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THE CHOICE FOR LESS SOCIAL INTERACTION BY THE GIFTED: FACTORS RELATED TO INNATE BRAIN NEEDS

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Abstract: Gifted people's reduced interest in socializing goes beyond questions of incompatibility of interests, depth of dialogue or intensity of engagement in certain topics, and is an innate behavior that is noticeable from childhood. This pattern is the result of autonomous and in-depth analyses that lead the gifted to seek out content and contexts independently, often perceiving social interaction as an unnecessary expenditure of energy and an interruption to their intense mental processes. This study seeks to explore the underlying reasons for this dynamic, considering everything from the first behaviors observed in precocious babies, who stand out and avoid excessive interaction, to young people who interact out of social acceptance or cultural conventions, culminating in increased distancing with age. To understand these phenomena, the study integrates approaches from neuroscience and genomics, investigating how neurological and genetic factors can influence the lower predisposition to socialization in gifted people, helping to unravel the biological and behavioural bases of this process.
Keywords: giftedness, socialization, innate behavior, autonomy, neuroscience, genomics, social interaction, in-depth analysis, development, social distancing.

INTRODUCTION

This study seeks to explore the subjectivity behind many gifted people's lack of interest in constant socialization, analyzing how this tendency can be influenced by neurological and genetic factors. The reduced interest in social interaction, noticeable since childhood, goes beyond a simple incompatibility of interests or difficulty in maintaining in-depth dialogues. It is suggested that this behavior is associated with a natural predisposition to autonomous and in-depth analysis of the world, an intrinsic characteristic of the cognitive functioning of the gifted.

From an early age, gifted individuals show a strong preference for exploring content and contexts independently, often perceiving social interaction as secondary or even as an interruption to their intense mental processes. This dynamic tends to intensify throughout life, resulting in more pronounced social distancing in adulthood. At the same time, there is a natural impulse to disconnect from superficial environments and immerse oneself in in-depth analysis of topics of interest, which often escape the scope of common social interactions.

To understand the basis of this dynamic, this study will integrate neuroscience and genomics approaches, investigating how neurological and genetic markers can influence social perception, social reward processing and emotional regulation in gifted individuals. The aim is to understand the biological and behavioural origins of this lower predisposition to socialization, shedding light on the relationship between cognitive functioning and underlying biological factors.

Gifted people often show an impulse for detailed analysis that transcends the immediate context. Imagine, for example, a party where the topics discussed by the guests seem superficial or uninteresting. For the gifted, identifying an idea that arouses genuine interest triggers an almost irresistible need to delve deeper into the topic, prioritizing their inner thoughts over their surroundings. Only when they meet someone equally interested and capable of enriching their search for depth does social interaction become meaningful and relevant.

The aim of this work is to bring together fragments of an original text produced by the author, and to verify them by means of a literature review. The central concept was based on his own reflections, corroborated by dozens of gifted people in the *Gifted debate* group, in which the author acts as administrator. The

dialogues and agreements were archived and documented via WhatsApp. The analysis was also enriched by a self-analysis by the author, who has been diagnosed with profound giftedness, and by questions from members of the group, resulting in a broad and multifaceted interpretation of the subject.

DEVELOPMENT

Text by the author, the same used to ask the opinion of the participants in the Portuguese and/or Spanish language group

Dear members, today I bring you a question which, although it seems simple, is deeply subjective: what is the real reason (or possible explanation) for the way we interact socially as gifted people? We often hear that the difficulty in interacting is attributed to the interlocutor, either because of the superficiality of the information, lack of depth, absence of complexity, or even lack of interest in exploring more elaborate topics. However, I believe that this issue goes beyond these external factors.

I think the origin of this dynamic lies in ourselves and in our neurogenomics. There is an innate need, rooted in our brains, to delve deeper into any circumstance, no matter how simple. Our genes express themselves in such a way as to demand greater synaptic activity and the consequent formation of engrams, while our brains, which are more robust and demanding, seem to search incessantly for complexity and depth of content. This cycle is regulated by the action of neurotransmitters such as acetylcholine, which facilitates learning and memory, and dopamine, whose predominance in contexts of greater complexity gives us greater satisfaction. In addition, glutamate, a crucial excitatory neurotransmitter, feeds this impulse for greater cognitive processing.

In addition, this more demanding brain architecture leads us to need breaks between social interactions, for reflection and debate, whether internal or external. Without these moments, our experience of dialogue can seem insufficient, as we don't meet our need to deeply analyze the content being discussed.

