

Research Article

Understanding Life Through Structured AI: Illustration Using PTSD

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Abstract

The paper introduces a new approach for understanding aspects of life, based upon the emerging science of Mind Genomics. The approach presents an internet-based technology (www.bimileap), which enables the interested person to use an AI-empowered system, Idea Coach, to ask ideas. Originally developed as a way to provide novices with a way to learn structured, critical thinking, Idea Coach has been expanded, allowing the user to describe a topic, posit the existence of mind-sets, and instruct the AI to answer a set of user-defined questions about these mind-sets. The Idea Coach system can be iterated to provide new sets of answers, each iteration requiring about 15-30 seconds. The Idea Coach request to AI can be changed 'mid-stream', to provide different types of information. The approach is illustrated with a deep analysis by Idea Coach of what might be in the mind of a person suffering from post-traumatic stress. The position of the paper is that AI can now be used to launch critical thinking about a topic, doing by posing 'what if' types of questions to promote discussion and experimentation.

Introduction

It is commonly recognized that a vast number of internet searches are done to understand situations, events, things which affect one personally [1-3]. The foregoing sentence seems so simple, so realistic, so obvious. The point is made cogently when one experiences a life-impacting situation, e.g., a disease to which one is newly diagnosed. What was an intellectual topic before may often evolve to an obsession with knowing as much about this disease or other problem [4,5], often to the point that the individual's entire focus and conversation revolves around the different aspects of the disease, the origins, diagnoses, prognoses, and so forth. [6].

One consequence of the desire to 'know' about things most important is the use of the Internet as a source of information. When the topic is health and medical most websites are careful to emphasize in one way or another that the reader should consult a medical professional for guidance, and that the information presented is for popular, informal consumption. Typically, the material presented to the reader is couched in an interesting, easy to understanding, and engaging fashion. The information is usually superficial, a level which makes sense because the typical reader wants a quick and superficial overview

The origin of this paper was the request to provide a deeper level of information about a medical topic, that level not being one that a medical student might learn, but certain more structured and deeper than one might receive from a cursory search through Google.

The choice of PTSD was dictated by other reasons, namely a growing interest to deal with social issues intertwined with medical issues. One of the important ones was the providing deeper information about

PTSD, a psychiatric disorder of interest to local town officials coping with the effects of exposures to violence among many of the town's poorer citizens. Could Mind Genomics, and its AI components, Idea Coach, provide the user with new types of information,

The Historical Background

The approach presented here evolved over the 30-year span from the early 1990's. At that time author Howard Moskowitz and colleague Derek Martin had been expanding the scope of concept testing by creating what was then called IdeaMap [7], later to evolve to Mind Genomics [8]. The ingoing vision was to democratize the acquisition of insights into two ways, one by a new way of thinking about insights, the other by the vision of DIY, first at one's own computer, and then on the internet.

Up to the introduction of IdeaMap researchers tested new ideas by one of two ways. The first was called 'promise' testing, or some variation thereof. The ingoing notion was that the researcher would come up with a number of different ideas, and test these among prospective consumers. The ideas could be alternative execution of a basic idea or proposition' (viz., rate each of these ideas for a new medicine), or the ideas could be even more basic (viz., rate the importance of each of these benefits of a new medicine, such as speed of relief, degree of relief, safety, etc.). These ideas could be rated in a study, but the basic notion is that the research could take a simple situation and have people rate facets of that situation, or take a simple offering, and have people rate ways of expressing what the offering could do. The methods were easy, the respondent in the study had no problem, but the test stimuli lacked context, depth, and the richness of everyday life. Nonetheless, the researchers working in the field followed through

on these, and often were quite successful because the study with real consumers gave the developers and marketers a great deal of insight.

A second approach, also widely done, and complementing the promise test was to create an execution, a stand-alone 'concept' of the problem or offering. The test stimulus in this case was a concept 'board', usually presenting a picture, product or service name, description, and so forth. The execution of the basic idea was as important to the corporation as the basic idea itself. The ingoing assumption was that people needed to be convinced, by having something which appealed to them, presented in a way that would be more typical, 'more 'ecologically valid.' The executions, the test concepts, demanded a great deal of judgment about what to put in, what to exclude, how to talk about the product or service, along with work to create the actual concept, e.g., what visuals were needed, and so forth. The studies were called concept screens when the concepts were rough, barebones descriptions, or called concept tests when the concepts were finished, and the testing was necessary to measure the expected performance in the marketplace.

The Contribution of Mind Genomics

When Mind Genomics appeared on the scene it evolved form, beginning in the first years of this 21st century [8] the ingoing notion was that people should be able to respond easily to combinations of messages, even when the messages were not necessarily connected, but rather thrown together. Unpublished work with respondents beginning in 1980 with The Colgate Palmolive Company in Toronto, Canada evaluating new ideas for Colgate Dental Cream uncovered the surprising observation respondents reported NO DIFFICULTIES when they were exposed to combinations of messages in this sparse framework. There were, however, 'concerns' from the advertising agency.

This study is about PTSD, post-traumatic stress disorder [9], but the reality is that the approach presented here could be used virtually for any topic. Figure 1 shows the structure of a concept,

or 'vignette' in the language of Mind Genomics. The figure shows a spare structure comprising a short introductory instruction, a small collection of unconnected phrases, albeit all dealing with PTSD, and then the rating scale. After an initial shock of seeing such a spare format, most respondents adjust quickly, going through the vignettes by 'skimming', and then making a quick decision about what rating to assign. The reality was that in most studies with concepts the respondent skims the concept, grazing for information, rather than reading the material.

