Cognitive Process Profile (CPP)

Standard Report for ABC Company

STRICTLY CONFIDENTIAL

NAME:
Manny Sample

CPP NUMBER:
CPP02010

ASSESSMENT DATE:
2015-01-14

cognadev

SECTION 1

Introduction

The CPP

The Cognitive Process Profile (CPP) is a computerised exercise that has been designed to externalise and dynamically track a person's cognitive processes to give an indication of thinking preferences, capabilities and potential for growth. The thinking processes are interpreted using algorithms.The aim of the CPP report is to provide an understanding of a person's thinking skills and learning potential to inform decisions regarding selection, placement, team compilation, succession and development. The results are described narratively and graphically.

Cognitive constructs reported on by the CPP

- The theoretical model on which the CPP is based
- Suitable SST work environment
  - Current and potential work environments
  - Work-related processing dimensions
  - Unit of information
- Stylistic preferences and capabilities
- Task requirements associated with processing tendencies
- Speed and pace control
- Processing competencies
  - Strengths and development areas
- Learning potential
- Developmental guidelines
- Summary of results
- Graphic summary

Biographical information

Full name:	Manny Sample
Gender:	Male
Date Assessed:	2015-01-14
Report Date:	2015-01-14
Unique Test Number:	CPP02010
Date of birth:	1989-03-18
Nationality:	SouthAfrica
Ethnicity:	WhiteEuropean
Highest education:	Multiple Degrees / Postgraduate
Discipline:	Civil Engineering / Construction
Functional Area:	Administration / Operations
Current position:	Other
Color blind:	No
Previous CPP:	No

Self-evaluation

This section was filled out by the candidate after completing the CPP.

How well did you understand the test?	Quite well
How difficult did you find it?	Fairly hard
How well do you think you did?	Quite well
Were you anxious or afraid?	Very relaxed
How well could you concentrate?	Fairly well
How much did you enjoy the test?	Quite a lot

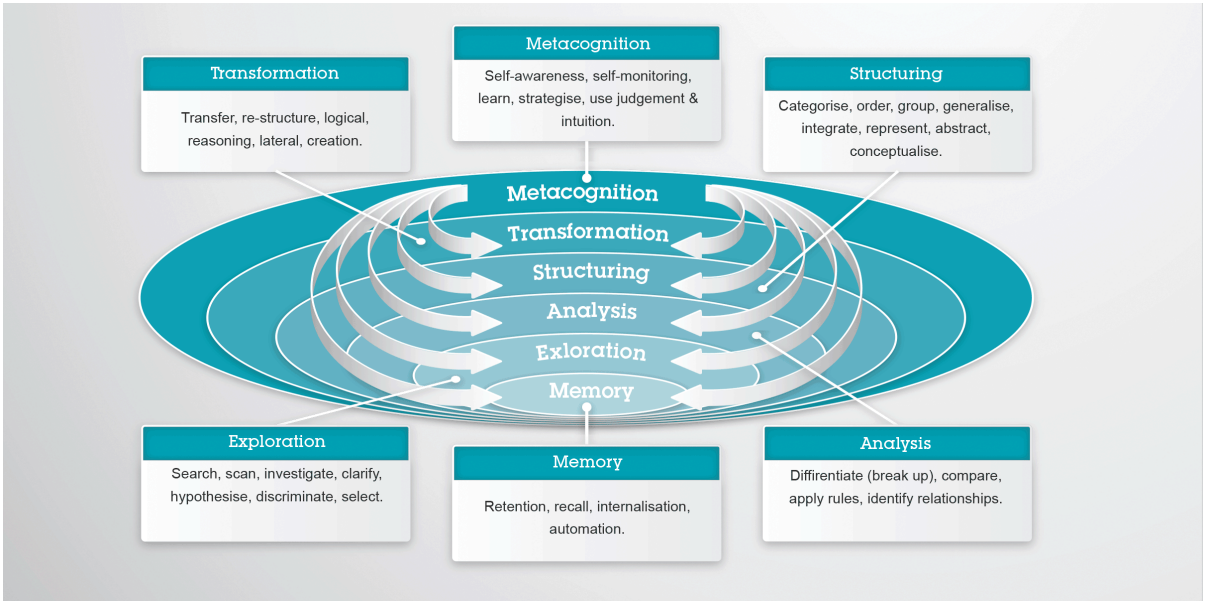
SECTION 2

The theoretical model on which the CPP is based

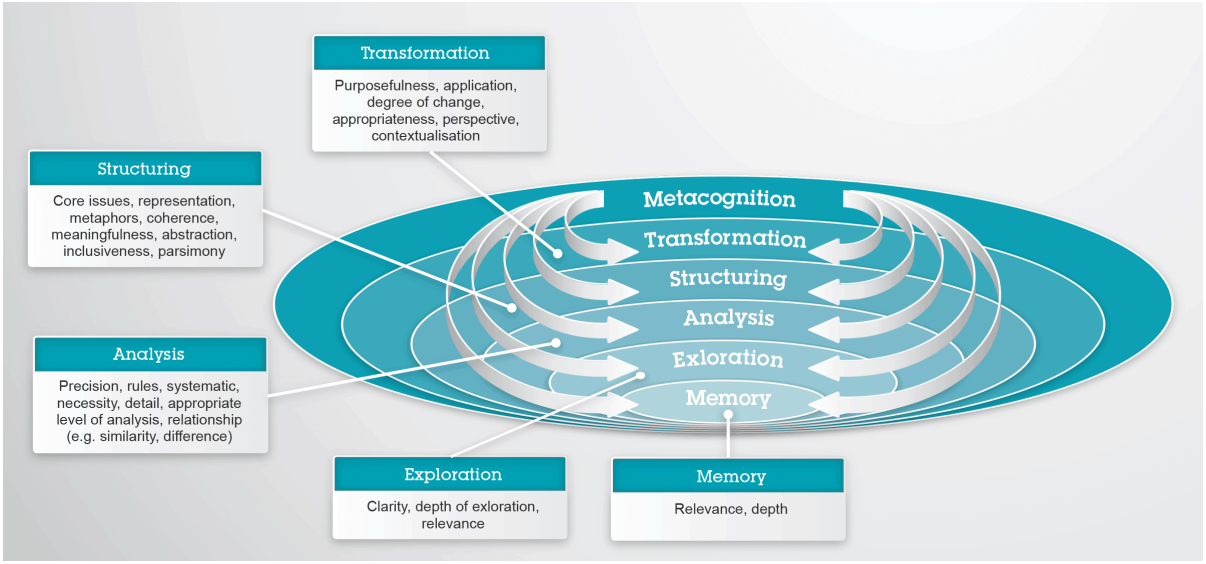
The holonic structure of the functional processing categories

The CPP externalises and tracks information processing activities and represents these in terms of functional categories organised as holons, where each successive process includes and transcends the previous one(s). Alternatively, the processing categories can be represented as overlapping fields of a matrix, the axes of which represent: (a) the increasing complexity of the information involved; and (b) the increasingly inclusive sequence of cognitive processes applied (as described in the CPP research manual).

The theoretical model of cognitive processes on which the CPP is based, differentiates between 'performance' and 'metacognitive' processes. Performance processes are applied to task material to recall, explore, analyse, structure, and transform information. The application of the performance processes is guided by specific metacognitive criteria. Cognitive development requires the internalisation and automatisation of metacognitive criteria.



