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Research Article

DWRI as a New Neurobiological Perspective of Global Intelligence: From Synaptic Connectivity to Subjective Creativity

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Abstract: This article proposes a conceptual expansion of the understanding of human intelligence by introducing the DWRI model — Development of Wide Regions of Intellectual Interference. Unlike traditional approaches centered solely on the intelligence quotient (IQ), DWRI defines intelligence as the result of a synergistic orchestration among multiple brain networks. These networks involve not only regions associated with logic and reasoning but also fundamental structures for emotion, subjective creativity, and social cognition. Grounded in an integrated neurobiological basis — including the prefrontal cortex, limbic system, cerebellum, and subcortical nuclei, among others — the article advocates for the recognition of DWRI as a new category of intelligence: broader, more adaptive, and inherently human in its complexity. This proposal offers not only a new theoretical paradigm but also practical implications for cognitive diagnosis, personalized education, and the deep understanding of human uniqueness.

1. Introduction

The attempt to measure human intelligence has always been permeated by a tension between the demand for objectivity and the inherent complexity of the mind. Psychometric instruments such as the WAIS have sought to quantify specific dimensions of cognitive functioning — including abstract reasoning, working memory, processing speed, verbal comprehension, and perceptual organization — offering a functional yet partial, or incomplete, portrait of intelligence. However, although useful in standardized contexts, such models fail to capture the deeper and more interactive dimensions of intelligence — those expressed through spontaneous creativity, emotional regulation, and social sensitivity [1-3].

The concept of intelligence as something segmented and hierarchical largely reflects a reductionist view of the brain, in which functions are assigned to isolated areas and capacities are measured in compartmentalized ways. Nevertheless, evidence from neuroscience, genomics, integrative psychology, and the logical–creative subjectivity of cognition points in another direction: intelligence is the result of complex interactions between distributed brain networks, whose efficiency lies in the functional integration of specialized regions.

It is within this context that the DWRI model — Development of Wide Regions of Intellectual Interference — is situated. Encapsulated in an acronym, it represents a conceptual proposal that seeks to redefine intelligence as an emergent function of effective communication among diverse brain areas, including those often neglected, omitted, or unaccounted for in traditional assessments. DWRI proposes that global intelligence is not merely measured by what one answers correctly, but by how the brain orchestrates its multiple systems — rational, emotional, social, and creative — in adaptive synergy.

This article aims to present and substantiate the DWRI concept through an interdisciplinary analysis, combining neurobiological findings, genetic data, and philosophical reflections on human cognition. The objective is to establish the scientific foundations for recognizing DWRI as a new category of intelligence, with meaningful implications for cognitive science, education, and mental health [].

2. Theoretical Foundation

2.1. Limitations of the Psychometric IQ Model

Since the early 20th century, the intelligence quotient (IQ) has been consolidated as one of the primary metrics for evaluating human cognition. Grounded in standardized tests such as the WAIS, this approach seeks to quantify cognitive abilities through indicators like abstract reasoning, working memory, verbal comprehension, perceptual organization, and processing speed. Despite its applicability and relative precision in educational and clinical settings, this model shows notable limitations when attempting to capture the brain's functional complexity. Factorial theories such as Spearman's g and Carroll's hierarchical model, although historically significant, overlook essential dimensions of contemporary cognition — such as emotional intelligence, metacognitive awareness, nonlinear creativity, and the dynamic integration across neural networks. These gaps highlight the need for broader and more integrative frameworks capable of reflecting the systemic and interconnected nature of human intelligence.

Multiple studies have shown that individuals who perform well on IQ tests may nonetheless experience adaptive difficulties, emotional deficits, or a lack of original creativity — suggesting that IQ represents a limited variable when it comes to capturing the totality of intelligence (Beaty et al., 2018; Barbey, 2021). In this context, the overemphasis on static metrics promotes a fragmented view of human intellect, disregarding the dynamic fluidity between functional brain systems.

