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Chasm of Archetype: Leveraging Personality Diversity in Cost Estimation

2025-05-13

Abstract:

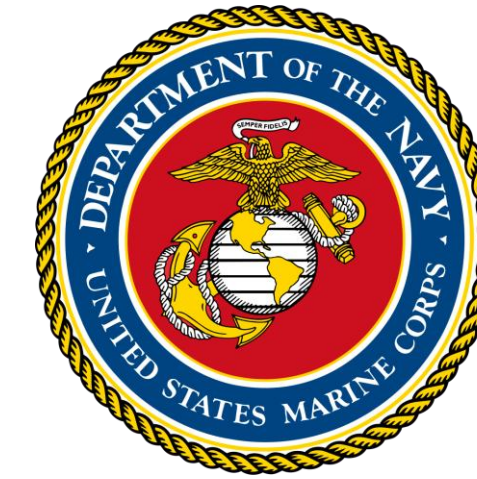
Cost estimation is a field requiring mathematical and technical expertise, typically attracting professionals from Science, Technology, Engineering, and Mathematics (STEM) backgrounds. Individuals in these disciplines often display introverted personality traits, which can lead to a limited range of interpersonal dynamics within cost teams. However, collaboration, communication, and other interpersonal skills—often associated with extroverted personalities—are critical to team success and broader project goals. This presentation will explore strategies to harness the strengths of both introverts and extroverts, address challenges related to varying communication styles and offer insights for managing well-rounded teams where diverse personality traits complement each other.

Tyler Duran & Stephen Koellner

Speaker Bio - Professional

■ Tyler Duran – Portfolio Manager

- ~6 years experience in federal project management
- USMC veteran & ordnance systems technician
- Professional support focused on Enterprise IT strategy
- Associate Member – Technology Business Management Council
- BAs in Economics and Political Science & Government



■ Stephen Koellner – Consultant/Technical Advisor

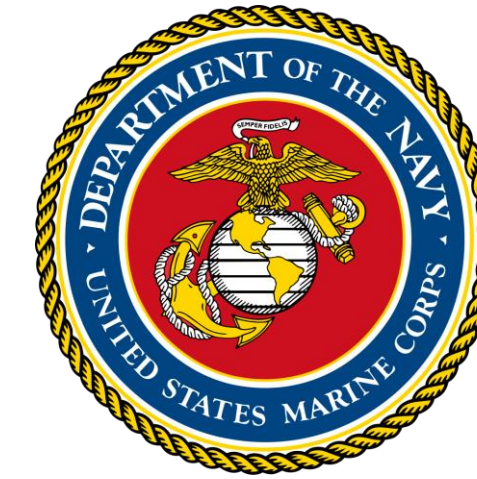
- ~6 years of experience in federal project cost estimation
- ICEAA 2022 Team Achievement of the Year Award
- GAO Cost Guidebook contributor
- BS in Mathematics - Penn State University
- Author in Earth & Planetary Science Letters



Speaker Bio - Personal

■ Tyler Duran – Extrovert

- Will FaceTime you instead of texting
- Loves a good trust fall
- Failed the same high school Algebra class 3 times
- Formerly managed concert venues & night clubs
- COVID isolation was miserable



■ Stephen Koellner – Introvert

- Always wear headphones at the office
- All hobbies are inherently solo activities
- Currently regretting this speaking engagement
- BS in Mathematics - Penn State University
- Thrived during COVID telework/isolation



Anonymous Audience Poll

- How Introverted/Extroverted are you?



Presentation Goals

- Understand Personality Differences

Explore key traits of introverts and extroverts in cost estimation

- Recognize and Manage Strengths & Challenges

Identify how each personality type contributes to problem solving and communication

- Identify Strategies for Collaboration

Discuss opportunities for leveraging diverse thinking styles

- Build Efficient Teams

Gain insights into working with and managing balanced teams for better outcomes

Disclaimers

This presentation is not meant to be reductionist. People are complicated, and we rarely fit into neat little archetypal boxes.

We're not evaluating academic research and data; we're discussing personal experiences.

"There are two types of people in this world; those who think there are two types of people and those who know better." -Unknown