The metacognitive criteria which guide the application of cognitive processes



SECTION 3

Suitable SST work environment

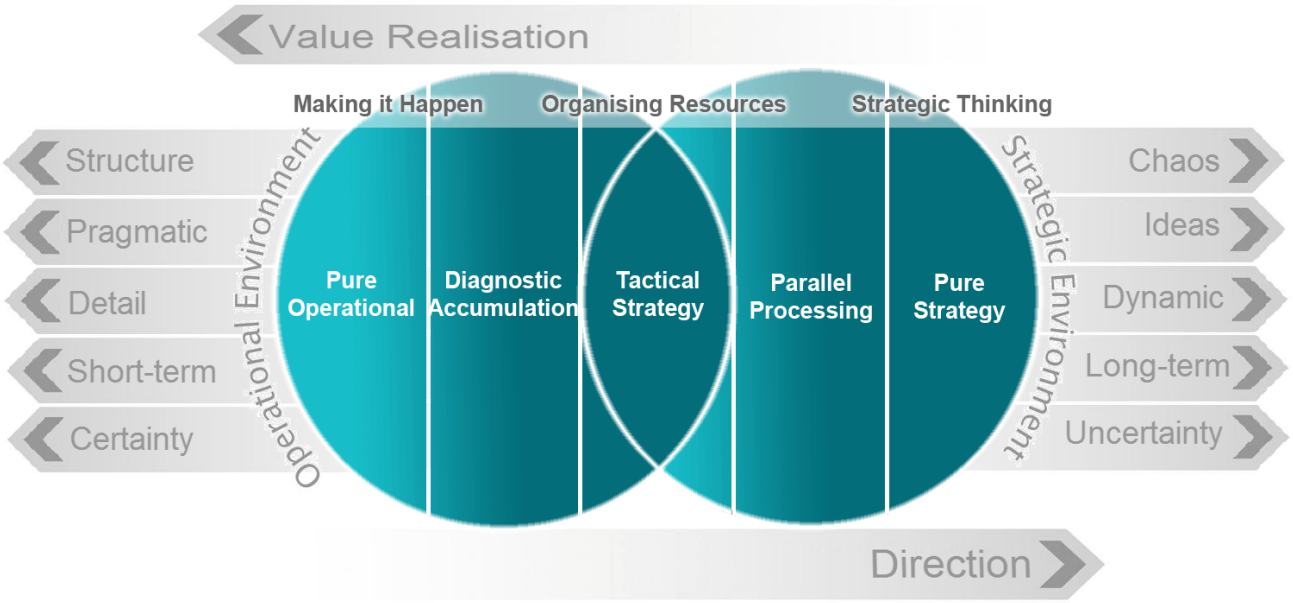
The CPP links a person's cognitive profile to the cognitive requirements of specific operational and strategic work environments.

Algorithms are used to compare the qualitative and quantitative characteristics of a person's profile to the requirements of five work environments. The profile qualities considered include a person's: (a) stylistic preferences, (b) the units of information used in processing, (c) judgement and decision making tendencies, as well as (d) eight job-related processing dimensions.

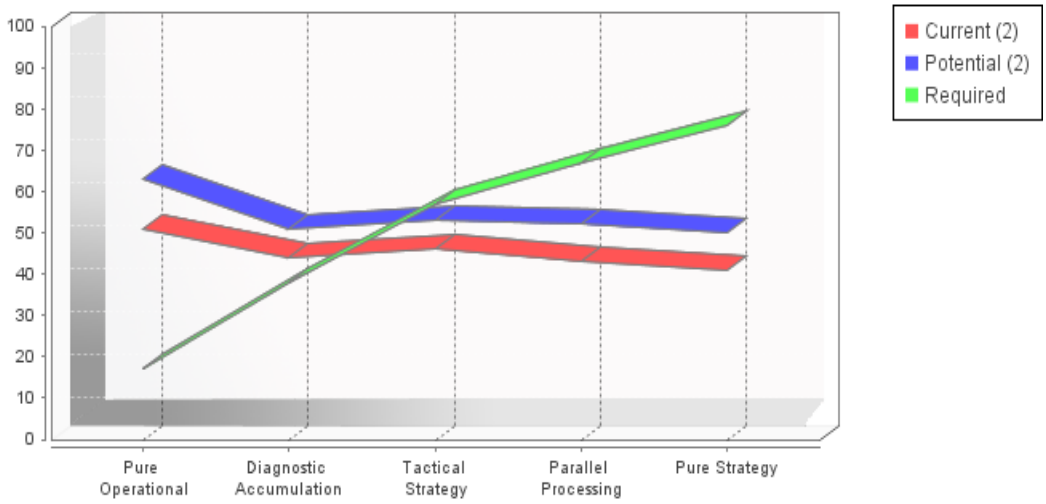
The work environments specified reflect the Stratified Systems Model (SST) of E Jaques, the Viable Systems Model (VSM) of S Beer and M Prinsloo's work on cognitive complexity.

Both 'current' and 'potential' work environments are indicated but no time frames are given to predict the person's readiness to progress from the current to the potential level as this depends on many different factors including opportunity and motivation.

Operational and strategic work environments



Manny's progress through the assessment was tracked and this is shown graphically below. This gives an indication of his preferred current and potential working environment.



SECTION 4

Manny's current and potential work environment

Manny's cognitive profile currently seems best suited to the following work environment:

Diagnostic accumulation

- Technical-specialist and/or supervisory work
- Situational problem-solving
- Understand service needs
- Understand technicalities
- Focus on causes, effects and symptoms
- Diagnose and prevent problems
- Initiate solutions within parameters, services

A Diagnostic Accumulation work environment can be described as follows:

Type of work

- It involves being familiar with and supervising direct operating tasks and supporting those who perform them
- Keeps operational work running smoothly
- Includes first-line management, involving direct face-to-face leadership
- Can be a technical specialist
- Mostly requires tertiary education
- Does not necessarily have clear-cut goals and outcomes

Ways of working

- Accumulates practical knowledge and data in a particular field
- Uses practical knowledge, together with technical / guidelines, to diagnose problems
- Comes up with solutions and acts to solve the problem
- Handles ambiguity by either-or or linear-causal reasoning
- Classifies and sorts information using relatively fixed rules of thumb

Information used

- Concrete, theoretical and specialised
- Clear and linear procedures
- Relatively stable contexts

Outputs / achievements

- Allows scope for different problem-solving approaches
- Outputs partly specified, but need some interpretation
- Largely situational / contextual

Judgement

- Based on how the rules may be applied in a given situation
- Relies on a clear and specialised knowledge base

Language used

- Focuses on objects, methods and outcomes

Learning

- Practical application and refinement of technical knowledge base

Time frame

- Ranges from three months to one year for the most complex task.

Examples

- First-line supervisor
- First level technical specialist or professional
- Teaching, training, direct sales, rule-based programming / technical work

SECTION 5

Work-related processing dimensions

The work-related processing preferences are used in conjunction with cognitive style, unit of information and judgement capability, to determine a most suitable work environment for a person.

Personal preferences for Operational or Strategic work can be described in terms of four dimensions:

- Complexity
- Tangibility / type of the information
- Time frames
- Degree of structure of the work environment

The person's preferences and capabilities can guide job placement decisions and indicate the most appropriate developmental initiatives.

Notes: (see the table on the following page) Interpreting the work-related processing scores:

Strategic orientation (right column): These scores reflect skill in dealing with the processing requirements of Strategic environments. Scores of up to approximately 40 support Operational functioning; roughly 40 - 60 enable Diagnostic Accumulation functioning; 60 - 70 point to Tactical Strategy functioning, around 70 - 77 suggest Parallel Processing functioning and scores exceeding approximately 77 indicate Pure Strategic functioning.

