

Pioneering Artificial Intelligence Integration Into Forensic Risk Assessment: Applying ChatGPT-4o to the Terrorist Radicalization Assessment Protocol–18 (TRAP-18)

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This case study investigates the application of ChatGPT-4o by OpenAI to the Terrorist Radicalization Assessment Protocol–18 (TRAP-18; Meloy, 2017) to evaluate the coding accuracy and consistency of ChatGPT-4o compared to two qualified and trained human TRAP-18 coders. The TRAP-18 is a structured professional judgment instrument (SPJ) composed of proximal warning behaviors and distal characteristics to assess risk in individuals potentially engaging in lone-actor terrorism; it has demonstrated wide acceptance and efficacy. The ChatGPT-4o artificial intelligence (AI) was initially “trained” with a teaching guide derived from the TRAP-18 manual and relevant literature. Anonymized case material was provided, and ChatGPT-4o was instructed to code the material with an output temperature setting of 0.0 to ensure consistency. Two qualified human coders independently coded the same case material. Interrater agreement was calculated using Cohen’s and Fleiss’s κ coefficients. The results showed perfect agreement among human coders and between human and AI coders for the TRAP-18 proximal warning behaviors. Agreement on distal characteristics was fair to moderate, highlighting areas where ambiguous item content could be clarified for better accuracy. The results suggest that AI has the potential in assisting SPJ risk measures. The case application concludes that although AI demonstrates potential in coding accuracy, consistency, and extracting relevant facts, further refinement of item criteria and additional simulations are necessary to improve the overall interrater reliability. Ethical considerations and the necessity of human oversight remain crucial in the deployment of AI in forensic assessments.

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J. Reid Meloy is the owner and developer of the Terrorist Radicalization Assessment Protocol–18 and derives income from his exclusive license to MultiHealth Systems, Inc. (<https://MHS.com>) for trainings and publications.

Marvin W. Acklin conceived the project. Kailey Topping compiled the teaching guide and case material, developed input queries, and conducted statistical analyses of the data. Marvin W. Acklin was Human Rater 1. Julia Kupper was Human Rater 2. Marvin W. Acklin and Kailey Topping prepared the article with editorial assistance by J. Reid Meloy and Julia Kupper.

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Public Significance Statement

Applications of artificial intelligence (AI) in forensic psychology promise to address well-recognized limitations of human decision making, including inherent limits in cognitive processing capacity and bias. This case study demonstrated the capability of ChatGPT-4o, a large language model by OpenAI, in coding the Terrorist Radicalization Assessment Protocol-18—a widely used measure in the assessment of terrorist violence—with expert human raters. Multiple iterations of the coding procedure indicated high levels of consistency. The findings highlight AI’s potential to improve the accuracy and efficiency of complex structured professional judgment risk assessments. The use of AI applications with SPJ instruments for the assessment of violence risk opens a new frontier in clinical and forensic psychology requiring oversight by both human gatekeepers and further research.

Keywords: risk assessment, Terrorist Radicalization Assessment Protocol-18, structured professional judgment, ChatGPT, artificial intelligence

The explosive proliferation of generative artificial intelligence (AI) presents rich opportunities in the field of targeted violence risk assessment. AI applications promise to address the inherent capacity limits and transient storage properties of human working memory, including human proneness toward interpretation of information into existing schemas and expectations (“cognitive bias”; Tversky & Kahneman, 1974). From the user’s perspective, AI includes

algorithmic systems that people recognize as providing enhanced or entirely new capabilities that have fallen within the human domain of human decision-making and action, such as visual and speech recognition, reasoning, problem-solving, creative expression, navigation, and interaction. (De Freitas et al., 2023)

The application of AI to case study material promises to increase accuracy and efficiency in the coding and interpretation tasks. For example, a 2018 study examined deep learning comparing AI and practicing radiologists in the interpretation of chest X-rays. The AI performed at a level similar to practicing radiologists with 12 years of experience, requiring an average of 1.5 min to interpret 420 images compared to 240 min required by the human radiologists (Rajpurkar et al., 2018). AI has demonstrated unprecedented utility in addressing complex tasks such as detecting emotion in facial expression and tone of voice, creating paintings that pass the Turing test, writing poetry, predicting which jokes people will find funny, and predicting which songs will become hits (De Freitas et al., 2023). AI applications to violence risk assessment have begun to appear in peer-reviewed literature, for

example, Etaywe et al. (2024), applying ChatGPT to linguistic content analysis.

This exploratory case study was conducted using ChatGPT-4o, an evolving AI large language model based on the generative pretrained transformer architecture. The AI application is based on a dialogical method with queries and follow-up clarifications and requests for justification of the AI’s “reasoning.” The ChatGPT-4o model utilized in this case study required a paid subscription and provided advanced comprehension and output response accuracy (OpenAI, 2024a).

AI has the potential to enhance structured professional judgment (SPJ) by assisting in evidence coding and organization ensuring flexible professional judgment in comparison to actuarial tools (Richardson, 2024). AI has the potential to assist by (a) reducing cognitive fallibilities, such as confirmation bias, by identifying facts and patterns in the data that may challenge the theory of the case; (b) potentially incorporating a broader more nuanced application of the SPJ, based on all current research; and (c) recognizing that within any SPJ framework, the weighting and integration of the risk variables are the obligation of the professional. In summary, the AI could help by digitally “remembering” all the research on the selected SPJ and facts of each case and assisting the professional in rational decision making based upon the integration of often voluminous sources of data without bias, such as the emotion of the professional blind spots interfering with complex tasks.

The Terrorist Radicalization Assessment Protocol-18 (TRAP-18; Meloy, 2017) is an SPJ

measure developed for the assessment of risk for targeted violence by ideologically motivated individuals. The measure has demonstrated wide acceptance and efficacy (Allely & Wicks, 2022; Clesle et al., 2024; Cook & Vargen, 2023; Hart & Vargen, 2023; Vargen & Challacombe, 2023). It has been found to be both reliable and valid for professional use (Allely & Wicks, 2022; Corner & Pyszora, 2022; Risk Management Authority, 2021). The TRAP-18 is a proprietary instrument and cannot be used without license and requisite training through MultiHealth Systems (<https://www.mhs.com>). It is used here with the permission of the owner and developer, who is a coauthor of this study.

The TRAP-18 consists of two sets of variables: First, eight proximal warning behaviors were originally developed to identify patterns of proximal risk for intended or targeted violence, in contrast to the more common mode of affective violence, which is typically impulsive or reactive (Fontaine, 2007, 2008; Meloy, 2006; Siegel & Victoroff, 2009). Second, 10 distal characteristics of the lone-actor terrorist were derived from studying the extant empirical and theoretical research on terrorism and Meloy's experience as a forensic psychologist (Meloy, 2004, 2011) in directly and indirectly assessing both foreign and domestic lone-actor terrorists over a 20-year period (Meloy & Yakeley, 2014). Meloy's preattack warning behavior typology has been validated as a robust factor in individual online risk assessment (Allwinn et al., 2024). The description and criteria for the proximal warning behaviors and distal characteristics are described in Appendix A: AI TRAP-18 teaching guide with the permission of the author.

The present case study examines the application of generative AI (ChatGPT-4o) to anonymized case material to calibrate coding accuracy in relation to human coders and to examine the consistency of AI coding. The emerging availability of generative AI methodology shows potential in coding case material information in SPJ measures. AI presents the possibility of rapidly coding and integrating information well beyond the capacity of a human coder. To assess the efficacy of AI applications to SPJ measures such as the TRAP-18, applications of interrater agreement are necessary.