Defining the Landscape

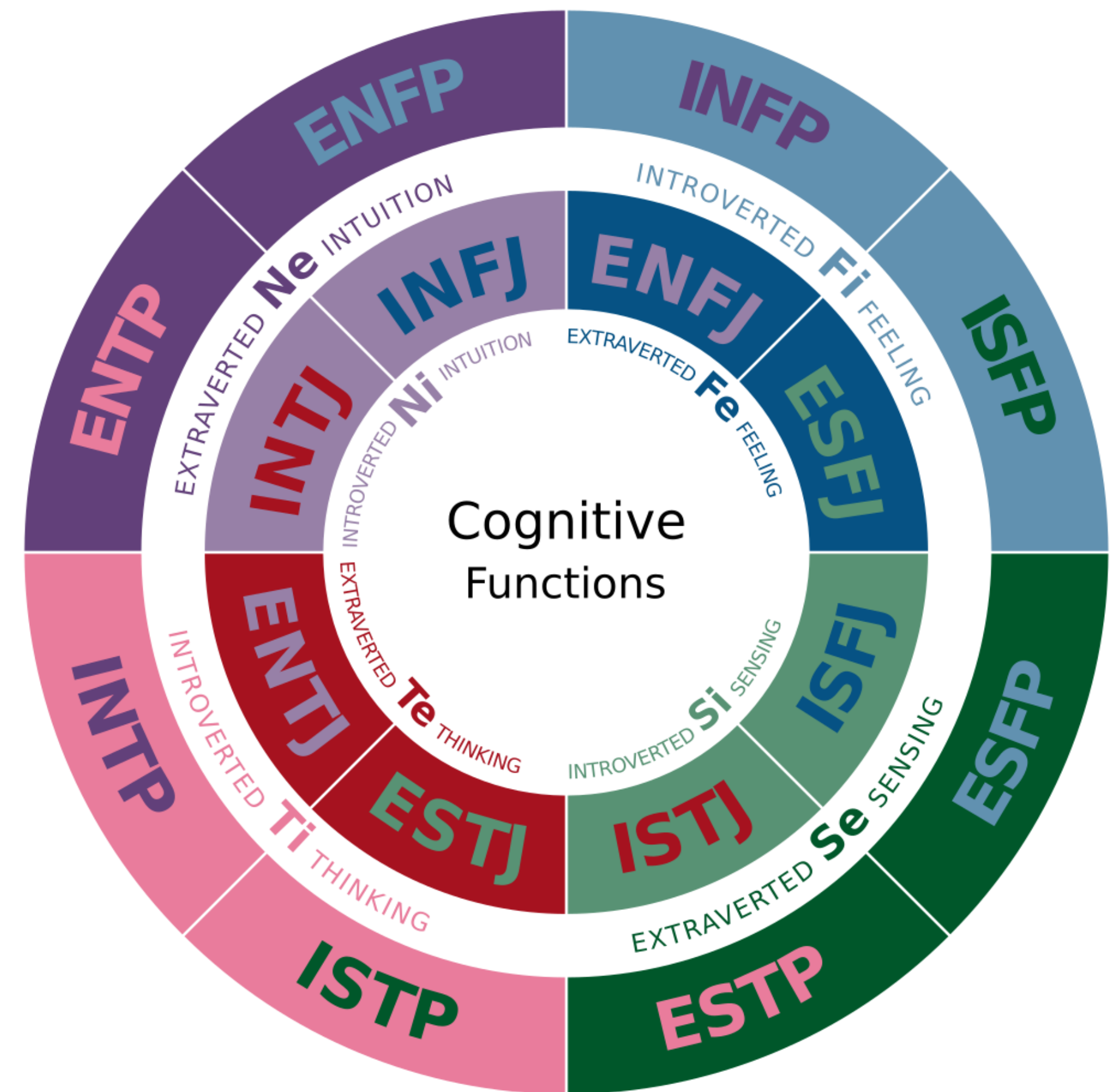
Introverts and Extroverts: What's the Difference?

- **Introverts:** Energized by solitude, prefer deep focus, thoughtful decision-makers, typically reserved in social environments
- **Extroverts:** Energized by social interaction, thrive in dynamic environments, think out loud, action-oriented
- Terms coined by Carl Jung in early 1900's
 - Developed as part of his theories on personality
 - Expanded through Myers-Briggs Type Indicator and Big Five Personality Traits

Myers-Briggs Type Indicator (MBTI)

16 distinct “psychological types”

- **Attitudes:**
 - Extroversion (E)/Introversion (I)
- **Functions:**
 - Information gathering functions:
 - Sensing (S)/Intuition (N)
 - Decision-making functions:
 - Thinking (T)/Feeling (F)
- **Lifestyle Preference:**
 - Judging (J)/Perception (P)



Despite widespread use, MBTI is scientifically questionable

Introvert Characteristics

- Burn energy by taking actions
 - Reflect → Act → Reflect
 - Recharge via time
- Thought-oriented
- Seek depth of knowledge
- Substantial interaction
- Time for contemplation
- Observer



Extrovert Characteristics

- Gain energy through actions
 - Act → Reflect → Act
 - Reflection drains energy
- Action-oriented
- Seek breadth of knowledge
- Frequent interactions
- Fast-paced environment
- Center of attention



Introverts vs. Extroverts in the Workforce

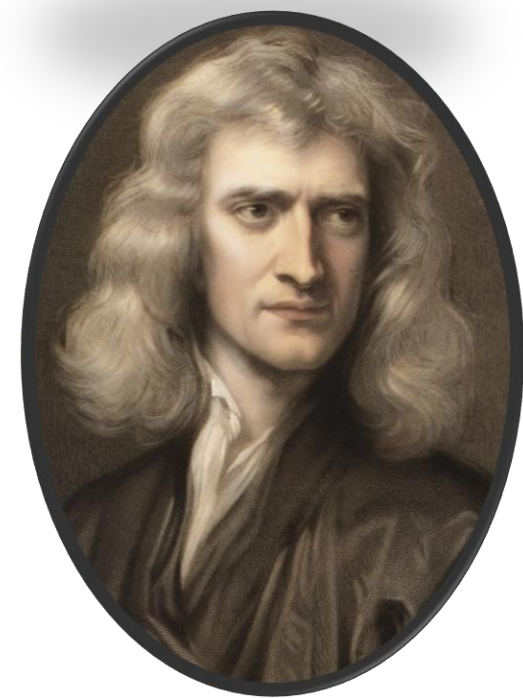
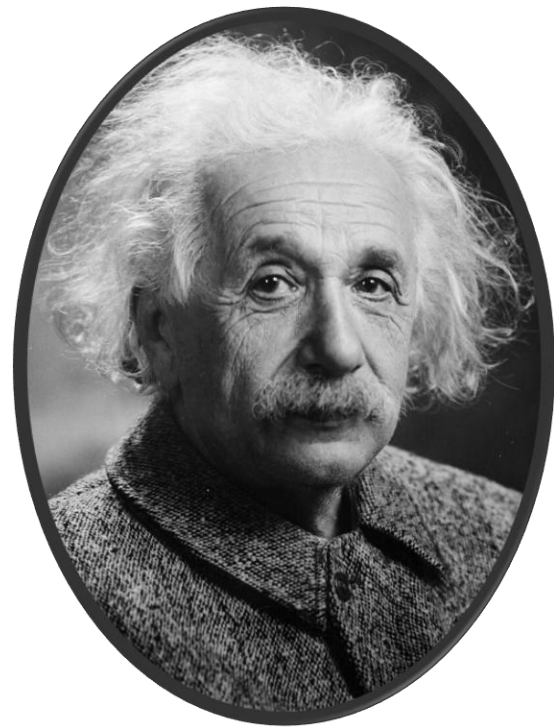
Group	Percent Extroverted	Percent Introverted
General Population [1]	65% - 75%	35% - 25%
Computer Science Majors [2]	13% - 33%	67% - 87%

