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The transferability of brilliance

Pontish Yeramyan, Alexander Murzaku*, Nick Uva, Curt Anderson

Abstract: Brilliance is the thinking that causes our most extraordinary performance. Enhancing one's brilliance and adopting brilliance from others is hard to do reliably. The transfer of brilliance from one person to another is often difficult; it most often happens in a family context where there is frequent and intense contact between brilliant people and someone with the desire to acquire that brilliance. In the search for what kind of thinking constitutes brilliance, we identify seven themes of brilliance. Our goal is to bring clarity to what brilliant thinking is and outline ways that brilliance can be documented, shared, and studied.

Keywords: knowledge transfer, knowledge management, tacit knowledge, human brilliance, knowledge documentation

1. Introduction

Brilliance is the exceptional intellectual capacity, creativity, and profound insight that drives groundbreaking ideas and innovations — an invaluable asset. Reliably increasing one's own brilliance and transferring brilliance to others is extraordinarily difficult. The successful transfer of brilliance from one person to another is rare, posing significant challenges in perpetuating exceptional thinking and innovation, whether it be from master to apprentice, from coach to trainee, or across generations. This rarity stems from the difficulties inherent in capturing and conveying this special form of tacit knowledge (in the sense of Polanyi 1966), intuition, and deep cognitive processes that together constitute brilliance. Traditional mentorship and educational models often focus on explicit knowledge transfer, neglecting the nuanced thought patterns and experiential wisdom that underlie exceptional capabilities.

Based on thousands of interviews with high performing individuals, we propose that brilliance is characterized by seven major themes, which we call Genius Universals. These themes are mindsets that a person embodies, and from these mindsets a person takes action in order to perform at their highest potential. Geniuses and other brilliant individuals are often unaware that these themes are part of their thinking, and it takes effort to distinguish and discover the nature and structure of one's own thinking.

We propose that a core aspect of brilliance is tacit knowledge about one's sense of self, purpose, and understanding of the world. Brilliance draws upon not just the individual's factual understanding of their

* Genius Institute at Gap International, Springfield, PA, USA. Correspondence with alex.murzaku@gapinternational.com. All co-authors are members of the Genius Institute at Gap International and can be contacted at first.last@gapinternational.com.

area of expertise, but also includes a layer of thinking that is deeply engrained and oftentimes inaccessible. As Einstein is quoted saying in a biography (Pais 2005): "The essential of the being of a man of my type lies precisely in what he thinks and how he thinks, not on what he does or suffers." This knowledge is a type of tacit knowledge. The Genius Universals, similarly, are themes not of explicit knowledge or "what he does", but of tacit knowledge, or "how he thinks".

It's widely recognized that tacit knowledge can be difficult to externalize, document, and transfer to other individuals (Nonaka 1994). While it is possible to transfer tacit knowledge, transfer is often unreliable and inconsistent, requires extensive amounts of time and personal contact between individuals, and cannot be done at scale within an organization. This difficulty is the critical impediment to the transfer of brilliance. If brilliance is the unique mindset of an individual which allows them to achieve exceptional results, successful transfer of this brilliance allows others to adopt and operate from this mindset themselves. One can learn not just techniques and processes from someone accomplished, but also the mindset that enabled them to do the things that led to them being successful. It also allows for the possibility of self-transfer, by which we mean the ability for someone to recall and recognize their own brilliance and apply it in new contexts.

Our goal is to bring clarity to what brilliant thinking is, and once it is identified what brilliance is, outline ways that brilliance can be documented, shared, and studied. The paper is organized as follows. First, we distinguish the concept of brilliant thinking as the type of thinking exhibited both by people recognized for their accomplishments and also by everyday people achieving at their highest level. Next, we propose what we call the Genius Universals, seven themes that recur frequently in the thinking of brilliant people, and which we claim constitute brilliant thinking. We establish that the Genius Universals can be identified in the language of historical and contemporary geniuses, but raise the problem that the brilliance of many thinkers is unreliably transmitted to their students, their employees, and other people. Following that, we argue that families are a case where brilliance is often successfully transferred, and identify the key features of the family environment that allow for transfer to be successful. We assimilate the problem of transfer of brilliance to the problem of tacit knowledge documentation and transfer, and sketch an interview process for uncovering and documenting brilliance. Finally, we take stock and point out future goals for the scientific understanding of brilliance and its documentation and transfer.