Method

Depending on the AI's familiarity with esoteric topics or measures, AI requires "training," that is,

learning information provided by a user and applying the newfound knowledge according to the user's request. In a preliminary study, ChatGPT-4o's baseline knowledge of the TRAP-18 generated a description of the instrument but provided inaccurate indicators. A 2,430-word teaching guide was subsequently provided to "pretrain" ChatGPT-4o and increase output accuracy, using descriptions of the 18 proximal and distal indicators derived from open-source publications and the TRAP-18 manual (Meloy, 2017; Risk Management Authority, 2021). A ChatGPT-4o response parameter setting known as the "temperature" is responsible for the influence of randomness of response outputs. The temperature value parameters range from 0.0 to 1.0. Low-temperature parameters operate in a deterministic mode with high predictability. Low temperature imposes conservative constraints of the language model. High-temperature parameters activate increased randomness, diverse, and creative output responses (Davis et al., 2024; OpenAI, 2024b). In the context of using ChatGPT-4o as a research tool with application to the TRAP-18, a low-temperature value of 0.0 was set for the response output as a parameter to achieve the highest degree of consistency in coding. This investigation did not require institutional review board approval. The research was conducted consistent with the APA's *Ethical Principles of Psychologists and Code of Conduct* (American Psychological Association, 2017). Identifying case study material was disguised according to the APA's *Publication Manual* (American Psychological Association, 2020; 7th ed., Section 1.19). The design of the study investigated ChatGPT-4o for coding of TRAP-18 items (Appendix C: ChatGPT-4o Output).

ChatGPT-4o Query and Instructions by Researcher

The case information was derived from actual, real-life case material. The fully anonymized case information enhances ecological validity while protecting privacy (see Appendix B). Before it was input into the AI system, identifying case material was disguised according to the APA's *Publication Manual* recommendations to protect confidentiality (American Psychological Association, 2020). Following the teaching guide and initial query instruction, ChatGPT-4o was provided with the following instructions and anonymized case material:

I am going to provide you with anonymous case material that I want you to code with adherence to the TRAP-18 utilizing the information provided in the teaching guide. With an output temperature setting of 0.0, I want you to provide me with the evidence, justification with specific examples, and coding (present, absent, unknown) in adherence to the TRAP-18. Rate as absent if evidence for a factor is not clear. Adhere to the terminology used in the teaching guide. Ready for the case material?

The anonymized case material (2,850 words) was provided and independently coded by two qualified human coders with extensive training on the TRAP-18. Human Coder 1 is a senior forensic psychologist with training and experience in TRAP-18 applications. Human Coder 2 is a tactical linguist who has applied the TRAP-18 in casework and several research studies (e.g., Kupper et al., 2023; Kupper & Meloy, 2021, 2023). In this case, Rater 1 was the gold standard in which ratings of the other human and AI raters were applied. Rater 1 indicated that coding the TRAP-18 after the record review required 3.0 hr. Rater 2 required 2.5 hr. After training and input of case data, ChatGPT-4o ratings required less than 2 min. The human coding permitted comparisons to AI-generated coding derived from the case material. Levels of agreement were calculated using Cohen's and Fleiss's κ coefficients using standard interpretive criteria (Landis & Koch, 1977).

Following the human–AI coding comparisons and to assess the internal consistency of AI-generated coding, five simulations of the input procedure were calculated to determine the test–retest reliability. The subsequent serial AI ratings required less than 120 s. In each simulation, ChatGPT-4o was provided with the same anonymized case material, the same TRAP-18 teaching guide, and the same detailed instructions for output interpretation. The

analysis was conducted to determine the degree to which output variance must be considered as a limitation of ChatGPT-4o's reliability in scientific research. A 2015 application of the TRAP-18 to individual terrorists in Europe indicated mean interrater reliability (Cohen's κ) of 0.895 and ranged from 0.69 to 1.0 for the warning behaviors and 0.75 to 1.0 for the distal characteristics (Meloy et al., 2015). In a more recent study, Vargen and Challacombe (2023), using mixed-model absolute agreement intraclass correlation coefficients, found reliability ranged from 0.20 to 0.63. The authors recommended consensus coding approaches to enhance agreement. Appendices A–C present the AI teaching guide, anonymized case material, and ChatGPT-4o output.

Results

Coding results of the two independent human and AI raters are presented in Table 1 for the eight proximal warning behaviors and Table 2 for the 10 distal characteristic items. The AI calculated Cohen's and Fleiss's multirater κ coefficients. The following table illustrates coding decisions for each rater.

- Human Coder 1 and Human Coder 2: The independent human coders achieved perfect agreement. Cohen's κ coefficient is $\kappa = 1.0$.
- Human Coder 1 and AI Coder: Cohen's κ between Human Coder 1 and the AI Coder is $\kappa = 1.0$. The Human Coder 1 and AI Coder achieved perfect agreement.
- Human Coder 2 and AI Coder: Cohen's κ between Human Coder 2 and the AI Coder is $\kappa = 1.0$. The coders achieved perfect agreement.

Table 1
Tabular Representation of Independent Coding of TRAP-18 Proximal Warning Behaviors

TRAP-18			
Eight proximal warning behavior	Human Coder 1	Human Coder 2	ChatGPT-4o AI coder
1. Pathway	Absent	Absent	Absent
2. Fixation	Present	Present	Present
3. Identification	Absent	Absent	Absent
4. Novel aggression	Absent	Absent	Absent
5. Energy burst	Absent	Absent	Absent
6. Leakage	Present	Present	Present
7. Last resort	Absent	Absent	Absent
8. Directly communicated threat	Present	Present	Present

Note. TRAP-18 = Terrorist Radicalization Assessment Protocol-18; AI = artificial intelligence.

Table 2
Tabular Representation of Independent Coding of TRAP-18 Distal Characteristics

TRAP-18 10 distal characteristic	Human Coder 1	Human Coder 2	ChatGPT-4o AI Coder 3 (original)	ChatGPT-4o AI Coder 4 (Item 3 modification)
1. Personal grievance and moral outrage	Present	Present	Present	Present
2. Framed by an ideology	Absent	Absent	Absent	Absent
3. Failure to affiliate with extremist or other group	Absent	Absent	Present	Absent
4. Dependence on virtual community	Absent	Present	Absent	Unknown
5. Thwarting of occupational goals	Present	Present	Present	Present
6. Changes in thinking and emotion	Absent	Absent	Present	Present
7. Failure of sexual intimate pair bond	Present	Present	Present	Present
8. Mental disorder	Absent	Present	Present	Absent
9. Greater creativity and innovation	Absent	Absent	Absent	Absent
10. History of criminal violence	Absent	Absent	Absent	Present

Note. Coder discrepancies are labeled in bold. TRAP-18 = Terrorist Radicalization Assessment Protocol-18; AI = artificial intelligence.

- Fleiss’s multirater κ : The Fleiss’s κ is $\kappa = 1.0$. This indicated perfect agreement among the three coders.
- These results indicate that the ChatGPT-4o achieved perfect agreement with independent human coders.

Preliminary analyses of the 10 distal characteristics indicated suboptimal levels of agreement for several TRAP-18 items. To reduce AI-generated errors of miscoding items with double negative wording, the language of Item 3 “failure to affiliate” was modified to “rejection by” on the teaching guide provided to ChatGPT-4o AI Coder 4. Table 2 illustrates the effects of modifying item content.

- Human Coder 1 and Human Coder 2: The Cohen’s κ between Coder 1 and Coder 2 is $\kappa = 0.58$. This value indicated moderate agreement between the two coders. Coders disagreed on Item 4 *dependence on virtual community* and Item 7 *failure of sexual intimate pair bond*.
 - Human Rater 1 coded Item 4 *dependence on virtual community* as absent. While the subject used the internet to transmit one-way communication, there is no evidence that he depended on or belonged to a virtual community for interaction (e.g., reinforcement of beliefs) or virtual learning (e.g., planning or preparation).
 - Human Rater 2 coded Item 4 *dependence on virtual community* as present due to the subject using the internet to send various emails to a variety of targets and to post on social media.
 - Human Rater 2 coded Item 7 *failure of sexual intimate pair bond* as absent because the subject was married four times but noted his inability to form long-lasting relationships.
- Human Coder 1 and AI Coder 3 (original item content): Cohen’s κ between Coder 1 and AI Coder 3 is $\kappa = 0.62$. This indicated substantial agreement between the two coders. Coders disagreed on Item 3 *failure to affiliate with extremist or other group* and Item 6 *changes in thinking and emotion*.
- Human Coder 1 and AI Coder 4 (with Item 3 modification): Cohen’s κ between Coder 1 and Coder 4 is $\kappa = 0.48$. This value indicated a moderate level of agreement between the two coders. Coders disagreed

on Item 4 *dependence on virtual community*, Item 6 *changes in thinking and emotion*, and Item 10 *history of criminal violence*.