- Extroverts are 25% more likely to be in a high-earning job [3]
 - 96% of leaders/managers self-identify as extroverted [4]
 - 75% of people with a 160+ IQ are introverted [5]

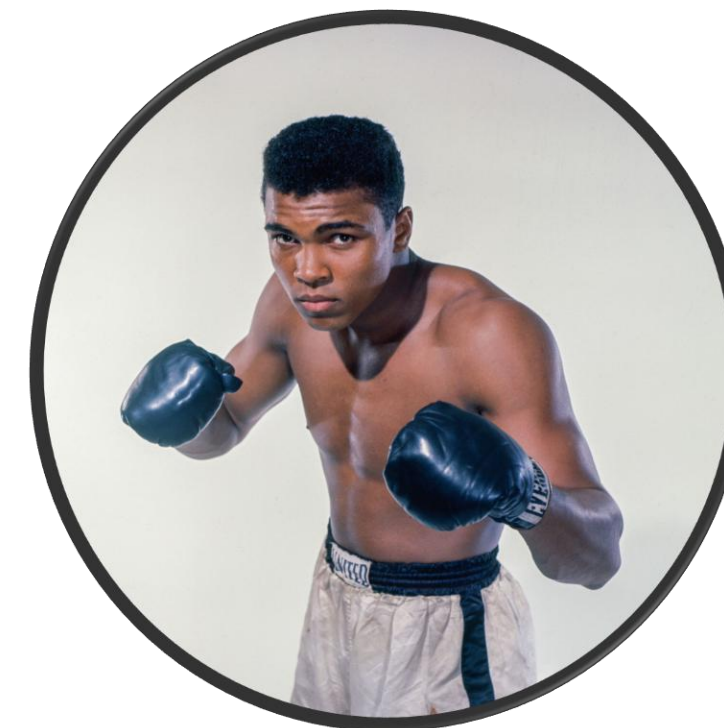
Careers Suited to Extroverts [6]	Careers Suited to Introverts [7]
Management, Sales, Financial Advisor, Lawyer, Education, Public Relations, Human Resources	Accountants/Auditors/Actuarial Sciences, Business Analyst, Research Scientist, Data Scientist, Software Engineer, Graphic Design

Famous Introverts & Extroverts

Introverts



Extroverts



Overview of Cost Estimation

Cost estimating is the process of predicting the financial, time, and resource requirements of a project based on data analysis, historical trends, and risk assessment. It plays a critical role in budgeting, decision-making, and overall project success.

Key Skills

- Analytical Thinking
- Mathematical & Statistical Proficiency
- Attention to Detail
- Risk Assessment & Management
- Communication & Presentation Skills
- Collaboration & Teamwork
- Technical & Industry Knowledge
- Adaptability & Crisis Management

Strengths & Challenges for Extroverts

Challenges

- May dominate conversations or interrupt others
- Tendency to speak before fully processing ideas
- Can overlook details in favor of speed and action
- Discomfort with solitude or independent tasks
- Risk of appearing overconfident or dismissive of quieter input

Strengths

- Strong verbal communication and presentation skills
- Build rapport easily; excel in collaborative environments
- Quick decision-makers with high energy and visibility
- Comfortable taking initiative in uncertain situations
- Motivate and energize teams through enthusiasm

Strengths & Challenges for Introverts

Challenges

- Hesitant to speak up
- Valuable insights can be missed without activity
- Prefer time to process information
- Can be perceived as disengaged
- Avoids self-promotion
- May feel slighted if contributions aren't recognized

Strengths

- Exceptional listening skills
- Empathetic team members
- Valuable collaborative partners
- Strong, independent work ethic
- Comfort working solo
- Sustained concentration
- Process information in a deeper, less linear manner

Archetype Gaps in Cost Estimation



Introverted Considerations

- Occasionally long stretches of highly analytical, solo work
- Specialization in a particular area of focus in the task



