

*NOTE*  
PAVING THE WAY FOR MIND-  
READING: REINTERPRETING  
“COERCION” IN ARTICLE 17 OF  
THE THIRD GENEVA CONVENTION

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INTRODUCTION

Mind-reading is no longer a concept confined to the world of science-fiction: “Brain reading technologies are rapidly being developed in a number of neuroscience fields.”<sup>1</sup> One obvious application is to the field of criminal justice: Mind-reading technology can potentially aid investigators in assessing critical legal questions such as guilt, legal insanity, and the risk of recidivism.<sup>2</sup> Two current techniques have received the most scholarly attention for their potential in aiding interrogators in determining guilt: brain-based lie detection<sup>3</sup> and brain-based memory detection.<sup>4</sup>

Neurologically inspired brain-based lie detection is akin to a polygraph test, and primarily relies on functional magnetic resonance imaging (“fMRI”) to detect deception. “The appeal of this brain-based

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1. Stephen Rainey et al., *Brain Recording, Mind-Reading, and Neurotechnology: Ethical Issues from Consumer Devices to Brain-Based Speech Decoding*, 26 SCI. & ENG’G. ETHICS 2295, 2295 (2020).

2. Sjors L.T.J. Ligthart, *Coercive Neuroimaging, Criminal Law, and Privacy: A European Perspective*, 6 J.L. & BIOSCIENCES 289, 291 (2019).

3. Martha J. Farah et al., *Functional MRI-Based Lie Detection: Scientific and Societal Challenges*, 15 NATURE REV. NEUROSCI. 123, 123 (2014).

4. Emily Murphy & Jesse Rissman, *Brain-Based Memory Detection and the New Science of Mind Reading*, HANDBOOK HUM. MEMORY 1, 18 (Michael Kahana & Anthony Wagner eds., 2020) (forthcoming 2021).

lie detection approach is that, in contrast to most previous methods—which detected the emotional arousal resulting from deception—it measures physiological changes associated with cognitive processes during deception and could therefore, in principle, be detecting the process of deception itself.”<sup>5</sup>

In contrast, brain-based memory detection, or brain fingerprinting, involves analyzing brain waves to determine whether “a given stimulus is something that [the subjects] have encountered in their past, or whether [the stimulus] is being encountered for the first time.”<sup>6</sup> The idea underlying this method is that our subconscious brains possess an uncontrollable and perceptible response to familiar stimuli that an electroencephalography (“EEG”) machine can register.<sup>7</sup>

This growing ability to peer inside someone’s mind raises significant legal issues. A number of American scholars, especially in the past fifteen years, have debated the constitutionality of forensically employing mind-reading technologies on United States citizens.<sup>8</sup> Almost no scholarly attention, however, has focused on the legality of mind-reading technologies under international humanitarian law.<sup>9</sup> This Note seeks to fill this gap in the literature and explores whether the administration of mind-reading technologies on a prisoner of war (“POW”) in an armed conflict violates international humanitarian

5. Farah et al., *supra* note 3, at 123.

6. Murphy & Rissman, *supra* note 4, at 4.

7. *Id.* at 4–5.

8. Some scholars have argued that mind-reading technologies may unconstitutionally infringe an individual’s Fifth Amendment right against self-incrimination. *See, e.g.*, Sarah E. Stoller & Paul Root Wolpe, *Emerging Neurotechnologies for Lie Detection and the Fifth Amendment*, 33 AM. J.L. & MED. 359, 374 (2007) (“If, however, [the courts] focus on the communicative product and the violative nature of entering the suspect’s mind, they would likely find [neurotechnologies for lie detection] to fall within the Amendment’s bounds.”); Ronald J. Allen & Kristen Mace, *The Self-Incrimination Clause Explained and its Future Predicted*, 94 J. CRIM. L. & CRIMINOLOGY 243, 248–50 (2004) (linking the connection between polygraph tests and Fifth Amendment violations to mind-reading technology). Others have argued that mind-reading technologies do not violate the Fifth Amendment’s absolute prohibition against involuntary incrimination, but instead implicate the Fourth Amendment, which prohibits searches and seizures without probable cause. *See* Kiel Brennan-Marquez, *A Modest Defense of Mind Reading*, 15 YALE J.L. & TECH. 214, 258–60 (2012) (“The identification of private or sacred space, in other words, goes to the Fourth Amendment, not the Fifth . . . [t]he mind, like the home, is a place where seizures occur.”).