In view of this, I invite you to read the text below and reflect on the issue. Then answer the poll that asks you to identify whether this characteristic is a common pattern inherent in personality, upbringing or a manifestation of double exceptionality. Please also share your opinions, as your answers are essential for us to move forward in this reflection.

The question of the gifted's interest in socialization goes beyond the simple incompatibility of interests, the depth of the dialogues or the intensity with which they get involved in a topic, contrasting with the superficiality of the context offered by others. It is an innate behavior, noticeable from childhood, which results from their own in-depth analysis of any situation. This natural autonomy means that the gifted person searches for content and context independently, without depending on external interventions. In this way, social interaction is often perceived as a less rewarding waste of energy, a waste of time and a difficulty in reconciling the rhythm of mental processing with the rhythm of social interaction, which follow their own intense rhythm.

There is a genuine impulse, derived from an intrinsic need, to disconnect from the environment in order to immerse oneself in deeper analysis of specific content. At the same time, there is a desire to explore topics that are often outside the scope of common social interactions.

Imagine, for example, being at a party full of guests discussing subjects that, to the gifted person, seem superficial or uninteresting. When they identify an idea or situation that piques their interest, they feel an almost inevitable need to delve deeper into that thought. This impulse for detailed analysis overrides any surrounding context, leading them to

prioritize reconnecting with their own thoughts. The exception is only when he meets someone equally interested and intellectually capable of accompanying and enriching this search for depth on the same topic.

Reply link: https://forms.gle/9qJk4xnxN-SaswicC7

THE SAME TEXT HAS BEEN TRANSLATED FOR GIFTED DEBATE MEMBERS IN OTHER LANGUAGE COUNTRIES

Dear members, I bring you a question today that, while seemingly simple, is deeply subjective: what is the true reason (or possible explanation) for the way we interact socially as gifted individuals? We often hear that the difficulty in interaction is attributed to the interlocutor-be it due to superficial information, lack of depth, absence of complexity, or even a lack of interest in exploring more intricate topics. However, I believe this issue goes beyond these external factors.

I believe that the root of this dynamic lies within ourselves and our neurogenomics. There is an innate need, deeply embedded in our brains, for depth in any circumstance, no matter how simple it may appear. Our genes express themselves in a way that demands greater synaptic activity and, consequently, the formation of engrams. Meanwhile, our more robust and demanding brains seem to constantly seek complexity and depth in content. This cycle is regulated by neurotransmitters such as acetylcholine, which facilitates learning and memory, and dopamine, whose predominance in contexts of greater complexity brings us more satisfaction. Additionally, glutamate, a crucial excitatory neurotransmitter, fuels this drive for higher cognitive processing.

Moreover, this more demanding brain architecture leads us to require intervals between social interactions for reflection and debate, whether internal or external. Without these moments, our dialogue experience can feel insufficient, as we fail to meet our need for deep analysis of the discussed content.

With this in mind, I invite you to read the text below and reflect on the question. Afterwards, please respond to the poll, which aims to identify whether this characteristic is a common pattern inherent to personality, education, or a manifestation of twice-exceptionality. Feel free to share your opinions as well, as your insights are vital for advancing this discussion.

The issue of gifted individuals' interest in socialization goes beyond mere incompatibility of interests, the depth of dialogues, or the intensity with which they engage in a topic, contrasting with the superficiality of the context offered by others. It is an innate behavior, noticeable since childhood, that stems from a unique and profound analysis of any situation. This natural autonomy drives gifted individuals to seek content and context independently, without relying on external interventions. As a result, social interaction is often perceived as a less rewarding expenditure of energy, a waste of time, and a difficulty in reconciling the pace of mental processing with the pace of social interaction, which follow their own intense rhythm.

There is a genuine impulse, derived from an intrinsic need, to disconnect from the environment to delve deeper into specific subjects. At the same time, there is a desire to explore topics that frequently lie beyond the scope of common social interactions.

Imagine, for example, being at a party full of guests discussing topics that, to the gifted individual, seem superficial or unengaging. When they identify an idea or situation that sparks their interest, they feel an almost irre-

sistible need to delve deeply into that thought. This drive for detailed analysis surpasses any surrounding context, leading them to prioritize reconnecting with their own thoughts. The exception occurs only when they encounter someone equally interested and intellectually capable of following and enriching this pursuit of depth in the same topic.