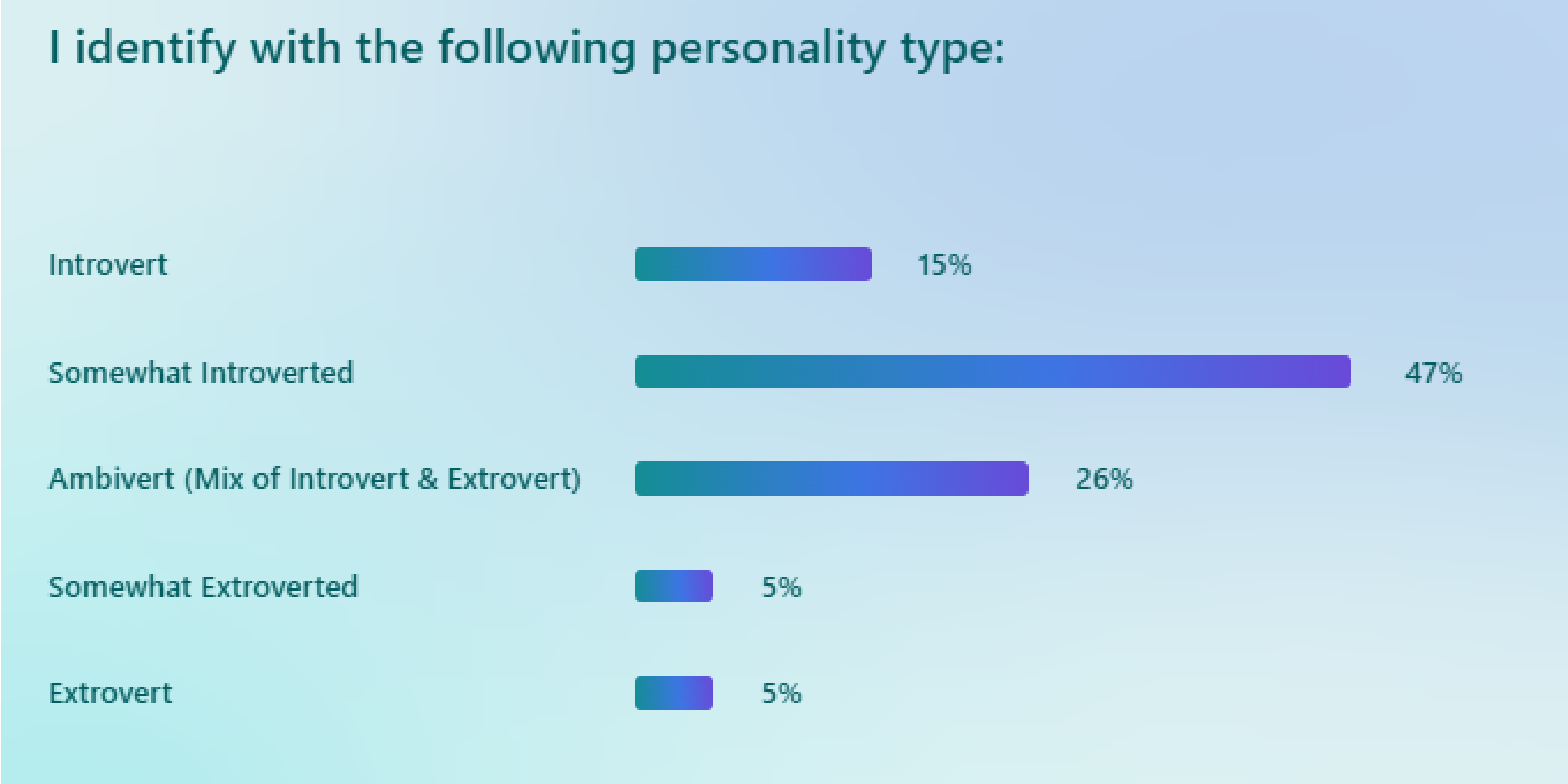
Extroverted Considerations

- Frequent information gathering meetings with reluctant attendees
- High visibility public speaking engagements



What's Your Personality?

Results From Our Coworkers at Augur



Bridging the Gap: How We Complement Each Other

Overcoming Misunderstandings

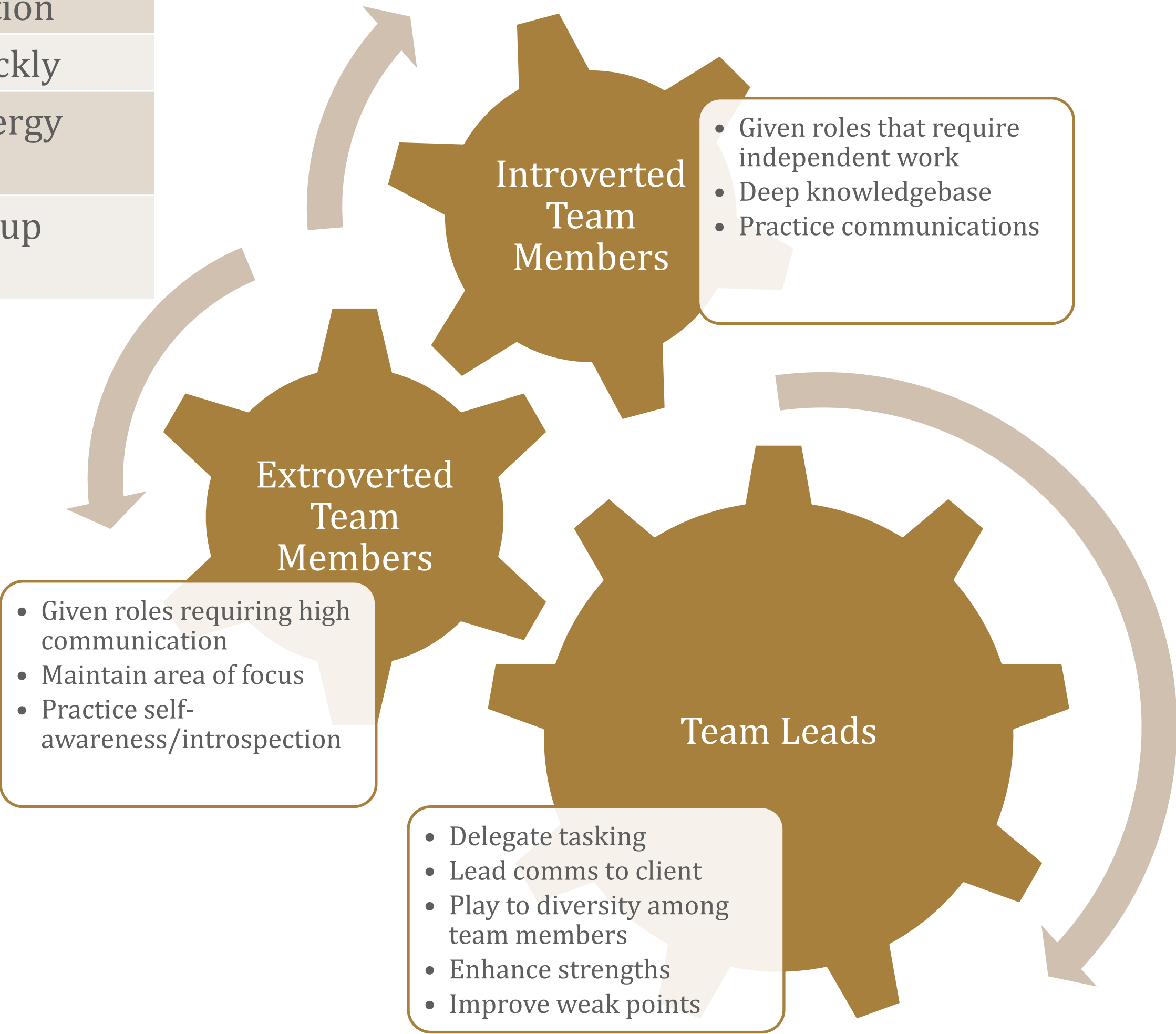
What the Extrovert Says:	What the Introvert Hears:	What the Extrovert <i>Means</i>
"Lets just talk about it right now"	<i>"Panic. No time to think. More Panic."</i>	"I'm excited to get moving on this!"
"Let's loop everyone in."	<i>Great, everyone is going to show up and talk over me.</i>	"More buy in = better ideas"
"Just say what's on your mind, what's your gut feel on this?"	<i>"Do you think I'm a magician?"</i>	"I value real-time feedback, and your opinion will tell me if we're on the right track."
What the Introvert Says:	What the Extrovert Hears:	What the Introvert <i>Means</i>
"I need some time to think about this."	<i>"They hate my idea."</i>	"I need time to process and evaluate your statements."
"Can we circle back later?"	<i>"They think this is dumb and want to ignore it."</i>	"I need time to understand the problem better."
[Silently nods]	<i>[Stares Blankly]</i>	"This is me actively listening."