Operational orientation (left column): These mostly (excluding 'Detail') reveal a complementary score to that of the opposite pole on the right of a particular dimension. The scores in the left column are thus interpreted relative to the person's scores in the right column. 'Relatively high' scores are above 50.

- Relatively high scores on 'Detail complexity' indicate skill in dealing with technical detail, but not necessarily a preference for detail. Relatively low scores on 'Detail complexity' may indicate an avoidance of detail even though the person may have the capacity to deal with it.
- Relatively high scores on 'Tangible' indicates a pragmatic and hands-on approach and preference for well-defined contexts. Both high 'Tangible' and high 'Intangible' scores (thus an overlap between the two poles) is possible and this indicates adaptability to both types of environments.
- A relatively high score on 'Short-term' may indicate a reliance on immediate feedback given, the tendency to view issues simplistically, to jump to conclusions and to make assumptions.
- A relatively high score on 'Structured' indicates a need for ordered contexts and shows either the capacity to structure environments independently or to require structured environments.

Manny's results indicate the following work related processing preferences and capabilities:

Operational orientation	Strategic orientation
54	48
Detail complexity The application of a detailed, specialist and technical approach – where the focus is on facts, rules, linear sequences and relationships. (High IQ may elevate this score – but not necessarily, and an irritation with detailed technical work may lower it.)	**Dynamic complexity** The application of an integrative approach – where the focus is on underlying patterns and the interactions between elements and systems (non- sequential patterns, circularity, feedback systems). (Inadequate capability, learning opportunity and exposure may lower this score.)
60	53
Tangible information The application of a hands-on approach – where the focus is on tangible, concrete, well-structured and practical issues.	**Intangible information** The application of an ideas-oriented approach – where the focus is on new concepts, ideas, creativity, learning, quick insight, flexibility, intuition and an interest in ideas and possibilities. (An avoidance of new, abstract and/or hypothetical concepts may lower this score.)
63	37
Short-term focus The application of a trial-and-error approach – characterized by a preference for feedback and guidelines where the focus is on concrete actions and immediate effects within a familiar environment. A relatively high score may also reflect imprecision, assumptions, quick closure, impulsivity and inadequate planning.	**Long-term focus** The application of a disciplined and consequential reasoning approach – where the focus is on logical thinking, the following through of arguments and the evaluation of the effects of evolving situations. (A low level of motivation and interest may lower this score.)
59	38
Structured contexts A preference for order and structure (external or self-created) – where the focus is on guidelines, rules, linear procedures as well as capitalizing on knowledge and experience. (It reflects both the search for existing structures and creation of structures.)	**Unstructured contexts** The preference for an unfamiliar environment – where judgment and intuition is applied confidently and effectively in clarifying vague, unstructured and ambiguous information. (Low confidence in own intuitive insights may lower this score.)

SECTION 6

Complexity and unit of information

Individuals tend to focus on specific levels of complexity when dealing with information and when solving problems.

Five units of information can be identified to indicate the level of complexity involved, namely:

(a) separate elements

(b) relationships and linear causality

(c) tangible systems

(d) dynamic and interactive systems

(e) chaos and emerging patterns

These five units of information are linearly related to the five levels of work as reported on by the CPP. If the level of complexity required at a specific level of work matches the person's cognitive preference and capability to deal with that level of complexity, the person may experience a sense of being 'in flow'. If a person's approach and the job requirements are mismatched, it may result in boredom or stress and impact on job satisfaction and motivation.

Manny tends to utilise the following units of information:

Unit of information	Description
Relationships and linear causality 	Solving technical problems • linear sequences / causality • either-or tree structures • categorisation of symptoms for purposes of diagnosis • a tangible focus • a preference for a thorough knowledge base or previous experience
Tangible systems 	Optimising system efficiencies • planning and structuring • generating alternatives • co-ordination of structural elements within a system • interactions between tangible elements

SECTION 7

Cognitive styles

Cognitive styles refer to broad response tendencies or patterns in thinking and problem-solving behaviour. These are measured by tracking a person's responses to unfamiliar information. A person's stylistic preferences when dealing with unfamiliar information, however, also tend to be used when working with familiar information. Some personality factors are indicated here, as these are sometimes evident in the way a person thinks.

A person may develop specific stylistic preferences due to personality and emotional factors, cultural values, educational exposure, learning opportunities, work experience and fields of interest. In interpreting this report, the specific combination of preferred styles provides a useful indication of certain factors in the person's developmental history.

Various descriptive categories are reported on as indications of stylistic preference, namely: Explorative, Analytical, Logical, Structured, Reflective, Reactive, Trail-and-error, Integrative, Holistic, Intuitive, Quick Insight, Learning, Metaphoric and Memory approaches. A Balanced style is indicated if the person applies detailed, rule-based approaches as well as flexible, ideas-based approaches. A Trail-and-error or Quick Closure style may be an indication of performance anxiety, emotional or developmental factors. It may also be a valid reflection of the person's approach to unfamiliar problem-solving. Insight can be gained from interpreting the person's particular combination of stylistic preferences. The construct of "Style" also informs the identification of a suitable work environment.

Manny tends to apply the following styles in unfamiliar contexts and is highly likely to also apply these styles in familiar contexts:

LEARNING

Learning style:

- Tends to be curious and explorative
- Often capitalises on memory functions
- Is self-aware and tends to respond to feedback on the effectiveness
- Tends to continuously improve problem-solving skills
- Is adaptable, flexible and able to acquire new ways of thinking
- Seeks novelty and focuses on unfamiliar aspects
- Usually is motivated, concentrates well and invests in problem-solving
- Can easily get bored, so needs challenge and stimulation
- Is likely to enjoy fast-changing work environments

MEMORY

Memory style:

- Tends to concentrate well and remembers information
- Usually tries hard, concentrates carefully and has high standards
- May internalise and integrate information while processing it
- Relies on past experience and a knowledge base
- May show a technical specialist orientation, but not necessarily
- Tends to use memory strategies such as confirmation of hypotheses, external reminders, visualisations and associations
- Is aware of and mentally monitors own memory strategies
- Often has a need to achieve
- Can overload memory and become confused

TRIAL-AND-ERROR

Trial-and-error style:

- Likely to work quickly but inaccurately
- May be impulsive or show quick closure
- May respond emotionally rather than rationally
- May not identify or focus on the most relevant aspects of a problem
- May not spend sufficient time on complex cognitive challenges
- Could lack motivation
- Likely to be sensitive and/or experience performance anxiety
- May find it difficult to deal with unfamiliar cognitive challenges

QUICK INSIGHT

Quick Insight style:

- Tends to works quickly and accurately
- Grasps ideas and reaches conclusions relatively quickly
- Tends to focus and process information in a goal-oriented manner
- Processes and integrates information relatively quickly
- Uses effective reasoning and memory strategies
- Is likely to be self-confident and takes pride in working quickly
- May be sensitive, intuitive and trusts own insights
- Regards the speed information is processed as important

The order that Manny applied all the styles is:

1. Learning
2. Memory
3. Trial-and-error
4. Quick insight
5. Reactive
6. Intuitive
7. Explorative
8. Structured
9. Reflective
10. Integrative
11. Holistic
12. Metaphoric
13. Analytical
14. Logical

SECTION 8

Rank order of cognitive styles

Metacognition refers to awareness of ones own thinking processes. Each of the cognitive styles is guided by certain internalised metacognitive criteria. This means that a persons thinking processes reflect specific rules that are applied automatically or via self-talk. For example: a person who values accuracy and has internalised it as a metacognitive criterion, is likely to apply an analytical approach to problem-solving. The following styles reflect the application of the specified metacognitive criteria. First the preferred styles will be discussed, then the styles that are applied the least. This will provide an indication of broad cognitive development areas.

