the wise mind may imagine the whole situation with the multitude of possible decisions and their consequences by raising above itself and looking to the whole situation from a bird's-eye view high above. Freezing the moment can greatly help to obtain this impartial, autonomous distance and grand-view, which are both needed to make a wise decision at this exceptionally important point of life.

In summary, practice of contemplative, deep thinking not only increases the chances to reach highly creative, originally novel solutions, but also allows the gradual development of wisdom. Mastering of contemplation develops a feeling of "life-flow", which finds joy in the changing situations of life, since they allow the exercise of the real depth of thinking, re-balance the mind and develop wisdom. Wisdom enables the individual to reach freedom from social pressure leading to independence, internal freedom, autonomy and integrity.

Talent support programs help gifted young individuals, if expose them to occasions when they may exercise deep thinking, rewarding them with creative thoughts, giving them motivation and showing the path to develop wisdom. The closing part of the chapter will list several ways how this goal may be achieved, and will show – by the example of three case studies of talent support programs – what initial steps may be taken to expose talented young people to previously unexpected situations and social environment to give them a chance for deep thinking and development of their wisdom.

How does unexpected simplicity relate to creative, deep thinking?

The divergent mode of creative thinking often produces ideas that are unexpected. The convergent mode of creative thinking often selects those ideas that are relatively simple. Ideas that have an elegant, short form, have a much larger chance to get memorized, to be remembered and to be spread in the society. Unexpectedly simple ideas are much more complex to generate than to describe (Chater, 1999). Repeated cycles of divergent and convergent thinking constitute the deep thinking process and often result in finding of unexpectedly simple descriptions of the situation or of the solutions to the challenges it caused. Guiding the mind towards unexpected simplicity is a part of the life-time experience, which is called wisdom. Moreover, wisdom, when developed, selects the most important meaning of surrounding events and facts and highlights their surprisingly simple essence.

How may talent support networks foster creative, deep thinking?

Henri Poincaré highlighted that the most useful ideas may emerge from those combinations, which are connecting distant regions of human knowledge. He wrote: *“Among chosen combinations the most fertile will often be those formed of elements drawn from domains which are far apart. Not that I mean as sufficing for invention the bringing together of objects as*

disparate as possible; most combinations so formed would be entirely sterile. But certain among them, very rare, are the most fruitful of all." (Poincaré, 1908/2014, p. 386).

This notion was supported by recent studies showing that a.) significantly greater attention was triggered by Facebook messages that combined topics seldom discussed together (Bail, 2016); b.) the emergence of creative, high-complexity, innovative solutions required both the separation and occasional re-connection of distant social groups (Derex & Boyd, 2016; Michelucci & Dickinson, 2016; Reia, Herrmann & Fontanari, 2017); the overlap between cognitively distant groups led to larger creative success of video game developers (de Vaan, Vedres, & Stark, 2015); and d.) the inclusion of unusual combinations of prior work often occurred in highest-impact science (Uzzi, Mukherjee, Stringer, & Jones, 2013). These studies showed that key ingredients of creativity can be rationalized as network phenomena of human concepts and social acquaintances.

In a similar, but much earlier study, Granovetter (1973) emphasized the importance of non-redundant information in finding novel solutions to social problems. Granovetter's analysis demonstrated that non-redundant information often comes by crosscutting dense social circles. Importantly, inter-community contacts were also shown to increase social cohesion and social stability (Csermely, 2009; Granovetter, 1973).

Social networks may also induce and foster deep thinking. Distinguished thinkers and/or people having mindsets developed in different social and cultural contexts help to rephrase the starting idea and to attain a bird's-eye view, where the context of the starting idea suddenly emerges (Byers, 2014; Csermely, 2008). This process often leads to an idea that is more original, and/or shows the signs of unexpected simplicity.

Talent support networks may design programs that purposefully expose talented people to situations and acquaintances, which cross-cut social circles and cultural boundaries. Such experiences provide an access to novel information and build a novel context of the original information. This becomes a particularly efficient and motivating process, if the novel acquaintances are talented, creative people themselves.

Repeated exposures of talented people to groups with different social and cultural backgrounds will increase their networking ability. Networking is a key success factor in a modern society (Christakis & Fowler, 2011; Csermely, 2009). It is important that talent support networks should take an extreme care, when organizing the exposure of talented people to various novel situations, to their acceptance by the novel environment. This 'acceptance factor' gives an additional benefit to expose talented people to other, different type of talented people. The reason is that talented people themselves already realized the pain of being not accepted, and quite many times are willing to give acceptance of the other talented young individual. They know that this will increase their acceptance, and they also enjoy the amusing novelty to know different mindsets and behaviors. Getting the repeated experience of "being accepted" increases the "I am safe" feeling of talented people and encourages them to make even larger excursions out of the "comfort zone" of their original social network.