Link answer: https://forms.gle/9qJk4xnxNSaswicC7

POLL RESULTS

To complement the validation of the concept presented in this study, a survey was carried out with 20 participants, selected for their identification as gifted. The survey collected basic demographic and academic information, as well as asking participants about their agreement with the central text of this article. The results were as follows:

1. **Age range:** Participants were between 36 and 58 years old, providing a mature and well-established perspective on the social and intellectual dynamics addressed.
2. **IQ:** All the participants had IQs between 130 and 160, confirming their classification as gifted, according to criteria widely recognized in the literature.
3. **Dual exceptionality:** None of the participants reported having dual exceptionality, which reinforces the focus of this study on gifted people without concomitant conditions.
4. **Academic level:** All participants had undergraduate or postgraduate degrees, and the group included individuals with master's degrees, doctorates and one participant with a post-PhD.
5. **Corroborated with the text:** All 20 participants said they agreed with the central ideas presented in the text, validating the hypotheses and theoretical approach of this study.

These results reinforce the relevance and applicability of the proposed concept, highlighting that the perceptions described in this article find direct support in the experiences and opinions of gifted adults with high academic and intellectual qualifications.

PROOF OF TEXT BASED ON SCIENTIFIC EVIDENCE AND BIBLIOGRAPHIC REVIEWS

1. **We often hear that the difficulty of interaction is attributed to the interlocutor, whether it's the superficiality of the information, the lack of depth, the absence of complexity, or even the lack of interest in exploring more elaborate topics. However, I believe that this issue goes beyond these external factors.**

This passage suggests that the difficulty of social interaction among gifted individuals may not only be attributable to the superficiality or lack of depth of the interlocutor, but also to internal factors. Recent studies corroborate and broaden this perspective. Below, I'll explain the issue on the basis of scientific literature.

THE COMPLEXITY OF SOCIAL INTERACTION IN GIFTED PEOPLE: AN ANALYSIS BASED ON NEUROBIOLOGY AND PSYCHOLOGY

a. The Stigma of Giftedness and Its Social Impacts

The social interaction of gifted individuals is often permeated by stigmas associated with their intellectual difference. Studies show that these stigmas manifest themselves in various forms, from prejudices and stereotypes to coping strategies to deal with the perception of "being different". For example, Cross et al. (1993) developed the "Stigma Theory of Giftedness", which explores how gifted people perceive that they are treated differently and

adjust their behavior to minimize the social impact of their abilities. This adaptation can lead to camouflaging their intelligence, reducing social interactions or even denying their intellectual condition (Cross et al., 1993).

In addition, studies by Vialle et al. (2007) reveal that gifted individuals often internalize social stigma, which can lead to feelings of sadness, disconnection and loneliness. The relationship between internalized stigma and emotional health highlights the importance of educational and psychosocial interventions to support these individuals in social contexts (Vialle et al., 2007).

b. Asynchronous Development and Social Dynamics

The concept of asynchronous development is fundamental to understanding the social difficulties of gifted people. This discrepancy between advanced intellectual abilities and emotional or social maturity creates challenges for forming connections with peers of the same age. Kennedy (1995) documented how gifted individuals often seek interactions with older individuals or those who share similar intellectual interests, reflecting the difficulty in finding compatible peers in heterogeneous educational contexts (Kennedy, 1995).

In addition, asynchronous development can hinder emotional regulation. Studies indicate that brain areas such as the prefrontal cortex, responsible for emotional control, can develop at different rates in gifted people, contributing to intense emotional responses in social interactions.

c. The Neurobiology of Social Difficulties

Neurobiology offers a crucial lens for understanding the emotional and social difficulties faced by gifted people. Research indicates that the emotional hypersensitivity often reported by these individuals is associated with greater activity in the limbic system, particularly in the amygdala, which processes intense emotions. This sensitivity can increase social anxiety and discomfort in superficial contexts of interaction (Itskovich et al., 2020).

In addition, the role of neurotransmitters such as dopamine and glutamate is fundamental. Dopamine, known for its relationship with motivation and reward, regulates the search for intellectual and social challenges. In gifted people, high levels of dopamine may explain the intrinsic need for complexity and depth in social interactions. Glutamate, the main excitatory neurotransmitter, is directly linked to enhanced cognitive processing and memory formation, aspects that may influence the social demands of these individuals (Volkow et al., 2020).

d. Coping Strategies and Social Adaptation

Gifted people often employ coping strategies to navigate social contexts that they perceive as challenging. Studies by Swiatek (2001) have identified that these strategies vary according to gender, with women tending to deny their giftedness and men often using humor to adapt. These strategies reflect attempts to balance social pressure with one's own intellectual and emotional needs (Swiatek, 2001).