2.2. Intelligence as an Interfunctional Network

With advances in neuroscience and functional neuroimaging, it has become increasingly evident that intelligence does not reside in any isolated brain region, but rather emerges from the cooperation among interconnected systems. Studies show that individuals with higher cognitive performance exhibit more efficient connectivity patterns between the prefrontal cortex, superior parietal lobes, and subcortical regions, along with more integrated activation of the Default Mode Network (DMN) and the Executive Control Network (ECN) — neural systems that operate in parallel to regulate attention, introspection, and decision-making.

This perspective, often referred to as the functional neuroarchitecture of intelligence, emphasizes that intelligence is an emergent property of communication between brain regions, rather than merely the outcome of performance on isolated tasks (Goriounova & Mansvelder, 2019). Cognitive efficiency is directly linked to the brain's capacity to alternate between resting and active states, and to shift between logical processing and creative imagination — a dynamic phenomenon that traditional IQ tests, by their rigid structure, are inherently unable to capture.

2.3. Neurobiological Perspective on Cognitive Integration

The DWRI model proposes a conceptual shift: that higher cognitive performance arises from the coherent integration of multiple brain regions. The neurobiological basis of this model includes, in addition to the dorsolateral prefrontal cortex (associated with reasoning and executive control), structures such as the cerebellum (involved in both motor and cognitive coordination), the amygdala and hippocampus (emotional regulation and memory consolidation), the orbitofrontal cortex (affective decision-making), and the striatum (reinforcement learning).

This expanded communication — referred to as wide intellectual interference — supports not only analytical reasoning, but also empathy, introspection, and divergent creativity — abilities often underestimated by traditional assessment methods. DWRI intelligence thus represents a manifestation of functional harmony among diverse neurocognitive systems operating in parallel, in adaptive and often silent synchrony.

Neurobiology suggests that true cognitive brilliance lies not in the rapid repetition of correct answers, but in the ability to construct improbable connections between seemingly unrelated data — a capacity that ultimately depends on a brain architecture endowed with plasticity and evolutionary synchrony.

3. The DWRI Concept

The term DWRI — Development of Wide Regions of Intellectual Interference — does not merely refer to an expanded set of cognitive abilities. It represents a paradigm shift in our understanding of intelligence, redirecting the focus from isolated performance to the inter-regional functional integration of the brain. Whereas most classical psychometric models still conceive intelligence as a property subject to linear quantification, DWRI proposes that intellectual efficiency is not simply the result of how much a specific brain region contributes, but rather of how multiple regions converge harmoniously across diverse contexts. This concept suggests that true cognitive sophistication does not lie in a purely rational hyperfocus, but in the brain's ability to modulate fluidly between rationality, emotion, abstraction, and social perception. Perhaps DWRI is the precursor to future models of intelligence testing — models capable not only of quantifying abstract reasoning, but also of measuring emotional intelligence, social cognition, and subjective creativity.

3.1. Formal Definition

DWRI is defined as the neurological expression of an expanded form of intelligence that emerges from the efficient and synchronous communication among brain regions associated with logical reasoning, abstract thinking, working memory, verbal comprehension, perceptual organization, and processing speed — as well as emotional intelligence, social cognition, and subjective creativity. It is not a simple overlay of competencies, but rather a qualitative integration of these dimensions, orchestrated by neural networks that function with plasticity, adaptability, and a high level of functional connectivity.

3.2. DWRI Brain Architecture

The main brain structures involved in DWRI functioning include:

- Dorsolateral and frontopolar prefrontal cortex: logical reasoning, decision-making, and inhibitory control;
- Orbitofrontal cortex and anterior cingulate cortex: emotional regulation, affective judgment, and empathy;
- Temporoparietal junction and medial prefrontal cortex: social cognition and theory of mind;
- Cerebellum: coordination of complex cognitive processes;
- Limbic system (amygdala and hippocampus): emotional processing and autobiographical memory;
- Default Mode Network (DMN): introspective thinking, creativity, and future-oriented imagination.