2. On brilliance and the Genius Universals

Geniuses generate original and transformative ideas and achieve exceptional mastery in a specific domain, often reshaping how we understand or approach complex challenges. Whether it's a scientific breakthrough, an artistic masterpiece, or a simple yet profound insight, geniuses leave a lasting impact through their contributions. We call the mindset that enables the extraordinary performance of a genius "brilliance".[1]

When we discuss brilliance, we refer to a particular kind of thinking that allows for one to achieve exceptional results. For example, there are brilliant scientists, writers, painters, musicians, teachers, doctors, and so on, individuals who are not just highly competent in their area of expertise, but who stand out among their peers. Brilliance isn't limited to those who we broadly recognize as geniuses, but is a kind of thinking that everyone exhibits when they are working at their highest level. There are geniuses we recognize for their outstanding, widely known achievements, but brilliant thinking is also present in people who will never gain that kind of recognition. Although we use geniuses as examples of brilliance in this paper, our scope is wider than just geniuses; it is the entire phenomenon of brilliance.

[1] As a note, we will use the terms *brilliance* and *Genius* as near synonyms. *Brilliance* is used as a term for the overall category of thinking, while *Genius* is our technical term for this kind of thinking.

Brilliance can't be grounded in simple mastery of the facts and procedures of a simple discipline. If it were, we would recognize many skilled, technically competent people as being brilliant in their craft. Instead, we view brilliance as arising from a person's way of thinking. It is often difficult for one to describe the ways of thinking which constitute their own brilliance, much less do so systematically. Brilliance is also not necessarily "about" a specific discipline or competency, but is domain independent; many successful people are able to be successful in separate areas, suggesting that the mindset that makes them successful is sufficiently general purpose that it can be applied across different contexts.

What constitutes a brilliant mindset? Over the last twenty years, we have conducted thousands of interviews with businesspeople with the goal of understanding the mindsets that led to their accomplishments (whether personal or in business). Domain knowledge has varied considerably across the people that we've interviewed, but once we ask questions that probe the thought processes behind their accomplishments, patterns begin to emerge. We've identified seven themes that recur frequently enough that we believe them to be core aspects of brilliant thinking, regardless of industry, vocation, functional role, and experience. We call these themes "Genius Universals" (cf. "themes of brilliance" in Murzaku et al. 2024). These themes co-occur in a person's brilliance; nobody's brilliance is solely defined by a single one of these themes, but many or even all appear when we look at an individual's brilliance. This implies that brilliance is multidimensional and cannot be described by a single property.

The Genius Universals are briefly described in Table 1: Each Genius Universal is named by a cluster of four words or phrases that evoke the general semantic contour of the theme.[2] The accompanying descriptions are an attempt to distill the theme into natural language.

Genius Universal	**Description**
POSSIBILITY / CREATION / CHOICE / FREEDOM	Freedom to imagine the unimaginable and openness to what could be; boldness to create a new reality
PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY	Personal drive and greater reason for being, rooted in the ambition to positively impact others
EXTREMENESS / INTENSITY / OBSESSION / ABOVE AND BEYOND	Drive to go above and beyond, channeling intense focus and dedication to deliver peak performance
CURIOSITY / DISCOVERY / LEARNING / GROWING	Appetite for learning, growth, and expansion; The need to deepen knowledge and push boundaries of what is known
AT-STAKENESS / CONVICTION / RESOLVE / PERSEVERANCE	Drive within oneself connected to the joy or pain of what may be gained or lost; the will to persist in the face of challenges
JOY / EXCITEMENT / EXHILARATION / SPIRIT	Passion and excitement and experiencing joy and energy; fostering an environment of contagious enthusiasm
TOGETHERNESS / RELATIONSHIP / CONNECTION / LOVE	Creating deep, meaningful connections with people and what can be accomplished as a collective and cohesive whole

Table 1: Descriptions of Genius Universals

The Genius Universals stem from our work with clients and the interviews that we have conducted, but we find that each Genius Universal can be connected to independently motivated performance-related

[2] One way of thinking about this is that the four words/phrases of the Genius Universal describe a fuzzy concept with a center and a periphery. See Bianchini, Giusti and Gnoli (2017) who use a conceptually similar idea (the APUPA bell curve) in knowledge management.

constructs in the literature. We won't explore these connections in detail here, but Table 2 provides an initial offer for how our Genius Universals might link to existing work.

