

Searching for a Telepsychiatrist to Treat Newly Diagnosed Parkinson's Disease: Synthesized Mind-Sets Using AI Empowered by Mind Genomics Thinking

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Abstract

Artificial intelligence was used to synthesize six mind-sets of a specific medical-related topic: Telepsychiatry to treat a case of newly diagnosed Parkinson's disease. The paper shows how a large language model answers questions about these mind-sets, providing a tool to teach doctors about the minds of families making medical decisions. The "answers" provided by the large language model deal with mind-set specific needs about what they need to hear. The paper presents a worked example that can be used, with slight modification, as a template for almost any topic where the questions must be appropriately phrased based upon the nature of the mind-set.

Keywords

Mind Genomics, Parkinson's disease, Telemedicine, Telepsychiatrist.

Abbreviations

AI: Artificial Intelligence, CBT: Cognitive Behavioral Therapy, ChatGPT: Chat Generative Pre-trained Transformer, LLM: Large Language Model, PD: Parkinson's disease, SCAS: Socrates as a Service.

INTRODUCTION

Anxiety and sadness affect the quality of life of sufferers of Parkinson's disease (PD), perhaps even more than depression. The recognition about the issues involved in Parkinson's disease is well represented in the literature [1-3]. Even though these symptoms are common, psychological therapies for PD are little studied. Telemedicine and tele-support systems may treat mood problems [4]. Studies suggest that Telephone CBT, Cognitive Behavioral Therapy, improves depression and anxiety symptoms and quality of life [5]. Although CBT is effective in treating mood disorders, it may or may not lessen anxiety [6].

Telemedicine is gaining popularity, partly because of the COVID-19 pandemic and the unavailability to see psychiatrists. However, recent improvements in telemedicine have made visual psychiatric examinations possible. Like in a physical contact, the doctor may study the patient's emotions, body language, and speech. Telemedicine may assist those sufferers from Parkinson's disease to overcome travel, handicaps, and doctor shortages. The use of telemedicine has increased internationally,

benefiting most those who use remote provider training, and who are increasingly empowered as video conferencing prices fall. Its expansion is constrained by reimbursement and policy. As technology progresses, integrated care networks, education programs, and remote monitoring apps are expected to help more PD patients get treatment, learn, and participate in research [7,8].

Moving now from one technology to another, from telemedicine to artificial intelligence, we see another new opportunity emerging from the sufferers of PD. A key benefit of the artificial intelligence working or emanating from large language models is the richness of the information and the ability to interpret the information in a rapid, cost-effective, comprehensive manner [9,10]. One could always argue that nothing really can emerge which is radically "new," from artificial intelligence, an argument thus far relying on the wisdom of the human doctor to put together the vast array of different articles, press releases, interviews, and so forth, creating a "resource room," and then working with the patients to take advantage of that effort. Yet, the reality is that the large language models, the foundation of artificial intelligence, may do a lot of the work for us.



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The Mind Genomics World-View

Telepsychiatry in Parkinson's disease constitutes the topic of this project. The method comprises a combination of the aforementioned large language models, i.e., artificial intelligence, and the emerging science of Mind Genomics. To digress for a moment, Mind Genomics is a science which through experimentation looks at how people make decisions about their everyday world. Mind Genomics simply mixes and matches messages about a topic, presents these messages to regular people, determines from these people their reaction to the message, and deconstructs the reaction to the contribution of the different messages in the combination. The end result is a metric of the mind, a way of putting numbers onto different messages as these messages drive decision-making [11-13].

Mind Genomics provides an extraordinarily valuable tool by which to understand the reality of daily life without having to resort to very profound, deep, and hard-to-execute, often hard-to-interpret science. The Mind Genomics studies are quick, easy, computer-based, and extensive. They can be replicated and updated to get more focused results. The key for us here is that Mind Genomics continues to reveal the existence of mind-sets, groups of people who may otherwise be indistinguishable from each other, but who agree with each other on the pattern of their ratings and on the pattern of the impacts of the different messages.

For our particular needs here, we focus not so much on the method of Mind Genomics as on the recurring observation that in every topic area, there are mind-sets. The question is, can we instruct large language models, i.e., artificial intelligence, to "uncover" these different mind-sets and to tell us about them? Today's large language models are systems which incorporate lots of information about daily life. Can we simply ask that system to give us information about mind-sets of individuals who we "define" as searching for telemedicine in the case of newly discovered or newly diagnosed Parkinson's disease?