- Human Coder 2 and AI Coder 3 (original item content): Cohen's κ between Coder 2 and AI Coder 3 is $\kappa = 0.23$. This value indicated a fair level of agreement between the two coders. Coders disagreed on Item 3 *failure to affiliate with extremist or other group*, Item 4 *dependence on virtual community*, Item 6 *changes in thinking and emotion*, and Item 7 *failure of sexually intimate pair bond*.
- Human Coder 2 and AI Coder 4 (with Item 3 modification): Cohen's κ between Coder 2 and Coder 4 is $\kappa = 0.31$. This value indicated a fair level of agreement between the two coders. Coders disagreed on Item 4 *dependence on virtual community*, Item 6 *changes in thinking and emotion*, Item 7 *failure of sexually intimate pair bond*, and Item 10 *history of criminal violence*.
- AI Coder 3 (original item content) and AI Coder 4 (with Item 3 modification): Cohen's κ between Coder 3 and Coder 4 is $\kappa = 0.42$. This value indicated moderate agreement between the two coders. Coders disagreed on Item 3 *failure to affiliate with extremist or other group*, Item 4 *dependence on virtual community*, and Item 10 *history of criminal violence*.
- Fleiss's multirater κ for all raters is $\kappa = 0.43$. This indicated moderate agreement among the four coders.

The relative strength of agreement for TRAP-18 distal characteristics was lower than the proximal

warning behaviors. Although the level of agreement on the distal items was suboptimal ($\kappa = 0.23$), this level of divergence is meaningful in risk assessment as misclassifications in these areas could influence the critical examination of coding and case data. The AI coders demonstrated sensitivity to ambiguous item content. Examination of disagreements revealed some potential suggestions for improving the clarity of TRAP-18 item content and definitions. For example, classification accuracy improved with the modification on Item 3 *failure to affiliate with extremist or other group* by removing the double negative. Other items that may benefit from modification would include Item 4 *dependence on a virtual community* (increased definitional specificity), Item 6 *changes in thinking and emotion* (increased definitional specificity), Item 7 *failure of sexual intimate pair bond* (removal of double negative and increased definitional specificity), and Item 10 *history of criminal violence* (increased definitional specificity).

Consistency of ChatGPT-4o Output Analysis

To assess the stability of the AI in coding item content, a series of five independent analyses were conducted using the same case material utilized by the human coders. Across the five AI simulations, the test-retest reliability (Fleiss's κ) for the eight proximal warning behaviors is $\kappa = 0.69$ and the 10 distal characteristics is $\kappa = 0.67$ (substantial agreement). The coding data are presented in Table 3 for the proximal warning behaviors and in Table 4 for the distal characteristics.

Despite instructional parameters of a 0.0 temperature value, inconsistencies in AI coding of the proximal warning behaviors are present. This could

Table 3
ChatGPT-4o Output Coding of TRAP-18 Proximal Warning Behaviors

TRAP-18 Eight proximal warning behavior	AI Coder 1	AI Coder 2	AI Coder 3	AI Coder 4	AI Coder 5
1. Pathway	Absent	Absent	Absent	Absent	Absent
2. Fixation	Absent	Present	Present	Present	Present
3. Identification	Absent	Present	Absent	Absent	Absent
4. Novel aggression	Absent	Absent	Absent	Absent	Absent
5. Energy burst	Absent	Absent	Absent	Absent	Absent
6. Leakage	Present	Present	Present	Present	Present
7. Last resort	Absent	Absent	Absent	Present	Absent
8. Directly communicated threat	Present	Present	Present	Present	Present

Note. Coder discrepancies are labeled in bold. TRAP-18 = Terrorist Radicalization Assessment Protocol-18; AI = artificial intelligence.

Table 4
ChatGPT-4o Output Coding of TRAP-18 Distal Characteristics

TRAP-18 10 distal characteristic	AI Coder 1	AI Coder 2	AI Coder 3	AI Coder 4	AI Coder 5
1. Personal grievance and moral outrage	Present	Present	Present	Present	Present
2. Framed by an ideology	Absent	Absent	Present	Absent	Absent
3. Failure to affiliate with extremist group	Present	Present	Present	Present	Present
4. Dependence on virtual community	Absent	Present	Absent	Present	Present
5. Thwarting of occupational goals	Present	Present	Present	Present	Present
6. Changes in thinking and emotion	Present	Present	Present	Present	Present
7. Failure of sexual intimate pair bond	Present	Present	Present	Present	Present
8. Mental disorder	Present	Present	Present	Present	Present
9. Greater creativity and innovation	Absent	Absent	Absent	Absent	Absent
10. History of criminal violence	Absent	Present	Absent	Absent	Absent

Note. Coder discrepancies are labeled in bold. TRAP-18 = Terrorist Radicalization Assessment Protocol–18; AI = artificial intelligence.

be a result of the ChatGPT-4o model not accurately applying temperature settings, or an indicator of what TRAP-18 item content is needed to improve test–retest reliability, for example, ambiguities in Item 2 fixation, Item 3 identification, and Item 7 last resort. Nevertheless, the five independent AI coders demonstrate substantial levels of agreement.

Despite instructional parameters of a 0.0 temperature value, like the proximal warning behaviors, inconsistencies in output coding responses are present in the distal characteristics. Again this could be a result of the ChatGPT-4o model not accurately applying temperature settings or an indicator of what TRAP-18 language and criteria are needed to improve for increased test–retest reliability, for example, ambiguities in Item 2 *framed by ideology*, Item 4 *dependence on virtual community*, and Item 10 *history of criminal violence*. Coding for Item 3 utilizes unmodified item content including the abovementioned double negative. Modification of the double negative may have the effect of improving classification accuracy. Nevertheless, the five independent AI coders demonstrate substantial levels of agreement.

Discussion

The results of this case study demonstrated the efficacy of the ChatGPT-4o AI to rapidly extract, organize, code, and interpret a large volume of complex information. This case study demonstrated substantial levels of agreement between expert human and AI coders utilizing real-life case information. The ChatGPT-4o AI performed well in coding accuracy as well as in the

extraction of facts justifying the item coding. Further, the AI obtained a high degree of consistency through multiple iterations. The AI demonstrated the capability of identifying ambiguities in TRAP-18 item content and case material, a central factor in the development of a coding scheme. Coding accuracy improved with clarification of item content. The AI performance depends on the clarity of the teaching material and coding criteria and the scope and detail of the case material. The case study provides encouraging initial findings related to the accuracy and consistency of coding and interpretative hypotheses and the clarification of specific item content. The substantial level of agreement between the runs is promising but requires further replication with a variety of case applications.

As an SPJ risk assessment tool, the TRAP-18 is focused on radicalized individuals motivated by an ideology. The measure may require some modification when applied to other types of threats, for example, in the current case, an individual with a severe paranoid psychosis in the absence of political or ideological motivation other than believing some conspiracy theories and acting out of his personal grievances. Agreement on TRAP-18 distal indicators was lower than on proximal factors. However, the proximal warning behaviors were developed prior to the distal characteristics and were not specific to the risk of terrorist violence (Meloy et al., 2012). This may partially account for the accuracy of the proximal warning behaviors in this study given that this anonymized subject was *not* an ideological threat and the less successful agreement for the distal characteristics. The results of this study support the use of proximal warning

behaviors in threat assessment whether or not ideologically motivated (Amman et al., 2017). The TRAP-18 shows promise for use with subjects other than only lone-actor terrorists, for example, group-based extremists at risk for violence (Challacombe & Patrick, 2023).