Genius Universal	**Connection to literature**
POSSIBILITY / CREATION / CHOICE / FREEDOM	Divergent thinking, Guilford (1950, 1967)
PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY	PERMA model, Seligman (2011) Drive, Pink (2009)
EXTREMENESS / INTENSITY / OBSESSION / ABOVE AND BEYOND	Grit, Duckworth et al. (2007)
CURIOSITY / DISCOVERY / LEARNING / GROWING	Curiosity as motivation, Kashdan & Steger (2007) Growth mindset, Dweck (2006)
AT-STAKENESS / CONVICTION / RESOLVE / PERSEVERANCE	Grit, Duckworth et al. (2007)
JOY / EXCITEMENT / EXHILARATION / SPIRIT	Broaden and Build Theory, Fredrickson (1998, 2001)
TOGETHERNESS / RELATIONSHIP / CONNECTION / LOVE	Belongingness Hypothesis, Baumeister & Leary (1995)

Table 2: Tentative connections between Genius Universals and existing literature on performance

Brilliant or Genius thinking is thus a kind of mindset that creates the possibility of performance way beyond the norm. The Genius Universals are part of the language of an individual — the things they say out loud to others, what they write, and even what they say to themselves — and they provide an access point to that person's brilliance. Our aim in understanding the Genius Universals is to precisely characterize the mindset behind brilliance. When that mindset can be made salient for someone, they can more readily adopt that mindset and bring themselves to a new level. In addition, by studying brilliant thinking and the Genius Universals, we can create ways for Genius thinking to be made explicit, transferable, and more easily recalled. These notions of a person acquiring and using Genius thinking, either the thinking of others or their own thinking, we call "transfer of brilliance" and "transfer of Genius."

3. Genius and Genius transfer

3.1. The Genius of geniuses

When seeking access to brilliant thinking, it is common to look to figures from history who are recognized for their brilliance. The legacy of a person whose thinking produced exceptional outcomes can be a great inspiration. Some figures are so strongly associated with brilliance that invocation of their name alone may serve as shorthand for intelligence or innovation, as in the educational children's series *Little Einsteins* (after physicist Albert Einstein), or the automaker Tesla (after 19th and 20th century inventor Nikola Tesla). People are often inspired by the brilliance and extraordinary achievements of others. Being inspired, though, is not the same as thinking in the way that caused that achievement.

Learning to think like another brilliant person is not easy, and even in the closet mentorships, brilliant thinking doesn't transfer from mentor to mentee.

Leonardo da Vinci is perhaps our prototypical example of a genius, even more than five hundred years after his death. In his lifetime, he was widely recognized by his contemporaries as an exceptional talent, not just for his skill as an artist, but also for his wide ranging studies in disparate academic disciplines. Today, he is recognized not only for his paintings, but also his studies of human anatomy, his engineering drawings, and his drawings of the natural world.

A significant amount of time and a large percentage of da Vinci's writings were devoted to investigating and explaining the concepts of "seeing" and "distinguishing". His work can perhaps best be summarized as a journey toward *saper vedere* "knowing how to see (Cassirer 1963). It's telling that he was so preoccupied with the importance of seeing and distinguishing, that the word *occhio* "eye" appears in more than nine hundred folios across his writings, where he explains how to observe and to distinguish the world. In his studies, da Vinci observed, in minute detail and with obsession, how birds or insects fly, the movement of their wings, their anatomy, and even the air currents around them. He studied them, he drew them, he tried for years to recreate that miracle of nature, and he recorded this in his Codex Atlanticus. Da Vinci was very much about not just observing the natural world, but also understanding his own brilliance for observation and distinguishing crucial differences that had not been noted before.

Because of his extensive writings, da Vinci's brilliance is documented better than many other historical figures. Table 3 provides a sample of quotes from da Vinci, along with the Genius Universal that the quote appears to indicate, establishing the Genius Universals as part of da Vinci's brilliance.

Quote	**Genius Universal**[3]
Obstacles cannot bend me. Every obstacle yields to effort. Not to leave the furrow. He who fixes his course by a star changes not.	AT-STAKENESS / CONVICTION / RESOLVE / PERSEVERANCE
Iron rusts from disuse, stagnant water loses its purity and in cold weather becomes frozen; even so does inaction sap the vigour of the mind!	EXTREMENESS / INTENSITY / OBSESSION / ABOVE AND BEYOND
As a well-spent day brings happy sleep, so life well used brings happy death.	PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY
The natural desire of good men is knowledge.	CURIOSITY / DISCOVERY / LEARNING / GROWING
May I be deprived of movement ere I weary of being useful. Movement will fail sooner than usefulness. Death rather than weariness. I never weary in being useful. I am not tired of serving others.	PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY

Table 3: Leonardo da Vinci quotes and Genius Universals

Next we consider Steve Jobs, co-founder of Apple, who is often considered to be a modern example of a genius. Jobs positioned himself at the intersection of art, science, and technology, and his vision changed the computing and electronics industries repeatedly in the 1980s, 1990s, and 2000s. His

[3] All Leonardo da Vinci quotes are excerpted from *the Notebooks of Leonardo da Vinci* (MacCurdy 1955).

accomplishments include developing the first Macintosh computer with Steve Wozniak, the formation of Pixar, and the development of the iPod, the iPhone, and the iPad during his second tenure as Apple CEO. More than a dozen biographies of Jobs have been written, and there are more than seventy interviews with him recorded and made publicly available.