9. Only one scholarly publication has analyzed the legality of the use of mind-reading technologies during the interrogation of foreign detainees. *See* Sean Kevin Thompson, Note, *The Legality of the Use of Psychiatric Neuroimaging in Intelligence Interrogation*, 90 CORNELL L. REV. 1601 (2005) (arguing that the application of mind-reading technology on detainees violates the Geneva Conventions).

law.<sup>10</sup>

The legality of using mind-reading technologies against an unwilling prisoner of war largely turns on the meaning of “coercion.” POWs are entitled to a myriad of protections under the Third Geneva Convention (“Geneva III”).<sup>11</sup> One such protection is found in Article 17, which specifically regulates the general interrogation of prisoners.<sup>12</sup> It provides that “[n]o physical or mental torture, nor any other form of coercion, may be inflicted on prisoners of war to secure from them information of any kind whatever.”<sup>13</sup> Moreover, uncooperative POWs who refuse to answer questions “may not be threatened, insulted, or exposed to any unpleasant or disadvantageous treatment of any

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10. While other provisions in international human rights law (hereinafter HRL) similarly limit interrogation methods, these provisions are inapplicable during international armed conflict and therefore do not warrant further discussion. *See id.* at 1618 (noting that international humanitarian law applies to detainees of the War on Terror who did not qualify for protection under the Geneva Conventions). The main reason that HRL does not apply is because the United States, as well as Israel, does not believe that HRL applies during international armed conflict, especially when an international humanitarian law provision already applies to the situation under consideration. GARY D. SOLIS, *THE LAW OF ARMED CONFLICT* 26 (2d ed. 2016). Moreover, even if HRL did apply, it is doubtful that employing mind-reading technology would violate any HRL prohibition. *See* Thompson, *supra* note 9, at 1626 (arguing that reading a detainee’s mind does not violate the prohibition against cruel, inhuman, or degrading treatment).

11. Geneva Convention Relative to the Treatment of Prisoners of War, Aug. 12, 1949, 6 U.S.T. 3316, 75 U.N.T.S. 135 [hereinafter Geneva III]. Other provisions in Geneva III may also circumscribe the use of certain interrogation methods, but are not applicable to mind-reading technology and therefore will not be discussed any further. Article 13 of Geneva III, for example, states that all POWs must be “humanely treated.” *Id.* art. 13. Additionally, the detaining power has an obligation to protect all POWs, especially against “acts of violence or intimidation and against insults and public curiosity.” *Id.* Here, the use of mind-reading technology on POWs does not *prima facie* constitute inhumane treatment: fMRI, EEG, and other medical imaging technologies are routinely used on civilians for medical purposes and pose no health risks. *See Functional MRI of the Brain*, YALE MEDICINE, <https://www.yalemedicine.org/conditions/functional-mri-imaging-the-brain> (noting that “an fMRI is safe, painless, and noninvasive” and “there are no known health risks of the procedure.”); *Electroencephalogram (EEG)*, NATIONAL HEALTH SERVICES, <https://www.nhs.uk/conditions/electroencephalogram/> (noting that an EEG “is painless, comfortable and generally very safe. No electricity is put into your body while it’s carried out. Apart from having messy hair and possibly feeling a bit tired, you normally will not experience any side effects.”). Furthermore, the blanket ban on medical experiments only prohibits subjecting POWs to injurious treatment in the pursuit of scientific knowledge, but does not otherwise prohibit using medical equipment for non-experimental purposes, such as interrogation. *See* INTERNATIONAL COMMITTEE OF THE RED CROSS, COMMENTARY OF 2020 Art. 13 (2020), <https://ihl-databases.icrc.org/ihl/full/GCIII-commentary> [hereinafter 2020 ICRC Commentary] (noting that Geneva III sought to prohibit medical experiments “with a view to preventing a recurrence of the cruel experiments which had been made in concentration camps during the last war.”).

12. Geneva III, *supra* note 11, art. 17.

13. *Id.* para. 4 (emphasis added).

kind.”<sup>14</sup> Notably, Article 17 does not prohibit interrogation, but merely limits the tactics available to elicit information.<sup>15</sup>

Based upon current, prevailing interpretations of “coercion” in Article 17, mind-reading technology likely violates Geneva III. This Note, however, argues that an interpretation of coercion more faithful to the text and purpose of Article III would likely permit the application of mind-reading technology during interrogations. This Note will proceed in three parts. Part I briefly lays out the two prevailing interpretations of coercion, noting their implications for the legality of mind-reading technologies, and this Note’s interpretation of coercion, which markedly differs from the prevailing interpretations. Part II briefly expands upon the technology discussed in Part I—noting the potential for more accurate mind-reading technology in the future and the applicability of this technology to interrogations. Part III examines current interpretations of the term coercion, formulates a new definition by looking at the text and drafting history of Article 17, and contends that the coercion ban is meant to protect POWs from physical and mental suffering. Part IV then applies this new definition of coercion to various mind-reading technologies, concluding that the painless use of mind-reading technology does not violate Article 17 of Geneva III.