Given the previous technique of testing these attitudes, the question ends up being straightforward. Does a huge language model or AI know how to determine these attitudes without experiments? Can we ask the huge language model, the AI, to identify and describe diverse mind-sets? We just tell the AI the topic and that we are searching for attitudes about the topic. To make it harder and more realistic, we inform the AI there are a specific number of mind-sets and to answer the following questions for each, but provide no further information. This paper was written in the spirit of exploring how large language models might be used to understand the mind of the patient in the world of telemedicine, and specifically in the world of the person who has just been diagnosed with PD and is looking for a telepsychiatrist. Rather than simply trying large language models on the general topic of telemedicine, we decided that it might be far more instructive to push these large language models to deal with something specific, something that may not be intrinsically apparent or intuitively apparent, but perhaps something that will be delightful and enlightening if it really comes to be delivered.

The Study

The research starts with a short briefing. We use the Mind Genomics platform, BimiLeap.com. We set up a study, and then request to use Idea Coach, the access point to the large language model contained with Mind Genomics. The model is ChatGPT 3.5 [14], with a set of pre-programmed queries called SCAS (Socrates as a Service). Creating the pre-programmed queries enables the user to instruct the AI what to do, and then come out with a set of standardized questions and

answers about what was done, and what are the implications for products and services for people.

Table 1 presents a briefing. Notice that there's little information other than the topic, the "hint" that there are different mind-sets, and the request to answer specific questions about these yet-unnamed mind-sets. The focus is personal, not clinical. The focus on personal is intentional. We are not looking to AI in this situation to provide us with a clinically relevant analysis; that would not be legal and might bear no relation to reality. Rather, we instruct artificial intelligence to provide a synthesized mind of an ordinary person facing this situation and asked to answer questions of a non-clinical nature. The questions are experiential, the responses are clear if one is experienced and articulate, and the results reveal the person's thoughts.

Before discussing what artificial intelligence delivered, let's review some of the requests.

1. The requests are coached in simple, plain English.
2. We ask questions about feelings and what one would do.
3. We assess the information on a scale that is given to AI.
4. Finally, we are asking artificial intelligence questions of a very personal and simple nature, like what convinces the individual? How does the person tell their family? What are the words that the person wants to hear from the psychiatrist? All of these, as noted above, are simple, immediate, almost what one would call folksy. Finally, simple to do and change.

With that in mind, we move in the next section to what the Mind Genomics platform, BimiLeap.com, returns after approximately 15 seconds. The speed of the iteration is important because it allows the user to correct any errors in the syntax of the prompts shown in Table 1, as well as allow the user to try new ideas that may have been generated during the previous iterations. As such, the speed and flexibility turn SCAS, Socrates as a Service, into a teaching tool. In practical terms, this means that the user, such as the senior author, can simply type the information into the briefing "rectangle," press a button, receive the first iteration, press the button again, receive the second iteration, press the button again, receive the third iteration, and so forth. With each iteration the AI embedded in SCAS attacks the problem once again, emerging with a mix of new ideas and older ones, thinks anew with the same set of questions, and returns generally with new results.

Table 2 shows what is returned by SCAS in the aforementioned iteration. From personal experience, this way of doing things, of presenting artificial intelligence with this squib, and obtaining answers, and then iterating once again, becomes a way of learning about the topic. Each time the artificial intelligence is challenged with the question, it produces something new. The information remains within the computer, and all the researcher has to do is maintain control by keeping one hand ready to press the iteration, and the other to modify some of the input. It becomes very tempting to use this simple step on a repeated basis as new ideas and questions emerge. The effort to make an iteration is simply retyping and pressing anew, or just simply rerun, either with a change or without a change. The feedback is virtually real time.

Table 2 presents a sample output from an iteration. The output typically follows the order of the input, here shown in Table 1.

1. The first answer is the name of the mind-set: THE SEARCHING OPTIMIST. Keep in mind that the name was selected by the artificial intelligence. The original request was to give five things for which the mind-set looks for, and to rate each of these things.

Table 1: Briefing given to SCAS (Socrates as a Service).

We are studying the mind-set of people who have just moved into a neighborhood, and are searching for a PSYCHIATRIST PRACTICING TELEMEDICINE who can work with a newly diagnosed case of Parkinson’s disease.

We know that there are (SIX) mind-sets of people that have been identified in terms of how they look for a PSYCHIATRIST PRACTICING TELEMEDICINE when confronted with a serious neurological disorder.

For each mind-set, answer the following questions clearly.