Although many interviews and biographies of him are not conducted with the goal of discovering Job's brilliance in the sense that we develop in this paper, we can look at what he said throughout his life and infer something about his mindset, his vision for the role of computing in society. When we do so, we notice several of the Genius Universals present in what he says. Table 4 gives samples of Jobs' language and the Genius Universals present.

Quote	**Genius Universal**	**Source**
Stay hungry. Stay foolish.	CURIOSITY / DISCOVERY / LEARNING / GROWING	Stanford Commencement Speech, 2005
I'm convinced that the only thing that kept me going was that I loved what I did.	JOY / EXCITEMENT / EXHILARATION / SPIRIT	Stanford Commencement Speech, 2005
Great things in business are never done by one person. They're done by a team of people.	TOGETHERNESS / RELATIONSHIP / CONNECTION / LOVE	*60 Minutes* interview, 2003
We attract a different type of person [at Apple]… Someone who really wants to get in a little over his head and make a little dent in the universe.	PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY	*Playboy* interview, 1985
We're gambling on our vision, and we would rather do that than make "me too" products. Let some other companies do that. For us, it's always the next dream.	POSSIBILITY / CREATION / CHOICE / FREEDOM	Interview during the release of the first Macintosh computer, 1984

Table 4: Steve Jobs quotes and Genius Universals

Now let us turn to Marie Curie, a scientist whose genius shaped physics and chemistry. Curie's work led to groundbreaking discoveries in radioactivity, a term she herself coined. She became the first woman to win a Nobel Prize, the only person to ever win Nobel Prizes in two different scientific fields (Physics and Chemistry), and her research led to the isolation of the elements polonium and radium. Curie's genius lay not only in her technical mastery and innovative experimental methods but also in her unwavering commitment to the pursuit of knowledge, even in challenging and dangerous conditions. Biographies and collections of her letters reveal her determination and intellect. Table 5 provides examples of Curie's statements and establishes Genius Universals such as PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY and JOY / EXCITEMENT / EXHILARATION / SPIRIT as part of her brilliance.

Quote	Genius Universal	Source
I am among those who think that science has great beauty. A scientist in his laboratory... is also a child placed before natural phenomena which impress him like a fairy tale.	JOY / EXCITEMENT / EXHILARATION / SPIRIT	*Madame Curie*, 1938[4]
Life is not easy for any of us. But what of that? We must have perseverance and above all confidence in ourselves. We must believe that we are gifted for something, and that this thing, at whatever cost, must be attained.	AT-STAKENESS / CONVICTION / RESOLVE / PERSEVERANCE	*Madame Curie,* 1938
Radium is not to enrich anyone. It is an element; it belongs to all people.	PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY	*Madame Curie,* 1938
All my life through, the new sights of Nature made me rejoice like a child.	JOY / EXCITEMENT / EXHILARATION / SPIRIT	*Pierre Curie,* 1923[5]
We passed our days at the laboratory, often eating a simple student's lunch there… We lived in a preoccupation as complete as that of a dream.	EXTREMENESS / INTENSITY / OBSESSION / ABOVE AND BEYOND	*Pierre Curie,* 1923

Table 5: Marie Curie quotes and Genius Universals

Brilliant people possess an internalized network of insights, heuristics, and mental models that guide their thinking and problem-solving processes. These cognitive frameworks have been honed over years of practice, reflection, and iterative learning. But when the same people attempt to convey their expertise, they often focus on procedures, formulas, and observable behaviors without examining the underlying thought processes that drive their brilliance. Brilliance is thus often not successfully transferred from person to person, like from teacher to student or mentor to mentee, and one does not sufficiently recognize their own brilliance. In the next section, we linger on this point that transfer of brilliance is difficult and rare, but point out where it does seem to happen most often and most fluently: in families.

3.2. The difficulty of Genius transfer

Having developed a few examples of brilliance, let's consider another aspect of brilliance. We want to turn an eye towards not just the brilliance of an individual, but how that brilliance is transferred to other individuals and the difficulty in doing so. To begin, let's go back to Leonardo da Vinci, who is our "model" genius. Striking about Leonardo da Vinci is that although he had his own students, these students have nowhere near the recognition that he has. Though his students were competent painters in their own right, they never seem to have inherited his unique way of looking at the world. Also consider Steve Jobs. Jobs revolutionized the computer hardware, software, film, and personal electronic industries through the companies he led and influenced. We can see his brilliance in his language. Since his death

[4] E. Curie (1938)
[5] M. Curie (1923)

in 2011, while Apple has performed well financially, it has not yet innovated in the way it did with Jobs as its leader. The question to ask is why brilliance doesn't automatically transfer from one person to another, even when it would be advantageous.