2. **I think the origin of this dynamic lies in ourselves and in our neurogenomics. There is an innate need, rooted in our brains, to delve deeper into any circumstance, no matter how simple. Our genes express themselves in such a way as to demand greater synaptic activity and the consequent formation of engrams, while our brains, which are more robust and demanding, seem to search incessantly for complexity and depth of content.**

The passage under analysis proposes that the search for complexity and cognitive depth in gifted people is an innate phenomenon,

influenced by neurogenomics. This view is supported by recent studies and the accompanying material, which highlight the interaction between differentiated neuroanatomy, intense synaptic activity, genetic factors and molecular mechanisms. The following is a structured and expanded analysis, incorporating the suggestions provided.

NEUROGENOMICS AND THE NEED FOR COGNITIVE COMPLEXITY IN GIFTED PEOPLE: A DETAILED ANALYSIS

a. Differentiated Brain Structures and Synaptic Activity

Research shows that gifted people have marked neuroanatomical differences, especially in areas such as the prefrontal cortex and hippocampus, critical regions for executive functions and memory. These areas have a higher density of gray and white matter, favoring efficient neural connections. Individuals with a high IQ have a differentiated brain architecture, marked by longer dendrites and axons, resulting in greater capacity for processing and storing information (Fabiano de Abreu Agrela Rodrigues et al., p. 133).

- **Prefrontal Cortex**: Related to working memory, cognitive flexibility and decision-making. Studies such as those by Thompson et al. (2001) point to greater functional connectivity in this region, resulting in faster and more accurate cognitive processing (Thompson et al., 2001).
- **Hippocampus**: Essential for consolidating memories. As highlighted in the accompanying material, neurogenesis in the hippocampus supports the ability to learn and integrate new knowledge, a phenomenon intensified in gifted people (p. 133).

These characteristics allow for a greater ability to integrate complex information and cognitive flexibility, enabling the superior performance observed.

b. Engram formation and long-term potentiation

The formation of memory engrams is an essential process that supports the acquisition of knowledge in gifted people. The underlying mechanism, long-term potentiation (LTP), strengthens synaptic connections by amplifying neural transmission. The neuronal effort involved in consolidating new learning reflects the biological need to form robust engrams, a marked characteristic of gifted people (Fabiano de Abreu Agrela Rodrigues et al., 2024, p. 135).

- **Long-lasting memories**: LTP, identified as the molecular basis of memory, contributes to the creation of more robust and detailed engrams. Bliss and Collingridge (1993) demonstrated that increased synaptic strength in the hippocampus is central to advanced learning (Bliss & Collingridge, 1993).
- **Neurogenesis**: In the attached material, it is noted that continuous neurogenesis in gifted people reinforces the formation of new synapses and neural circuits, allowing for constant learning and adaptation (p. 135).

This combination of neuroplasticity and synaptic robustness explains gifted people's ability to integrate and retain complex information.

c. Genetics, Epigenetics and Neural Plasticity

Genes play a crucial role in intelligence and cognitive complexity. Genes such as **BDNF** and **CREB** are fundamental to neuroplasticity, facilitating adaptation and the retention of knowledge in challenging environments (Fabiano de Abreu Agrela Rodrigues et al., 2024, p. 137). others are equally relevant:

- **COMT**: Regulates dopamine metabolism, influencing cognitive flexibility and resistance to stress. Adequate levels of dopamine in the prefrontal cortex are associated with superior performance in complex tasks.
- **SNAP-25**: Related to the efficiency of synaptic communication, it is a key determinant of cognitive processing speed (Dick et al., 2007).

Epigenetics is also a key player, modulating the expression of these genes in response to the environment and individual experiences. This explains how gifted people can adapt their cognitive abilities to the specific demands of their context.

d. Need for Complexity and Novelty

The search for complexity in gifted people manifests itself in various areas of their lives: interpersonal relationships, career choices and leisure activities. This incessant search for complexity and novelty is intrinsically linked to the activation of intense neural networks and the predominance of neurotransmitters such as dopamine (Fabiano de Abreu Agrela Rodrigues et al., 2024, p. 137):

- **Interpersonal relationships**: They tend to seek deep intellectual connections, avoiding superficial interactions.
- **Professional choices**: They prefer challenging careers that require innovation and continuous learning, such as science, the arts or technology.
- **Leisure activities**: They show an interest in hobbies that involve creativity and analysis, such as solving complex problems or exploring new knowledge.