The interaction among these structures sustains what we define as integrated subjective creativity: a capacity to produce novel solutions based on internal and associative repertoires, rather than exclusively on formal learning. This type of creativity emerges spontaneously from the convergence of rational and emotional cognition — a fundamental trait of the DWRI individual. Other brain subregions are certainly involved, but here we have focused on those that most objectively represent the core architecture and predominant pathways of this cognitive model.

3.3. Uniqueness of the Model in Relation to Other Theories

Unlike models such as Gardner's theory of multiple intelligences — which fragments cognition into independent typologies — or Goleman's emotional intelligence theory — which restricts it to interpersonal domains — the DWRI model aims to unify these dimensions within a single neurofunctional structure.It is not about accumulating compartmentalized skills, but about identifying a higher cognitive state in which these abilities interweave and mutually reinforce one another. Thus, DWRI intelligence can be described as a form of global intelligence, but functionally integrated, operating dynamically according to context. Due to its inherent complexity, this condition is associated with brains exhibiting high synaptic efficiency and refined connectomic architecture — characteristics that can be identified through neuroimaging (e.g., fMRI) and genome-wide association studies (GWAS).

3.4. Philosophical and Clinical Implications

DWRI intelligence is not merely a technical expansion of the concept of cognition; it carries profound philosophical implications regarding what it means to think, feel, and create in a complex world. The ability to navigate refined emotional states, engage in critical thought, and exercise abstract imagination may be viewed as an evolutionary marker — a kind of sapiential intelligence, in which knowledge is transmuted into practical and adaptive wisdom. In clinical practice, this model offers advances in the differential diagnosis of high abilities, twice-exceptional syndromes, and in personalized interventions in neuroeducation and mental health. Individuals with DWRI profiles often do not fit traditional metrics, and may be mistakenly labeled as anxious, distracted, or eccentric. Understanding them through the lens of DWRI is to recognize that complexity and depth are not deviations, but expressions of intelligence operating at a higher functional level.

4. Neurobiological Evidence

The robustness of any scientific concept lies in its ability to engage with solid empirical evidence. In the case of DWRI, this foundation is supported by three complementary pillars: cognitive genomics, synaptic efficiency, and patterns of functional brain connectivity. These elements converge to validate the hypothesis that global intelligence, within the DWRI model, results from a neural architecture that is complex yet functionally harmonious.

4.1. The Genetic Basis of Cognitive Integration

Recent studies in genome-wide association (GWAS) have identified multiple polymorphisms associated with elevated cognitive factors, particularly genes involved in synaptic formation, neuronal plasticity, and cerebral energy metabolism (Goriounova & Mansvelder, 2019; Savage et al., 2018). In the genetic reports of the author himself, as well as in other high-IQ individuals cataloged by the Genetic Intelligence Project (GIP), several relevant variants have been observed — including polymorphisms related to dopaminergic pathway optimization (e.g., DRD2, COMT), mitochondrial function regulation (MT-ND2, SLC25A) and glutamatergic modulation (GRIN2B, GRIA1). These markers are critical for the coordinated activity of distributed brain systems and support the DWRI model's neurofunctional foundation. Unlike the reductionist notion of a so-called “intelligence gene,” the DWRI model emphasizes a polygenic orchestration, in which numerous variants with small to moderate effects interact synergistically. This complex genomic architecture appears to favor brains with superior inter-regional integration, refined neuroplasticity, and greater tolerance for ambiguity — all central traits in individuals exhibiting the DWRI cognitive pattern.