The important advance of Mind Genomics was the focus on the material, not on the execution. It was the questions and the answers that were important. In the actual execution, the Mind Genomics platform, www.bimileap.com, would combine the answers into vignettes, according to an underlying experimental design. The questions would not appear in the vignettes, only the answers. Respondents participating found this format easy, perhaps slightly boring, but not intimidating at all. The people who were intimidated turned out to be the users wanting to use Mind Genomics. These prospective users ended up having to provide questions and answers, a task that seemed to be so easy to do when Mind Genomics was first developed, but which turned out to be intimidating as real people were exposed to the task. It had been unclear until that point how difficult people found the job of thinking about a topic, coming up with questions which tell a story, and then coming up with answers to those questions.

The Mind Genomics approach ended up disposing of the believed requirement that the vignettes presented to the respondent be complete vignettes. Rather, it was simpler to create a template that the user could complete. Rather than using statistical jargon, and talking about underlying experimental design, everything was put into the template, requiring the user simply to think of ideas. In the most recent format, the user would be instructed to give the project a name (Figure 2, Panel A), and then provide the template with four questions telling a story (Figure 2, Panel B), and then for each question, four answers (not shown).

Please read this description of PTSD and give it a rating on the scale. Give your first impression

How helpful is this description to help you personally understand what PTSD is, and to help out someone who may have it

- 1 = I don't get it really...AND it won't help me to help someone
- 2 = I don't get it really ... BUT ... I think it will help me to help someone
- 3 = I can't answer this question
- 4 = I got it ... BUT it won't help me to help someone
- 5 = I got it ... AND ... I think it will help me to help someone

Survivors of physical or sexual abuse may develop PTSD.

Avoidance behavior develops as people try to avoid triggering situations, places, or people.

Supportive relationships can provide comfort and understanding to someone with PTSD.



Figure 1: Example of a vignette about PTSD (post-traumatic stress disorder).

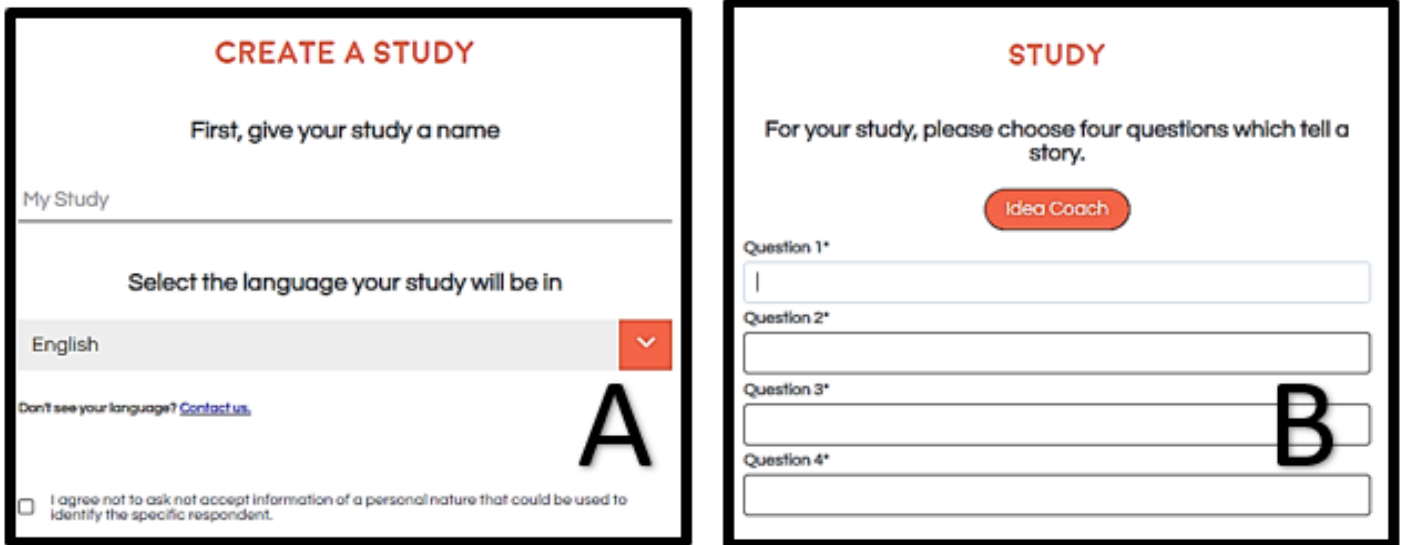


Figure 2: Set up screens for a Mind Genomics study. Panel A shows the first step, to name the study. Panel B shows the instructions to provide four questions.