This need is driven by neurotransmitters such as dopamine, which regulates the brain's reward system. Studies indicate that gifted people have a greater sensitivity to intellectual stimuli, reinforcing the cycle of learning and innovation (Goriounova & Mansvelder, 2019).

e. Historical Examples and Practical Relevance

Figures such as Albert Einstein and Marie Curie exemplify how cognitive insatiability not only shapes individual experience, but also drives global scientific advancement (Fabiano de Abreu Agrela Rodrigues et al., 2024, p. 136) to illustrate how the quest for complexity shaped their scientific contributions (p. 136). In addition to them:

- **Leonardo da Vinci**: A classic example of intellectual insatiability, exploring areas as diverse as art, anatomy and engineering.
- **Steve Jobs**: Demonstrated how the integration of creativity and technological innovation can transform society.
- **Elon Musk**: His visionary approach in multiple fields, such as renewable energy and space exploration, reflects the cognitive insatiability typical of gifted people.

These examples show how the search for complexity and novelty not only defines individual experience, but also drives significant advances in humanity.

3. **This cycle is regulated by the action of neurotransmitters such as acetylcholine, which facilitates learning and memory, and dopamine, whose predominance in more complex contexts gives us greater satisfaction. In addition, glutamate, a crucial excitatory neurotransmitter, feeds this drive for greater cognitive processing. In addition, this more demanding brain architecture leads us to need breaks between social interactions, for reflection and debate, whether internal or external. Without these moments, our experience of dialogue can seem insufficient, as we don't meet our need to deeply analyze the content discussed.**

The excerpt highlights the importance of neurotransmitters in modulating cognitive and behavioral functions in gifted individuals, as well as emphasizing the need for bre-

aks for reflective processing. Scientific studies corroborate these concepts, highlighting the relevance of neurotransmitters such as acetylcholine, dopamine and glutamate in the formation of memories, learning and the regulation of social behavior.

NEUROTRANSMITTERS AND THEIR ROLE IN COGNITIVE AND SOCIAL REGULATION

a. Acetylcholine and the Facilitation of Learning and Memory

Acetylcholine plays a crucial role in modulating cognitive functions, especially learning and memory. This substance regulates synaptic plasticity in the hippocampus and prefrontal cortex, brain structures that are essential for acquiring knowledge. Studies indicate that high levels of acetylcholine are associated with improved attention and the ability to consolidate memories in contexts of high cognitive demand (Hasselmo, 2006). In gifted individuals, this cholinergic efficiency can support the intensified processing of complex information.

b. Dopamine and the Search for Complexity

Dopamine is directly linked to motivation, reward and the pursuit of intellectual challenges. In gifted individuals, high levels of dopamine in circuits such as the mesocorticolimbic favor persistence in cognitively demanding tasks. Volkow et al. (2020) describe how dopamine is fundamental to regulating the perception of reward in learning contexts, providing intrinsic satisfaction in situations that require deep thinking. This neurotransmitter is particularly active when the challenges involve problem-solving or critical analysis, explaining the preference of gifted people for contexts that stimulate their intellectual capacity.

c. Glutamate and Advanced Cognitive Processing

Glutamate is the main excitatory neurotransmitter in the central nervous system and plays a central role in cognitive processing and memory. It regulates long-term potentiation (LTP), a key mechanism in the consolidation of complex memories. Goriounova and Mansvelder (2019) point out that glutamate facilitates communication between neurons in high-activity networks, allowing rapid and flexible responses to intellectual stimuli. In gifted people, this high glutamatergic activity is essential to cope with accelerated information processing.

d. The Need for Reflection Breaks

The intense brain activity in gifted people creates a natural demand for periods of introspection. These pauses are crucial for consolidating information and promoting deep insights. Research suggests that moments of cognitive inactivity, such as reflection or internal debate, activate the *Default Mode* Network (DMN), a brain system responsible for integrating ideas and planning ahead (Raichle, 2015). For gifted people, this need is exacerbated by the more demanding brain architecture, which requires cycles of high activity followed by recovery to achieve maximum performance.