4.2. Synaptic Efficiency and Expanded Cognitive Performance

DWRI intelligence does not rely solely on the presence of more neural connections, but rather on how these connections operate in terms of bioelectrical efficiency, metabolic economy, and functional synchrony. According to Goriounova and Mansvelder (2019), individuals with higher intelligence exhibit faster action potentials and greater dendritic density in frontal cortex neurons — features that facilitate communication across distant brain regions without informational loss or energetic overload.
Effective connectivity between regions traditionally associated with logical reasoning (such as the dorsolateral prefrontal cortex) and those linked to emotion, creativity, and social cognition (such as the orbitofrontal cortex, temporoparietal junction, and the Default Mode Network) constitutes one of the neurophysiological foundations of the DWRI model. This neural entanglement creates the conditions for what we term synchronized multidimensional thinking.

4.3. Neuroimaging and Integrated Functional Networks

Functional neuroimaging techniques (fMRI, DTI, PET) show that brains with superior performance on complex tasks do not rely on the activation of isolated regions, but instead engage multiple networks simultaneously. Three systems stand out in particular:

- Default Mode Network (DMN): involved in imagination, self-projection, and creativity;
- Executive Control Network (ECN): activated during focused attention, reasoning, and decision-making;

- Salience Network (SN): a modulatory system between the DMN and ECN, responsible for emotional and cognitive prioritization of stimuli.

In DWRI individuals, these networks do not operate antagonistically but in an adaptive oscillatory flow, enabling fluid alternation between introspection, rational analysis, and empathic response. This dynamic configuration is neurobiologically more demanding, requiring a brain with greater energy efficiency and reduced neural noise — a pattern typically observed only in highly specialized brains.

This type of functioning may be described as a homeostasis on a linear plane above the population average — like a cognitive graph where most individuals operate within a normative homeostatic band, whereas DWRI individuals function in a sustained, higher-range equilibrium, supporting superior global cognitive performance.

4.4. A New Pattern of Brain-Based Intelligence

The convergence of these findings suggests that DWRI intelligence represents more than a point on the IQ spectrum: it constitutes an emergent functional state in which multiple dimensions of cognition operate in dynamic cooperation. The simultaneous activation of frontal, limbic, and associative areas gives rise to a distinct cognitive profile — one that is highly creative, intuitive, adaptive, and introspective — transcending the conventional criteria of measurable intelligence. This perspective reinforces the thesis that intelligence is more than problem-solving; it is the ability to integrate multiple internal systems in order to understand and transform the external world.

4.5. Empirical Evidence: Published Case Study with Genomics and Psychometrics

To provide empirical support for the DWRI model, a previously published case study by Rodrigues et al. (2024) was analyzed. The study investigated the neurocognitive and genetic profile of an adult male identified as having high intellectual and creative performance.

Participant

The subject, selected through convenience sampling, demonstrated consistent results across three distinct intelligence assessments:

- WAIS-III: Full-scale IQ score above 155;
- WASI: Score consistent with “very superior” intelligence;
- Raven’s Advanced Progressive Matrices: 99th percentile, indicating performance above 99% of the normative population.

This cognitive profile was complemented by a history of intense creative output, elevated introspection, and pronounced social sensitivity — features frequently aligned with the DWRI pattern.

Procedures and Instruments

The study employed a multimodal approach, including:

- Whole genome sequencing (WGS) conducted via the Nebula Genomics platform, revealing more than 40 genetic variants associated with cognitive and emotional traits;
- Standardized psychometric testing, administered in a controlled environment by a multidisciplinary team;
- Qualitative analysis of personality traits, subjective cognition, and emotional processing style, based on structured interviews and clinical assessment protocols;
- Systematic literature review of genetic polymorphisms linked to intelligence, creativity, and neural plasticity.

Analytical Criteria

A descriptive-analytical methodology was employed. Genetic variants were interpreted using updated scientific databases (NCBI, SNPedia), and psychometric results were compared to statistically recognized thresholds for high intellectual ability.

The primary objective was to identify correlations among:

- Broad cognitive patterns (psychometric scores);
- Functionally relevant genetic markers;
- Behavioral traits consistent with the DWRI model (e.g., subjective creativity, emotional-rational integration, metacognitive thinking).