But it's not the case that transfer of brilliance never happens. A crucial observation is that brilliance is often transferred in families. There are many cases of family businesses where the business is handed down from parents to children across generations. So too are there examples of creative dynasties, families where many members contribute to the same art, such as painting, sculpting, artisan crafts, music, theater, or film.

An example of brilliance transferred within a family is the Mellerio family in France. Members of the family have been excelling in goldsmithing for fifteen generations, since 1515.[6] The family places itself between art, technology, and science, and constantly gets inspiration from the Italian renaissance. The youngest Mellerio says, "since I was a child, I understood the pride that the family took in running it, generation after generation," acknowledging the mindset required to keep the business alive for over 400 years. He also remarks, "I grew up with my brothers constantly hearing conversations about jewelry: my parents discussing their ideas in front of us and with us. I always projected taking part in the writing of the next chapters of Mellerio's legacy,"[7] showing how the brilliance of his parents was ever present in his environment, and how it helped him adopt the mindset required to carry on his family's legacy, an embodiment of the PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY Genius Universal.

Another goldsmithing dynasty, lasting more than a hundred years, is the Buccellati family in Italy. The latest representative is Lucrezia, who designs iPhone and iPad covers bejeweled with sunburst diamonds inspired by the sketches of Leonardo da Vinci. She says, "I feel I have a very different aesthetic than my father and grandfather, but we are all linked together by our DNA, which is very identifiable in our designs."[8] Lucrezia is saying that, although the aesthetics are different between her, her father, and her grandfather, there is a mindset about what it means to be artistic that she acquired from her father, and he from his father.

The Coppola family is another example of brilliance transfer through generations. This is a family that has been excelling in entertainment for at least three generations. Well-known among the general public is American filmmaker Francis Ford Coppola, and his children Sofia Coppola and Roman Coppola, also filmmakers. Less well-known is that actors Nicolas Cage and Jason Schwartzmann are Francis Ford Coppola's nephews, through his brother and sister, respectively. Not only that, but Francis Ford's sister Talia Shire (the mother of Jason Schwartzman) is an actress, his grand-daughter Gia Coppola a film director and screen writer, his own father Carmine Coppola a composer, pianist, flautist, and songwriter, and his mother Italia a lyricist, to name a few other members of the family. The Coppola family is a clear example of where a mindset around performing and entertaining has been handed down through multiple generations.

Of course, there is transfer of brilliance out of family contexts as well. There have been many successful mentor-mentee, master-apprentice, and teacher-student relationships where the student not only gains skills and techniques from their teacher, but also a way of thinking about their work and the world. Academia is one place where this happens often. To give an example, the doctoral advisor of American linguist Noam Chomsky was Zellig Harris, who was also an influential figure in linguistics. Chomsky's students in turn went on to become important figures in linguistics, including Barbara Partee, John R. Ross, Ray Jackendoff, Joan Bresnan, Ivan Sag, and George Lakoff, to name but a few.

Since transfer can happen outside of families, what we don't want to say is that familial relationships are important for transfer. Rather, our position is that families provide a kind of environment where transfer of brilliance can happen more easily than in other kinds of environments. In a family

[6] https://www.mellerio.fr/pages/au-fil-du-temps
[7] https://www.naturaldiamonds.com/historic-diamonds/meet-the-26-year-old-upholding-mellerios-diamond-legacy/
[8] https://magnifissance.com/style/jewellery-watch/buccellati/

environment, there is frequent, intense, and long-term exposure between family members (intra- and inter-generationally) in the context of their work, and this constant, continuous exposure to brilliance allows brilliance to transfer more easily than less frequent, less intense, or short-term exposure.

We see in these case studies that da Vinci and Jobs were able to extensively document and transfer their technical knowledge and expertise, preserved in the form of books, treatises, paintings, videos, and notes. They were less successful at transferring their brilliance. In contrast, families like the Mellerios, the Buccellatis, and the Coppolas are able to transfer their brilliance from generation to generation. When these families describe their journeys, their language embodies themes of the Genius Universals such as PURPOSE / CONTRIBUTION / WORLD IMPACT / LEGACY. There is something unmistakably different about transfer in the context of a family compared to other kinds of teacher-student dynamics, and we hypothesize that it has to do with the frequency, duration, and intensity of familial relationships in the context of brilliant achievements. In a family, children are continuously exposed to the brilliance of the previous generation (parents, but also aunts, uncles, and grandparents) and see first hand how that knowledge is used. In addition, children can immediately ask questions about why something is done, and repeat their inquiries until they are satisfied with the answer. Finally, in some cases, there is also a sense of family legacy and carrying on a tradition. These factors may be present in other teacher-student dynamics, but they appear more frequently in families and seem to be a crucial aspect of the environment that leads to brilliance transfer.