The rapid and widespread proliferation of AI applications raises concerns about the accuracy and fidelity of results. Despite the power of AI, the role of human critical thinking remains essential. Coders must avoid becoming too dependent on AI output or letting cognitive biases interfere with careful analytic thought (Kahneman, 2011). Applications of AI best serve as a digital assistant in the task of discovering, organizing, integrating, and interpreting complex case material. The quality of input data is critical for the accuracy of output data. Biased, incomplete, or erroneous training data and case material will produce unreliable results (Ataman, 2024). The real-world application of such AI output, in our opinion, requires human gatekeepers—that is, the threat assessment team—until multiple studies demonstrate both the reliability and validity of AI as a useful threat management planner for a person of concern.

As a generative AI, ChatGPT-4o is rapidly evolving with the latest editions incorporating “memory” from previous user instructions and queries. AIs may be trained on extensive digital libraries across a range of clinical and forensic issues (e.g., systematic literature reviews; Banker et al., 2024). This has the potential effect of refining criteria, augmenting and updating digital databases, resolving ambiguous queries and classifications, and improving the accuracy of output. According to ChatGPT-4o, after the initial training phase, the model undergoes fine-tuning on more specific data sets with human annotations, refining the model’s ability to generate contextually appropriate and accurate responses. Based on the principles of deep learning and machine learning in conjunction with the training process, AI has the capacity to develop algorithms and statistical models that enable it to learn from and make predictions or decisions based on input data. The human reviewer evaluates model outputs, providing feedback that helps the model to produce better responses in subsequent iterations.

Procedural Recommendations

When utilizing AI, procedural standardization is necessary to ensure the uniformity and

reliability of results. The following steps are proposed for using the AI as a digital assistant in the TRAP-18 rating task: These procedures may be applied to any forensic decision-making task where there are coding items (e.g., Static-99R, Stable-2007, and HCR-20-v3). First, after reviewing the case material, the human evaluator independently codes TRAP-18 item content according to the manual. Second, the TRAP-18 teaching guide, anonymized case material, and explicit instructions/queries for AI-generated output are communicated to ChatGPT-4o. Standardization of teaching material, queries, and case material is likely to improve the overall performance of AI-generated output content. Third, the human coder runs an interrater agreement trial with the ChatGPT-4o coder to identify concordance and disagreement. Fourth, the human coder runs multiple coding iterations to assess the test–retest reliability of the AI output. Fifth, the human coder evaluates and integrates the AI’s performance in reaching the final risk assessment determination and justifications. The OpenAI user manual recommends adversarial testing when reviewing the reliability of output. Concerning the diagnosticity of results, the AI may directly assist in the weighing of hypotheses incorporating the analysis of competing hypotheses (Heuer, 1999, 2005; PARC AI Team with R. Heuer, 2004). The AI can be programmed to provide alternative hypothesis analyses, specifically the provision of disconfirmatory evidence for the alternate hypothesis. This is a key factor in addressing confirmation bias (Bashkirova & Krpan, 2024). The human coder–AI interaction is an iterative, recursive dialog in the formulation and refinement of hypotheses. Guidelines for structuring the human coder/AI interaction have been published, for example, in “How to Use ChatGPT-4: A Comprehensive Guide” (retrieved from <https://adamfard.com/blog/how-to-use-chatgpt-4>, July 24, 2024). Given the critical importance of the case material for the AI’s effort in organization, integrating, coding, and summarizing information, careful attention needs to be paid to the anonymization, structure, and organization of case materials. Further, OpenAI makes recommendations concerning prompt engineering in directing and refinement of search results. A structured and disciplined approach to the iterative process is likely to produce increasingly refined and accurate conclusions.

The AI application modeled here utilizes ChatGPT-4o as a free-standing app with a survey rating method based on the published TRAP-18

manual after the evaluator has developed case material. There are several now available platforms that may have equal efficacy (see <https://www.poe.com> for a selection of AIs). Once it has been determined that the AI is a reliable coder, it is easily conceivable to develop a forensic AI app, which is fully based on the application, with “smart coding” item summation and evidence justifications, and direct output of risk determinations and management propositions. The AI may be trained with large data sets derived from subscription and open-source databases (Banker et al., 2024).

The application of the AI to risk assessment procedures requires adaptation of the AI to preexisting SPJ procedures: problem definition, hypothesis formulation, data collection, application of a coding system, analysis, alternative hypothesis analysis, formulation of findings, and opinion formation. Practical AI application requires the following steps: training the AI with database background (e.g., empirical literature digests, coding manuals, input of case data in the form of pdf records, clinical interviews, and results of psychological testing). The AI is especially powerful in the integration and summarization of large-scale and complex data, coding analysis, data integration, hypothesis testing (analysis of confirmatory and disconfirmatory evidence), and predictive analytics on the confidence of findings in relation to the data inputs. The AI automates these processes assisting the assessor’s cognitive limitations in the ability to synthesize large and complex data sets. This risk assessment methodology is conducted according to the respective logic of discovery, justification, and falsification. As noted above, the secondary and tertiary iterations of queries may be programmed into the app, including statements concerning the validity of the output and alternate hypothesis testing. Despite the attractions of an automatic operation, the critical human evaluator is required to adjust for variability and errors. Because of the importance of the human rater being competent in the SPJ, training on the instrument is necessary. It is possible to place the training module into the app to include libraries of case examples and interrater trials to establish rater competency.

In the present case study, the AI did not suggest a threat management approach to the subject; neither of the two human coders nor the AI was asked to do so. The AI can be “taught” using best

practices and empirical data focused on risk management and diversion. Further AI research could evaluate its ability to suggest successful evidence-based management of a case alongside the suggestions of human coders.

Ethical Considerations

Discussion of AI-related ethical concerns has appeared in the violence risk assessment literature (Cockerill, 2020; Hogan et al., 2021; Spivak & Shepherd, 2021). Farmer and colleagues present a full discussion of practical and ethical challenges in the widespread application of AI risks of introducing bias, deskilling, and privacy concerns (Farmer et al., 2024). Ethical issues related to confidentiality and data protection of case-related material are also a concern. The subscription-based ChatGPT-4o has provisions for confidentiality of case-related material, which has value in teaching the AI without breaches of confidentiality. Subscription AIs require a business associate agreement specifically designed for an AI company that will be handling sensitive data, like protected health information in health care. Although it is recognized that AI machine learning and deep learning provide opportunities to address the fallibility of human coders, specific ethical analyses within the medical ethics model by Beauchamp and Childress (2013) have been proffered. These analyses focused on autonomy, beneficence, non-maleficence, and justice as guiding principles. Farayola et al. (2023) emphasized issues of fairness, transparency, privacy and data protection, consistency, societal well-being, and accountability. Spanish researchers described the legal, social, and technical pitfalls that may have unintended consequences of the AI application of a 20-item domestic violence risk tool (Severe Intimate Partner Violence Risk Prediction Scale–Revised) to assist the decision making of judges (Valdivia et al., 2024). There are additional ethical issues pertinent to indirect personality assessment in operational contexts (Acklin, 2020; Meloy, 2004). Concerns about the reliability of interpretive output are dependent entirely upon the quality of input, highlighting the necessity for human interpreters to critically examine the quality and consistency of both input and output data.