Additional Empirical Context: The Genetic Intelligence Project (GIP)

Beyond the single case, this study is part of a larger empirical framework within the Genetic Intelligence Project (GIP) — an international research initiative coordinated by the author in partnership with the genetic laboratory TellmeGen. The GIP currently comprises a cohort of over 150 gifted individuals, all confirmed members of high-IQ societies that require supervised, in-person intelligence testing for admission (e.g., Mensa, Intertel, IIS, ePiq, ISI, Triple Nine Society).

Although the data from these participants are currently under ethical confidentiality, preliminary patterns observed across the GIP database show strong convergence with the DWRI profile. This includes shared cognitive-behavioral traits and polygenic signatures suggestive of enhanced neurofunctional integration.

5. Discussion

The DWRI model, by integrating multiple dimensions of human cognition — logical, emotional, social, and creative — through the functional interaction of broad brain regions, represents a paradigmatic shift from traditional intelligence models. This perspective has been conceptually supported by robust neurobiological evidence and, empirically, by the case study presented by Rodrigues et al. (2024), which demonstrates a cognitive profile compatible with the neurofunctional patterns proposed by DWRI.

The empirical findings reinforce the notion that intelligence cannot be reduced to a single measurable factor (such as IQ), nor fragmented into isolated domains. The case analyzed showed high connectivity among neural networks involved in logical reasoning (prefrontal cortex), emotional processing (limbic system), subjective creativity (Default Mode Network), and affective decision-making (orbitofrontal cortex). This functional entanglement suggests that superior intellectual efficiency does not rely on the overload of a single area, but rather on the synchrony of multiple networks operating in parallel and in an adaptive flow.

The scientific literature supports this hypothesis. Studies such as Barbey (2018) and Goriounova & Mansvelder (2019) show that high-performing brains exhibit greater synaptic density, energetic efficiency, and transition flexibility among networks such as the Default Mode Network (DMN), Executive Control Network (ECN), and Salience Network (SN). These mechanisms align with the DWRI proposal of distributed and functionally integrated intelligence.

Beyond neurofunctional validation, the case study also revealed relevant genetic evidence, including variants associated with synaptic plasticity, reinforcement learning, and emotional cognition. These data suggest that the biological foundation of DWRI intelligence may be linked to a complex genomic architecture composed of multiple small-effect genes acting synergistically — a view consistent with the findings of Savage et al. (2018).

It is important, however, to acknowledge the limitations of the present study. The analysis is based on a single case, which precludes statistical generalization. Still, in science, many paradigms begin with well-documented singular cases that challenge prevailing models and pave the way for broader investigations. The originality of the approach, combined with its theoretical coherence and empirical alignment, justifies the advancement of DWRI as a new category of intelligence.

From an applied perspective, this model may offer new tools for the differential diagnosis of high abilities and atypical cognitive profiles — often misinterpreted or overlooked by conventional assessments. It may also impact neuroeducation, vocational guidance, and psychological practice by enabling personalized interventions that respect the complexity of the human mind.

In addition to the case presented, the author coordinates the Genetic Intelligence Project (GIP), an international research initiative in collaboration with the Spanish genetic laboratory TellmeGen. The GIP has already cataloged over 150 individuals with high intellectual quotients (IQs ranging from 130 to 160), all verified members of reputable high-IQ societies that require supervised, in-person testing for admission. While the full data remain under ethical and contractual confidentiality, the patterns observed across these profiles reinforce the empirical coherence of the DWRI proposal, supporting its future expansion as a scientifically validable category.

6. DWRI as a New Cognitive Category of Intelligence

The history of intelligence psychology is marked by moments of paradigmatic rupture. From Spearman's unitary "g factor" to Gardner's proposal of multiple intelligences, and the emergence of emotional intelligence with Goleman, each new category has redefined the way we understand what it means to be intelligent. In this context, the DWRI concept does not present itself as a mere addition, but as an integrative reformulation — one capable of encompassing and transcending previous models.