Brilliance transfer then presents a different set of challenges from the transfer of technical knowledge, which can be documented, or passed down through apprenticeships. Brilliance is not simply a collection of facts or skills. It also encompasses things that are harder to verbalize and are deeply embedded in an individual's experiences. This individual, inexpressible knowledge is the aspect of brilliance which is most difficult to transfer, and it is best understood through the theory of "tacit knowledge" (Polanyi 1966).

4. Tacit knowledge and tacit knowledge transfer

4.1. Brilliance as tacit knowledge

By laying out the Genius Universals, we can get a glimpse of the landscape of brilliance, and an individual can begin to attend to their own brilliance by noticing the Genius Universals. To provide a more complete account of brilliance, including the difficulty of transfer of brilliance, we propose that the knowledge and understanding on which brilliant thinking is founded comprises both explicit knowledge and tacit knowledge (Polanyi 1966; Collins 2010). Explicit knowledge is what we normally think of as knowledge: it's knowledge of procedures, processes, facts, formulas, instructions, and other things that we are conscious of and which can be easily articulated. In contrast, tacit knowledge is that knowledge which cannot be easily articulated; it's often personal and context-dependent, and encompasses know-how like riding a bike or recognizing a face, as well as mindsets and ways of thinking. It's often rooted in unconscious thought and experience, rather than explicit rules. Tacit knowledge is the foundation on which one can make connections within explicit knowledge, have new insights, and achieve exceptional innovations.

In distinguishing brilliance from other types of thinking, we stress that brilliance isn't the same thing as tacit knowledge. Tacit knowledge and explicit knowledge are types of knowledge. Brilliance, on the other hand, is a way of thinking that produces exceptional results. When thinking in a brilliant way, a person uses their knowledge, both explicit and tacit, to achieve their goals. Tacit knowledge is difficult to access, and in cases where one may not even be aware that they have it, the Genius Universals can help provide access to this tacit knowledge. The Genius Universals are indicative of Genius thinking.

4.2. The difficulty of tacit knowledge transfer

Tacit knowledge is acknowledged to be critical for exceptional performance (for instance, see Nelson and Winter 1982; Hadjimichael and Tsoukas 2019). As such, the concept of tacit knowledge has been extensively adopted in the field of organizational knowledge management. In the context of this field, tacit knowledge is one of the most crucial resources an organization can possess (Grant 1996; Sobol and Lei 1994), and effective management of it is a critical challenge to overcome (Park and Gabbard 2018; Faulconbridge 2007; Aoki 2010). As previously mentioned, tacit knowledge is more difficult to access and transfer than explicit knowledge, because it cannot be readily expressed directly in language. The successful transfer of tacit knowledge is essential for any organization which aims to leverage its benefits, and many methodologies have been proposed to facilitate this transfer.

The SECI model of knowledge transfer (Nonaka 1994; Nonaka and Takeuchi 1995), distinguishes four kinds of knowledge transfer, shown in Table 6, defined by the initial and final state of the knowledge. Socialization, where tacit knowledge remains tacit as it is transferred, can be accomplished through repetition, guidance and observation. This requires extended in-person interaction, like the kind seen in families and apprenticeships. The Mellerio and Buccellati families are examples of successful tacit knowledge transfer through socialization. Their continued innovation and excellence across generations is grounded in the tight and dense social bonds of family, and extended periods of shared practice characteristic of the relationship between master and apprentice craftsmen. Externalization in contrast is a method of tacit knowledge transfer where the tacit knowledge is first expressed in language. Externalization is easier to scale within an organization and socialization, because documentation can be shared more readily than the time and attention of a single person. But tacit knowledge is difficult to externalize by nature, and development of externalization methods is an ongoing area of study, which we provide a few examples of below.

Transfer type	**Knowledge source state**	**Knowledge recipient state**
Socialization	Tacit	Tacit
Externalization	Tacit	Explicit
Combination	Explicit	Explicit
Internalization	Explicit	Tacit

Table 6: Types of knowledge transfer in the SECI model (Nonaka 1994)

Mascitelli (2000) argues that the ability of an organization to achieve breakthrough innovation is dependent on the creation and sharing of tacit knowledge. To cultivate an environment within the organization which allows for individuals to develop tacit knowledge around their work, he proposes that managers engage in story-telling practices centered around narratives of innovation. These narratives enable the transfer to employees of tacit knowledge connected to the strategic vision and guiding principles of the organization. Mascitelli also says that managers should also create and reinforce unique identities for teams. The characteristics of the social identity of a team, and the degree to which members are aligned with this identity, play a significant role in the ability of the team to successfully innovate (Jones and Jordan 1998; Scott 1997). Project goals and requirements should also be specified only enough to adequately provide the direction of the project during early stages, in order to allow enough ambiguity to foster divergent thinking and spontaneous leaps of intuition (Leonard and Strauss 1997).