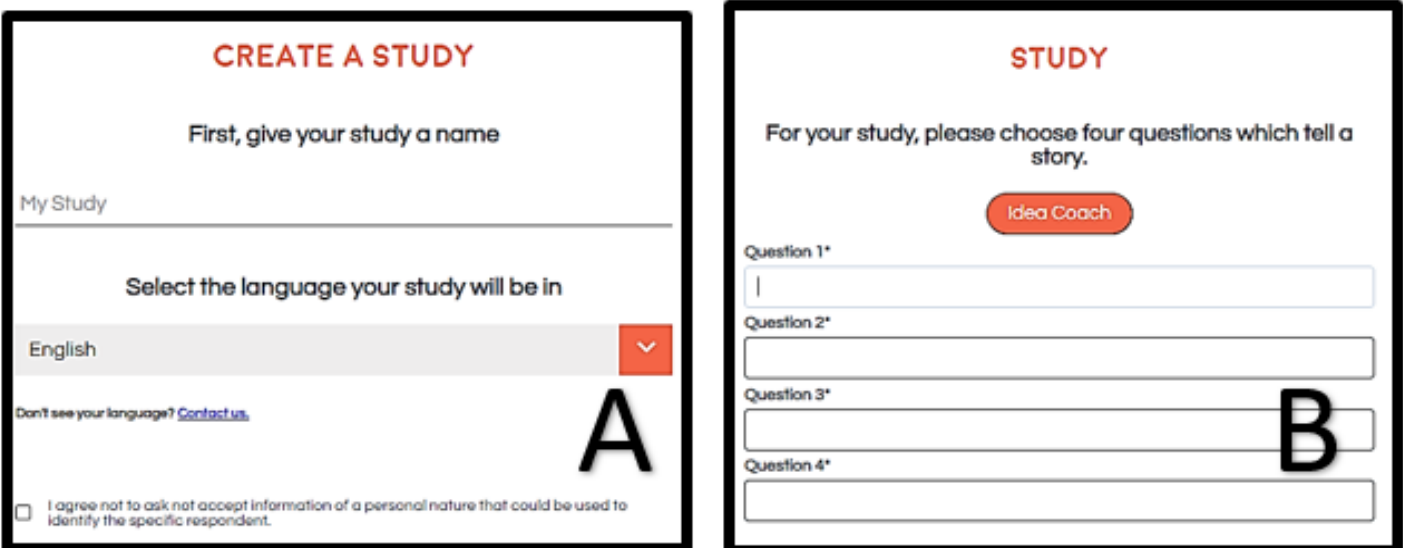


Figure 3: Panel A shows a request to Idea Coach to provide relevant questions for the study. Panel B shows four questions which emerged from Idea Coach.

Mind Genomics requires that the user think critically. Figure 1, Panel B instructs the user to create a set of four questions which ‘tell a story.’ For many neophytes, individuals who wanted to experience what Mind Genomics could do for them, the task seemed overwhelming. In order to ameliorate this problem, Mind Genomics evolved to incorporate AI, through Idea Coach. Figure 2, Panel A shows the ‘squib’, which allows the user write a request to Mind Genomics, and in turn have AI use that request to create the questions, as well as create the answers (not shown). Panel B shows the four questions which were chosen (Figure 3).

The actual output of Idea Coach appears in Tables 1 and 2, respectively. Table 1 shows the request made to Idea Coach to provide it with 15 questions. From this, the user selected four questions, shown in Figure 2, Panel B. Table 2 shows the 15 answers to each question provided by Idea Coach.

Moving Beyond the Question-and-Answer Format to the Tutoring/Coaching System

The success of Idea Coach as a way to provide questions and answers gave rise to another discovery, one which motivates this paper among others. That discovery is what emerges when the user asks more of Idea Coach than simply providing questions to address a simple squib (Table 1), or answers to a simple question (Table 2). Table 3 shows the squib for PTSD, but a far more elaborate request. The request ‘assumes’ without specification that PTSD has three different mind-sets. The squib does not specify anything about these mind-sets, but rather requests Idea Coach to answer 11 different questions.

In turn, Tables 4-6 show three sequential runs of Idea Coach, each taking about 30 seconds. Idea Coach uses the same squib shown in Table 3, and returning back each time with a unique set of answers, albeit answers with substantial commonality.

Table 1: Output of 15 questions from Idea Coach, with the output emerging immediately after the request was given to Idea Coach.

<p>Topic: Please give me 15 questions that I can ask about PTSD. Post Traumatic Stress. Make the questions engaging, leading to discussion, rather than asking the respondent to list.</p> <p>Make the question no more than 15 words Make the question very interesting, so it generates an answer that people enjoy reading Keep the questions to the level of a 12-year-old</p> <p>Have you ever heard of PTSD? What do you think it means? Can you imagine what it feels like to have a flashbulb memory? Explain. Do you think PTSD affects only soldiers, or can anyone experience it? How do you think someone's daily life may be impacted by PTSD symptoms? Can you think of any unexpected triggers that might cause a PTSD episode? If someone you know had PTSD, what kind of support would you offer them? Imagine being constantly on high alert. How might that affect your relationships? How do you think therapy or treatments could help someone with PTSD? Do you think PTSD can be completely cured, or is it manageable? Can animals or pets help people with PTSD? Explain your thoughts. How does PTSD affect a person's ability to trust others and form new relationships? Can you think of any positive coping skills or strategies for someone with PTSD? How might someone with PTSD react differently to a stressful situation compared to others? Can you explain the concept of hyperarousal and how it relates to PTSD? Do you believe society is becoming more aware and understanding of PTSD? Explain.</p>
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Table 2: The four sets of 15 answers, one set for each question selected (see Figure 2, Panel B).