Team Dynamics

Introverts	Extroverts
Prefer written communication	Prefer verbal, real-time interaction
Need time to reflect before responding	Think out loud and respond quickly
Comfortable with solo work and deep focus	Thrive in collaborative, high-energy environments
May hesitate to speak in group settings	Naturally lead or dominate group conversations

How to Bridge the Gap

- **Use hybrid workflows:** Allow both written and verbal input (e.g., email follow-ups after meetings)
- **Balance work modes:** Schedule both “focus time” and “collaboration time”
- **Set communication norms:** Pause in meetings to invite quieter voices, and set agendas in advance
- **Pair intentionally:** Match personality types for complementary working styles



Team Dynamics Scenario

Name	Personality Type	Role
Gordon	Extrovert	Team Lead
Eli	Introvert	Analyst
Vance	Introvert	Analyst
Alyx	Extrovert	Analyst

Goal: Develop a comprehensive lifecycle cost estimate for a pre-MS-C DoD Acquisition Program

- Gordon only sets timelines for analysts on the team to complete work
- Gordon and Alyx dominate the majority of the daily team discussions
- Eli and Vance are reluctant to speak up, participate, or correct what they hear
 - They receive little direction and work on an island without team coordination
 - Independent working time is not as productive or high-quality
- Alyx's areas of focus are the only aspects of the LCCE that receive refinement
 - Shoulders brunt of the workload during independent working time (most energy intensive)

Team Dynamics Scenario

Name	Personality Type	Role
Gordon	Extrovert	Team Lead
Eli	Introvert	Scheduler
Vance	Introvert	Cost Estimator
Alyx	Extrovert	Risk Analyst

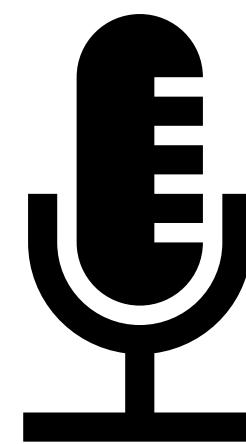
Goal: Develop a comprehensive lifecycle cost estimate for a pre-MS-C DoD Acquisition Program

- Gordon establishes timelines and delegates roles/responsibilities
- Each aspect of the deliverable are discussed in an integrated environment
- Eli and Vance participate in discussions due to their delegated roles
 - Other team members are dependent on their work/their work depends on other team members
 - Receive regularly occurring feedback from Gordon/team
- Alyx given a role within the overall team that requires most communication
 - Can prioritize these areas of focus during independent working times

Practical Takeaways for Teams and Managers

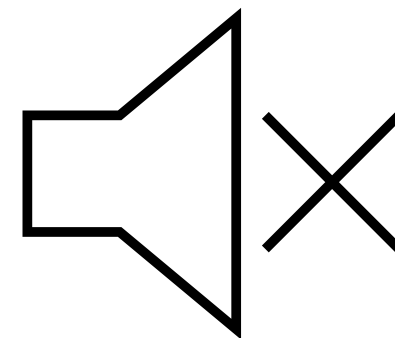
Recommendations to Aid Introverted Team Members

- Public speaking is a skill that can be strengthened with practice
- Delegation of tasking can increase comfortability with communication
- Acknowledge that nobody is an expert on everything
- Failure to deviate from introverted tendencies can prohibit career growth



Recommendations to Aid Extroverted Team Members

- Set aside time/energy to reflect on role in social interactions
- Agreeableness & friendliness are tools to “disarm” people
- Avoid falling victim to the Dunning-Kruger effect (“Midwit Syndrome”)
- Extroversion is a double-edged sword that can be strategically dulled with empathy



Guidance for Managers

Great managers will not expect someone to mirror their own personality; they create an environment where all thrive

- Tailor Communication Styles
- Balance Meeting Participation
- Assign Work Strategically
- Foster Peer Partnerships
- Recognize and Celebrate Diversity

Deploying your Introverts

- Assign deep analysis work such as sensitivity analyses and risk evaluations
- Let them lead the documentation
- Share data in advance; with context
- Clearly define speaking roles along boundaries

Your introverts should still communicate with clients; you're not firewalling them from human contact. As a manager you share responsibility for their development, so do your job to ensure they become well-rounded analysts.