The DMN is a brain system that activates during states of cognitive rest and introspection. Pioneering studies by Raichle et al. (2001) identified that the DMN plays a crucial role in integrating scattered information and planning ahead. For gifted individuals, whose brain activity on challenging tasks is high, activation of the DMN provides a period of neural reorganization necessary to consolidate memories and generate new insights (Raichle et al., 2001). In addition, Buckner et al. (2008) showed that the DMN is associated with self-reference and the processing of au-

tobiographical information, aspects that are often intensified in individuals with high cognitive ability. This need for "active disconnection" reflects the brain's effort to balance intense learning and neural recovery (Buckner et al., 2008).

The consolidation of memories and the processing of experiences occur predominantly during periods of reflection. Studies by Diekelmann and Born (2010) indicate that the consolidation of long-term memories is favoured by rest intervals, when the brain organizes acquired information and establishes deeper connections between concepts (Diekelmann & Born, 2010). For gifted people, reflection makes it possible:

Integration of complex ideas: The ability to connect apparently disconnected information and form new hypotheses.

Generating creative insights: Studies by Beaty et al. (2016) show that rest periods are critical for creativity, especially in individuals with high cognitive performance (Beaty et al., 2016).

The demanding brain architecture of the gifted requires recovery cycles after intense periods of processing, due to the high energy expenditure required to sustain high synaptic activity and the integration of complex information. The study by Smith et al. (2009) highlighted that the DMN acts as a "recharging center" for brain networks dealing with cognitive tasks, allowing not only the repair of synaptic connections, but also the restoration of neural homeostasis. This process is critical because brain energy consumption, particularly glucose and oxygen, increases significantly during periods of high cognitive demand, requiring breaks for efficient recovery. The absence of adequate breaks compromises this balance, leading to mental overload, reduced processing capacity and impaired cognitive performance. Longitudinal studies, such as those by Killgore et al. (2017), have associated a lack of brain recovery with increased mental fatigue, as well as impaired creativity and decision-making in complex contexts.

4. **The question of the gifted's interest in socialization goes beyond the simple incompatibility of interests, the depth of the dialogues or the intensity with which they get involved in a topic, contrasting with the superficiality of the context offered by others. It is an innate behavior, noticeable from childhood, which results from their own in-depth analysis of any situation. This natural autonomy means that the gifted person searches for content and context independently, without depending on external interventions. In this way, social interaction is often perceived as a less rewarding expenditure of energy, a waste of time and a difficulty in reconciling the rhythm of mental processing with the rhythm of social interaction, which follow their own intense rhythm.**

The passage presented addresses the complex relationship between giftedness and social interaction, highlighting the perception of incompatibility and the autonomous behavior of these individuals. Recent studies corroborate this view, suggesting that the difficulty in establishing meaningful social interactions is not limited to external factors, but reflects innate aspects and intrinsic cognitive characteristics.

THE SOCIAL DYNAMICS OF THE GIFTED: INCOMPATIBILITIES AND INNATE BEHAVIORS

a. The Perception of Superficiality in the Social Context

The perception of superficiality in social interactions significantly affects the self-esteem and motivation of gifted individuals. When these individuals do not find depth or complexity in discussions, they can experience frustration and disconnection, which,

according to Gross (1993), contributes to a feeling of social alienation and low motivation to interact in similar situations. This can lead to a cycle of social withdrawal and reinforcement of the perception of inadequacy. To deal with this frustration, gifted people can adopt strategies such as seeking interactions in specialized communities or groups that share similar intellectual interests.

b. Autonomy and in-depth analysis

From childhood onwards, gifted individuals display a natural autonomy in learning and exploring complex subjects. Longitudinal studies by Silverman (2002) indicate that this autonomy can be seen in behaviors such as self-sufficiency in tasks and independent curiosity, which are often misinterpreted by educators and peers as isolation or arrogance. This misinterpretation can hinder the development of social relationships and generate harmful stereotypes.

In addition, autonomous behavior is often driven by the insatiable need to learn at an accelerated pace, which is rarely accompanied by peers or traditional educational systems. To support these individuals, it is essential to provide opportunities for collaboration in contexts that respect their pace and intellectual preferences, such as mentoring programs or specialized study groups.

c. Energy Expenditure in Social Interactions

Gifted people often perceive social interactions as an energy expenditure that can vary depending on the type of interaction. While casual conversations can be seen as unstimulating and exhausting, academic debates or intellectually challenging discussions are often more rewarding. Studies by Cross et al. (2011) show that gifted people report greater emotional satisfaction when involved in interactions that allow for the sharing of complex ideas.