<p>What does PTSD mean to you personally? Make your answer no more than 12 words. Make the answer a discussion, not a list. Make the answer interesting to read.</p> <p>A1 A terrifying imprint that relentlessly haunts the mind and spirit. A2 Constantly reliving a nightmare that never seems to fade away. A3 An invisible prison that holds the heart and refuses to release. A4 A gnarled, untamed beast that lurks within the shadows of memories. A5 A battle-scarred warrior, forever vigilant against unseen threats. A6 A turbulent sea of emotions, with sudden storms that wreck inner peace. A7 A heavy burden carried silently, burdening the soul with its weight. A8 A shattered mirror, reflecting fragments of past traumas and fear. A9 A dark cloud that blankets the mind, distorting reality and emotions. A10 A war-torn landscape, where peace is but a distant memory. A11 A fragile fortress, guarded against triggers that can quickly dismantle it. A12 A haunting melody, replaying painful memories on an endless loop. A13 A thief of joy and tranquility, leaving an empty void in its wake. A14 A long road to recovery, where small victories bring immense strength. A15 A transformative journey, shaping resilience and empathy for oneself and others.</p> <p>How do people end up with PTSD? Make your answer no more than 12 words. Make the answer a discussion, not a list. Make the answer interesting to read.</p> <p>B1 Experiencing or witnessing a traumatic event can lead to PTSD. B2 Unexpected life-threatening situations can leave lasting psychological scars. B3 War veterans often suffer from PTSD due to the horrors of combat. B4 Survivors of physical or sexual abuse may develop PTSD. B5 Natural disasters can trigger the onset of post-traumatic stress disorder. B6 Traumatic experiences in childhood can increase the likelihood of developing PTSD. B7 Being involved in a severe car accident can lead to PTSD. B8 Mistreatment or bullying can contribute to the development of PTSD. B9 Witnessing a violent crime can leave lasting psychological trauma. B10 Combatting life-threatening illnesses can result in post-traumatic stress disorder. B11 Trauma experienced during military training can lead to PTSD. B12 Living through a terrorist attack may cause symptoms of PTSD. B13 Rescuing or witnessing disturbing events as a first responder can lead to PTSD. B14 Surviving a near-death experience can contribute to the development of PTSD. B15 Sudden and unexpected loss of a loved one may lead to post-traumatic stress disorder.</p> <p>How does PTSD manifest itself in a person's everyday life? Make your answer no more than 12 words. Make the answer a discussion, not a list. Make the answer interesting to read.</p> <p>C1 PTSD can cause distressing flashbacks, often triggered by certain sights or sounds.</p>

- C2 Sleep disturbances such as nightmares and insomnia are common symptoms of PTSD.
- C3 People with PTSD may experience difficulty concentrating or maintaining focus throughout the day.
- C4 Emotional numbing can occur, leading to a reduced ability to experience pleasure and find meaning.
- C5 Hypervigilance or constantly being on edge is a common manifestation of PTSD.
- C6 Avoidance behavior develops as people try to avoid triggering situations, places, or people.
- C7 Social withdrawal can occur as individuals may struggle with trust and forming new relationships.
- C8 PTSD may lead to irritability, anger outbursts, or emotional instability.
- C9 Intrusive thoughts and memories related to the traumatic event can disrupt daily life.
- C10 Certain smells, tastes, or other sensory triggers can intensify PTSD symptoms.
- C11 Physical symptoms like headaches, stomach aches, or muscle tension can be associated with PTSD.
- C12 Changes in appetite or weight can arise as a result of PTSD symptoms.
- C13 Substance abuse and the development of addiction are common comorbidities with PTSD.
- C14 Negative self-perception and self-blame often affect the individual's self-esteem.
- C15 Work or school performance may be negatively impacted by PTSD symptoms, leading to difficulties and decreased productivity.

What helps a person with PTSD? Make your answer no more than 12 words. Make the answer a discussion, not a list. Make the answer interesting to read.

- D1 Supportive relationships can provide comfort and understanding to someone with PTSD.
- D2 Therapy sessions, such as cognitive behavioral therapy, can help manage symptoms.
- D3 Engaging in calming activities, such as yoga or mindfulness meditation, can promote relaxation.
- D4 Utilizing grounding techniques can help bring a person's attention back to the present.
- D5 Learning and implementing stress management techniques can assist in coping with triggers.
- D6 Medication, prescribed by a healthcare professional, may help alleviate symptoms.
- D7 Participating in support groups can offer a sense of community and validation.
- D8 Art therapy can aid in expressing and processing emotions related to traumatic experiences.
- D9 Exercising regularly can boost mood and reduce anxiety associated with PTSD.
- D10 Developing a safety plan can instill a sense of control and preparedness.
- D11 Establishing routine and structure can provide stability and a sense of security.
- D12 Seeking understanding and education about PTSD can foster self-compassion and empathy.
- D13 Identifying and avoiding triggers, when possible, can minimize distressing experiences.
- D14 Connecting with nature and spending time outdoors can promote relaxation and healing.
- D15 Practicing self-care, including adequate sleep, healthy eating, and self-compassion, is vital.

Table 3: A more elaborate squib to both get answers about PTSD and to teach about PTSD.

My topic is PTSD, post-traumatic stress disorder

My first request is that you provide me with 6 questions about PTSD in general which talks about a topic (not yes/no), and for each of the 6 questions, provide me with 6 appropriate answers to that question in a simple explanatory form

Now let's go to the three mind-sets, based upon the questions and answers above.

I understand that there are three major and radically different mind-sets involved with PTSD. These mind-sets are defined by what is important to them.