1. What is the name of the Mind-Set: Put in capital letters
2. What does the mind-set look for? Use six slogans to tell us what the mind-set looks for, and for each slogan rate the degree of success that slogan will have in helping the person find the right PSYCHIATRIST PRACTICING TELEMEDICINE. Use a scale from 1 to 5 (1 = slogan doesn’t really help concretize the way they think...5 = slogan absolutely concretizes the way they think).
3. What are the typical words the mind-set uses to ask neighbors and friends for a recommendation? Make these quotes, in the way a person talks.
4. What are the typical words to which the mind-set responds and feels comfortable with the recommendation? Use the words that the person would like to hear from the PSYCHIATRIST PRACTICING TELEMEDICINE.
5. What are five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set?
6. What are five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set?
7. Summarize in one paragraph of six sentences how the mind-set tells the family about the new PSYCHIATRIST PRACTICING TELEMEDICINE, before the family meets the new PSYCHIATRIST PRACTICING TELEMEDICINE. Make this paragraph follow the way a person talks to her or his family.
8. Summarize in one paragraph of six sentences how the mind-set tells relatives (e.g., children) about the new PSYCHIATRIST PRACTICING TELEMEDICINE, knowing that the relatives will never meet the PSYCHIATRIST PRACTICING TELEMEDICINE.
9. Summarize in one paragraph of six sentences what the mind-set will tell friends when asked to describe what they think about the PSYCHIATRIST PRACTICING TELEMEDICINE, knowing that the friends will never meet the PSYCHIATRIST PRACTICING TELEMEDICINE.

2. The second answer shows the six things for which the mind-set searches and the rating of this answer in terms of helping to concretize the situation. The scale is used by SCAS to assign a rating. Accordingly, the perfect thing is seeking a psychiatrist experienced in neurological disorders like Parkinson’s disease (expected rating would be a perfect 5 out of 5). In contrast, having good online reviews and testimonials drop the score to 3 out of 5.
3. The rest of the answer follows the request in Table 1, on an item-by-item basis.

It is important to note here that the information presented in Table 2 comes from the questions asked in Table 1. That means that anybody doing the technology can change these questions and have the artificial intelligence present new answers. One thing that is not shown is the request for slogans. It’s often a good idea to summarize things by means of slogans. But adding another several questions would just be too much for this paper. So we stopped at the questions we asked and requested that the artificial intelligence produce for us six different mind-sets.

In-Depth Analyses after the Iteration

The BimiLeap platform for Mind Genomics answers extra questions for each iteration after the study is closed. Thus, if the user ran 10 iterations, there would be 10 parallel analyses, one for each iteration. Only one deeper analysis is detailed for space considerations. The deeper analysis for the Searching Optimist mind-set appears in Table 3. Just looking at the eight major questions answered by the in-depth analysis suffices to encourage critical thinking. Looking at the process differently, one may sense the beginning of an “invention machine” for ideas, a machine which operates at a vastly faster rate thanks to the combination of Mind Genomics thinking and artificial intelligence typified by large language models.

DISCUSSION AND CONCLUSION

The focus of this paper is principally on presenting a simple tool for critical thinking, based on artificial intelligence and Mind Genomics.

Unlike the conventional hypothetical deductive sciences, where there is an in-going hypothesis to answer, the objective here is to use a capability to “map” a subject area by answering different “standard questions.” The ultimate goal is to create a large-scale database of the way people think and behave, using a standard set of questions and analyses applied to different ways of thinking about the same topic. The outcome would then be an encyclopedic database of a given topic, set up using artificial intelligence, so that the information would be general descriptions of the way people think, rather than specific facts of what people actually do.

The approach presented here represents a new way to consider knowledge, lying somewhere between the generalizations of human behavior often encountered in the social sciences and the deep specifics for smaller issues encountered in the behavioral sciences. The social sciences present generalities of behavior, the behavioral sciences, especially those involving experimentation, present mind-numbing specifics of behavior. A happy medium would be the series of general questions presented as in Table 1, followed by the answers to those questions for each mind-set, shown in Tables 2 and 3.

We focused here on one behavioral issue, the search for a telepsychiatrist, and were able to come up with fairly rich data. One can only imagine what would happen to the world of patient-and-doctor experience if the entire medical world were to have the aforementioned databases, perhaps written up in easy-to-understand chapters. The novice medical professional would be able to learn general principles about how to deal with patients in terms of knowing the “minds” of the patients. And, for anyone in the medical profession, a few hours on the computer with the technology would allow the medical professional to better understand how patients may think. We are not talking about clinical issues, we’re not talking about statistical significance, but rather we are rather talking about the human bedside manner and the fact that artificial intelligence may be able to help to understand the way patients as people think about their own situations and their interactions with the medical world.

Table 2: Answers to the questions in Table 1 for the mind-set "Searching Optimist," synthesized and then described by the Artificial Intelligence.