AI hallucinations occur when the AI model generates incorrect, misleading, or fabricated information. AI hallucinations have ethical consequences to the extent that the model generates

information supporting false negative or positive conclusions. This can happen when AI models are trained with insufficient or inaccurate data or when the model makes incorrect assumptions or uses biased data. These factors are not different, however, from traditional SPJ measures that do not rely on AI. This highlights the importance of quality control and critical thinking in the evaluation of both inputs and outputs in generating the AI model and rigorous human oversight.

Limitations

This single-case study is limited in the scope and generalizability of the findings, serving the initial purpose of exploring the risk assessment coding capabilities of ChatGPT-4o. The interrater reliability trial is applicable and necessary to all forms of coding response data on SPJ measures. This case study suggests AI may be applied to the TRAP-18 or any sort of actuarial or SPJ coding scheme, including other violence risk measures, as well as forensic decision making (e.g., Acklin & Velasquez, 2021). This research on basic psychometric properties of AI application to the TRAP-18 lays the foundation for second-stage predictive validity research in human and machine coders on the TRAP-18 and other SPJ risk measures (e.g., workplace, domestic, and general violence) in the continuing effort to protect society from violence. With continuous cataloging of teaching materials and coding schemes into archived libraries of data and measures, the AI shows potential promise in a range of clinical and forensic tasks.

Conclusion

Artificial intelligence has arrived and is undergoing rapid development in all sectors of science, business, medicine, psychology, and law. The U.S. National Science Foundation recently committed \$140 million in funding seven new AI research institutes with the goal of developing more transformative AI tools (De Freitas et al., 2023). For the threat assessor or threat assessment team, the AI application does not supplant the use of SPJ methods or the necessary judgment of human assessors; however, it has the possibility of greater efficiencies in the organization, integration, and risk formulation of threat information in real time.

The advent of AI represents a Copernican revolution in psychological methodologies with inevitable resistance (De Freitas et al., 2023). Freitas and colleagues described the psychological factors, which are barriers to the adoption of AI, including attitudes, misconceptions, and prejudices inherent in human cognition. The advent of large language models—especially as their capabilities and complexity develop—challenges established methods, norms, and systems and promises to transform psychological science and practice. Professional psychology must grapple with the empirical, ethical, and practical implications of this monumental technology to remain the gatekeeper of its application rather than its unwitting servant.

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(Appendices follow)

Appendix A

Terrorist Radicalization Assessment Protocol–18 Teaching Guide for ChatGPT-4o

“I am going to teach you about the Terrorist Radicalization Assessment Protocol–18 (TRAP-18) and then ask you to apply the TRAP-18 to hypothetical or anonymous case data I provide you. The TRAP-18 is a structured tool for identifying people who may be at risk of engaging in lone-actor terrorism. It is a professional judgment tool that threat assessment professionals use to help make decisions about an individual’s risk of engaging in lone-actor terrorist violence. It is twofold in nature consisting of eight proximal warning behaviors (pathway, fixation, identification, novel aggression, energy burst, leakage, directly communicated threat, and last resort behavior) and 10 distal characteristics (personal grievance and moral outrage, framed by an ideology, failure to affiliate with extremist or other group,^{A1} dependence on a virtual community, thwarting of occupational goals, changing in thinking and emotion, failure of sexual intimate pair bonding, mental disorder, creativity and innovation, and history of criminal violence, Meloy et al., 2019).

The results generated from using the tool indicate whether a case requires active management (where one or more warning behaviors are present) or monitoring (where only distal characteristics exist; Meloy, 2018, 2019; Meloy & Genzman, 2016). To have the most reliable assessment using the TRAP-18, three sources of data should be used: a direct interview (this may be clinical or nonclinical and may or may not involve psychometric testing); collateral interviews with those who are acquainted with the individual and are aware of their behavior; and the individual’s public records, including law enforcement and national security documents if available. It is recognized, however, that a direct interview may not be feasible, necessary, or wise in certain cases (Acklin, 2020; Meloy, 2019).

All the proximal warning behaviors are dynamic and based on patterns of behavior, whereas several of the distal characteristics (e.g., history of mental disorder) are static risk factors. Although protective factors are not explicitly included, the absence of certain indicators (proximal warning behaviors and distal characteristics) is protective. The focus of the TRAP-18 is on patterns of behavior rather than distinctive variables, that is, it is not intended to predict who will or will not commit an act of terrorism; rather, the tool can be used to help assign

resources by informing on which individuals should receive priority attention.

The 18 indicators are coded as either present or absent if there is sufficient evidence to make this determination. The eight proximal warning behaviors are coded first because they are more temporally proximal risk indicators: they are more closely related in time to the act for which there is a concern. If no warning behaviors are present, the distal characteristics are coded next because they are more distantly related to the act for which there is a concern.

Now, I am going to teach you about the specific definitions and criteria for the proximal warning behaviors and distal characteristics derived from the TRAP-18 manual (Meloy, 2017).

Below is the specific definitions and criteria for proximal warning behaviors. There are eight of them.

Pathway Warning Behavior

Research, planning, preparation for, or the implementation of an attack. This indicator focuses only on the late-stage markers on the pathway to violence. It does not include the initial stages of grievance and ideation, which are captured by other TRAP indicators. When there is any evidence of these latter stages, the person of concern (POC) has moved into operational space, and there is intent to engage in targeted violence. The farther the POC has advanced, the more he or she will focus on tactics (preparation) and less on strategy (planning), and the more overt will be the behaviors potentially observable.

Fixation

An increasingly pathological preoccupation with a person or a cause accompanied by a deterioration in social and/or occupational life. Fixations are thought about continuously. We all have fixations at various times and periods of our lives, but this is different; a pathological fixation is always accompanied by a deterioration in either work or love. A

^{A1} Item language changed from “failure to affiliate” to “rejection by” to reduce artificial intelligence-generated errors of miscoding double negatives.

price is paid for the constant focus of one's thoughts on the object of fixation, usually a person or a cause. Fixations may also appear as statements and visual representations on social media. The more intense the fixation, the greater the number of constant postings for others to see.

Identification

A psychological desire to be a pseudocommando or have a warrior mentality; closely associated with weapons or other military or law enforcement paraphernalia; identify with previous attackers or assassins; or identify oneself as an agent to advance a particular cause or belief system. Fixation is what one constantly thinks about; identification is what one becomes. The key to coding this indicator is to watch for shifts from fixation to both fixation and identification.

Novel Aggression

An act of violence that appears unrelated to the intended act of concern and is committed for the first time; it is typically done to evaluate the subject's ability to carry out his or her intended act of violence. This warning behavior is one of the most difficult to discern. The threat assessor is looking for "one off" behavior, which is violent and is committed for the first time; or violent behavior in a POC who absolutely has no violence in his history. Often subjects who have never been violent need to test their capability to be violent before they can fully move into operational space and continue down their pathway toward the selected target. Such novel aggression could occur days, weeks, or months before the target date. In some cases, the POC will have such a versatile and violent criminal history that this warning behavior cannot be coded.

Energy Burst

An increase in the frequency or variety of any noted "on the ground" activities related to the target, even if the activities themselves appear relatively innocuous, usually in the weeks, days, or hours before the attack. Social media (online activity) during this period of on-the-ground behavioral acceleration will usually decrease for several reasons: the person is encrypting his communications, especially if he is being enabled by another

in tactical preparation or spiritual guidance, or he is just too busy preparing for his attack.

Leakage

Communication to a third party with an intent to do harm to a target through an attack; the third party may be an internet audience and/or any social media audience. Motivations for leakage can vary widely, but increasingly such warning behavior will appear on social media or be posted on the internet in some form. The words may be quite opaque or very explicit.