For each mind-set in turn, please provide me with the following information in the order requested.

FOR EACH MIND-SET IN TURN...

1. What is the name of the mind-set
2. What are three ways that the specific PTSD mind-set manifests itself.
3. What are eight thoughts which go through the mind of a person suffering from this specific PTSD mindset
4. What are three treatments for this specific PTSD mind-set, and what is the likely outcome of each treatment, immediately during the period after treatment, and then during the year after the treatment finishes
5. What types of people are most affected by each specific PTSD mind-set
6. What types of language does each PTSD mind-set use to describe how the person feels
7. What is the life outlook of the person with each PTSD mind-set
8. What type of person is most likely to manifest each PTSD mind-set
9. What type of person is least likely to manifest each PTSD mind-set
10. If I met a person who had PTSD, but I did not know it, what type of behaviors would that person manifest, for each of the three PTSD mind-sets
11. Give me six questions I can ask a person, with the question having two answers, NO, YES. For each mind-set, tell me the most likely pattern of answers to these six questions to be given by a person with that mind-

Table 4: The first set of answers to the squib shown in Table 3. Idea Coach attempts to provide answers to each question, viz., to each request.

<p>Set #1</p> <p>Topic Questions:</p> <p>What are the common causes of PTSD?</p> <ul style="list-style-type: none"> - Traumatic events like physical or sexual assault, accidents, natural disasters, combat, or witnessing a life-threatening event. <p>How does PTSD affect a person's daily life?</p> <ul style="list-style-type: none"> - It may cause intrusive thoughts, flashbacks, nightmares, insomnia, anxiety, hypervigilance, avoidance of triggers, mood swings, social withdrawal, memory problems, and difficulty concentrating. <p>Can children develop PTSD?</p> <ul style="list-style-type: none"> - Yes, children can develop PTSD after experiencing or witnessing a traumatic event. <p>How long does PTSD symptoms usually last?</p> <ul style="list-style-type: none"> - Symptoms can persist for months or years, and in some cases, they may even become chronic. <p>Can PTSD be treated effectively?</p> <ul style="list-style-type: none"> - Yes, with appropriate treatment such as therapy and medication, many people with PTSD experience a reduction in symptoms and an improvement in their quality of life. <p>Are there any risk factors for developing PTSD?</p> <ul style="list-style-type: none"> - Yes, factors like a history of trauma, childhood abuse, lack of social support, pre-existing mental health conditions, and genetic predisposition can increase the risk of developing PTSD. <p>Now, let's proceed to the three mind-sets related to PTSD:</p> <p>Mind-set 1: Fear and Hyperarousal</p> <p>Mind-set Name: Fearful Vigilance</p> <p>Manifestations: Constantly on edge, easily startled, difficulty relaxing or sleeping, always on the lookout for danger or threats.</p> <p>Thoughts: "I'm never safe," "Something terrible will happen again," "I can't trust anyone," "The world is a dangerous place."</p> <p>Treatments: Cognitive Behavioral Therapy (CBT), exposure therapy, medication. Immediate outcome: reduced hypervigilance and anxiety. 1-Year outcome: improved sense of safety and decreased fear responses.</p> <p>Most Affected: Individuals who have experienced repeated traumatic events or ongoing traumatic situations.</p> <p>Language Used: "I feel anxious all the time," "I can't relax," "I'm always on high alert."</p> <p>Life Outlook: Belief that danger is lurking everywhere, difficulty forming trusting relationships, struggle to feel safe in the world.</p> <p>Likely Manifestation: People who have been through multiple traumatic experiences and constantly perceive threats in their environment.</p> <p>Least Likely Manifestation: Individuals with a strong social support system, stable environment, and few prior traumatic experiences.</p> <p>Behaviors: Avoiding crowded places, constantly checking surroundings, having difficulty being alone, exhibiting heightened startle responses or panic attacks.</p> <p>Question Pattern: "Do you often feel like you are in danger?" (YES); "Do you find it difficult to relax or sleep?" (YES); "Can you trust people easily?" (NO); "Do you always stay on high alert?" (YES); "Do you believe something terrible will happen again?" (YES); "Do you feel safe in the world?" (NO).</p> <p>Mind-set 2: Emotional Numbing and Avoidance</p> <p>Mind-set Name: Detached Isolation</p> <p>Manifestations: Feeling emotionally numb, avoiding reminders of the traumatic event or any emotional situations, isolating oneself from others.</p> <p>Thoughts: "I can't feel anything anymore," "People are better off without me," "It's safer to be alone," "I don't want to talk about it."</p> <p>Treatments: Eye Movement Desensitization and Reprocessing (EMDR), Prolonged Exposure Therapy (PET), group therapy. Immediate outcome: increased emotional engagement and reduced avoidance. 1-Year outcome: improved ability to cope with emotions and establish connections.</p> <p>Most Affected: Individuals who have experienced a single traumatic event or have difficulty expressing emotions openly.</p> <p>Language Used: "I feel empty inside," "I don't care anymore," "I avoid anything that reminds me of the past."</p> <p>Life Outlook: Feeling disconnected and detached from others, struggling with expressing or experiencing emotions fully, believing it's better to be alone.</p> <p>Likely Manifestation: People who have experienced a single traumatic event and have difficulty connecting emotionally.</p> <p>Least Likely Manifestation: Individuals with strong emotional support systems and a willingness to confront their emotions.</p> <p>Behaviors: Social withdrawal, avoiding situations that trigger emotional responses, limited expression of emotions, appearing emotionally distant to others.</p> <p>Question Pattern: "Do you often feel emotionally numb?" (YES); "Do you avoid situations that remind you of the past?" (YES); "Do you find it difficult to express your emotions?" (YES); "Do you often prefer to be alone?" (YES); "Do you feel disconnected from others?" (YES); "Do you believe it's better not to talk about it?" (YES).</p> <p>Mind-set 3: Re-Experiencing and Intrusion</p> <p>Mind-set Name: Overwhelming Flashbacks</p> <p>Manifestations: Frequent and distressing flashbacks, vivid nightmares, intrusive thoughts, feeling as if the traumatic event is happening again.</p> <p>Thoughts: "I can't escape from the memories," "I'm stuck in the past," "Everywhere I go, I'm reminded of it," "I'm losing control."</p> <p>Treatments: Trauma-focused therapy, medications, mindfulness-based therapies. Immediate outcome: decreased frequency and intensity of flashbacks. 1-Year outcome: improved ability to manage distress and reduced intrusion.</p> <p>Most Affected: Individuals who have experienced severe trauma or life-threatening events.</p> <p>Language Used: "I keep reliving the experience," "I feel overwhelmed by memories," "It's like I'm trapped in the past."</p> <p>Life Outlook: Feeling trapped in the trauma, struggling to move forward, occasional periods of intense distress and uncontrollable flashbacks.</p> <p>Likely Manifestation: People who have experienced severe trauma and have persistent and intrusive re-experiencing symptoms.</p> <p>Least Likely Manifestation: Individuals who have received immediate support after the traumatic event and have coping mechanisms to manage intrusive thoughts.</p> <p>Behaviors: Experiencing sudden panic attacks, displaying visible distress during triggers, avoiding situations that remind them of the trauma, having difficulty concentrating.</p> <p>Question Pattern: "Do you frequently have disturbing flashbacks?" (YES); "Do you have vivid nightmares related to the event?" (YES); "Do you find it challenging to escape from the memories?" (YES); "Are you often reminded of the traumatic event?" (YES); "Do you feel trapped in the past?" (YES); "Do you lose control when experiencing these flashbacks?" (NO).</p>