<p>1. What is the name of the mind-set? SEARCHING OPTIMIST</p> <p>2. What does the mind-set look for?</p> <ul style="list-style-type: none">• "Innovative treatment options are key to finding the right doctor." (4 out of a maximum of 5)• "Telemedicine offers convenience and accessibility for appointments." (5 out of a maximum of 5)• "Seeking a psychiatrist experienced in neurological disorders like Parkinson's Disease." (5 out of a maximum of 5)• "Online reviews and testimonials can help narrow down the search." (3 out of a maximum of 5)• "A compassionate and understanding healthcare provider is essential." (5 out of a maximum of 5)• "Availability for virtual consultations is a must." (5 out of a maximum of 5) <p>3. What are the typical words the mind-set uses to ask neighbors and friends for a recommendation? "Can you recommend a psychiatrist who specializes in Parkinson's disease treatment through telemedicine?"</p> <p>4. What are the typical words to which the mind-set responds and feels comfortable with the recommendation? "I have extensive experience in treating patients with Parkinson's disease and offer telemedicine services for your convenience."</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set:</p> <ul style="list-style-type: none">• Convenient virtual appointments• Specialization in neurological disorders like Parkinson's disease• Flexibility in scheduling• Access to innovative treatments• Supportive and compassionate care <p>6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set:</p> <ul style="list-style-type: none">• Lack of experience in treating Parkinson's disease• Poor communication or accessibility• Negative reviews from previous patients• Limited availability for appointments• Inflexibility in treatment options <p>7. Summarize in one paragraph how the mind-set tells the family about the new PSYCHIATRIST PRACTICING TELEMEDICINE. "I found a psychiatrist specializing in Parkinson's disease who offers telemedicine services, making it easier for me to schedule appointments. They come highly recommended and have experience in treating patients with similar conditions. I feel confident and relieved knowing I have access to quality care conveniently from home. I look forward to starting treatment and feel optimistic about the progress I can make with their support."</p> <p>8. Summarize how the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE: "I have found a psychiatrist who specializes in treating my Parkinson's disease using telemedicine. I trust their expertise and am confident in the care they provide. I believe this will be a positive step towards managing my condition effectively. I know you may never meet them, but I wanted to share the good news with you all. It gives me peace of mind knowing I have a dedicated healthcare provider looking out for me."</p> <p>9. Summarize how the mind-set will describe the PSYCHIATRIST PRACTICING TELEMEDICINE to friends: "I have started treatment with a psychiatrist who specializes in Parkinson's disease management through telemedicine services. They have been incredibly supportive and understanding of my condition, offering innovative treatment options that have already made a difference. While you may not meet them, I wanted to share my positive experience with you all. I feel hopeful and empowered in my healthcare journey."</p>

Table 3: In-depth analysis by SCAS of the initial information generated for the Searching Optimist mind-set.

<p>Searching Optimist Mind-Set</p> <p>1. Key Ideas</p> <ol style="list-style-type: none"> 1. The mind-set is focused on finding the right psychiatrist who specializes in Parkinson's disease treatment through telemedicine. 2. The typical words used include seeking innovative treatment options, convenience, accessibility, specialized care, and compassionate healthcare providers. 3. The mind-set looks for recommendations from neighbors and friends who have experience with similar conditions and treatments. 4. The mind-set responds positively to recommendations that offer specialized care, experience in treating neurological disorders, and telemedicine services. 5. When sharing about the new psychiatrist practicing telemedicine, the mind-set emphasizes convenience, expertise, trust in care, and hope for positive outcomes. 6. Strong positives for choosing a psychiatrist practicing telemedicine include convenient virtual appointments, specialized care, flexibility, innovative treatments, and supportive care. 7. Danger signals for rejecting a psychiatrist practicing telemedicine include lack of experience, poor communication, negative reviews, limited availability, and inflexible treatment options. 8. When sharing with relatives and friends, the mind-set focuses on expertise, confidence in care, positive outcomes, and peace of mind. 9. Slogans emphasize quality care from home, tailored treatment solutions, specialized care for neurological disorders, compassionate virtual consultations, and peace of mind with a dedicated healthcare provider. <p>2. Themes</p> <ol style="list-style-type: none"> 1. Seeking specialized care and expertise: <ul style="list-style-type: none"> <input type="checkbox"/> Finding the right psychiatrist who specializes in Parkinson's disease treatment <input type="checkbox"/> Experience in treating neurological disorders <input type="checkbox"/> Specialized care and innovative treatment option 2. Convenience and accessibility: <ul style="list-style-type: none"> <input type="checkbox"/> Telemedicine service offering virtual appointments <input type="checkbox"/> Convenient care from home <input type="checkbox"/> Flexibility in treatment options 3. Trust and positive outcomes: <ul style="list-style-type: none"> <input type="checkbox"/> Recommendations from neighbors and friends <input type="checkbox"/> Confidence in care and positive outcomes <input type="checkbox"/> Peace of mind with dedicated healthcare provider 4. Communication and support: <ul style="list-style-type: none"> <input type="checkbox"/> Compassionate healthcare providers <input type="checkbox"/> Supportive care <input type="checkbox"/> Tailored treatment solutions 5. Warning signs for rejection: <ul style="list-style-type: none"> <input type="checkbox"/> Lack of experience <input type="checkbox"/> Poor communication <input type="checkbox"/> Negative reviews <input type="checkbox"/> Limited availability <input type="checkbox"/> Inflexible treatment options <p>3. Perspectives</p> <p>Plus:</p> <ol style="list-style-type: none"> 1. Plus factors in seeking specialized care and expertise include the opportunity to receive treatment from a healthcare provider with specific knowledge and experience in Parkinson's disease. This can lead to more effective and tailored treatment options for the patient. 2. Convenience and accessibility factors allow for easier access to care through telemedicine services, saving time and energy for both the patient and healthcare provider. This can also lead to more frequent appointments and better management of the disease. 3. Trust and positive outcomes can provide peace of mind and confidence in the care being received, leading to better mental and emotional well-being for the patient. 4. Communication and support from healthcare providers can improve the overall treatment experience, ensuring that the patient feels heard and understood in their healthcare journey. <p>Minus:</p> <ol style="list-style-type: none"> 5. Minus factors in seeking specialized care and expertise may include a limited availability of healthcare providers with specific expertise in Parkinson's disease treatment, making it more difficult for patients to find the right care. 6. Lack of convenience and accessibility in treatment options may result in delays in care and challenges in managing the disease effectively. 7. Negative outcomes or experiences can lead to a loss of trust in the healthcare provider, potentially impacting the patient's mental well-being and treatment outcomes. 8. Poor communication and lack of support from healthcare providers can hinder the patient's treatment journey, leading to frustration and dissatisfaction with their care. <p>Interesting:</p> <ol style="list-style-type: none"> 9. Interesting factors in seeking specialized care and expertise may include the innovative treatment options that come with specialized care, providing patients with cutting-edge solutions to manage their Parkinson's disease. 10. The use of telemedicine services for virtual appointments can offer a new level of convenience and flexibility in healthcare, allowing patients to access care from the comfort of their own homes. 11. Recommendations from neighbors and friends can provide valuable insights into the quality of care provided by a specific healthcare provider, helping patients make more informed decisions about their treatment options.
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4. Interested Audiences