6.1. What Justifies a New Category?

For a theoretical proposal to be recognized as a new category of intelligence, it must meet certain minimum criteria:

- Conceptual originality: it must not be reducible to existing models;
- Theoretical and empirical consistency: it must be grounded in neurobiological, genetic, clinical, and observational data;
- Expanded explanatory power: it must account for phenomena not addressed by previous categories;
- Practical applicability: it must offer tools for diagnosis, education, intervention, or human development.

The DWRI model meets all these criteria. It does not replace existing theories but integrates them at a higher level, offering a global view of human mental functioning with empirical support and applicability across multiple domains of knowledge.

6.2. Comparison with Other Theories

In contrast to models that compartmentalize intelligence, DWRI proposes that the different domains of human functioning — rational, emotional, social, and creative — do not operate in isolation but are interdependent. True cognitive excellence, in this framework, emerges when these dimensions converge harmoniously. Table 1 is the comparative overview of Intelligence Theories and the DWRI Contribution.

Table 1. *Comparative Overview of Intelligence Theories and the DWRI Contribution*

Theory	Central Emphasis	Limitations	What DWRI Adds
Spearman (IQ, g factor)	General reasoning ability	Reduction to logic and abstract problem-solving	Integrates cognition, emotion, and creativity
Gardner (Multiple Intelligences)	Independence among types of intelligence	Excessive fragmentation	Unifies under a neurofunctional architecture
Goleman (Emotional Intelligence)	Emotional regulation and empathy	Isolation from analytical cognition	Incorporates emotion into the full cognitive system
DWRI	Synchronous integration of multiple brain networks	—	Holistic and neuroscientifically grounded model

6.3. DWRI as Global and Evolutionary Intelligence

DWRI represents a form of global intelligence in its most profound sense: not only by encompassing multiple competencies, but by enabling functional interconnection among them. This interconnectivity enhances not only the ability to solve problems, but also to understand contexts, anticipate consequences, generate novel ideas, and emotionally adapt to complex environments.

From an evolutionary standpoint, DWRI may be considered a marker of higher adaptation — where intelligence is not measured merely by outcomes, but by the capacity to comprehend, transform, and assign meaning to the world — an essential attribute for the future of humanity.

6.4. Proposal for Scientific Recognition and Application

To propose DWRI as a scientifically recognized category of intelligence is to:

- Validate its theoretical relevance through neuroscience and genomics;
- Apply it to the diagnosis of high-ability individuals, divergent minds, and atypical cognitive profiles;
- Integrate this model into personalized education, vocational development, and psychotherapy grounded in neurofunctionality.

DWRI is not a speculative hypothesis, but a coherent synthesis of the multiple forms of intellectual expression, supported by observable and replicable data.

7. Final Considerations

For much of its history, intelligence was treated as a fixed, measurable, and compartmentalized construct. However, the evolution of scientific thought — particularly in recent decades — has shown that the human mind is more than a sum of isolated functions: it is a dynamic, multidimensional organism, sensitive to the nuances of time, environment, and consciousness itself.

In this article, we have proposed the DWRI model — Development of Wide Regions of Intellectual Interference — as a new category of intelligence, grounded in the functional and synchronous integration of neural networks that transcend the logic-centered capacities traditionally measured by IQ. By considering not only the brain regions associated with rational cognition, but also those involved in emotion, sociability, and subjective creativity, DWRI allows for a broader, deeper, and more realistic understanding of human intelligence.

More than a theoretical formulation, DWRI emerges as an epistemological necessity in the face of the limitations of previous models. It offers a new pathway to understand individuals who do not conform to classical testing frameworks, yet display an uncommon ability to think in complex ways, adapt with sensitivity, and create with originality. DWRI is, therefore, a connective, fluid, evolutionary — and human — intelligence.