Table 5: The second set of answers to the squib shown in Table 3. Idea Coach attempts to provide answers to each question, viz., to each request.

<p>Set #2</p> <p>Topic Questions:</p> <p>Sure, here are the six questions about PTSD in general:</p> <p>What is PTSD and what are its main symptoms?</p> <p>How does someone develop PTSD?</p> <p>Can children develop PTSD?</p> <p>What are the common triggers for PTSD?</p> <p>How is PTSD different from normal stress or anxiety?</p> <p>Is PTSD curable or is it a lifelong condition?</p> <p>Now, let's move on to the three mind-sets:</p> <p>Mind Set 1: Safety Seekers</p> <p>Manifestations: Hyper-vigilance, avoidance of triggers, difficulty trusting others</p> <p>Thoughts: "I am always in danger", "I need to be constantly on guard", "No one can be trusted"</p> <p>Treatments: Cognitive Behavioral Therapy (CBT), Exposure therapy, Medications (antidepressants)</p> <p>- Outcome: Immediate relief of anxiety, reduction in avoidance behaviors; after a year, improved overall functioning and ability to feel safe</p> <p>Most affected: Individuals who have experienced physical or sexual assault</p> <p>Language: "I feel hypervigilant", "I'm always fearing for my safety"</p> <p>Life outlook: Constant vigilance and skepticism, difficulty feeling secure or at ease</p> <p>Most likely to manifest: Individuals who have experienced direct threat to their physical safety</p> <p>Least likely to manifest: Individuals who have experienced trauma without direct threat to their physical safety</p> <p>Behaviors: Constant scanning surroundings, avoiding crowded places, being cautious in interpersonal relationships</p> <p>Question pattern:</p> <p>- Do you feel safe in your daily life? (NO, YES)</p> <p>- Can you trust others easily? (NO, YES)</p> <p>- Do you often experience feelings of hyper-vigilance? (YES, NO)</p> <p>- Are you able to relax and let go of control easily? (NO, YES)</p> <p>- Do you avoid situations that remind you of the trauma? (YES, NO)</p> <p>- Do you often feel the need to constantly be prepared for danger? (YES, NO)</p> <p>Mind-Set 2: Avoidance and Emotional Numbing</p> <p>Name: Avoidance Copers</p> <p>Manifestations: Avoiding reminders of the trauma, numbing of emotions, detachment from others</p> <p>Thoughts: "I can't face my memories", "My emotions are shut off", "I am alone in my pain"</p> <p>Treatments: Prolonged Exposure Therapy, Eye Movement Desensitization and Reprocessing (EMDR), Medications (antidepressants)</p> <p>- Outcome: Initially discomfort during exposure, gradual reduction in avoidance behaviors; after a year, better ability to process emotions and maintain healthier relationships</p> <p>Most affected: Individuals who have experienced combat-related trauma or witnessed traumatic events</p> <p>Language: "I feel disconnected from my emotions", "I avoid anything that reminds me of the trauma"</p> <p>Life outlook: Emotional detachment, difficulty forming deep connections, avoidance of reminders</p> <p>Most likely to manifest: Individuals who have witnessed or experienced highly distressing events</p> <p>Least likely to manifest: Individuals who have experienced trauma without being directly involved</p> <p>Behaviors: Avoidance of specific places or activities, emotional numbness, social isolation</p> <p>Question pattern:</p> <p>- Do you often avoid things that remind you of the trauma? (YES, NO)</p> <p>- Do you experience emotional numbing? (YES, NO)</p> <p>- Are you able to express your feelings easily? (NO, YES)</p> <p>- Do you find it difficult to connect with others on an emotional level? (YES, NO)</p> <p>- Do you feel detached from your own emotions? (YES, NO)</p> <p>- Do you avoid discussing or thinking about the traumatic event? (YES, NO)</p> <p>Mind-Set 3: Intrusion and Re-experiencing</p> <p>Name: Intrusive Relivers</p> <p>Manifestations: Intrusive memories, flashbacks, nightmares, emotional distress</p> <p>Thoughts: "The memories won't leave me", "I am reliving the trauma over and over again", "I am trapped in my nightmares"</p> <p>Treatments: Eye Movement Desensitization and Reprocessing (EMDR), Cognitive Processing Therapy (CPT), Medications (antidepressants)</p> <p>- Outcome: Some initial distress during therapy, reduction in re-experiencing symptoms; after a year, improved ability to cope with intrusive memories and reduced frequency of re-experiencing</p> <p>Most affected: Individuals who have experienced interpersonal trauma, such as domestic violence or abuse</p>