Last Resort

Evidence of a "violent action imperative" and/or a "time imperative"; it may be a signal of desperation or distress. Often the result of an unexpected triggering event or one that is anticipated, which involves a loss in love and/or work. Last resort warning behavior is a proximal pattern that may contain within it more discrete behaviors, such as "final acts," wherein the POC will complete tasks that suggest he believes his life is about to end. He may give away possessions, close banking accounts, settle financial matters, or communicate his farewells to others with whom he is close. But the core of this warning behavior is the belief that one has no other choice and must act now. Last resort behavior is usually prompted by a triggering or precipitating event, which is a construct defined by two dimensions: it is either internal or external and it is either in the past or anticipated in the future. For example, the trigger may be an actual rejection in love or work (external), or it may be a psychological box that the POC has placed himself in (internal).

Directly Communicated Threat

The communication of a direct threat through any means to the target or law enforcement beforehand.

Provided below are the definitions and criteria for distal characteristics. There are 10 of them.

Personal Grievance and Moral Outrage

The joining of both personal life experience and historical, religious, or political events. Personal grievance is often defined by a major loss in love or work, feelings of anger and humiliation, and

the blaming of others. Moral outrage is typically a vicarious identification with a group, which has suffered, even though the lone-actor terrorist usually has not experienced the same suffering. Personal grievance is the first stage in the pathway to violence and usually has four components: loss, humiliation, anger, and the specific blaming of another. But it is distinguished from other pathways by its joining with moral outrage concerning a group that has suffered or is perceived to be suffering by the lone-actor terrorist. Also, a marker to watch for, as noted earlier, is a shift from identification with the victim (a distal characteristic) to identification with the aggressor (a proximal warning behavior).

Framed by an Ideology

The presence of beliefs that justify the subject's intent to act. It can be a religious belief system, a political philosophy, a secular commitment, a one-issue conflict, or an idiosyncratic justification. Beliefs are usually superficial and selected to justify violence. Ideological framing may precede a personal grievance, and it can often serve as an intellectual bridge to moral outrage and vicarious identification with the suffering group.

Failure to Affiliate With Extremist or Other Group

The experience of rejecting or being rejected by a radical, extremist, or other group with which the subject initially wanted to affiliate.^{A2}

Dependence on the Virtual Community

Use of the internet through social media, chat rooms, emails, listservs, texting, tweeting, posting, searches, and so forth, for virtual interaction (e.g., reinforcement of beliefs) or virtual learning (e.g., planning and preparation.)

Thwarting of Occupational Goals

A major setback or failure in a planned academic and/or occupational life course. This may manifest itself as those caught between the identity confusion of adolescence and the identity integration of adulthood which makes them quite vulnerable to adult role models who convey authority and simplistic beliefs.

Changes in Thinking and Emotion

Thoughts and their expression become more strident, simplistic, and absolute. Argument ceases and preaching begins. Persuasion yields to the imposition of one's beliefs on others. No critical analysis of theory or opinion, and the mantra, "don't think, just believe," is adopted. Emotions typically move from anger and argument to contempt and disdain for others' beliefs, to disgust for the outgroup, and a willingness to homicidally aggress against them. Violence is cloaked in self-righteousness and the pretense of superior belief. Humor is lost. Engagement with others in virtual and/or terrestrial reality may greatly diminish or cease once the subject has moved into operational space. This indicator focuses on three areas for the threat assessor: interpersonal style of communicating with others; internal fantasy; and changes in emotional states toward unbelievers. The predominant shift in interpersonal communication is a movement from mutual engagement, often argument, to preaching and stridency, to withdrawal and limited communication with only others who believe as he does—these changes are mostly noticed by people close to the POC; the fantasy world, often inferred through social media postings, becomes more grandiose and violent, and shows identifications with weapons and terrorist groups, and an interest in their conquests and the sufferings of those they kill; the emotional states toward those considered unbelievers move from anger, to contempt, to disgust for the other, the outgroup.

Failure of Sexually Intimate Pair Bonding

The historic failure to form lasting sexually intimate relationships. You are looking for chronic sexual and affectional failures. The sexualization of violence is a secondary component. It refers to the finding of a sexual attitude or behavior in the subject, which appears to substitute for the absence of a sexual pair bond, such as the sexualization of weapons, the anticipation of unlimited sexual gratification in the afterlife, the exclusive use of prostitutes and other unbonded sources of sexual gratification, or compulsive use of pornography:

^{A2} Item language changed from "failure to affiliate" to "rejection by" in the trial (4) ChatGPT-4 AI Coder with Item Modification to reduce AI-generated errors of miscoding double negatives.

All of these behaviors may be rationalized by the ideology.

Mental Disorder

Evidence of a major mental disorder by history or in the present. The ideology may help to reduce anxiety surrounding the mental disorder or utilize the symptoms to advance the attack (e.g., suicidal thoughts and depression become motivations for martyrdom; delusions of grandeur solidify commitment). The focus of the threat assessor for this indicator is whether there is a direct relationship between symptoms of the mental disorder and a motivation to engage in an act of terrorism. Focusing on the level of symptoms is much more useful than quibbling over the diagnosis during the threat assessment. However, during threat management, understanding the diagnosis is critical.

Creativity and Innovation

Evidence of tactical thinking “outside the box.” The planned terrorist act is creative (a major aspect has not been done before in contemporary times) and/or innovative (may be imitated by others). The indicator is to nudge the threat assessor to think creatively about the means by which the POC

could carry out his or her act and not just depend on methods that have come before in other cases.

Criminal Violence

Evidence of instrumental criminal violence in the subject’s past, demonstrating a capacity and a willingness to engage in predation for a variety of reasons, such as a history of armed robberies or planned assaults on others for material gain. Although this indicator focuses on a violent criminal history, we are particularly interested in acts of instrumental or predatory violence, rather than affective or reactive violence. For example, armed robbery is prima facie evidence of instrumental or predatory violence, whereas a simple assault or assault and battery may not be. Likewise, murder is premeditated, whereas manslaughter is typically the product of high emotional arousal and is not planned or predatory. The distinction will likely depend upon the time devoted to the threat assessment. The premise here is that one act of predatory or instrumental violence will have demonstrated to the POC that he has the ability to be violent, which may make it easier for him to do so again. Such a finding may negate any reason to practice violence while on the pathway and will likely eliminate by definition the warning behavior of novel aggression.”

Appendix B

Anonymized Case Material Presented to Artificial Intelligence and the Two Independent Human Coders

Mr. Z. is a male in his mid-60s. Mr. Z. communicates in an arrogant, hyperintellectualized manner, has an extensive vocabulary, and was frequently overly elaborative and overinclusive in his response to interview questions and psychological test items. He describes himself as a high school dropout. He enlisted in the military at the age of 17. He worked in avionics and electrical engineering. He obtained his general equivalency diploma in the military. He reports that his general equivalency diploma score was the “highest score in the Western United States.” He was honorably discharged. He studied math and applied physics at three universities. He has 230 hr of college credits but did not complete or receive his degrees. He boasts of having more education than Mark

Zuckerberg and Bill Gates combined. Mr. Z. describes himself as ambidextrous. He has multiple children. He is not sure whether all of them are actually his children and reports having two stepchildren. He reports that he founded several multimillion-dollar companies. He describes himself as being a software engineer, executive producer for video games, scientist, physicist, and software designer for a number of prominent brands and projects. He describes himself as having high revenue, and “when I was not using, I was highly functional.”

He has been in custody in a federal detention center since the summer of 2022. He is housed in the general population module. He states that he had one episode of segregation due to a problem

with another inmate in the winter of 2022. Mr. Z. describes being sent to the special holding unit because he accidentally spilled hot water on an inmate that was bothering him. He stated that the inmate involved was being held for terrorist attack charges. Mr. Z. spends his days tutoring math to other inmates, reading, authoring books, exercising, and working as a librarian. He has written three books while incarcerated. He is not receiving any mental health services.