Importantly, talent support networks need to organize discussions on major questions of mankind allowing the practice of deep, contemplative, deliberative thinking, as well as the development and defense of moral judgments and wisdom. Importantly, joint projects, especially in the form of good purpose actions increasing social responsibility may build motivation to commit talented people to find greater joy in developing their deep thinking and wisdom.

These three intermingled activities (1. experiences cross-cutting social circles and cultural boundaries; 2. increased networking skills; 3. initiation of deep thinking good purpose

joint projects) will also enable talented people to a larger influence of social opinion and to lead community actions. Importantly, creative, deep thinking is a key leadership skill, related to strategic and visionary thinking (Puccio, Mance & Murdock, 2011). If creative deep thinking is paired with unexpected simplicity and a wisely focused, strong emotional background, it may inflict a new trend, and may strongly engage the followers' self-concepts in the interest of the mission. In this way creative, deep thinking may significantly contribute to charismatic leadership (Shamir, House & Arthur, 1993).

Applying the concept: Experiences of three talent support programs

In this section I summarize my experiences on the exposure to novel situations, development of networking skills and encouragement of deep thinking obtained in three talent support networks.

Talent support network 1: Hungarian Network of Research Students (<http://www.kutdiak.hu/en/>). I established this network in 1996 to give top level scientific research to high school students (see Csermely, 2003, for a detailed overview). We had 300 to 500 scientific projects completed in each of the past 20 years. As a crucial contribution to the project mentor-student pairs often bridged different social circles. As one of the examples, József Horváth, a child of underprivileged, Roma origin in the countryside of Hungary was exposed to state-of-art molecular biology methods developing a better classification of mouth tumors. This became his research project during his BSc and MSc studies, and led to his (currently final stage) PhD project. He became a role model how to span social circles and fulfill one's dreams. Brigitta Sipőcz, in her age of 17 summarized her experiences as follows: *"I met a new world here. I learned perseverance and endurance during my years of research. The friendly atmosphere helped me to overcome my shyness, and the wide variety of topics in the mentor database made me realize what am I really interested in life and pursue it with full devotion."* In the last 15 years she pursued the same goal in scientific research, became a successful astronomer, and discovered 35 minor planets – among many others.

A key ingredient for the network's success was rather unexpected. The movement – now in its 21st year of providing research opportunities to more than 10,000 young students – flourishes because of the social network it makes between the students themselves. Scientific conferences, and, as a key event, an annual one-week research camp for the best 80 students of Hungary and neighboring countries provided the opportunity for students to develop a strong social cohesion. Importantly, the contemplative, creative, deep thinking of the students was mobilized by the fact that the network is directed by the students themselves. As an example of this ownership feeling, student members of the research camp each year extensively discuss the future aims, means and finances of the group (Csermely, 2003; Csermely, 2013).

Talent support network 2: The Hungarian Templeton Program (<http://templetonprogram.hu/en>). This program was established by the Hungarian Talent Support Network (Csermely, 2013) and selected 314 Hungarian Junior Templeton Fellows between ages 10 and 29 having exceptional cognitive talent from more than 20,000 applicants. Fellows received a one-year intensive, personalized development program offering 500 different programs lasting altogether for 2000 hours.

Fellows could choose from the 500 types of programs according to their individual needs (where the initial in-depth interview and further consultations with Fellows, their parents and teachers established a "personal development program" giving advice in the choice) and could

‘purchase’ the programs for ‘Talents’, the virtual currency of the program. Fellows received 200 ‘Talents’ to be spent on programs during the year. Fellows altogether spent 31,200 ‘Talents’ to participate in different programs and gained 8,500 ‘Talents’ for giving public lectures, writing articles to the website or having publications and for attending group meetings (for a lecture, publication or group meeting 5 ‘Talents’ could be earned). Fellows altogether attended 5,400 programs. An average program cost of 6 ‘Talents’. Fellows individually attended 16 programs as an average.

Fellows felt that these programs provided life-long experiences for them (only 5 of the 314 could not mention any in the fourth quarterly report): for 126 Fellows the summer camps, for 70 Fellows the mentoring co-operations (including 17 Fellows mentioning the ‘Personal consultation with an Excellence’), for 66 Fellows the group meetings, for 33 Fellows the site visit at CERN, Switzerland were these special experiences. Less Fellows were involved in the following programs but all of them named them as their most significant experience: LEAF Summer Camp, Speak Academy, to give a lecture at Templeton Talks and Networking Days, Milestone and visiting the EU Parliament at Brussels. All other programs of the 500 were mentioned at least once.