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Language: "I keep having flashbacks", "The memories haunt me", "I am trapped in the past"
Life outlook: Feeling trapped in the past, difficulty moving on, frequent distressing memories
Most likely to manifest: Individuals who have experienced traumatic events involving people close to them
Least likely to manifest: Individuals who have experienced trauma involving strangers or distant events
Behaviors: Distress during triggering situations, nightmares, reliving events through thoughts or memories
Question pattern:
- Do you frequently experience intrusive memories of the trauma? (YES, NO)
- Do you have nightmares related to the traumatic event? (YES, NO)
- Do you often have flashbacks of the traumatic event? (YES, NO)
- Are you able to let go of distressing memories easily? (NO, YES)
- Do you feel like you are reliving the trauma sometimes? (YES, NO)
- Do you find it difficult to move on from the past? (YES, NO)
Now, here are 15 additional questions based on the idea above:
Have you experienced any traumatic events in your life? (YES, NO)
Do you actively avoid situations that remind you of the trauma? (YES, NO)
Are you easily startled or constantly on edge? (YES, NO)
Do you often have difficulty sleeping or experience nightmares? (YES, NO)
Can you easily talk about your traumatic experiences with others? (NO, YES)
Do you feel detached or emotionally numb most of the time? (YES, NO)
Are you able to trust others without hesitation? (NO, YES)
Do you have sudden and intense emotional or physical reactions to reminders of the trauma? (YES, NO)
Do you frequently have intrusive thoughts or memories about the trauma? (YES, NO)
Are you able to easily let go of distressing memories or thoughts? (NO, YES)
Do you often feel like you are reliving the traumatic event? (YES, NO)
Are you able to maintain healthy relationships with others? (NO, YES)
Do you avoid discussions or thoughts related to the traumatic event? (YES, NO)
Are you able to feel safe and secure in your daily life? (NO, YES)
Do you find it difficult to move on from past traumatic experiences? (YES, NO)

Table 6: The third set of answers to the squib shown in Table 3. Idea Coach attempts to provide answers to each question, viz., to each request.

Set #3
Topic Questions:
What are the common symptoms of PTSD?
- Flashbacks, nightmares, and intrusive thoughts related to the traumatic event
- Avoidance of reminders of the trauma, including places, people, or activities
- Hyperarousal, such as increased anxiety, irritability, and difficulty sleeping
How does PTSD affect a person's daily life?
- It can impair their ability to think clearly and concentrate
- It may lead to feelings of guilt, shame, or detachment from others
- It can disrupt their relationships, work, and overall functioning
Can PTSD develop immediately after a traumatic event?
- Yes, symptoms can appear within hours or days after the trauma
- No, sometimes symptoms may not emerge until several months or even years later
What are the risk factors for developing PTSD?
- Experiencing a severe or life-threatening trauma
- Having a history of mental health disorders, such as anxiety or depression
- Lack of a strong support system or social networks
Is PTSD a lifelong condition?
- No, with appropriate treatment, many individuals can recover from PTSD
- Yes, some individuals may experience chronic symptoms that require ongoing management
Can children develop PTSD?
- Yes, children can develop PTSD after experiencing or witnessing a traumatic event
- No, children are more resilient and rarely experience long-lasting effects from trauma

Mindset 1: Fear and Anxiety Dominance

Name: The Fearful Mind-Set

Manifestations: Constant feelings of fear and anxiety, hyper-vigilance, avoidance of triggers

Thoughts: "I am always in danger," "I cannot trust anyone or anything," "The world is a dangerous place"

Treatments: Cognitive-behavioral therapy, exposure therapy, and medications. Outcome: Reduction in fear and anxiety levels, improved coping skills. Immediately after treatment, relief from symptoms; a year after treatment finishes, significant reduction in the intensity and frequency of symptoms.

Most affected: Individuals who have experienced multiple traumatic events or ongoing trauma.

Language: "I feel constantly on edge," "I can't relax or calm down," "I always anticipate something bad happening."