## I. INTERPRETATIONS OF COERCION

This section will proceed by first briefly summarizing the prevailing interpretations of coercion. Subsection B then summarizes this Note’s interpretation of coercion, noting its implications for the legality of mind-reading.

### A. *Current Interpretations of Coercion and Their Implications for the Legality of Mind-Reading Technologies*

Article 17 does not define the term coercion. Scholars have acknowledged that the lack of a clear definition of coercion makes it difficult to determine if any kind of physical discomfort or scientific method can be used during interrogation without the commission of an illegal act.<sup>16</sup> Two approaches to defining coercion, however, are

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14. *Id.*

15. Thompson, *supra* note 9, at 1613.

16. See Stanley J. Glod & Lawrence J. Smith, Comments, *Interrogation Under the 1949 Prisoners of War Convention*, 21 MIL. L. REV. 145, 153–54 (1963) (“The problem is at what point physical discomforts cease to be minor and become illegal coercion. This presents a question of

discernible in the Article 17 literature.

One approach, which can be called the ‘Free Will Approach,’<sup>17</sup> defines coercion as any situation in which information is secured against a detainee’s free will.<sup>18</sup> Under this approach, brain-based lie detection is arguably not coercive, since the POW must voluntarily answer questions for the fMRI to detect deception.<sup>19</sup> On the other hand, brain-based memory detection is coercive, since the machine extracts cognitive information even when the POW is not answering.<sup>20</sup>

The second approach, which can be called the ‘Duty Approach,’<sup>21</sup> regards as coercion all harsh or intrusive methods designed to elicit any information whatsoever.<sup>22</sup> According to this approach, the purpose behind the coercion ban is to uphold the POW’s “duty to refrain from giving military information to his captors.”<sup>23</sup> Thus, under this Duty Approach, mind-reading technology is likely illegal as per Article 17.

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fact which must be determined separately in each case . . . some minor physical discomforts . . . will not necessarily violate Article 17.”); William Ranney Levi, Note, *Interrogation’s Law*, 118 YALE L.J. 1434, 1463 (2009) (noting that while the Geneva Conventions “provide boundaries for what might be considered permissible conduct in the interrogation of prisoners, definitional uncertainty remains with respect to central interrogation-relevant terms . . . the Conventions do not define coercion; they provide no articulable basis upon which to distinguish between lawful physical discomforts and illegal coercion.”). On a more general note, one scholar who has examined the general historical uses of the term coercion found that coercion has been used synonymously with several terms, such as “violence,” “compulsion,” “punishment,” “force,” “interference,” and the imposition of “one’s will on the will [of others].” Scott Anderson, Coercion, STAN. ENCYC. PHILOSOPHY, (Oct. 27, 2011), <https://plato.stanford.edu/entries/coercion/>.

17. This term is self-coined. No proponents of the ‘Free Will Approach’ and no commentaries on the meaning of the term coercion, of which there are few, use this identifying label.

18. Thompson, *supra* note 9, at 1618. See Dep’t of the Army, FM 2-22.3 (FM 34-52), Human Intelligence Collector Operations ¶ 5-26 (2006) [hereinafter FM 2-22.3] (stating that “[p]hysical or mental torture and coercion revolve around eliminating the source’s free will” and is “expressly prohibited by” Article 17).

19. Thompson, *supra* note 9, at 1613.

20. *Id.* at 1617–18.

21. Similar to the ‘Free Will Approach,’ the ‘Duty Approach’ is self-coined.

22. See, e.g., The Judge Advoc. Gen. of the U.S. Army, Use of “Truth Serum” in Questioning Prisoners of War, JAGW 1161/1157 (June 21, 1961), *reprinted in* INTERNATIONAL LAW STUDIES: DOCUMENTS ON PRISONERS OF WAR 708–09 (Howard S. Levie ed., 1979) [hereinafter Use of “Truth Serum”]. Here, the Judge Advocate General of the Army stated that POWs must be protected against “inquisitorial” methods of interrogation, which presumably include harsh and intrusive questioning. *Id.* Though protection from “inquisitorial practices” could mean protection from even basic inquisitive questioning, Article 17 does not prohibit questioning but merely regulates the method of interrogation. *Id.*