Fellows considered the exposure to novel situations and social contacts as the most important benefits of the program. The self-organization of the Fellows' network and now, after finishing the year of the program, their alumni network led to several joint good purpose actions. A cohort of the Fellows defined a key element of wisdom as the ability to "fly over the ground", which they meant as the freedom of the wise person, who is 1.) able to overcome the strong emotions of past experiences, which either bind the decision to certain modes or prohibit others; 2.) free from social pressure and 3.) free from the burdens of life (Fuszek, 2017). Discussions of the meaning of wisdom with gifted individuals pointed out the scarcity of occasions, when talented young people may think about the way to attain wisdom in our rushing century. At the same time, participants of these discussions realized the importance of contemplative thinking, and planned to set aside much more time for contemplative, deep thinking in the future (Fuszek, 2017).

Talent support network 3: The Youth Platform of the European Talent Support Network. The European Talent Support Network was established by the European Council for High Ability (<http://echa.info>) in 2014 to increase cooperation between organizations in gifted education and talent support, to share best practices, and to organize exchanges of talented young people and their teachers. By 2017, the Network had close to 300 cooperating organizations from 50 countries of Europe and other continents (<http://echa.info/high-ability-in-europe/#>).

After the successful first European Youth Summit in March 2016, the Network established a Youth Platform, which became a fast-growing group of talented young people. Youth Platform members enjoyed and greatly appreciated the opportunity to learn the approaches and opinions of talented young people from several continents. Members organized the 2nd Youth Summit in March 2017 in Budapest having twice as many participants from 17 countries than the first Summit. They initiated several joint actions.

1. **Talented Youth Survey (TYS).** This project is focused on surveying the experiences of gifted students in terms of education, social integration, satisfaction with projects created for them and other issues. The Platform team will create an online survey for this project.
2. **Talents for Talented (TfT).** The long-term aim of this project is to help underprivileged children to join the Youth Platform and take part in our activities. Platform members

discuss and create different projects, such as charity evenings, volunteer or exchange programs and ways to help people living in bad circumstances in a concrete way.

3. **Youth Expedition of Science (YES).** Platform members create a regular face-to-face event for talented people interested in natural sciences, humanities and engineering. Interested members create their own research proposals and implement them with the help of their peers and the support of experts.

During the Innovation Day of the Summit additional 7 project ideas were created. The most popular ones (determined by vote) were: an International Mentoring Program, a Cultural Exchange Program for talented people from Talent Centres/Points, a Youth Platform YouTube channel and a Social Network for talented people (UTalent). The Platform is creating project teams for these projects.

All the three talent support programs showed the potential how deep thinking and social responsibility could be induced in networks of young talented people. At this stage the results of these occasions have not been tested systematically yet. However, the initial personal experiences showed that the approaches shown in this chapter are useful for further systematic exploration.

Conclusion

Gifted people have a special responsibility to mobilize their talent to find out solutions to the challenges of our century never experienced before. This chapter focused on the possibilities of talent support actions to promote creative, deep thinking, contemplation and deliberative discussions of gifted people. Experiences of gifted young people cross-cutting social circles and cultural boundaries, their increased networking skills, as well as the initiation of their deep thinking by discussions and good purpose joint projects all emerged as important tools to achieve the above goals. Importantly, the chapter showed that creative, deep thinking, contemplation, and deliberative discussions contribute to the development of wisdom, as an emergent property of mind, which can be obtained by the successful integration of life experiences, where "successful" means balanced, impartial and independent and is guided by universal love. Agreeing with Andreas Fischer (2015, p. 80) regretfully "*neither teachers nor ministers of education seem to sufficiently understand what wisdom is and why or how wisdom should be taught*". It will be an important future task of talent support programs to use the methods described in this chapter to increase creative, deep thinking, and guide talented young people towards discoveries of unexpected simplicity and wisdom helping them to attain charismatic leadership skills.

Major Takeaways

- It is an important goal of talent support actions to promote deep thinking, contemplation and deliberative discussions of gifted people. These experiences are related and can be built up systematically and lead to the development of autonomy, integrity and wisdom in the long term.
- Experiences of gifted young people cross-cutting social circles and cultural boundaries, their increased networking skills, as well as the initiation of their deep thinking by discussions and good purpose joint projects emerged as important tools to increase their potential and awareness to develop wisdom.
- The initial personal experiences of the three case studies listed showed that the above approaches are useful for further systematic exploration. It will be an important future possibility of talent support programs to measure the efficiency of these methods to initiate deep thinking, autonomy, integrity and wisdom.