Life outlook: Pessimistic and filled with constant worry about potential threats.

Likely to manifest: Those who have experienced combat, witnessed violence, or survived natural disasters.

Least likely to manifest: Individuals with strong support systems and stable environments.

Behaviors: Hypervigilance, startle response to loud noises, becoming easily frightened or startled.

Questions:

- Do you often feel on edge or highly alert? (Yes)
- Do you frequently avoid situations or places that remind you of the trauma? (Yes)
- Do you often have nightmares or intrusive thoughts about the traumatic event? (Yes)
- Do you trust others easily? (No)
- Do you struggle to relax or feel constantly tense? (Yes)
- Do you believe the world is a safe place? (No)

Mindset 2: Emotional Numbness and Detachment

Name: The Detached Mind-Set

Manifestations: Emotionally numb, avoiding emotional connections, feeling disconnected from oneself and others.

Thoughts: "I feel empty inside," "I have lost the ability to experience joy or love," "Life has no meaning anymore."

Treatments: Psychotherapy, mindfulness-based practices, support groups. Outcome: Reconnection with emotions, increased sense of purpose. Immediately after treatment, gradual improvement in emotional responsiveness; a year after treatment finishes, enhanced ability to experience positive emotions.

Most affected: Individuals who have experienced a sudden loss, such as the death of a loved one or a severe betrayal.

Language: "I feel nothing," "It's like I'm watching life through a glass window," "Everything seems meaningless."

Life outlook: Lack of interest, joy, or pleasure in daily life's activities, with a sense of disconnection from oneself.

Likely to manifest: Those who have experienced traumatic grief, betrayal trauma, or a significant change in personal identity.

Least likely to manifest: Individuals with strong emotional support systems and resilient coping skills.

Behaviors: Social withdrawal, lack of emotional expression, difficulty forming or maintaining relationships.

Questions:

- Do you often feel emotionally numb or detached from others? (Yes)
- Do you struggle to experience joy or happiness? (Yes)
- Have you lost interest in activities or hobbies you once enjoyed? (Yes)
- Are you comfortable discussing your feelings with others? (No)
- Do you feel a sense of loneliness or detachment from yourself? (Yes)
- Do you believe life has lost its meaning? (Yes)

Mindset 3: Intrusive Memories and Psychological Distress

Name: The Overwhelmed Mind-Set

Manifestations: Frequent intrusive memories, emotional dysregulation, difficulty coping with distressing emotions.

Thoughts: "I can't stop thinking about what happened," "I feel overwhelmed by intense emotions," "I'm afraid I will never recover."

Treatments: Eye movement desensitization and reprocessing (EMDR), medication, art therapy. Outcome: Reduction in distressing memories and emotional intensity. Immediately after treatment, relief from intrusive thoughts and improved emotional regulation; a year after treatment finishes, significant decrease in the frequency and intensity of intrusive memories.

Most affected: Individuals who have experienced a single traumatic event, such as a car accident or assault.

Language: "The memories haunt me," "I feel like I am trapped in the past," "I can't escape the pain."

Life outlook: Ambivalence towards the future, struggling to find a balance between reliving the trauma and moving forward.

Likely to manifest: Those who have experienced a recent traumatic event or a significant life-altering event.

Least likely to manifest: Individuals with strong coping mechanisms and the ability to process traumatic experiences effectively.

Behaviors: Recurrent nightmares, sudden emotional outbursts, isolating oneself from triggering situations.

Questions:

- Do you frequently experience distressing memories or flashbacks? (Yes)
- Are you often overwhelmed by intense emotions like anger or sadness? (Yes)
- Do you try to avoid situations that remind you of the trauma? (Yes)
- Can you imagine a future free from the impact of the traumatic event? (No)
- Do you have difficulty concentrating due to intrusive thoughts? (Yes)
- Do you believe you will ever fully recover from this trauma? (No)

Discussion and Conclusions

During the course of the research and writing, an effort requiring less and less time and effort, AI has been both lauded and lambasted, lauded because of the possibilities it has, lambasted because it is far from being omniscient and fair [10]. The world of academics is struggling with the impact of the widely available Chat GPT system and its clones [11], worrying about cheating [12], about the reliance of students on AI for their knowledge and even for writing the papers that they turn in for coursework [13].

The approach presented here may provide a different pattern of activities, one which incorporates early-stage learning with AI as a tutor, and then experimentation with real people, or eventually event with synthetic respondents, viz., survey takers constructed by AI. The paper began with the history of Mind Genomics, the problems with critical thinking, and the salutary effects introducing AI as an aid to creating questions, and then providing answers to those questions. The paper 'ended' with the benefits emerging from a more detailed introduction to the issue, that introduction created simply by expanding the nature of the squib, the introduction to the problem. Rather than a simple instruction to produce questions and answers, the paper shows how a more detailed request to AI could produce a wealth of information.

The suggestion made here is quite simple: REVERSE THE PROCESS. That is, for a designated topic, e.g., PTSD, begin the process by a tutorial with detailed request, such as that shown in Table 2. Once the tutorial has finished, the Idea Coach, acting as a true coach, has done its work, producing sufficient information about PTSD. It is now entirely in the hands of the user to do the Mind Genomics experiment with real people, using the information conveyed to the user by the expanded squib. Whether the user must use their own questions and answers or can once again use idea Coach to request questions and answers is a policy decision, one beyond the scope of this paper.

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