At the current time, he is not taking any psychiatric medications. He has several veteran affairs hospitalizations. Psychiatric medical records indicate a history of paranoid and grandiose psychotic delusions, chronic cannabis use, refusal of psychotropic medications, and a history of diagnoses of psychotic disorder and schizophrenia. He attributes his mental health problems to cannabis use. He states that all his mental health breakdowns over the past 10–15 years were associated with cannabis use and divorces. He admitted himself to a drug rehabilitation center in 1986 after his first divorce. He stated cocaine “wrecked” him. He described himself as “relapsing” in 2004 after his third divorce, and he lived on a beach for 5 years. There, he was arrested for sleeping on the beach, defrauding an innkeeper, possession of rolling papers, and assault. He spent 9 months in jail from 2010 to 2011. He was clean for 9 months before smoking a joint and “relapsing.” He sought help and was psychiatrically hospitalized at a VA hospital in 2011. There, he was told he was “basically schizophrenic” and was speaking extensively about engaging in time travel. He then lived in affordable housing and began building his LinkedIn and working to rejoin society.

He states that he was visited by the Federal Bureau of Investigation in May of 2022 and arrested 14 days later at his residence, a group home for veterans. He was charged with various felonies related to a series of communicated threats. He refused a plea proffer. He went to trial in the summer of 2023 and was convicted at trial. His sentencing proceedings are pending.

Mr. Z. continuously reiterates his many accomplishments in a scattered historical account. He reports that in the years prior to these incidents, he was a highly successful and functional individual, involved in the technology industry, owned his home, and had a high salary. About 3 years prior, Mr. Z. was involved in litigation over his company. He appealed the decision but ultimately lost. He lost

a \$4.5 million judgment. He described a fiasco that occurred at a media fair. He reports periods of boom and bust in his personal life.

Mr. Z. has been married and divorced four times. He married his fourth wife, Mrs. Y, in 2013. Upon arriving back in his home state after a mock trial in 2020, Mr. Z. reports his wife called the police, changed the locks, and threw him out of the house. He states that his conflicts with his wife were financially driven. He reports that his wife has accused him of having an affair. His wife filed for divorce in early 2020. He had temporary orders for joint custody, but his wife insisted on supervised visitation, which Mr. Z. believes it was a ploy for reconciliation. He did not want to reconcile and states that “I didn’t trust her.” His wife filed a temporary restraining order. He reports that there was no temporary restraining order in place until late 2020 after he asked for a paternity test.

After his wife barred him from entering their home, Mr. Z. left the state. He reports then traveling the country and staying in five-star hotels. He reports traveling and living in an apartment while working for a company. He reports that an investor friend reached out and offered him the chance to work on a company that Mr. Z. was a majority share owner of. His friend offered him lodging. Located on a ranch, Mr. Z. reports that he was held captive there for 3 months, where he was threatened with violence, not allowed to work, and had no phone. He states that his company was taken over, his wife received money from it, and that it was then sold to Elon Musk. He was then psychiatrically hospitalized before being “dumped on the streets.” Mr. Z. went to stay with a friend in another state, was later hospitalized at the VA, and was relocated twice in the summer of 2021. He reports social security and VA disability income. He states that he was camping, fishing, and skateboarding before relocating 2 months later. He stayed in a hotel before traveling to visit a family member.

He arrived locally in the summer of 2021, where he remained until his arrest. He states that for a while he was living on a farm, skateboarding daily. When he lost his place at the farm, he went to the VA Hospital and reported being suicidal. He was hospitalized and received mental health treatment at the VA. Housing arrangements were made and he began renting a room. He expressed disdain for his landlord, stating he “would rather be in prison than around that lady.” Records

indicate that his behavior was frightening. He described frequently skateboarding around the city for 24 hr straight while under the influence of mushrooms and cannabis. He states that he was taking an eighth of an ounce of psychedelic mushrooms once a month and smoking cannabis. He was working on his book about immortality. He states that he has had near-death experiences and describes himself as something of an expert on “controlled near-death experience” using asphyxia techniques. He states that his near-death experiences are similar to a runner’s high.

The divorce trial took place in the spring of 2022. Mr. Z. represented himself at trial. He appealed aspects of the divorce. It was a long and painful divorce, taking 2 years for finalization. Mr. Z. encountered intense frustration at the delay. He states that he “got really upset,” describing a set of threatening emails that he sent out as “hyperbole.” The judge issued final orders, and at the time that he sent out the email blast, he had been waiting for the final orders for over 60 days. Mr. Z. reported getting word from the court about the finalization of his divorce while under the influence of mushrooms and cannabis. He states he was about to skateboard to the city. On a daily basis he would exercise, meditate, and author his book on immortality. The divorce went badly. He lost everything. His wife was awarded sole custody of the children and all their assets. He received no cash from the sale of the house. He states that “I gave it all up, it was dangerous for me ... it wasn’t safe” on the issue of custody of his child. He states that this divorce was “the whole reason I am here.”

Beginning on the day when the judge issued final orders, he sent out the emails over the course of 2 days. He reports sending 10–11 emails. He initially sent out emails threatening to bomb the courthouse and Ivy League schools. He sent these communications to the court clerk of the Family Court and threatened to bomb the State Capitol. He then forwarded the emails to members of the press. He describes the emails as “just ranting.” Witnesses who received the emails described him as ranting. Mr. Z. sent out another batch of emails 2 days later, making further threats. He threatened to bomb a university medical center and was later told that the threat was taken seriously because a prominent member’s funeral was taking place at the time. He states that he was not cognizant of threatening people.

The following social media posts and emails were sent from Mr. Z.:

- April 29, 2022 Email to court: “60 Days is today. I look forward to ending this nightmare. Thank you.”
- May 2, 2022 9:27 a.m. Email to court: “I want a fucking divorce!”
- May 3, 2022 1:22 p.m. Email to court: “Your broken promise of a ruling in 60 days will not be tolerated children.”
- May 3, 2022 1:23 p.m. Email to court: “So go fuck yourself. All of you.”
- May 3, 2022 9:12 p.m. Email to court: “I guess I’ll just have to bomb the city *rolling eyes emoji*.”
- May 3, 2022 Posted Instagram photo of a cruise missile with caption “On its way happening now 3rd District Court.”
- May 4, 2022 6:59 a.m. Email: “Thanks for finally sending my Divorce decision. You can still fuck the fuck off.”
- May 4, 2022 7:08 a.m. Email: “We’re still going to bomb the 3rd District Courthouse. Have a nice day.”
- May 4, 2022 7:26 a.m. Email: “Now we’re going to bomb the State Capital.”
- May 4, 2022 7:28 a.m. Email: “And then ... we’ll bomb the mayor’s office.”
- May 4, 2022 7:34 a.m. Email: “And then, we’re going to level the sacred temple.”
- May 4, 2022 7:37 a.m. Email: “And then ... We’ll level the Rockefeller Center in NYC.”
- May 4, 2022 8:00 a.m. Email: “And NOW. ... WE’RE BOMBING EVERY IVY LEAGUE SCHOOL STARTING WITH MIT, YALE, AND HAAARRRVVVVARDDDDD.”
- May 4, 2022 12:38 p.m. Email: “We’re bombing the Federal Courthouse to teach them a lesson.”
- May 6, 2022 8:39 a.m. Email: “The medical center is Frankenstein Inc. They put illegal medical devices in me without my knowledge or permission. We’re bombing both campuses today for crimes against humanity.”