1. Individuals with neurological disorders like Parkinson's disease would be most interested in the topic questions, as they would be looking for specialized care and innovative treatment options to manage their condition effectively.
2. Caregivers and family members of individuals with neurological disorders may also be interested in the topic questions, as they would want to ensure their loved ones are receiving the best possible care and support.
3. Healthcare professionals, specifically psychiatrists and neurologists, could also be interested in the topic questions as they may be looking for ways to improve their practice and increase accessibility for their patients through telemedicine services.
4. Individuals interested in telemedicine and virtual healthcare options in general may also find the topic questions relevant, as they are looking for convenient and effective ways to receive medical care.

5. Opposing Audiences

1. Some older individuals may oppose the idea of telemedicine and prefer traditional in-person appointments with healthcare providers.
2. Patients who value personal interactions and physical examinations may feel that telemedicine lacks the same level of care and connection.
3. Those who are hesitant about technology or unfamiliar with virtual healthcare services may be resistant to the concept of seeing a psychiatrist through telemedicine.
4. Individuals who prioritize face-to-face communication and building a rapport with their healthcare providers may feel that telemedicine is impersonal and less effective in addressing their needs.

6. What is Missing

1. The potential costs associated with telemedicine appointments and treatments
2. The process for obtaining prescriptions and medication through telemedicine
3. The availability of follow-up care and support after virtual consultations
4. The potential limitations or challenges of receiving treatment through telemedicine, such as technological issues or lack of in-person physical exams

7. Alternative Viewpoints

1. Some alternative viewpoints on the topic of choosing a psychiatrist practicing telemedicine may include concerns about the quality of care provided through virtual appointments compared to in-person visits. Some individuals may prioritize a personal connection with their healthcare provider and feel that telemedicine lacks the same level of empathy and understanding. Others may be hesitant about the security and privacy of telemedicine platforms, especially when discussing sensitive mental health issues.
2. Additionally, some individuals may have reservations about the effectiveness of telemedicine for certain neurological disorders, such as Parkinson's disease, which may require physical examinations or specialized testing that cannot be done remotely. They may prefer traditional, in-person care from a healthcare provider with experience in managing complex neurological conditions.
3. There may also be concerns about the accessibility of telemedicine services, particularly for those who do not have reliable internet access or the technological skills to navigate virtual appointments. Some individuals may feel more comfortable with face-to-face interactions and may prefer seeking recommendations for a psychiatrist through traditional word-of-mouth methods rather than relying on online reviews and testimonials.