Manny's most prominent stylistic preferences:

Rank	Preference	Description	Implications
1	**Learning**	A tendency to pursue cognitive challenges, to acquire new skills and to improve own functioning. **Metacognitive criteria: "error", "correctness", "improvement"**	It is associated with curiosity, an adaptable and open-minded approach, concentration, metacognitive awareness and the integration of feedback to improve own responses.
2	**Memory**	A tendency to concentrate well and rely on knowledge and past experience. **Metacognitive criteria: "concentration" "internalise", "relevance", "familiarity" and "recognition"**	May indicate a need for achievement. An exclusive reliance on existing knowledge can interfere with an unbiased and spontaneous approach. A well-developed knowledge base enhances intuitive capacity.
3	**Trial-and-error**	A tendency to apply a somewhat unsystematic, random and unplanned approach to problem-solving. **Metacognitive criterion: action**	May benefit from being more metacognitively aware of own thought processes and asking: "how shall I approach this?"
4	**Quick insight**	A tendency to grasp concepts relatively quickly. **Metacognitive criterion: "meaning"**	It may reflect cognitive capability; may be associated with intuition, learning and metacognitive awareness. It may reflect cultural values emphasising speed. It contributes to problem-solving effectiveness in general.
5	**Reactive**	"A tendency to value speed and/or closure over accuracy and therefore fast (but not necessarily), superficial and inaccurate.	May benefit from developing a more in-depth and structured approach and controlling emotional responses such as performance anxiety and "flight or fight" reactions. Learn to ask oneself: "carefully check again".

Manny seems **less inclined** to implement the following styles (this list starts from the least frequently applied style):

Rank	Preference	Description	Implications
14	**Logical**	A tendency to work with rigour, to look for logical evidence, to apply a process approach and to follow own thinking processes through. **Metacognitive criteria: ”purpose”, “change”, “transfer”, “application”, “contextualisation”, “alternatives”, “appropriateness”**	Manny may benefit from developing a more rule-based, disciplined and process approach to reasoning. Assumptions need to be verified or falsified by looking for logical evidence. Thinking processes need to be followed through in order to identify the consequences and implications.
13	**Analytical**	A tendency to work with detail in a systematic and precise manner, pulling issues apart, identifying subcomponents and linking these according to specific rules. **Metacognitive criteria: “accuracy”, “necessity”, “rules”, “precision”, “systematic”, “relationship”, “similarity”, “difference”**	This approach can be developed by becoming more aware of detail, precision, rules and interrelationships between elements. Manny could develop the habit of independently pulling situations apart to identify the building blocks. This is likely to result in a greater understanding of the information involved.

SECTION 9

Task requirements and associated processing tendencies

Current and potential preference and skill in dealing with specific task requirements

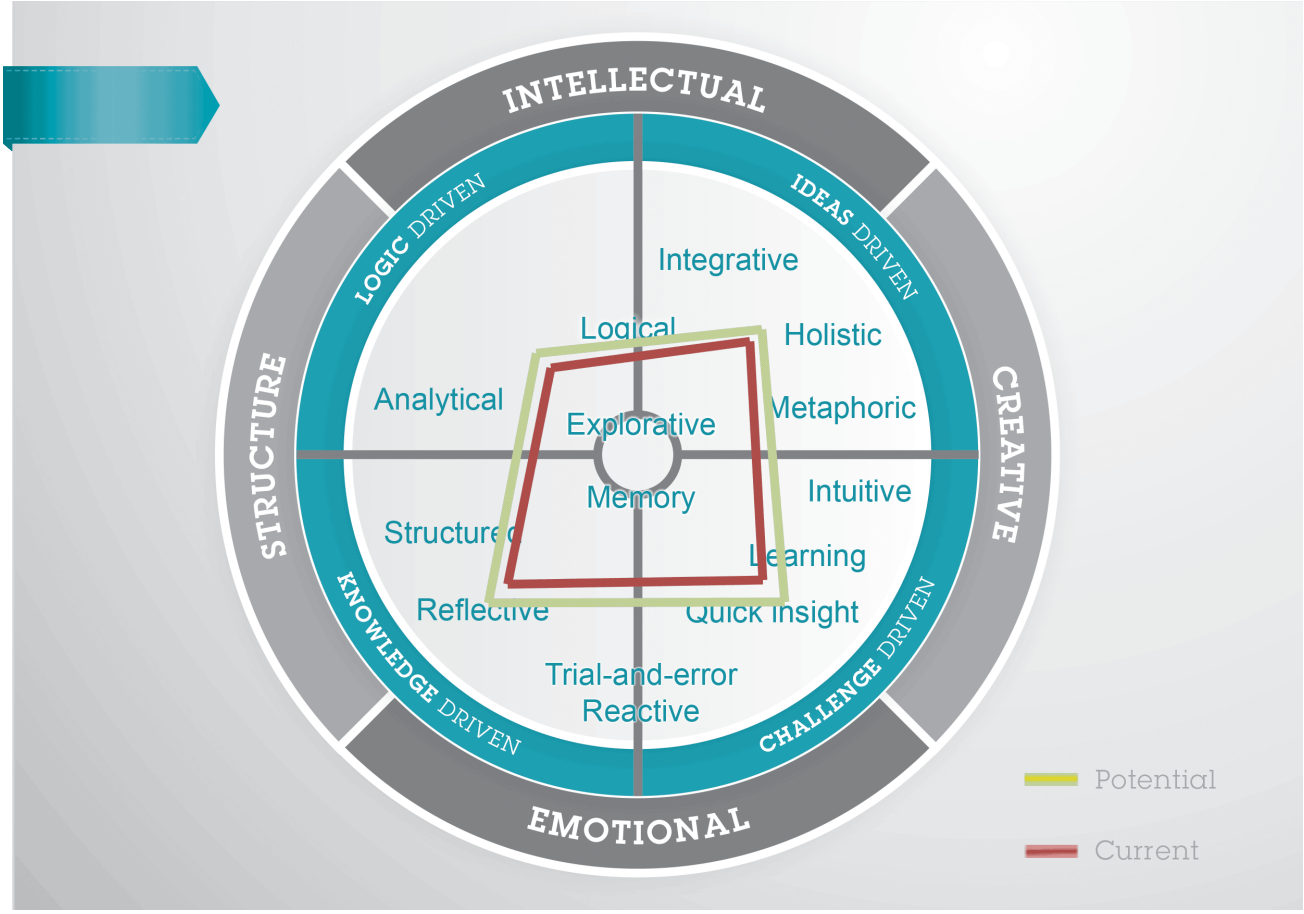
The various thinking styles above can also be represented in terms of the brain quadrants metaphor. The various quadrants indicate preferences for, and skill in, dealing with certain types of information and specific task requirements, including:

Logic **Ideas** **Challenge** **Structure**

The typical right quadrant preferences are associated with an ideas orientation and creative tendencies and the left quadrant preferences with a more structured, focused and factual orientation. The upper quadrants are more intellectually driven than the lower quadrants that are associated with emotional motives such as the need for certainty versus the need for challenge. The relative contribution of specific cognitive styles have been superimposed / positioned in blue on the graph.