Technology also plays a significant role in the way these individuals interact socially. Digital platforms, such as forums and social networks, offer opportunities for intellectual discussions with people of similar interests, allowing gifted people to optimize the use of their energy in interactions they consider most productive. However, excessive use of these technologies can lead to physical social isolation, highlighting the importance of a balance between digital and face-to-face interactions.

d. Cognitive Rhythm and Group Participation

Neuroscientific studies indicate that gifted people show greater brain activation in complex cognitive tasks, particularly in the prefrontal cortex and parieto-frontal networks, as described in Jung and Haier's P-FIT theory (2007). This increased activity explains the need for individual processing periods to consolidate information and keep up with the accelerated internal rhythm.

However, this need for self-paced learning can make it difficult for gifted individuals to participate in group activities or in environments with high sensory stimulation, such as traditional classrooms. Overstimulation can cause cognitive and emotional overload, leading to reduced performance and social engagement (Gross, 1993). Solutions such as the creation of sensorially adapted spaces and the use of personalized collaborative practices can facilitate the integration of these individuals into social and academic contexts.

5. **There is a genuine impulse, derived from an intrinsic need, to disconnect from the environment in order to immerse oneself in deeper analysis of specific content. At the same time, there is a desire to explore topics that are often outside the scope of common social interactions.**

This excerpt highlights the intrinsic impulse of gifted people to disconnect from their social environment and immerse themselves in deep analysis and topics outside the ordinary scope. This tendency is supported by innate cognitive and behavioral characteristics that are associated with the search for complexity and originality, often observed in gifted people from childhood. Studies corroborate these aspects, suggesting that this disconnection is not just a preference, but a necessity to maintain cognitive and emotional performance.

THE SEARCH FOR DISCONNECTION AND DEEP ANALYSIS

a. The Need for Disconnection for Cognitive Processing

Gifted people often experience a genuine urge to disconnect from social environments in order to focus on deeper analysis. This need reflects a high capacity for selective attention, regulated by neural networks such as the prefrontal cortex and the *Default Mode Network* (DMN). Raichle et al. (2001) suggest that the activation of the DMN in moments of introspection promotes the consolidation of complex ideas and the organization of dispersed information, essential for creativity and deep learning.

This behavior can be misinterpreted by others as isolation or a lack of social interest. However, it is an adaptive strategy necessary for maintaining high levels of cognitive performance, allowing gifted people to process information in depth before re-engaging in social interactions.

b. Exploration of Topics Outside the Common Scope

The inclination of gifted people to explore topics outside the scope of typical social interactions is associated with the desire to understand complex issues that often do not find space in everyday contexts. Robinson and Clinkenbeard (2008) point out that gifted people are attracted to abstract topics such as philosophy, advanced science and art, which require critical thinking and high analytical skills.

This intellectual pursuit is intensified by the activation of the mesolimbic dopaminergic circuit, which regulates intrinsic motivation to acquire new knowledge. However, this preference for less common interests can increase the feeling of social disconnection, especially in environments that don't value or understand these intellectual inclinations.

COGNITIVE AND CREATIVE IMPACTS

a. Benefits of Isolation for Cognitive Performance

Studies such as those by Beaty et al. (2016) show that periods of social disconnection can increase creativity and cognitive performance in gifted individuals. During these moments, the DMN and other networks associated with creativity are activated, facilitating the generation of innovative insights and the integration of complex ideas.

Not only that, intellectual isolation allows gifted people to better manage the cognitive demands associated with accelerated information processing. This balance between introspection and social engagement is crucial to avoid emotional and mental overload.

b. Emotional repercussions and support strategies

While beneficial for cognitive performance, the impulse to disconnect can lead to feelings of loneliness or social disconnection, especially in environments where gifted individuals have difficulty finding intellectual peers. Studies by Cross et al. (2011) suggest that interventions such as the creation of support groups or specific interest communities

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can help mitigate these effects, allowing gifted people to connect with others who share their intellectual passions and goals.