8. Innovations

1. Specialized online platforms connecting patients with the right healthcare providers based on their specific needs and conditions, such as a platform specifically for Parkinson's disease treatment
2. Virtual reality therapy programs for neurological disorders like Parkinson's disease, offering immersive and interactive experiences for patients to engage in therapy from the comfort of their own homes
3. Virtual support groups for patients with Parkinson's disease, providing a sense of community and connection with others going through similar experiences
4. Personalized treatment plans developed through advanced data analytics and artificial intelligence, ensuring tailored and effective care for each individual with Parkinson's disease
5. 24/7 telehealth services for immediate support and guidance in managing symptoms and treatment of Parkinson's disease, offering round-the-clock care and communication with healthcare providers

At the most pragmatic level we might imagine what could happen in a situation where the effort to use telepsychiatry is just beginning, e.g., in an economically undeveloped country. One could now imagine prospective benefits to emerge when the attending medical professional could either refer to a database about the mind-set of the prospective patient to be seen the next day, or if that is lacking, create one's own database about mind-sets, about what a prospective patient in one of the mind-sets might be thinking, etc. Today, the capability to do the foregoing requires substantial learning and experience, often marked by uncomfortable moments, uncertain, painful trial and error. Imagine, in contrast, that one part of the effort, the months-long education, could be done in a matter of an hour or two with output such as that material shown here. It is that goal to advance understanding by synthesizing mind-sets, which is the dream and the vision of Mind Genomics but taken to a quite different level by using large language models to directly address the issues. What might come next might be Mind Genomic studies with real people or "synthesized" respondents. Those next steps remain for future papers in this series.

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Appendix: Five Additional Mind-Sets

Table A1: The Informed Seekers Mind-Set

<p>1. What is the name of the mind-set: INFORMED SEEKERS</p> <p>2. What does the mind-set look for:</p> <ul style="list-style-type: none"> <input type="checkbox"/> “Cutting-edge treatments and innovations in telemedicine” (Rating: 5 out of a maximum of 5) <input type="checkbox"/> “Specialization in neurological disorders such as Parkinson’s disease” (Rating: 4 out of a maximum of 5) <input type="checkbox"/> “Experience in telemedicine and virtual consultations” (Rating: 4 out of a maximum of 5) <input type="checkbox"/> “Positive patient testimonials and reviews on online platforms” (Rating: 5 out of a maximum of 5) <input type="checkbox"/> “A warm and empathetic bedside manner even through virtual consultations” (Rating: 3 out of a maximum of 5) <input type="checkbox"/> “Accepts insurance coverage for telemedicine services” (Rating: 2 out of a maximum of 5) <p>3. Typical words used to ask for recommendations: “Do you know of any neurologist who specializes in Parkinson's Disease and practices telemedicine?”</p> <p>4. Typical words to which the mind-set responds: “We are looking for a neurologist who has experience in managing Parkinson's disease through telemedicine and has a compassionate approach to patient care.”</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Convenient access to specialized care from the comfort of home <input type="checkbox"/> Expertise in managing neurological disorders through telemedicine <input type="checkbox"/> Positive patient testimonials and reviews <input type="checkbox"/> Ability to receive innovative treatments and therapies <input type="checkbox"/> Option for virtual consultations reduces the need for travel <p>6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Lack of experience in treating Parkinson's disease through telemedicine <input type="checkbox"/> Negative patient testimonials and reviews <input type="checkbox"/> Limited availability for virtual consultations <input type="checkbox"/> Difficulty in establishing a rapport through virtual platforms <input type="checkbox"/> Inflexibility in accepting insurance coverage for telemedicine services <p>7. Summary of how the mind-set tells the family about the new PSYCHIATRIST PRACTICING TELEMEDICINE: “I did a lot of research and found a neurologist who specializes in Parkinson's disease and offers telemedicine consultations. They have great reviews and really understand my condition. I'm hopeful that they will provide the best care for me.”</p> <p>8. Summary of how the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE: “I found a great neurologist who specializes in Parkinson's disease and offers telemedicine consultations. They have a lot of experience and have received positive feedback from patients. I believe they will provide the best care for me.”</p> <p>9. Summary of how the mind-set tells friends about the new PSYCHIATRIST PRACTICING TELEMEDICINE: “I found a neurologist who specializes in Parkinson's disease and offers telemedicine services. They come highly recommended and have a strong track record in managing neurological disorders. I believe I am in good hands with them.”</p>