Manny's preference and skill regarding the task requirements

The graph below indicates Manny's current preferences and potential for dealing with these various types of processing requirements.



Interpretation of the skills and preferences associated with particular task requirements

Structured, rule-based approaches: dealing with facts in a logical, analytical, sequential and organised manner:

- Logic driven: a preference for logical-analytical reasoning, using facts. It involves the application of rule-based, focused and relatively structured information processing. People who achieve relatively high scores in this quadrant typically enjoy intellectual challenge and information-rich, technical and professional contexts.
- Knowledge driven: a preference for the relatively well-structured information that is characteristic of domain-specific and operational work environments where one can capitalise on existing knowledge and experience. In terms of the complexity involved, it may range from dealing with tangible and concrete phenomena to more complex theoretical information. The emotional security offered by the familiarity of the task material generally enhances performance.

Holistic and Creative approaches: dealing with ideas and new challenges by making meaning of, and contextualising the information

- Ideas-driven: a preference for integrating fragmented and/or theoretical information in a meaningful way. The generation of unique and innovative ideas are characteristic of this mode. People who achieve relatively high scores in this quadrant typically enjoy intellectual challenge and generally apply a contextualised or holistic approach.
- Challenge-driven: flexible, open-minded awareness, curiosity and a learning orientation. Relatively high scores in this quadrant are associated with the tendencies to become bored and to challenge oneself and others. This may be driven by an emotional need for novelty and variety. Those showing this preference perform best when having to deal with interesting and meaningful information.

SECTION 10

Speed and pace control

Speed and Power are two separate constructs in cognition. The CPP allows the person to work at his own pace. Four speed-related dimensions are reported on, namely: pace of problem-solving; how quickly new information is grasped; the time spent on easy versus difficult aspects; and the tendency to close problems quickly. Scores are normally distributed between 25 and 75.

Manny's speed and pace control scores:

Dimension	Description	Score
Speed of work	The speed or pace by which unfamiliar cognitive tasks are completed	52
Quick insight	The rate of grasping and understanding concepts	51
Pace control	The tendency to spend most time on the most difficult task requirements	69
Quick closure	The tendency to jump to conclusions and make assumptions	64

Notes: Interpreting Speed and Power

The various constructs reported on are independently measured. Thus seemingly contradictory results are possible – such as high scores on both 'Pace Control' and 'Quick Closure'. This can be interpreted qualitatively.

If the 'Speed of Work' score is relatively close to the 'Quick Insight' score, then the person works at a reasonable pace, given their natural inclination and capability. If the 'Speed of Work' score is higher than 'Quick Insight', then the person worked at a faster rate than they understood the task requirements. If the 'Quick Insight' score is higher than the 'Speed of Work' score, then the person worked relatively slowly and carefully. 'Pace control' scores are important and indicate the person's insight into the difficulty of the task and how they adjusted their pace to spend more time on more difficult aspects.

As a broad guideline, a score of 60 and above can generally be regarded as a high score on the constructs of 'Speed of work', 'Quick insight' and 'Pace control', and a score below 35 - 40 as a relatively low score. A relatively high score on 'Quick closure' may indicate that emotional and motivational factors interfered with the effectiveness of processing. It may also show low cognitive rigour or discipline. Relatively low scores are desirable on 'Quick Closure'. On this construct, scores above 50 can be regarded as relatively high.

SECTION 11

Information processing competencies

This bar graph provides a graphic representation of the person's functioning on the six processing categories namely: Memory, Exploration, Analysis, Structuring and Integration, Transformation and Metacognition. All are Performance processes, except Metacognition which guides the application of the Performance Processes. These functional processing categories can be represented as a holon where each successive process includes and transcends the previous one(s). The dynamic functioning of the processes are explained by the theoretical processing model on which the CPP assessment is based.

This following simplified graphical representation summarises Manny's results and is useful to guide decision-making and cognitive development initiatives in work and educational contexts.

Processing competency		Description	Scores
Memory	Use of Memory	A tendency to rely on memory and to concentrate on the task	64
	Memory Strategies	Effectiveness of memory strategies	62
Exploration	Pragmatic	Practical orientation (asking whether things will work in practice). Determining relevance in structured contexts	42
	Exploration	The effectiveness, depth and width of exploration	45
Analysis	Analysis	Working systematically,independently. Detailed and precise in differentiating between, and linking, elements	27
	Rules	A focus on rules	47
Structuring / Integration	Categorisation	Creating external order, categories and reminders. Structuring tangibles	52
	Integration	Synthesis of ambiguous / discrepant / fragmented information	45
	Complexity	The preferred level of complexity and the unit of information used	54
Transformation	Logical Reasoning	The disciplined, logical following through of reasoning processes	22
	Verbal Conceptualisation	Unusual / flowery / creative and/or abstract verbalisation and conceptualisation	31
Metacognition	Judgment	Capitalising on intuitive insights to clarify unstructured and vague information	38
	Quick Insight Learning	A tendency to grasp new concepts and acquire knowledge and understanding relatively quickly	56
	Gradual Improvement Learning	A preference for practical or experiential learning	66

SECTION 12

Cognitive strengths and development areas

The following table reveals those processing dimensions that the person scored significantly higher or lower on as compared to his average processing scores on the left, as well as his current level of work. This is a very detailed part of the report and is provided to inform cognitive development initiatives. This section should be managed holistically – and not by focusing on the complex detail.

Manny's processing strengths and development areas:

Table of Cognitive Strengths and Development Areas	STRENGTHS		DEVELOPMENT AREAS	
	Own profile	Current work environ-ment	Own profile	Current work environ-ment
Memory				
Use of memory: The tendency to retain and recall information that is a prerequisite for learning, intuition and integration functions	4	1		
Analytical				
Analytical approach: A disciplined, detailed, systematic and rule-based approach			1	
Metacognitive monitoring of linking: Being aware of the way one identifies relationships between objects or concepts			1	
Need for precision: An emotional need to be accurate and correct			1	
Precise and systematic approach: Working with accuracy, applying a detailed and precise approach			1	
Structuring and Integration				
Abstract conceptualisation: Expressing conceptual thinking by using creative, abstract language			2	
Categorisation: Classifying, grouping and representing information by using techniques such as categorisation, filing, listing, mapping, architecturing, note-taking and diarising	1			
Complexity: Dealing with numerous, vague, interactive and abstract elements			2	
Transformation				
Following arguments through: A tendency to apply a process-approach and pursue the line of reasoning in a disciplined manner until the underlying complexity converges			3	1
Logical verification: The tendency to search for logical proof			2	
Metacognition				
Memory strategies: The use of techniques and aids to assist memory functioning. (Checking to ensure accuracy may lower this score)	3	1		
Metacognition: Self-awareness regarding problem-solving approach	1			
Strategising: Careful planning on how to approach a problem			2	
Learning: Improving understanding by adjusting, expanding and integrating information structures in a self-aware manner	3	1		
Clarification: Interpreting, judging, weighting and prioritising unclear information			1	

Note: the strength of the finding is indicated numerically in the table above. Higher numbers indicate a more significant finding. Treat scores two and above as significant.

SECTION 13

Learning potential

It is difficult to predict a person's future and potential cognitive functioning on the basis of current performance, given the long term impact of variables such as emotionality, motivation, educational and work exposure. Cognitive performance is evaluated in depth to identify indicators of cognitive modifiability. The slopes of learning curves and the effectiveness of information processes are interpreted. This gives an indication of the person's potential to increase current cognitive functioning as well as the capacity to master new knowledge or content areas. This information can inform decisions regarding the utilisation and development of talent.