On May 6, 2022, the Federal Bureau of Investigation conducted a 45-min interview with Mr. Z. at his residence. During the interview, Mr. Z. relayed his background, confirmed himself as the sender of the threatening emails, and answered questions regarding the reasoning and intent behind the transmitted communications. Following the interview, correspondence between Federal Bureau of Investigation agents indicates a consensus that Mr. Z. is “not gonna

(Appendices continue)

hurt himself or anybody,” and “doesn’t have the means” to carry out threats. Mr. Z. was questioned about his reasoning, intent, and ability to carry out the communicated threats. When asked why he sent the threat to bomb the medical center, Mr. Z. stated, “My family did surgeries on me and took all my money two years ago.” He states he “wasn’t hearing from my family and so I notified the news.” “I don’t want to bomb them. I let them know that I knew everything. I live far. I don’t have the ability to bomb them.” The reasoning of the message was “to publish my story” because “I’ve been violated. I want my story published.” When asked what story he was referring to, Mr. Z. stated, “about how they butchered my body without my permission or knowledge. I’m upset about it.” Mr. Z. stated, “I don’t intend to bomb them. I told them—want to wake them the fuck up.” “I don’t have any intention of hurting anybody—just to let them know that I’m fed up.” “I wanted to get their attention. That’s my honest answer.” When asked if he was serious about this and if he was trying to kill people, Mr. Z. replied, “No.” When asked why he threatened to bomb the third District Courthouse, Mr. Z. stated, “I was just frustrated because they promised me that I would have the results of my [divorce] trial within 60 days and they didn’t. They said 60 days—60 days came and went and I said where’s my fucking divorce?” “Mr. X is the Attorney’s General’s part of it [chuckles] That’s why I said bomb the capitol.” “They took control of my life.” When asked about the purpose of the emails, Mr. Z. stated, “They have all my money and I’m living in poverty.” “I’m not planning on bombing. I don’t have a network of people that are gonna bomb. You showed up so obviously I got some attention. I don’t have any intention of bombing anybody.” “Never bombed anything. I have no intention of bombing anything. I don’t know how to make a bomb. I could look—I know about the Anarchist Cookbook. I can go on and look, but I’m not interested.” Throughout the interview, Mr. Z. communicated the following delusional statements: My family did surgeries on me and took all my money 2 years ago. Took control of my assets. I have been fighting for them back for 2 years—they sold my company to Elon Musk. They kept me (unintelligible) so I started a company with a million dollars and they took it all. Mr. Z. claimed that his family did surgery on him, “Brain surgery.

They removed my heart. They did brain surgery on me.” “They didn’t ask me, they didn’t tell me they did it.” “I have scars on my body.” “Those three scars. They weren’t there before October 2020.” “I didn’t want to do this shit show—Kings and Queen’s. Like they wanted me to be a king with [a prominent member of society] who died six months after. There’s all kinds of shit going on because of it.”

Mr. Z. was indicted with the following:

- Count 1 Transmitting a Threat in Interstate Commerce (threat to bomb the third Judicial History Courthouse).
- Count 2 Threat and Conveying False Information concerning Use of and Explosive (threat to bomb the third Judicial Courthouse).
- Count 3 Threat and conveying False Information Concerning Use of and Explosive (threat to bomb the State Capitol).
- Count 4 Threat and Conveying False Information Concerning Use of an Explosive (threat to bomb the mayor’s office).
- Count 5 Threat and Conveying False Information Concerning Use of and Explosive (threat to bomb every Ivy League school).
- Count 6 Threat and Conveying False Information concerning Use of and Explosive (threat to bomb the United States Courthouse).
- Count 7 Threat and Conveying False Information Concerning Use of an Explosive (threat to bomb a university medical center).

He was offered a plea bargain but refused. He went to trial in July 2023 and testified in court. His lawyer did not pursue a mental defense at trial. He states that the trial turned on the “constitutionality of true threats” and intent. He states that there was a debate over objective versus subjective intent. He denied subjective intent to threaten anyone although his communications were couched in violent language. The judge denied his diminished capacity defense. Mr. Z. reports it was due to the judge’s judgment about his ability to function on mushrooms as he stated he was able to buy a Coca Cola while under the influence. He was not able to introduce evidence of his mushroom intoxication at trial. He reports that “I knew I was fucked when I saw the jury instructions.” He was convicted for making bomb threats. Guidelines for sentencing are 50–64 months but the prosecutor wants 74–80 months.

(Appendices continue)

When he was sending out the threatening emails, he variously stated that he was in a blackout, does not remember what he was doing, and had been microdosing on hallucinogenic mushrooms. He smoked cannabis daily. He was on mushrooms for 3 or 4 days. He reported checking his email later and thinking, “what did you do?” He states that the whole matter was “like a dream.” He admits that he was having a mental health crisis at the time. He denies that the threats were operative. He denies any intent to inspire fear of violence. He states that he had no actual plans to execute the threats. He denies that he assembled bomb-making materials. He denies any exposure to radicalization by right-wing ideologies. He did not have access to weapons. He was never accused of any approach

behaviors. He reports no affiliations with known political groups.

Despite his denial of involvement with radical ideologies, he reports consistent conspiracy theories, for example, stating that the collapse of the World Trade Center on 9/11 was “a controlled demolition.” He acknowledges he does not trust the government. He believes in a shadow government. He denies that Iraq was assembling weapons of mass destruction. He characterizes himself as a brilliant physicist and scientist. He acknowledges his propensity to challenge legal entities. He has a strong resistance to acknowledging mental health-related factors in his legal case even if it might be helpful in his defense.

Appendix C

ChatGPT-4o Output

Based on the provided case data, here is the application of the TRAP-18 tool with evidence, justification, and coding for each indicator.

Proximal Warning Behaviors

Pathway: Absent

No evidence suggests that Mr. Z. engaged in research, planning, preparation, or implementation of an attack beyond making threats. His threats do not appear to be backed by concrete steps toward violence.

Fixation: Present

Mr. Z. exhibits a pathological preoccupation with personal grievances and perceived injustices, particularly related to his divorce and legal conflicts, which are accompanied by social and occupational deterioration.

Identification: Absent

Although Mr. Z. has grandiose self-descriptions, there is no clear evidence of a desire to emulate

previous attackers or identify with militant or aggressive roles in support of a cause.

Novel Aggression: Absent

There is no history or evidence of Mr. Z. committing acts of violence that test his ability to carry out violence prior to the threats.

Energy Burst: Absent

No increase in preparatory or targeted activities related to an imminent attack has been reported.

Leakage: Present

Mr. Z. communicated his intent to harm targets through threats made via emails to the court clerk and others, and he posted threatening messages on social media.

Last Resort: Absent

Despite his frustrations and distress, there is no concrete indication of a “violent action imperative” or a “time imperative” that suggests desperation leading directly to imminent action.

(Appendices continue)

Directly Communicated Threat: Present

Mr. Z. directly communicated threats to bomb public places and institutions, which fulfills this criterion.

Distal Characteristics**Personal Grievance and Moral Outrage: Present**

Mr. Z. expresses personal grievances, particularly related to his divorces and financial losses, and he blames others for these issues.

Framed by an Ideology: Absent

Although Mr. Z. has conspiracy beliefs, there is no clear ideological framework that justifies violence in his case.

Failure to Affiliate With an Extremist or Other Group: Present

There is no indication that Mr. Z. has successfully affiliated with any radical or extremist groups.

Dependence on the Virtual Community: Absent

Although Mr. Z. is active online, there is insufficient evidence to suggest a dependence on virtual communities for reinforcement of beliefs or planning.

Thwarting of Occupational Goals: Present

Mr. Z. has experienced significant occupational setbacks and failures, particularly related to his ventures and employment history.

Changes in Thinking and Emotion: Present

Mr. Z.'s thinking has become more strident and absolute, particularly regarding his legal and personal challenges, and he exhibits contempt and disdain toward those he blames.

Failure of Sexually Intimate Pair Bonding: Present

Mr. Z. has had multiple failed marriages and describes problematic relationships, indicative of difficulties in forming lasting intimate bonds.

Mental Disorder: Present

Mr. Z. has a documented history of mental disorders, including psychotic disorder and schizophrenia, which have impacted his functioning.

Creativity and Innovation: Absent

There is no evidence that Mr. Z. has engaged in creative or innovative planning concerning violent acts.

History of Criminal Violence: Absent

Mr. Z.'s criminal history does not clearly include acts of instrumental or predatory violence that would suggest a predisposition toward such behavior in service of his expressed threats.

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