Consolidating this concept as a new cognitive category requires continuity: empirical validation through studies in functional neuroimaging, genetic analysis, and behavioral testing that honor the complexity it proposes. Still, what we present here is not a conclusion, but the beginning of a new paradigm — one that acknowledges that genius may dwell both in introspective silence and in creative eruption; in precise logic and in empathic sensitivity.

To conclude, in this case, is merely to open the space for the next scientific and philosophical step: to develop tools capable of identifying, welcoming, and fostering DWRI individuals in their fullness — without reducing, labeling, or limiting them.

For perhaps true intelligence is not about what we measure, but about how deeply we understand what we do not yet know how to measure.

7.1. Limitations and Future Perspectives

Although the DWRI model presents strong theoretical foundations and is supported by preliminary empirical data, it remains a conceptual framework undergoing scientific consolidation. The current study deliberately adopts a concise and illustrative format, focusing on a single, well-documented case. However, it is important to note that this example represents just one manifestation of a broader empirical corpus.

The case study analyzed here stems from the Genetic Intelligence Project (GIP) — an ongoing international research initiative coordinated by the author in collaboration with the Spanish genomics laboratory TellmeGen. The GIP includes a cohort of over 150 gifted individuals (IQ 130–160), all verified through supervised, in-person intelligence testing and belonging to recognized high-IQ societies. These individuals have undergone comprehensive psychometric assessments and full genomic sequencing, generating a rich database of cognitive, behavioral, and neurogenetic patterns. Although these data are currently under ethical confidentiality, they provide a substantial foundation for the DWRI model beyond the single case presented.

A major methodological limitation remains the lack of validated diagnostic scales specifically designed to measure inter-regional cognitive interference — a core element of the DWRI construct. Additionally, the considerable neurocognitive diversity among individuals necessitates replication studies across varied cultural, genetic, and environmental backgrounds.

Future research should prioritize:

- Expanding empirical validation with larger, diverse samples;
- Standardizing diagnostic criteria for DWRI profiles;
- Integrating advanced neuroimaging (e.g., fMRI, DTI) and psychogenomic tools;
- Developing instruments capable of capturing the multidimensional and dynamic nature of DWRI cognition.

The present study is intentionally objective, focused, and illustrative, while resting on a much deeper reservoir of empirical evidence already under analysis within the GIP. What is shown here is not the whole — but a scientifically grounded entry point into a broader paradigm. Table 2.is the summary Indicators of the DWRI Profile (Case Study Example from the GIP Dataset).

Table 2. *Summary Indicators of the DWRI Profile (Case Study Example from the GIP Dataset)*

Category	Indicator	Result / Evidence
IQ (Psychometrics)	WAIS-III	Full-Scale IQ > 155
IQ (Psychometrics)	Raven’s Advanced Progressive Matrices	99th percentile
Genetics	Intelligence-related variants (e.g., *COMT*, *BDNF*, *DRD2*, *GRIN2B*)	More than 40 relevant polymorphisms identified (WGS via GIP)
Neurofunctionality	Concurrent activation of DMN, ECN, and SN networks	Observed in alignment with DWRI neurofunctional pattern
Subjective Cognition	Creativity, introspection, emotional self-regulation	High behavioral expressiveness and meta-reflective capacity

8. Methodology of the Pilot Case Study

The case analyzed is real and documented in previously published articles (DOIs included). Data were collected through the following procedures:

- Standardized psychometric tests (WAIS-III, Raven’s Advanced Progressive Matrices);
- Genetic profiling via whole genome sequencing (Nebula Genomics platform);
- Qualitative analysis based on clinical observation and structured interviews;
- Neurobiological interpretation informed by functional connectivity studies and previously validated genetic markers (e.g., Savage et al., 2018; Goriounova & Mansvelder, 2019).

The aim was not to statistically validate the DWRI model, but to describe a cognitive and neurogenetic pattern consistent with its theoretical foundations — thereby establishing a groundwork for future research involving larger sample sizes.

Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
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- **Data availability statement:** The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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