Manny shows an above average to high level of learning potential.

Manny's current strengths that can be capitalised on in actualising his learning potential are:

Strength of finding	Indications of existing skill	Description
4	Overall profile	Manny achieved significantly higher scores on some relatively complex processes as compared to other less challenging ones. This indicates that He should be able to use his already developed skills to improve the lower processing scores with relative ease.
3	Right brain preference	He seems to prefer the world of ideas to that of tangible facts. He also showed more skill in making sense of ideas and integrating information than in the analysis factual matters. Integrating information is more difficult than analysis information – which indicated a foundation upon which Manny can further develop his analytical skills. If the person has person has a personality preference for ideas and integration, it may limit their motivation to learn more effective analytical skills.

Note: the strength of the finding is indicated numerically in the table above. Higher numbers indicate a more significant finding. Treat scores two and above as significant.

Manny's developmental areas in terms of learning potential

Strength of finding	Indications of existing skill	Description
4	Ineffective thinking strategies	Manny's profile showed some examples of the application of ineffective thinking strategies. Typical examples of ineffective problem-solving strategies are: impulsivity, randomness, sweeping perception, assumptions, an unanalytical approach, or a lack of metacognitive awareness and thus inadequate monitoring of own functioning. These tendencies can be addressed via the internalisation of metacognitive skills.
2	Uncertainty	Uncertainty may indicate that the person works in a punitive environment, that the impact of mistakes may potentially be significant, that there may be a history of previous misjudgements, or that there is a lack of confidence. Practicing relying on intuitive insights and comparing the conclusions to expert opinion may lead to improvement in this area.

Note: the strength of the finding is indicated numerically in the table above. Higher numbers indicate a more significant finding. Treat scores two and above as significant.

SECTION 14

CPP summary report

This is a brief summary of Manny’s information processing results. His recommended current and potential work environments, stylistic preferences as well as a number of additional observations and special insights into Manny's processing tendencies are provided.

Current and potential work environment

Manny’s cognitive profile best matches the requirements of **Diagnostic Accumulation** work environments. These contexts are characterised by problem-solving, usually of a technical nature, in order to ensure smooth operational functioning and client service. It may also entail supervisory or first line managerial work, sales, teaching and/or training, or other work which is performed according to fairly clear technical and/or theoretical guidelines, in a relatively structured work environment. Diagnostic environments may be technically highly complex. The focus is on linear causality and the time frame of most tasks are months to a year from decision making to when feedback becomes available.

Stylistic preferences

The way a person approaches problems gives insight into how they think, what problems they are best suited to solve and the complexity they can work with. Manny applied Learning style. Manny may enjoy pursuing cognitive challenges, acquiring new skills and improving own functioning style. This approach was mixed with Memory style, which involves a tendency to concentrate well and rely on knowledge and past experience to solve problems style. He also showed a tendency to use Trial-and-error approach, which means he tended to apply a somewhat unsystematic, random and unplanned approach to problem-solving style. Lastly, Manny can also process information using Quick Insight style. This involves a tendency to grasp concepts relatively quickly. This can indicate that Manny values the speed at which he processes information style.

Additional observations and special insights

- He obtained average scores in terms of problem solving performance.
- He applied relatively weak problem-solving strategies and may improve his problem-solving performance significantly by addressing current cognitive habits through thinking skills training.
- A relatively lower score on verbal conceptualisation as compared to the person's average functioning, often indicates that he may need to improve his ability to come up with abstract insights and ideas and develop his capacity to communicate and express ideas creatively and interestingly.
- He applied an Intuitive style of problem-solving. However, Manny's tendency to apply a Trial-and-error or Reactive style, or to make unverified assumptions, may affect the validity and accuracy of his intuitive insights. Intuition, combined with relatively high scores on the Trial-and-error and Reactive styles, may enable Manny to perform adequately in familiaror routine environments, but may impact on performance in new and unfamiliar environments.
- He will function optimally in a relatively structured work environment.
- He shows the necessary cognitive complexity to further improve the disciplined and step-by-step following through of arguments to their logical conclusions.
- He obtained a significantly higher score on learning than on most of the other processing functions. Learning indicates the rate at which new and unfamiliar information is grasped and mastered.

SECTION 15

Developmental guidelines

The following section is included for the benefit of the CPP accredited practitioner who will be providing feedback to the candidate. Statements in this section are based on an automated interpretation of the differences between this candidate's CPP processing scores. Not all comments necessarily apply, and it is up to the practitioner to select those guidelines that may be useful to the candidate in developing additional cognitive skills given the cognitive competency requirements of his particular work environment.

Notes: Interpreting the Development Guidelines

These competency indications are relative to your own overall functioning. In other words, if your scores are relatively low on analysis compared to the rest of your profile, it will be mentioned here - even if your analytical skills are better developed than most other people.

How we apply ourselves intellectually is largely determined by overall physical, psychological, emotional and spiritual awareness, our external context (exposure and opportunities) as well as the interaction amongst internal and external factors. The individual does, however, have a significant degree of choice when it comes to applying and developing themselves.

The extent of the finding is indicated in numbers in blue.

Possible impact of emotional factors 5

Manny's cognitive assessment results may have been affected by Emotional Intelligence (EQ) factors. Cognitive factors can be the result of or overlap with emotional and motivational issues.

A part of Emotional Intelligence is self-insight (the equivalent term in cognition is metacognitive awareness). Emotional Intelligence also includes self-management, interpersonal awareness and skill, goal-orientation, postponement of gratification, being in flow with environments, energy, commitment, honesty and resilience.

EQ factors can result in demotivation, disinterest and other psychological and behavioural problems. The development of certain EQ factors can significantly enhance functioning including cognitive functioning.

Low process orientation and less effective logical reasoning 3

Manny seems to avoid an in-depth, complex, logical approach and may not infer long-term consequences and implications of situations by following his reasoning processes through. Logical reasoning involves looking for logical evidence, applying a rule-based process approach and both expanding problems to gain clarity and understanding as well as narrowing it, or converging the argument, to find the correct answer.

Those who are reluctant to apply a process orientation often prefer a relatively superficial and short-term approach. In other words, they may seek immediate feedback, prefer dealing with tangible elements and they may not particularly seek challenge. Instead, they may prefer a relatively structured, familiar and simple environment. This approach may impact on innovation and the effective prediction of long-term implications. A low process orientation may also indicate the impact of emotional factors such as disinterest, de-motivation or general tiredness.

In order to develop a more effective process orientation, Manny should be motivated and interested in the subject matter and in own cognitive development. Manny can benefit from posing the following questions to himself:

- *what is the context here?*
- *what are the long-term consequences?*
- *what pattern could this decision trigger?*
- *what aspects/effects are the most difficult to predict?*
- *where are the biggest future risks and what can I do about those?*
- *what goals am I pursuing?*
- *given the situation, is my approach appropriate?*

Low verbal conceptualisation 2

The manner in which ideas are formulated and verbally expressed, as well as the accompanying non-verbal messages, are very important interpersonal tools.

Manny seems to prefer visual and / or kinaesthetic modes to that of verbal and / or auditive modes of information processing. Alternatively he may tend to conceptualise issues in an uncomplicated, straightforward and factual manner. In certain cases, significantly lower scores on verbal conceptualisation may indicate emotional factors.