Table A2: The Information Seekers Mind-Set

<p>1. What is the name of the mind-set: INFORMATION SEEKERS</p> <p>2. What does the mind-set look for:</p> <ul style="list-style-type: none"><input type="checkbox"/> "Expertise in treating neurological disorders" (5 out of a maximum of 5)<input type="checkbox"/> "Convenient telemedicine options" (4 out of a maximum of 5)<input type="checkbox"/> "Positive patient reviews" (3 out of a maximum of 5)<input type="checkbox"/> "Parkinson's disease specialization" (5 out of a maximum of 5)<input type="checkbox"/> "Accepts insurance coverage" (2 out of a maximum of 5)<input type="checkbox"/> "Availability for urgent consultations" (4 out of a maximum of 5) <p>3. Typical words the mind-set uses to ask for recommendations: "Do you know of any psychiatrists specializing in Parkinson's disease who offer telemedicine services?"</p> <p>4. Typical words to respond to and feel comfortable with the recommendation: "I have extensive experience treating Parkinson's disease patients through telemedicine and will prioritize your convenience and care."</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Convenience of telemedicine<input type="checkbox"/> Specialization in Parkinson's disease<input type="checkbox"/> Positive patient reviews<input type="checkbox"/> Acceptance of insurance<input type="checkbox"/> Expertise in treating neurological disorders <p>6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Lack of Parkinson's disease specialization<input type="checkbox"/> Poor patient reviews<input type="checkbox"/> Unavailability for urgent consultations<input type="checkbox"/> Non-acceptance of insurance<input type="checkbox"/> Lack of expertise in treating neurological disorders <p>7. Before the family meets the new PSYCHIATRIST PRACTICING TELEMEDICINE: "I found a highly recommended psychiatrist who specializes in Parkinson's disease and offers convenient telemedicine services. They have great patient reviews and accept insurance, so I feel really positive about this choice. I know they will provide the best care for me."</p> <p>8. How the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE: "I've found a great psychiatrist specializing in Parkinson's disease who offers telemedicine services. They come highly recommended and accept insurance, so I feel confident in this choice. I know they will provide excellent care to help manage my condition."</p> <p>9. How the mind-set describes the new PSYCHIATRIST PRACTICING TELEMEDICINE to friends: "I've started seeing a psychiatrist who specializes in Parkinson's Disease and offers telemedicine. They have great patient reviews and accept insurance, so I feel really positive about this choice. I trust their expertise in managing neurological disorders."</p>

Table A3: The New Beginner Mind-Set

<p>1. What is the name of the mind-set: NEW BEGINNER</p> <p>2. What does the mind-set look for:</p> <ul style="list-style-type: none"><input type="checkbox"/> "Looking for accessible and convenient telemedicine options." (4 out of a maximum of 5)<input type="checkbox"/> "Seeking a psychiatrist who specializes in neurology and Parkinson's disease." (5 out of a maximum of 5)<input type="checkbox"/> "Desiring a compassionate and understanding healthcare provider." (4 out of a maximum of 5)<input type="checkbox"/> "Prioritizing recommendations from trusted sources." (5 out of a maximum of 5)<input type="checkbox"/> "Seeking a telemedicine psychiatrist with flexible scheduling options." (3 out of a maximum of 5)<input type="checkbox"/> "Seeking a psychiatrist who can offer guidance on managing symptoms and medications." (5 out of a maximum of 5) <p>3. Typical words the mind-set uses to ask for recommendations: "Do you know of any good doctors that specialize in Parkinson's Disease and offer telemedicine services?"</p> <p>4. Typical words to respond to and feel comfortable with the recommendation: "I have experience working with patients with Parkinson's disease and am here to offer guidance on managing symptoms and medications."</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE: Positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set include convenience of access, specialized expertise in Parkinson's disease, compassionate care, trusted recommendations, and flexibility in scheduling.</p>

6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE:

Danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE for this mind-set include lack of experience in neurology or Parkinson's disease, lack of compassion or understanding, rigid scheduling options, negative reviews or recommendations, and difficulty in accessing the provider.

7. Before the family meets the new PSYCHIATRIST PRACTICING TELEMEDICINE:

The mind-set might tell their family, "I've found a great psychiatrist who specializes in Parkinson's disease and offers telemedicine services. They are very knowledgeable and understanding, and I feel confident in their ability to help me manage my condition effectively. I know this is a new journey for us, but I trust that this psychiatrist will be a valuable resource for us moving forward."

8. How the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE:

The mind-set might tell their relatives, "I've started seeing a psychiatrist who specializes in Parkinson's disease and offers telemedicine services. They are very knowledgeable and understanding, and I feel confident in their ability to help me manage my condition effectively. I trust that this psychiatrist will be a valuable resource for me moving forward."

9. How the mind-set describes the new PSYCHIATRIST PRACTICING TELEMEDICINE to friends:

The mind-set might tell their friends, "I've recently started working with a psychiatrist who specializes in Parkinson's disease and offers telemedicine services. They are incredibly knowledgeable and compassionate, and I feel supported in managing my condition. I trust that this psychiatrist will be a valuable resource for me moving forward."