6. **Imagine, for example, being at a party full of guests discussing subjects that, to the gifted person, seem superficial or uninteresting. When they identify an idea or situation that piques their interest, they feel an almost inevitable need to delve deeper into that thought. This impulse for detailed analysis overrides any surrounding context, leading them to prioritize reconnecting with their own thoughts. The exception is only when he meets someone equally interested and intellectually capable of accompanying and enriching this search for depth on the same topic.**

This excerpt describes a common experience for gifted people, where the social context is often not enough to stimulate their intellectual interest. This situation illustrates how the search for complexity and in-depth analysis can lead these individuals to temporarily disconnect from their environment in order to prioritize the deepening of ideas they consider meaningful. Studies corroborate this dynamic, exploring how gifted people experience social interactions and the importance of finding intellectually compatible interlocutors.

SOCIAL DISCONNECTION AND FOCUS ON CRITICAL THINKING

a. Frustration with Surface Interactions

Gifted individuals often perceive conventional social interactions as unstimulating or repetitive, especially when the content of the discussions does not meet their intellectual expectations. Gross (1993) points out that, in contexts such as parties or meetings, these individuals tend to withdraw mentally, focusing on more complex issues or topics of personal interest that are neglected in the social environment (Gross, 1993).

This behavior is often interpreted as disinterest or even arrogance by those around them, but in reality it reflects a cognitive need to engage in deeper levels of analysis.

b. Reconnecting with Inner Thoughts

When they encounter a thought-provoking topic, gifted people experience an almost uncontrollable urge to delve deeper into the idea. This is because their brain architecture, particularly in regions such as the prefrontal cortex, is optimized for analytical thinking and abstract reasoning (Jung & Haier, 2007). During these moments of disconnection, they prioritize introspection, even to the detriment of immediate social interactions.

This preference for internal analysis is also supported by the activation of the *Default Mode Network* (DMN), which facilitates the integration of complex ideas and the formulation of new hypotheses during periods of introspection (Raichle, 2015).

THE IMPORTANCE OF INTELLECTUALLY COMPATIBLE MEETINGS

a. Interlocutors with Similar Interests

Although gifted people often disconnect in social environments, there are exceptions when they meet interlocutors who are equally curious and intellectually capable of enriching in-depth discussions. Robinson and Clinkenbeard (2008) point out that these encounters can generate a rare feeling of genuine connection, providing moments of creative collaboration and mutual learning (Robinson & Clinkenbeard, 2008).

For example:

- **Academic example**: A gifted person can feel motivated at a scientific conference by engaging with colleagues who share their interest in advanced research.

- **Informal interactions**: Conversations in small specialized groups, such as book clubs, philosophical communities or high-IQ societies, often provide the level of complexity that gifted people value.

b. Historical Examples of Intellectual Connections

Historical figures illustrate the importance of compatible interlocutors in the development of innovative ideas:

- **Marie Curie and Pierre Curie**: A couple who turned their intellectual compatibility into advances in physics and chemistry.
- **Sigmund Freud and Carl Jung**: They collaborated deeply in psychoanalysis, although they had later disagreements.
- **Elon Musk and SpaceX engineers**: The search for innovation in space exploration demonstrates the need for environments that bring together creative minds for common goals.

Cognitive and Emotional Impacts of Social Disconnection

a. Benefits of introspection

Social withdrawal to prioritize inner thoughts allows gifted people to maximize their cognitive performance and promote creativity. Studies show that these moments of introspection are essential for formulating new ideas and solving complex problems (Beaty et al., 2016).

b. Emotional repercussions and support strategies

However, frequent isolation can lead to feelings of loneliness and emotional disconnection. To mitigate these effects, it is important to encourage gifted people to participate in communities that value their abilities and interests, such as research groups, academic circles or creative initiatives. These interactions can balance the need for introspection with the desire for social connection.

FINAL CONSIDERATIONS

Based on the data presented, this study concludes that the lower predisposition to social interaction of the gifted is not simply a matter of preference, but rather a reflection of neurobiological and genetic characteristics that modulate their cognition and behavior. The combination of highly efficient brain architecture, greater activity in networks such as the Default Mode Network and the role of neurotransmitters such as dopamine and glutamate highlight the complexity of this profile. The results of the survey corroborated the central hypotheses, showing that the search for depth and the perception of superficiality in interactions are widely shared experiences among the gifted. These findings suggest the need to develop environments that respect these characteristics, offering appropriate intellectual stimuli and emotional support strategies. This study also opens up new research possibilities, such as the impact of epigenetics on the social behavior of the gifted and the application of educational practices adapted to their cognitive needs. Advances in this area can benefit not only gifted individuals, but also contribute to building more inclusive and challenging social environments.

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