Manny may want to develop a somewhat more creative and interesting approach to the way in which concepts are formulated. The quality (namely the unusualness, coherence and abstraction) of conceptualisations, may improve communication, trigger interest and influence the perceptions of others. Analogies and metaphors can, for example, be used to sway the perceptions and opinions of others. Abstract language, storytelling and flowery expressions can also be useful, but only up to a point as these aspects may create confusion.

Occasional random approach and impulsivity 2

Occasionally taking a random approach indicates that Manny may not solve problems in a planned and self-guided manner, but rather via a trial-and-error approach. Impulsivity refers to speed and inaccuracy and is often associated with the desire to escape from the situation as quickly as possible.

If a person occasionally applies a random and impulsive approach, it can often be attributed to performance anxiety or an expectation of failure. It could also be an internalised response to unfamiliar or new environments. This approach to new situations and problems can become a habit that is hard to break. This pattern of responding can also be developed from having a poor knowledge base or limited educational exposure that includes the development of analytical techniques. The analytical techniques encompass planning, differentiation, categorisation, structuring, logic, decision-making, being systematic, identifying relationships and metacognitive awareness.

The analytical skills mentioned above can, however, be developed in analytical skills training but takes time to be internalised and transferred to the work environment. The outcomes and benefits of such training techniques should take into consideration the person's current level of functioning, motivational factors, adult learning principles, reinforcement from the environment, a supportive environment and, most importantly, metacognitive awareness.

Visualisation, background music and behavioural techniques (such as breathing exercises or stretching of calves) may have a beneficial impact. Manny may also benefit from internalising self-talk and self-instruction aimed at calming himself down when working under pressure to reduce response speed. To internalise metacognitive criteria, Manny could benefit greatly by keeping reminders in his workplace to ask himself the following questions:

- *do I have to come up with an answer to this so quickly or should I take more time?*
- *is this the only conclusion and the best one?*
- *is this sufficient evidence or should I find more?*
- *what else can impact on this?*
- *is there any other way to look at this?*
- *is this really an inclusive "always" or "never" situation or am I overgeneralising?*
- *is this an issue of life and death that requires ultimate speed – or is it just my habit to be so impatient?*
- *is this conclusion necessarily so?*
- *is this sufficient evidence?*
- *what else could be involved?*

High rule orientation combined with a low creative approach 2

Manny may have internalised a rule-based approach to thinking. This can develop from working in harsh or punitive educational or work environments or Manny having high standards and a need for certainty and predictability.

In highly intelligent people, a strict adherence to rules can indicate an excessive avoidance of criticism. Some intelligent people from disadvantaged backgrounds realise that by adhering to rules, they are more able to perform with excellence.

A high adherence to rules may significantly improve performance in operational and routine environments, but can cause problems in unclear environments, where change and innovation are needed or in people management. If the work environment requires a rule-based approach, then this does not need to be addressed unless it is limiting the person's development.

An excessive rule-orientation can be addressed by Manny first becoming aware of his rule-based functioning. On a metacognitive level, Manny can benefit by asking himself the following questions:

- what rules do I assume apply here?
- are these rules applicable, appropriate, necessary and irreplaceable?
- to what extent do these rules apply?
- what alternative approaches may be more appropriate here?

Strategic ideas without sound logical foundation 2

Many people show an ideas orientation, seek social involvement and capitalise on a verbal modality. A problem can arise when it is not combined with a technical task focus or a well-developed analytical skills base. An ideas and people orientation approach which lacks the necessary technical rigour, may thus impact on strategic and / or managerial effectiveness.

Even though the person may not ideally be suited to structured contexts, the guidelines and quality control mechanisms that are available in these environments are likely to improve their performance. They may however find these environments boring and demotivating.

People with this profile are often frustrated in their careers without understanding the cause of their dissatisfaction. Career guidance and the development of self-awareness via coaching may be beneficial. In certain cases, the person may be best suited to community and political activities, or to dealing with people in sales or training environments.

Low consistency in approach 2

This is an indication that Manny may have focused on different elements with no apparent plan or revealed inconsistencies in problem-solving behaviour. The possible causes of this are low motivation, interest, attention or awareness levels or possibly anxiety.

Planning, consistency and awareness of how different approaches can work are useful in everyday life and the work environment. By asking himself questions, Manny can greatly improve his reflective behaviour, self-monitoring and self-evaluation. The questions to ask are:

- *is this the best way to approach this task?*
- *do I always do it this way?*
- *can I come up with a plan on how to approach this problem?*
- *before I start this, what do I need to know?*

Less effective strategies 2

Of the many problem-solving strategies measured in the assessment, it appears that Manny used less effective strategies or occasionally applied a trial-and-error approach.

Having a clear strategy on how to solve problems can assist effective functioning in the work place and life in general. Strategies can also help a person work quicker as less time will be spent on irrelevant aspects and more effective answers will be found sooner.

There are many possible cognitive strategies, all which require metacognitive activity and being self-aware of one's own thinking processes. These strategies can be easy to develop using instruction, practice and success experiences. Manny may want to always ask himself what the best way to approach specific tasks is and which strategy to use. Developing some of these strategies may have a large impact on Manny's effectiveness. These strategies include:

- *hypothesising about the meaning of a situation*
- *trying to verify and falsify own hypotheses in an objective manner*
- *continuously integrating new information*
- *being precise, systematic and rule oriented*
- *making sense of information by categorising, structuring, representing it*
- *looking for logical evidence*
- *following own arguments through in a metacognitively directed manner*
- *transformational techniques such as "backward reasoning"*
- *using memory and memory strategies effectively*

A need for structure 1

An emotional need for structure may manifest cognitively as an excessive rule orientation, the tendency to repeatedly structure information, to look for guidelines and advice and to prefer familiar contexts and approaches. It often prevents innovative solutions from being formulated.

Manny may find new, unfamiliar and vague environments confusing and avoid them. He may show the tendency to postpone decision-making or make impulsive decisions to escape unclear situations. He may also simply screen out vagueness and work with the issues that are clear. To structure chaotic or complex situations, he may focus most of his time and energy on structuring, ordering and looking for information and clear guidelines. He may feel most comfortable when technical guidelines are available and where previous knowledge and experience can be applied.

A need for structure may, possibly, also reflect low self-confidence as he may not trust his own insights and may avoid making decisions without gathering ample information. Over time this may result in the habit of focusing on operational issues – a tendency that reinforces itself over time. It is important to note that working in a harsh environment requiring precision, accuracy and structure can result in a need for structure and, if this is the case, Manny does not need to address this.

Manny may need to acquire the habit of clarifying vague problems and prioritising unclear issues by allocating weightings in terms of the importance of the various aspects. He may want to practice placing greater reliance on his own intuitive insights – at first with the assistance of a mentor to provide guidance. Mapping problems or creating a representation of them can assist in making the complexity more manageable. Manny may also benefit from developing the habit of asking himself the following questions:

- *what do I know?*
- *what don't I know?*
- *what is most important?*
- *can I order this?*
- *must I leave the situation open to get more information or do I need to close it now?*

Lower scores on judgement 1

Judgement is a person's ability to make considered decisions and come to a sensible conclusion. Manny's results indicated that he did not apply his judgement, or did not trust the decisions that he made. A person's judgement in particular situations largely reflects previous learning and exposure.

However, in new and unfamiliar environments, judgement capability has a lot to do with metacognitive awareness (self-awareness) and intuitive awareness. To improve judgement, Manny (or any person) can work to develop their self-trust, confidence, a tolerance for fuzziness and ambiguity, the capacity to prioritise vague issues, openness to consider alternatives, discretion on when to close situations where information is missing (this is of crucial importance) and general flexibility.