Ambrosini and Bowman (2001) propose a method for the transfer of tacit knowledge within an organization. They employ structured interviews to create a kind of cognitive map (see Eden et al. 1981)

to guide participants to externalize and structure their tacit knowledge. Cognitive maps represent thinking as a graph consisting of nodes which represent mental objects such as ideas and beliefs, and edges which represent the cognitive connections between those objects. They employ the causal map (Huff 1990), a class of cognitive map which places concepts in relation to one another with edges representing causal relationships. Another example is Mitchell, Harvey and Wood (2021), who explore tacit knowledge transfer in the context of a researcher's ability to locate, quantify and justify research impact. They assess common academic practices based on their capacity to facilitate tacit knowledge transfer, both through socialization and through externalization, and recommend that care is taken in selecting context-appropriate practices to maximize transfer. And Goffin and Koners (2011) focus on the product development cycle, where they recommend that the use of metaphor and storytelling be encouraged in discussions around these issues, as they are particularly effective at capturing and transferring this tacit knowledge.

What underlies all these methods is the necessity of documentation. Documentation of knowledge should include detailed accounts of reasoning, decision-making steps, and problem-solving strategies. In addition, documentation should describe not just successful pathways but also dead-ends and failures that contributed to learning. By capturing this depth of information, documentation provides the next generations with a more holistic understanding of brilliance. It opens a window into the minds of experts, allowing learners to internalize not just what was done, but how and why it was done. Documentation allows for that knowledge to be shared and internalized by others in a scalable way. This scalability is not possible with socialization-based methods of tacit knowledge transfer. In the next section, we sketch a process for documenting the brilliance of a person.

5. The Genius Inquiry

Interviews are a familiar process for documenting knowledge. The kind of interview that most people are familiar with is the journalistic interview, which seeks to extract a narrative about a matter of public interest, whether it be details and interpretations of current events, or stories from the life of a public figure (Roulston 2012). Many journalists and media personalities, such as Oprah Winfrey, Barbara Walters, and Larry King, have gained fame primarily due to their skill at conducting journalistic interviews (Platt 2002). Journalistic interviews, though, are not an ideal method for tacit knowledge documentation and transfer. The focus on narrative prioritizes explicit knowledge. The interview is an attempt to get at the pre-existing knowledge and thinking of the interviewee. It does not elicit new connections in their thinking which previously they had not been able to externalize.

Some types of interviews are better suited for the externalization of tacit knowledge. The motivational interview, used in psychology, asks interviewees questions in order to increase their motivation towards goals, and assist them in changing their behaviors (Miller & Rollnick 2012). The cognitive map interview asks interviewees about the choices they made which caused a certain outcome, and sequentially inquires backward about the choices which led to those choices (Eden et al. 1982).

In an effort to capture and document brilliance, we chose to use a structured interview process aimed at externalizing the tacit knowledge component of a person's brilliance. We call this process an inquiry. Every inquiry is conducted with the intent of discovering an individual's brilliance by asking how and why questions. By asking how and why questions repeatedly, the interviewer can go increasingly deeper into the thinking of the person being interviewed. The successive questioning by the interviewer encourages the interviewee to go beyond their most accessible conscious thinking and explore tacit knowledge related to their purpose, sense of who they are as a person and what's meaningful to them, and how they relate to other people and the world. These are the fundamental aspects of their Genius.

An inquiry could be set up in many different ways. One method of setting up the inquiry is to focus on the interviewee's previous success factors, and elicit the thinking that contributed to them. This reveals

the mindset. An inquiry could also be set up to start from exploring the Genius Universals. For instance, an interviewer could ask the interviewee to imagine a time when they embodied a specific Genius Universal like POSSIBILITY / CREATION / CHOICE / FREEDOM, and ask questions about what that was like: When did you embody that Genius Universal, , how did it feel in the moment, , and so on. What's key in an inquiry, however the interviewer starts the conversation, is that the interviewer asks questions that are intended to get increasingly deeper into the thinking of the person being interviewed. Subsequent Genius Inquiries often reveal additional facets that were unexplored. In our experience, though, many of the same themes and even the exact same phrasing in language occurs in repeated inquiries, which supports our belief that the Genius Inquiry process reveals something essential about a person's brilliance.