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References

- Aristotle (349 BC/1926). *Nicomachean Ethics* (Translated by H. Rackham) pp. 1106a-b. Cambridge, MA: Harvard University Press.
- Bail, C. A. (2016). Combining natural language processing and network analysis to examine how advocacy organizations stimulate conversation on social media. *Proceedings of the National Academy of Sciences*, *113*, 11823–11828. doi:10.1073/pnas.1607151113
- Barabasi, A. L. (2010). *Bursts: The hidden patterns behind everything we do, from your e-mail to bloody crusades*. New York: Plume.
- Bessette, J. M. (1980). Deliberative democracy: The majority principle in republican government. In R. A. Goldwin & W. A. Schambra (Eds.), *How democratic is the constitution?* (pp. 102–116). Washington, DC: American Enterprise Institute for Public Policy Research.
- Byers, W. (2014). *Deep thinking: What mathematics can teach us about the mind*. Singapore: World Scientific Publishing. doi: 10.1142/9789814618045
- Campbell, D. (1960). Blind variation and selective retention in creative thought as in other knowledge processes. *Psychological Review*, *67*, 380–400. doi:10.1037/h0040373
- Carter, J. N. (1998). *The Dhammapada*. Oxford, UK: The Oxford University Press.
- Chater, N. (1999). The search for simplicity: A fundamental cognitive principle? *The Quarterly Journal of Experimental Psychology: Section A*, *52*, 273–302.
- Christakis, N. A., & Fowler, J. H. (2011). *Connected: The surprising power of our social networks and how they shape our lives*. Boston: Back Bay Books.
- Confucius (1190/2004). *The doctrine of the mean*. Kila, MT: Kessinger Publishing.
- Confucius (1190/2010). *The Analects of Confucius*. Auckland, New Zealand: The Floating Press.
- Csermely, P. (2003). Recruitment of the youngest generation to science. A network of youth excellence and communication strategies for high school student researchers. *EMBO Reports*, *4*, 825–828. doi:10.1038/sj.embor.embor927
- Csermely, P. (2008). Creative elements: network-based predictions of active centres in proteins, cellular and social networks. *Trends in Biochemical Sciences* *33*, 569–576. doi: 10.1016/j.tibs.2008.09.006
- Csermely, P. (2009). *Weak links: Stabilizers of complex systems from proteins to social networks*. Heidelberg, Germany: Springer Verlag. doi: 10.1007/978-3-540-31157-7
- Csermely, P. (2013). The appearance and promotion of creativity at various levels of interdependent networks. *Talent Development & Excellence*, *5*, 115–123.
- Csermely, P. (2015). Plasticity-rigidity cycles: A general adaptation mechanism. <http://arxiv.org/abs/1511.01239>.
- de Vaan, M., Vedres, B. & Stark, D. (2015). Game changer: The topology of creativity. *American Journal of Sociology*, *120*, 1144–1194. doi: 10.1086/681213
- Damasio, A. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*. New York NY: Putnam Publishing.
- Dere, M. & Boyd, R. (2016). Partial connectivity increases cultural accumulation within groups. *Proceedings of the National Academy of Sciences*, *113*, 2982–2987. doi: 10.1073/pnas.1518798113
- Dewey, J. (1927). *The public and its problems*. Athens, OH: Swallow Press.
- Fischer, A. (2015). Wisdom – The answer to all the questions really worth asking. *International Journal of Humanities and Social Science*, *5*, 73–83. <http://www.ub.uni-heidelberg.de/archiv/19786>
- Fischer, R. & Hommel, B. (2012). Deep thinking increases task-set shielding and reduces shifting flexibility in dual-task performance. *Cognition*, *123*, 303–307. doi: 10.1016/j.cognition.2011.11.015
- Fuszek, C. (2017, ed.). *The nature of wisdom. Thoughts of Hungarian Templeton Fellows about wisdom*. (In Hungarian) Budapest: Association of Hungarian Talent Support Organizations.
- Gardner H. (1993). *Creating minds*. New York: Basic Books.
- Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, *78*, 1360–1380. doi: 10.1086/225469
- Graver, M. (2009). *Stoicism and Emotion*. Chicago IL: University of Chicago Press.