Judgement is not as easily developed as some of the other cognitive skills because it depends not only on processing skills and learning potential, but also on metacognitive awareness, emotional stability, flexibility and previous experiential opportunities. Thus, these aspects may need to be developed simultaneously.

Potential Discrepancy 1

It is best practice to align a person's career progress with their cognitive preferences and capabilities.

People who are comfortable with the cognitive demands of their work, often experience job satisfaction. They feel stimulated, challenged and "in flow" as their capabilities are being utilised optimally. This, however, is seldom the case as most people either have work requirements that exceed their capabilities or capabilities that exceed their work requirements.

A large number of individuals are employed in positions that require little cognitive challenge or involvement. This often leads to boredom, demotivation and underperformance at work.

Alternatively there are those that have been promoted to work environments that they find too vague and confusing, where insufficient structure and guidelines are available, or where they lack the necessary knowledge and experience. This could result in excessive stress and demotivation - especially in positions where performance is highly visible. A common response is to avoid important issues and focus on irrelevant or insignificant matters including office politics.

Possible underperformance 1

A number of factors may contribute to underperformance, the most important possibilities are: inadequate self-confidence and drive, low levels of self-insight and awareness, emotional and psychological factors, as well as environmental circumstances (such as educational and work opportunities and long-term exposure to unstimulating contexts). These issues often give rise to adaptational and motivational patterns that, over time, are internalised.

Exploring the possible reasons for underperformance and addressing them can result in a change of attitude and energy invested in work. It may benefit the person to become aware of their potential and the degree to which self-actualisation has occurred.

Lower scores on transformational thinking 1

Manny appears to have scored relatively lower scores on transformational thinking. Although this is linked to creativity, creativity was not directly measured. The assessment does measure the tendency to reconceptualise or rethink issues and think logically and laterally. Scores on transformational thinking are also indicative of motivation and energy as reconceptualising issues is hard work.

Low scores on both of the transformational subscales may indicate:

- Being tired
- Having a stagnant work position or routine job for a long period of time
- Being demotivated (work in general or specifically this assessment)
- Not particularly enjoying cognitive challenges (maybe because of other interests and values)
- Be generally quite accepting of information that is given to them, without really wanting to rethink it for themselves (especially in combination with high memory scores).
- Not be innovatively inclined (possibly because of personality profile)

This guideline needs to be interpreted by taking contextual factors, personality profiles, values, and the optimism of the person into consideration.

Low analytical orientation 1

Analytical skills include exploration, detail precision, rule orientation, structuring skills, memory and many others. The person's profile should be considered as a whole to determine what approach the person takes to problem-solving.

Manny received relatively low scores on analysis, defined here as detail and precision. This can have the following implications on the person's behaviour:

- Usually, the person may not independently initiate analytical activity. He may not pull issues apart, differentiate between subcomponents. Also, Manny may not focus on identifying relationships and link the elements together in a meaningful way. This can impact on the person's effectiveness in technical environments as they may become confused by detail, prone to making errors, superficial, bored and overwhelmed.

If a low score on analytical is combined with other scores, then some special insights may apply:

- If a low analytical score is combined with Trial-and-error or Reactive styles, then the person could be affected by feelings of insecurity or a need to escape from the test situation. The person may do the first thing that comes to mind, without strategising how they would solve the problem.
- If a low analytical score is combined with high scores on memory or a Memory style, then the person can work with detail, but probably likes to capitalise on knowledge and experience or other acquired skills. These people may only be unanalytical in unfamiliar environments.
- If a low analytical score is combined with an Explorative or Reflective style, it may indicate a very careful, uncertain approach. The person may become confused about the task requirements and explore – but not strategically or economically. In this data-finding approach, the person may be overwhelmed with information.
- If a low analytical score is combined with a low score on pragmatic and judgement (clarification in structured and unstructured environments respectively). This profile is a strong indication that the person needs guidelines to work effectively. This profile is common in individuals from disadvantaged backgrounds or people who are preoccupied. The memory, complexity and learning scores are an indication of the person's future capability.
- If a low analytical score is combined with a low score on judgement but not pragmatic then the person may be fearful, have low confidence in their own capability and may want some guidelines. They tend to go about their work independently and analytically – in their own way. However, they usually do not want to be faced with decision-making in vague environments.
- If a low analytical score is combined with higher scores on transformational thinking (logical reasoning and verbal abstraction) especially when the person's complexity score exceeds 60, then the person probably shows a right-brain orientation. They may get bored with technical detail – especially if a person's quick insight learning is greater than their gradual improvement learning.

A low analytical orientation should be interpreted in terms of contextual work requirements, the available team members, educational qualifications and options and personality preferences.

SECTION 16

Graphic summary

The following graph represents the degree to which Manny's processing results meet the generic requirements of a specific SST level of work.

Competency Graph

Manny's processing scores in terms of generic **Diagnostic Accumulation** (SST) requirements

Dimension	Sub-Dimension	Requirement: Standard Deviation	Description
Future orientation	Strategic		Planned problem-solving, learning and ideas orientation, flexibility
	Long-term		Following arguments through, identifying future implications and consequences
Operational orientation	Pragmatic		Focusing on tangible and practical facts, discriminating between relevant and irrelevant information, investigating at an appropriate level and depth
	Analytical		Applying a detailed, rule-based, systematic and precise approach to identifying relationships
	Logical reasoning		Reasoning, augmenting and reconsidering issues in a rigorous and consequential manner
Technical-specialist approach	Detail orientation		Differentiating between subcomponents, identifying links, focusing on technical-specialist facts, checking carefully
	Structured approach		Dealing with complexity by listing, categorising, ordering, representing and summarising information
	Memory orientation		Capitalising on previously acquired knowledge and skills, retaining and recalling information
Holistic approach	Intuitive		Internalising learning experiences, trusting own gut level insights, openness to subtle awareness, identifying patterns via subconscious integration of complex information
	Integrative		Synthesising fragmented / discrepant information into a meaningful and coherent whole, applying a holistic approach, understanding the bigger picture
	Abstraction		Generalising and abstracting verbal concepts, taking unusual perspectives for creative formulation
Innovative approach	Generating alternatives		Applying critical and divergent reasoning about alternative possibilities, change-orientation
	Learning orientation		Flexibly aquiring new ideas and concepts, adaptability, curiosity, open-mindedness, change-orientation
	Creative conceptualisation		Verbal reformulation, reframing, redefining, reconceptualising, using abstract, unusual or flowery language / concepts
Self-awareness (personal management)	Metacognition		Having awareness, monitoring and evaluating own perceptions, opinions and ideas, introspection, improving functioning
	Prioritisation		Clarifying and prioritising vague and unclear issues to inform decision-making
	Seeking challenge		Preferring complex, vague and challenging issues, adaptability, energy, interest in intellectual endeavours

SECTION 17

Final Comments

The CPP is a psychological test developed and distributed by Cognadev UK. If you would like to use the CPP or the other assessments we have on offer, please visit our website:
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The CPP is a complex instrument and it requires comprehensive training to interpret the report. Feedback on this report should always be done by an accredited CPP practitioner.

We hope to have provided you with the insight needed to make informed decisions and unlock potential. If you would like a more detailed description of the concepts dealt with in this report, a full guide and glossary is available at:
web.cognadev.com/publications/cpp-guide.pdf

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