In effect, the inquiry process is a way of compressing the socialization process that we hypothesize is found in families. Within the family, children are in direct contact with the Genius of others. They can see that Genius in action, they receive explanations of the thought process driving the actions from their parents and grandparents, and they can immediately and continuously ask their own questions to elucidate and clarify what their parents and grandparents are thinking. The frequency, duration, and intensity of learning in a family environment amounts to a kind of continuous inquiry on the part of a child. Our inquiry process takes the most essential aspects of a child's continuous inquiry — the exploration of purpose and the motivating principles underlying what their parents do — and makes it into a process that can be conducted in a short period of time to uncover crucial facets of someone's Genius.

Brilliance can be documented in many ways. We've found success with a visual representation of the language from the interview. The interviewer selects sections from the participant's spoken language and arranges them into an inverted tree structure, similar in some ways to the causal maps employed by Ambrosini and Bowman (2001) in their method of documenting tacit knowledge.[9] The arrangement of language from the tree root to the leaves represents a continuum between purposeful and operational mindsets; language near the root of the tree is language revealing mindsets about the interviewee's understanding of the world and themselves, and the language nearer the leaves reveals thinking which drives and immediately guides action. The language in the tree is selected so that the mindset behind the language might be freely applied in other contexts. In other words, our visual representation is designed to document Genius thinking in such a way that it can be applied anywhere.

This representation is a tool for transfer of Genius. The interviewee receives a copy of the tree for their own use; they have a visual representation of their own thinking, accessible via language, and can use that language in the future to try to trigger specific mindsets that helped make them successful. The tree can also be shared with others. For instance, a supervisor might share their tree with an employee, so that the employee can understand their supervisor's mindset better, and even transfer that mindset to theirself by studying the language in the tree. If the tree is annotated so that each example of language is coded for a Genius Universal or Genius Universals, the content of the thinking can be studied. The ability to represent Genius in language makes recalling brilliance for oneself, studying brilliance, and sharing brilliance with others possible.

6. Looking ahead

The Genius Inquiry process, the Genius Universals, and the visual representation of Genius are closer to the beginning rather than the end of our journey to understand brilliance. As we discussed in Murzaku et al. (2024), we developed a novel corpus linguistic annotation process for the structured interviews that we discussed here, the Genius Inquiry. The goal of this annotation process is to allow us to study specific

[9] Formally, the tree structure we use is a directed acyclic graph. Each node is language selected from the inquiry that shows the individual's brilliance, and edges between nodes create a hierarchy of thinking.

linguistic characteristics of the language of brilliance, including syntax, semantics, pragmatics, prosody and intonation, and body language. The research on these linguistic characteristics is still ongoing. This work will allow us to document and analyze the language of brilliance with automated tools and artificial intelligence, to massively increase access to understanding and transfer of brilliance. It will also allow us to continue to improve methods for internalization of tacit knowledge, allowing organizations to leverage the benefits of brilliance more effectively.

We've also pointed out that socialization in families is like a kind of continuous Genius Inquiry, and noted that both socialization in general and the Genius Inquiry process are limited by available time and resources. We raise the idea that AI could be used to conduct Genius Inquiries at larger scale and with greater frequency; an AI could be trained in the Genius Inquiry process so that a broader base of individuals within an organization could be interviewed, or to create an app that could do fast and regular check-ins with a person to capture what they are saying at that moment and the Genius thinking that it indicates.

7. Conclusion

In this paper, we've distinguished the notion of brilliance (which we also call Genius), a general purpose mindset that enables someone to perform at their highest potential. Brilliance is exhibited in people recognized as geniuses, but also in anyone who is achieving something exceptional whether or not they are publicly recognized for their achievements. What the nature of brilliant thinking is has remained elusive, but we propose seven themes characteristic of brilliant thinking, the Genius Universals. These themes are present in the thinking of brilliant figures throughout history, independent of their area of expertise.

Brilliance is difficult to transfer from person to person. The reason for this is that brilliance is a type of tacit knowledge, which is recognized to be difficult to externalize and transfer. The context in which brilliance transfer occurs most frequently is in the context of a family, where children are in direct contact with the brilliance of their caregivers, a type of socialization method of transfer. We've outlined a method for the elicitation and documentation of language that exhibits the Genius Universals. This allows for one to study and enhance their own brilliance, and for brilliance to be more readily shared with other people. Future directions include automating this process with AI, and studying the language of Genius using methods from linguistics. Our work allows for people to document and transfer their brilliance so that everyone can perform to their maximum potential and pass their unique way of thinking to others.

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