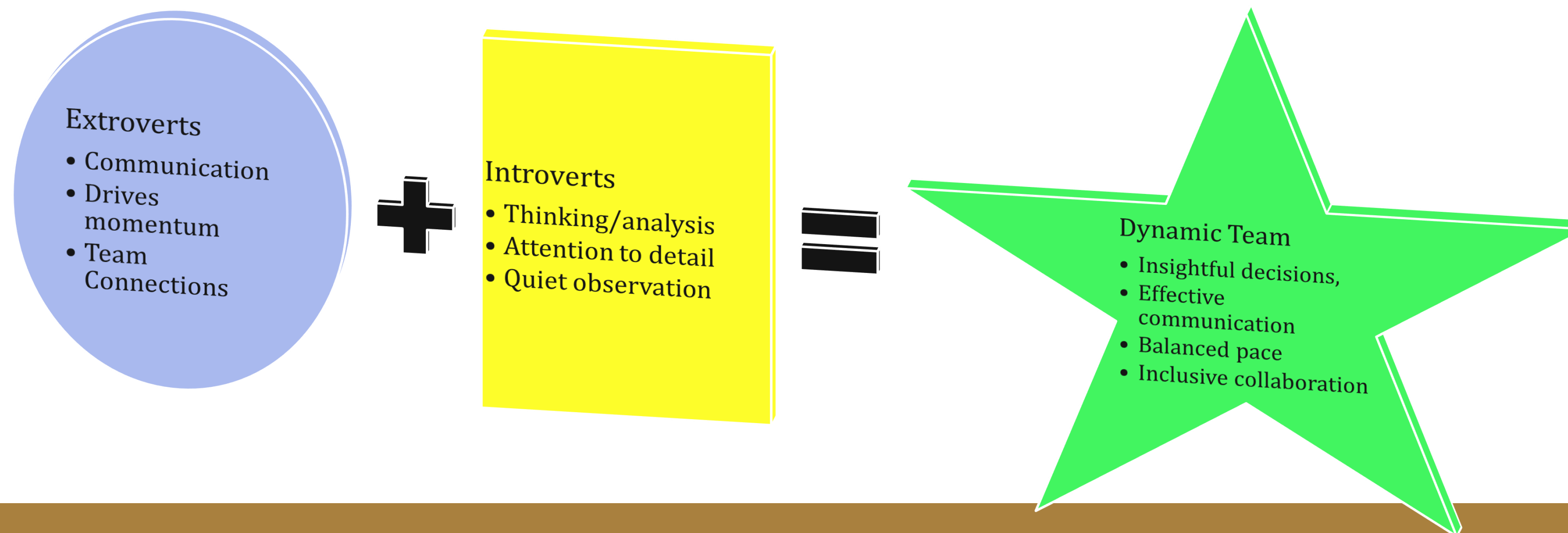
Deploying your Extroverts

- Put them on client/stakeholder briefings to present the cost narrative
- Lead cross-functional coordination between engineering, finance, etc.
- Assign to high-pressure tasks with tight timelines
- Lead group discussions

Extroverts are still required to be technically proficient estimators; being a smooth talker doesn't mean it's the only thing you do (we're not car salesmen). Ensure your extroverted team leads make room for your introverts to have a voice.

Conclusion

- Introspection and self-awareness
 - Determine your personality type → enhance strengths/improve weaknesses
- Introverts and extroverts are not opposing forces
 - Complementary strengths/weaknesses between both groups
- Lead and manage with intention
 - Actively work to understand your team's interpersonal dynamics



Free Personality Tests

Introspective Opportunity: find out your personality type

- MBTI: Short test, not scientifically significant
- Minnesota Multiphasic Personality Inventory (MMPI):
 - Most common psychometric test to assess personality traits

MBTI (Short)



MMPI (Long)

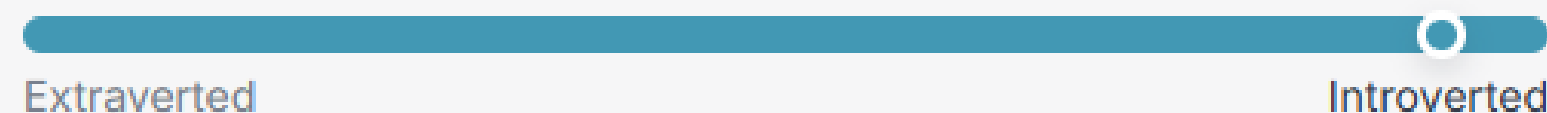


Personality Test Results – Stephen

Your personality type is:

Logician
INTP-T

93% Introverted



67% Intuitive



63% Thinking



58% Prospecting

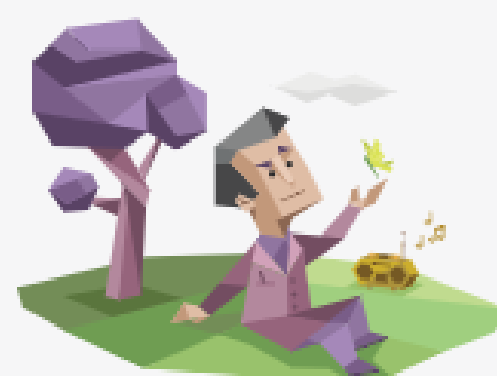


81% Turbulent



Energy

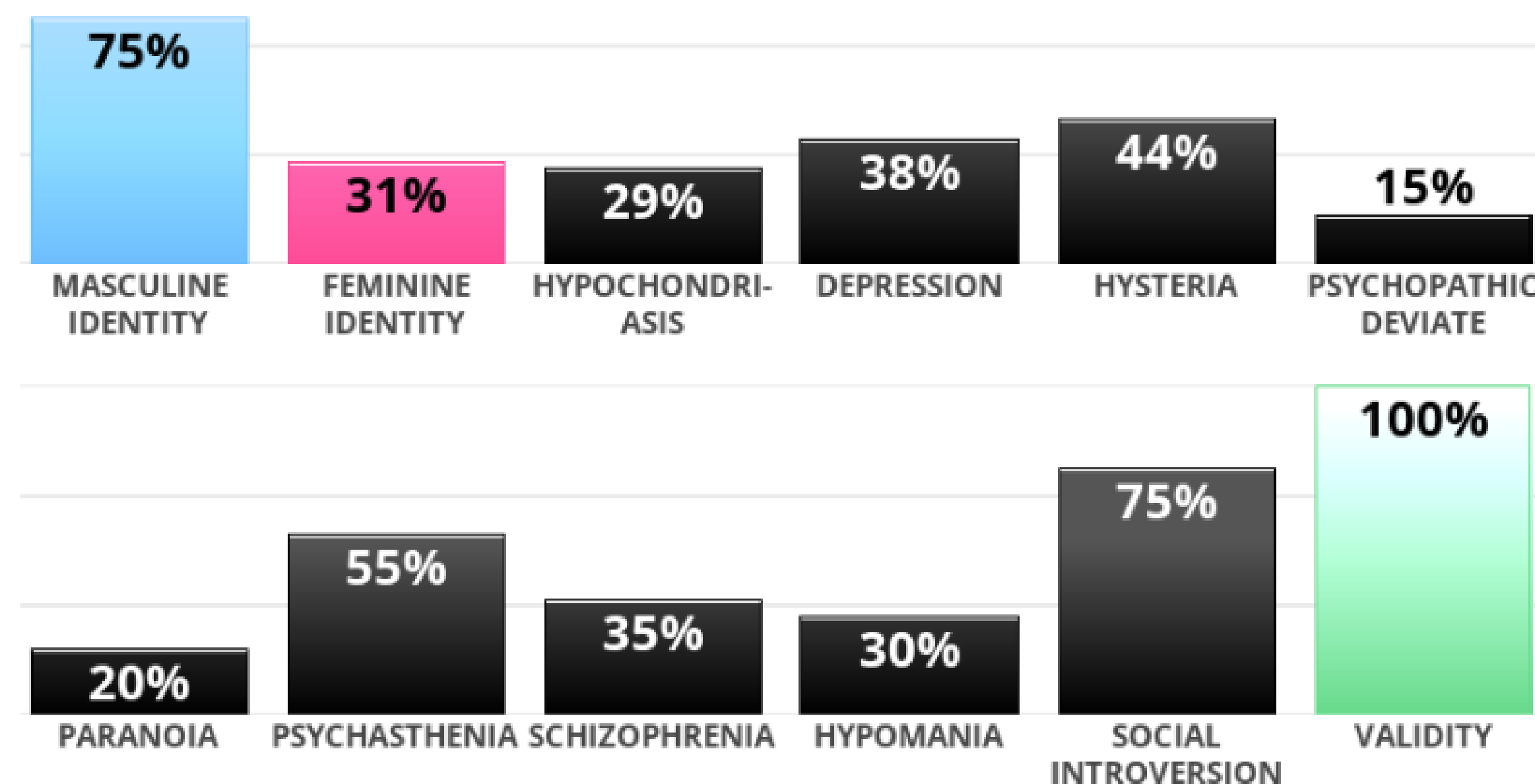
93% Introverted



You likely prefer fewer, yet deep and meaningful, social interactions and feel drawn to calmer environments.

Multiphasic Personality Test

Results:



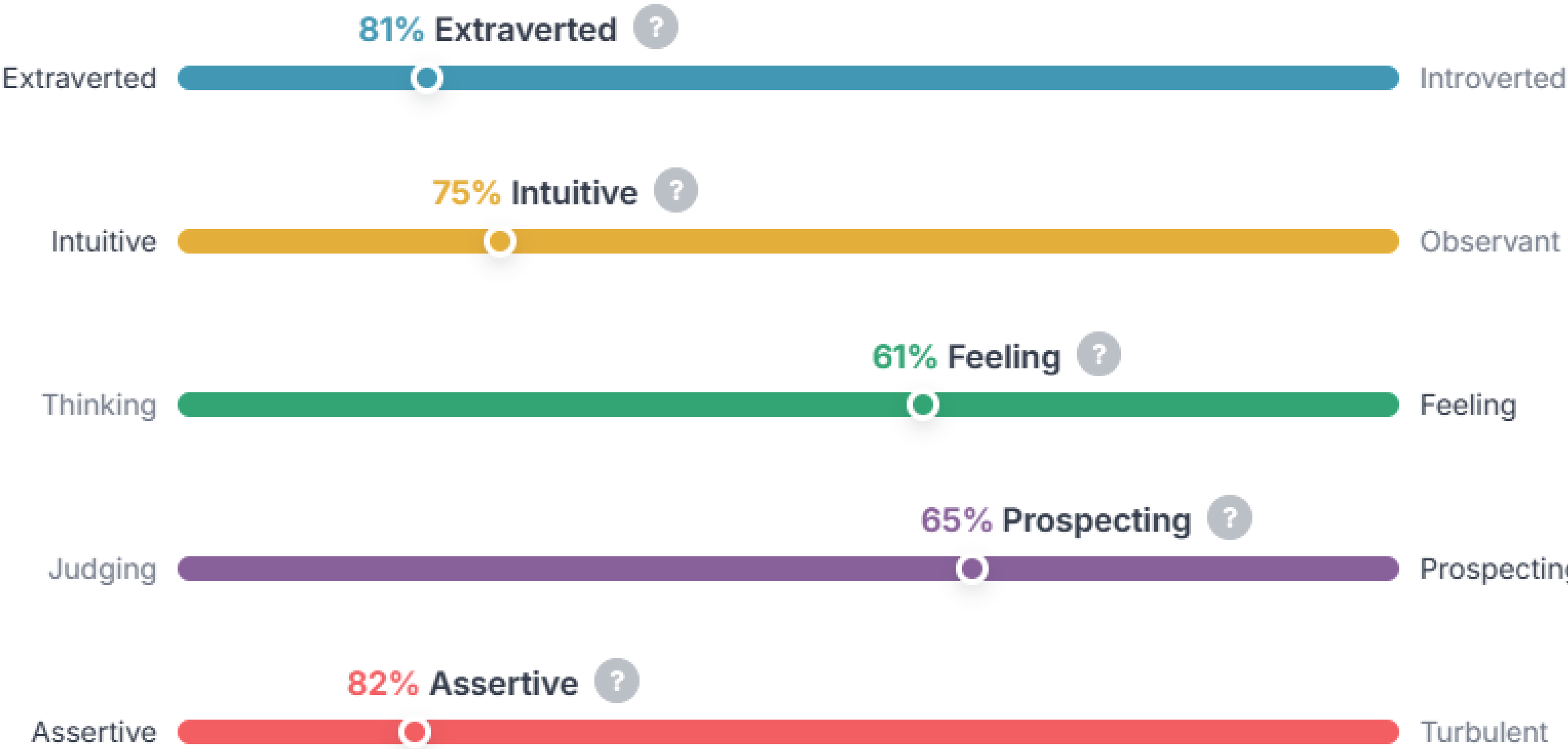
Personality Test Results – Tyler

His Personality

Campaigner (ENFP-A)