Table A4: The Convenience Seeker Mind-Set

<p>1. What is the name of the mind-set: CONVENIENCE SEEKER</p> <p>2. What does the mind-set look for:</p> <ul style="list-style-type: none"><input type="checkbox"/> "Access to care from the comfort of my own home" (4 out of a maximum of 5)<input type="checkbox"/> "Efficient use of time with no travel required" (5 out of a maximum of 5)<input type="checkbox"/> "Availability of appointments outside of traditional office hours" (3 out of a maximum of 5)<input type="checkbox"/> "Ability to see a specialist without geographical limitations" (5 out of a maximum of 5)<input type="checkbox"/> "Reduced stress and anxiety associated with in-person appointments" (4 out of a maximum of 5)<input type="checkbox"/> "Cost-effective alternative to traditional office visits" (3 out of a maximum of 5) <p>3. Typical words the mind-set uses to ask for recommendations: "Hi, have you heard of any doctors who do appointments over the phone or video?"</p> <p>4. Typical words to respond to and feel comfortable with the recommendation: "I appreciate the convenience of telemedicine appointments and the flexibility it offers in managing my condition."</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Convenient access to specialized care<input type="checkbox"/> Time and cost savings<input type="checkbox"/> Flexibility in scheduling appointments<input type="checkbox"/> Reduced stress and anxiety associated with travel<input type="checkbox"/> Ability to receive care from the comfort of home <p>6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Lack of in-person interaction with doctor<input type="checkbox"/> Potential technology issues disrupting appointments<input type="checkbox"/> Concerns about accuracy of diagnosis without physical examination<input type="checkbox"/> Limited ability to develop a personal connection with the doctor<input type="checkbox"/> Difficulty with ensuring privacy and security of medical information <p>7. Before the family meets the new PSYCHIATRIST PRACTICING TELEMEDICINE: When discussing the new PSYCHIATRIST PRACTICING TELEMEDICINE with the family, the Convenience Seeker may say things like, "We don't have to worry about scheduling conflicts or traffic to get to appointments. It's so much easier to just hop on a video call from home and get the care I need. Plus, it saves us money on gas and parking fees. Isn't that great?"</p> <p>8. How the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE: When telling relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE, the Convenience Seeker may say something like, "I found a great psychiatrist who does appointments over the phone or video, so it's really convenient for me. I don't have to worry about traveling to appointments or waiting in a crowded waiting room. It's much easier to manage my condition this way. Isn't that fantastic?"</p> <p>9. How the mind-set describes the new PSYCHIATRIST PRACTICING TELEMEDICINE to friends: When describing the PSYCHIATRIST PRACTICING TELEMEDICINE to friends, the Convenience Seeker may say something like, "I have a psychiatrist who does appointments over the phone or through video calls, so it's really convenient for me. I don't have to worry about fitting appointments into my busy schedule or dealing with traditional office visits. It's a great option for managing my Parkinson's disease. Isn't that awesome?"</p>
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Table A5. The Searcher Mind-Set

<p>1. What is the name of the mind-set: SEARCHER</p> <p>2. What does the mind-set look for:</p> <ul style="list-style-type: none"><input type="checkbox"/> "Cutting-edge technology in treatment options" (4 out of a maximum of 5)<input type="checkbox"/> "Convenience of remote consultations" (5 out of a maximum of 5)<input type="checkbox"/> "Expertise in neurological disorders" (5 out of a maximum of 5)<input type="checkbox"/> "Positive patient reviews and testimonials" (3 out of a maximum of 5)<input type="checkbox"/> "Specialization in Parkinson's disease management" (5 out of a maximum of 5)<input type="checkbox"/> "Affordability of telemedicine services" (2 out of a maximum of 5) <p>3. Typical words the mind-set uses to ask for recommendations: "Do you know of any psychiatrists who specialize in Parkinson's disease and offer telemedicine services?"</p> <p>4. Typical words to respond to and feel comfortable with the recommendation: I have extensive experience in treating patients with Parkinson's disease and offer telemedicine services for your convenience.</p> <p>5. Five strong positives for choosing a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Expertise in neurological disorders<input type="checkbox"/> Convenience of remote consultations<input type="checkbox"/> Specialization in Parkinson's disease management<input type="checkbox"/> Positive patient reviews<input type="checkbox"/> Cutting-edge technology in treatment options <p>6. Five strong danger signals for rejecting a PSYCHIATRIST PRACTICING TELEMEDICINE:</p> <ul style="list-style-type: none"><input type="checkbox"/> Lack of specialization in Parkinson's disease management<input type="checkbox"/> Negative patient reviews<input type="checkbox"/> Limited experience with neurological disorders<input type="checkbox"/> Unaffordability of telemedicine services<input type="checkbox"/> Outdated treatment options. <p>7. Before the family meets the new PSYCHIATRIST PRACTICING TELEMEDICINE: "I have found a highly specialized psychiatrist who can provide expert care for my Parkinson's disease through convenient telemedicine consultations. They come highly recommended, and I believe they will greatly benefit my treatment."</p> <p>8. How the mind-set tells relatives about the new PSYCHIATRIST PRACTICING TELEMEDICINE: "I have found a highly skilled psychiatrist who specializes in Parkinson's disease and offers telemedicine services. I believe this will greatly improve my treatment and make it more convenient for me to access care."</p> <p>9. How the mind-set describes the new PSYCHIATRIST PRACTICING TELEMEDICINE to friends: "I have started seeing a psychiatrist who specializes in Parkinson's disease and offers telemedicine services. I feel confident in their expertise and believe they will help me manage my condition effectively."</p>