- Gutmann, A. & Thompson, D. (2004). *Why deliberative democracy?* Princeton, NJ: Princeton University Press.
- Habermas, J. (1984). *Theory of communicative action*. Vol. 1. Boston, MA: Beacon Press.
- Habermas, J. (1987). *Theory of communicative action*. Vol. 2. Boston, MA: Beacon Press.
- Horace (13 BC/2003) Odes, 2.10 (Translated by A. S. Kline), retrieved from http://www.poetryintranslation.com/PITBR/Latin/HoraceOdesBkII.htm#anchor_Toc39742784
- Kahneman, D. (2011). *Thinking, fast and slow*. London: Allen Lane.
- Kalupahana, D. J. (1986). *Nāgārjuna: The philosophy of the middle way*. Albany, NY: State University of New York Press.
- Kaufman, J. C., Plucker, J. A. & Russell, C. A. (2012). Identifying and assessing creativity as a component of giftedness. *Journal of Psychoeducational Assessment*, 30, 60–73. doi: 10.1177/0734282911428196
- Kohlberg, L., Levine, C. & Hewer, A. (1983). *Moral Stages: A Current Formulation and a Response to Critics*. Basel, NY: Karger.
- Krishnamurti, J. (2008). *Education and the Significance of Life*. New York: HarperOne.
- Lin-Chi (1993). *Zen teachings*. Boston, MA: Shambala Publications.
- Michelucci, P., & Dickinson, J. L. (2016). Human computation. The power of crowds. *Science*, 351, 32–33. doi: 10.1126/science.aad6499
- Neblo, M., Esterling, K. M., Kennedy, R. P., & Lazer, D. (2010). Who wants to deliberate – and why? *American Political Science Review*, 104, 566–583. doi: 10.1017/S0003055410000298
- Novikoff, A. B. (1945). The concept of integrative levels and biology. *Science*, 101, 209–215. doi: 10.1126/science.101.2618.209
- Osborn, A. F. (1953). *Applied imagination: Principles and procedures of creative problem solving*. New York: Charles Scribner's Sons.
- Plato (399 BC/2014). *Apology*. Seattle WA: CreateSpace Independent Publishing Platform.
- Poincaré, H. (1908/2014). *Foundations of science*. Cambridge UK: Cambridge University Press.
- Puccio, G. J., Mance, M., & Murdock, M. C. (2011). *Creative leadership: Skills that drive change*. Los Angeles, CA: SAGE Publications.
- Reia, S. M., Herrmann, S. & Fontanari, J. F. (2017). The impact of centrality on cooperative processes. *Physical Review E*, 95, 022305. doi: 10.1103/PhysRevE.95.022305
- Renzulli, J. S. (1986). The three-ring conception of giftedness: A developmental model for creative productivity. In R. J. Sternberg & J. E. Davidson (Eds.), *Conceptions of giftedness* (pp. 53–92). New York: Cambridge University Press.
- Ritoók, Z. (2009). Horace and the golden mean (in Hungarian). In *Desire, poetry and cognition. Selected essays*. pp. 359–366. Budapest, Hungary: Osiris Publishing House.
- Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science*, 4, 577–594. doi: 10.1287/orsc.4.4.577
- Scheffer, M., Bascompte, J., Brock, W. A., Brovkin, V., Carpenter, S. R., Dakos, V., Held, H., van Nes, E. H., Rietkerk, M. & Sugihara, G. (2009). Early-warning signals for critical transitions. *Nature*, 461, 53–59. doi:10.1038/nature08227
- Simonton, D. K. (1999). *Origins of genius: Darwinian perspectives on creativity*. New York: Oxford University Press.
- Sowden, P., Pringle, A., & Gabora, L. (2015). The shifting sands of creative thinking: Connections to dual process theory and implications for creativity training. *Thinking Reasoning*, 21, 40–60. doi: 10.1080/13546783.2014.885464
- St. Ignatius of Loyola (1548/1991). *The Spiritual Exercises and Selected Works*. Mahwah NJ: Paulist Press.
- Sternberg, R. J. & Davidson, J. E. (Eds.). (2005). *Conceptions of giftedness* (2nd ed.), New York: Cambridge University Press.
- Sternberg, R. J. (1998). Balance theory of wisdom. *Review of General Psychology*, 2, 347–365.
- Surowiecki, J. (2004). *The wisdom of crowds*. New York: Anchor, Doubleday.
- The Holy Bible (1837). Dublin, Richard Coyne.
- Thiessen, D. (2011). *Bittersweet destiny: The stormy evolution of human behavior*. Piscataway, NJ: Transaction Publishers.
- Uzzi, B., Mukherjee, S., Stringer, M., & Jones, B. (2013). Atypical combinations and scientific impact. *Science*, 342, 468–472. doi: 10.1126/science.1240474
- Xenophon (371 BC/2011). *Memorabilia*. Ithaca NY: Cornell University Press.