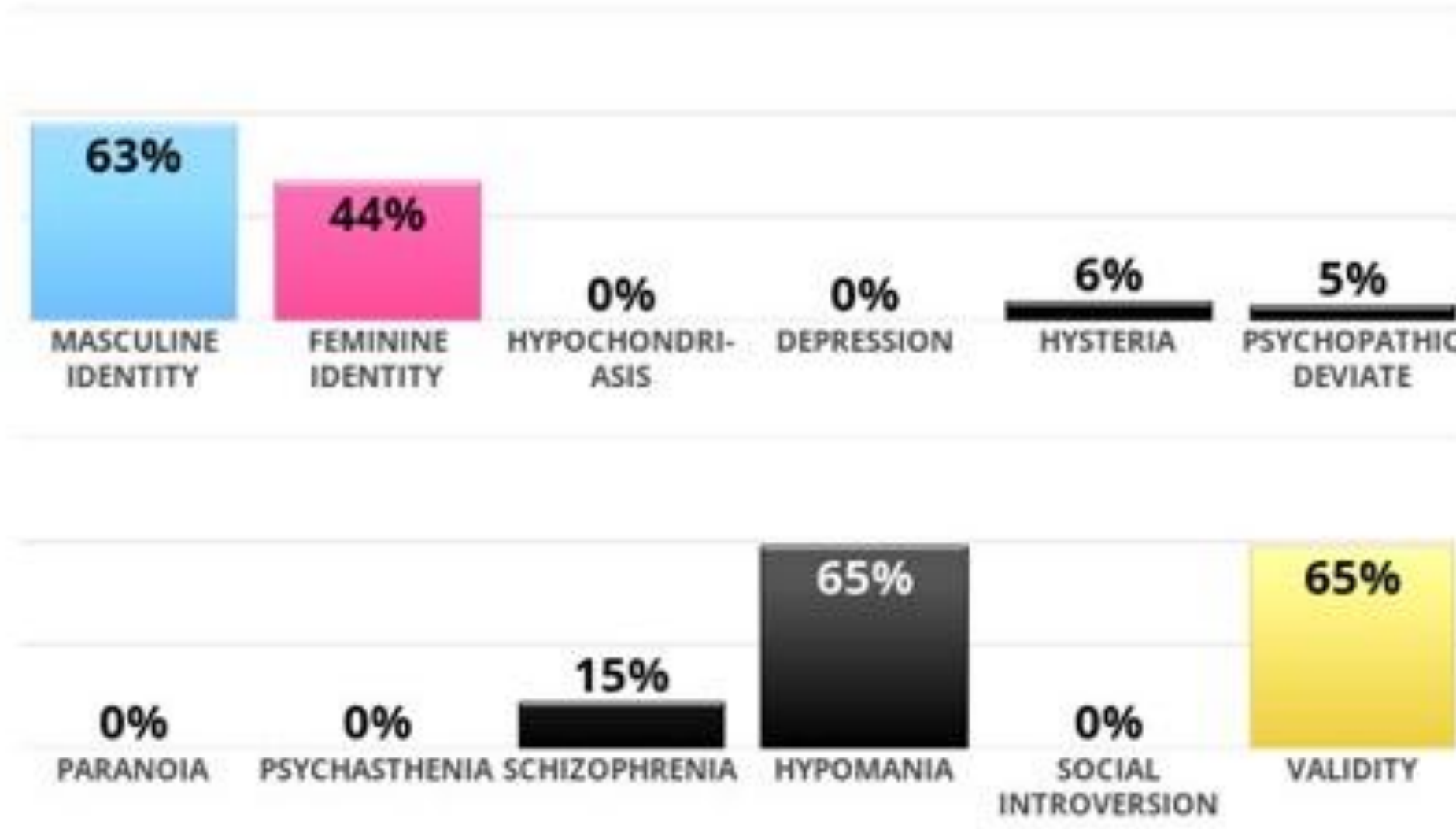


Campaigners are enthusiastic, creative, and sociable free spirits, who can always find a reason to smile. They embrace big ideas and actions that reflect their sense of hope and goodwill toward others.



Multiphasic Personality Test

Results:



Questions?

MBTI (Short)



MMPI (Long)



Backup



References

[1] <https://www.jhunewsletter.com/article/2022/11/dear-extroverts-introverts-are-normal-too#:~:text=One%20of%20the%20biggest%20questions%20I%20tend,extroverted%20and%20the%20other%2030%%20is%20introverted.>

[2] https://www.researchgate.net/publication/253850674_Extrovert_or_introvert_The_real_personalities_of_computing_students

[3] <https://www.suttontrust.com/our-research/a-winning-personality-confidence-aspirations-social-mobility/>

High-earning = Greater than \$74K/yr (median is \$62K/yr)

[4] https://www.researchgate.net/publication/247689617_How_Special_Are_Executives_How_Special_Should_Executive_Selection_Be_Observations_and_Recommendations

[5] https://www.giftedreach.org.nz/archives/the_gifted_introvert.pdf

[6] <https://www.indeed.com/career-advice/finding-a-job/jobs-for-extroverts>

[7] <https://research.com/careers/best-careers-for-introverts#:~:text=Diverse%20Career%20Options:%20There%20is,or%20with%20minimal%20social%20interaction.>