23. *Id.*

*B. The Proper Interpretation of Coercion and Its Implication for the Legality of Mind-Reading Technologies*

This Note advocates for a different interpretation of ‘coercion,’ one that is consistent with the plain meaning of the word, the surrounding Article 17 statutory text, and the purpose behind Article 17’s inclusion in Geneva III.<sup>24</sup> Coercion, plainly, denotes “the use of physical or moral force to compel to act or assent.”<sup>25</sup> Common synonyms of coercion include “compulsion,” “force,” and “violence.”<sup>26</sup> Thus, the purpose behind banning coercion was not to guard against some abstract loss of free will or to protect the POW’s duty to refrain from giving military information to the enemy. Rather, the purpose of Geneva III was to protect POWs from the physical pain and mental suffering that accompanies the use of force or threats, or, as one commentator noted, to “prevent [prisoners of war from] being brought down to the level of animals.”<sup>27</sup> Since coercion as used in Article 17 permits interrogation techniques that do not cause physical pain or mental suffering, the use of painless mind-reading technology would probably not be considered coercion.<sup>28</sup>

Ultimately, anticipated scientific developments make the topic of mind-reading both relevant and urgent. The meaning of the term ‘coercion,’ however, will have implications that reach beyond the successful development of mind-reading technology. This Note’s argument that “harm” is a component of coercion requires the international community to agree on a threshold of harm (a topic

24. See discussion *infra* Part III.

25. *Coercion*, WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE (1961).

26. *Coercion*, WEBSTER’S DICTIONARY OF SYNONYMS (1st ed. 1942).

27. JEAN DE PREUX, COMMENTARY ON III GENEVA CONVENTION RELATIVE TO THE TREATMENT OF PRISONERS OF WAR 627 (Jean S. Pictet ed., A.P. de Henry trans., Int’l Comm. of the Red Cross 1960) [hereinafter 1960 Commentary].

28. See *infra* Part II. While the actual act of mind-reading does not cause physical pain per se, it could be argued that invading the mental privacy of an unwilling detainee causes mental suffering and therefore violates this Note’s definition of coercion. The author of this Note finds this argument unpersuasive. As used in Article 17, the ban on coercion prevents a capturing party from acquiring information by use of threats of physical violence or other harmful psychological techniques that produce mental suffering, such as forced nudity, sleep deprivation, hooding, sensory deprivation, and mock executions. Moreover, the invasiveness of mind-reading is essentially indistinguishable from the invasiveness of current methods of interrogation, which are not considered to produce mental harm. For example, the data yielded by neuroimaging applications is no more sensitive than data acquired through current methods of criminal interrogation, such as DNA testing and polygraph examinations. It is doubtful that reading someone’s mind constitutes mental coercion under Article 17, so this Note assumes that reading someone’s mind does not constitute mental coercion.

beyond the scope of this analysis). Moreover, an elemental formulation of coercion will reduce uncertainty surrounding permissible interrogation practices and provide a more concrete framework for countries to rely on when constructing interrogation policies.

## II. MIND-READING TECHNOLOGY: AN OVERVIEW

Deception is a major component of human behavior.<sup>29</sup> In the law enforcement context, deception frustrates the truth-finding process and slows down the administration of justice. The challenge deception imposes on the truth-finding process is why humans have always “wanted to peer inside each other’s minds.”<sup>30</sup> Early efforts at mind-reading linked lying to certain facial expressions.<sup>31</sup> Humans, however, are rather poor at detecting deception when relying on their own senses and intuitions, which has led to relatively recent attempts to rely instead on technological instruments to detect deception.<sup>32</sup> One prominent example is the polygraph, which associates physiological changes—such as changes to heart rate, electrical skin conductance, and blood pressure—with deception.<sup>33</sup> Despite inconsistent and lackluster results, the polygraph is still widely used by law enforcement and government agencies,<sup>34</sup> a testament to the persisting human desire for lie detection.

The search for a more reliable method of lie detection has recently focused on measures of the brain. Whether these neuro-based lie-detectors are merely a product of wishful thinking or the first step in a technological breakthrough is the primary question Part II seeks to answer. The general takeaway is that while brain-based mind-reading technology is still too rudimentary for forensic use, it has serious potential to aid interrogators in differentiating lies from truth. Subsection A discusses one neuro-based method, fMRI-based lie detection. Subsection B focuses on another method, EEG-based

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29. Theodor Schaarschmidt, *The Art of Lying*, SCI. AM. (July 11, 2018), <https://www.scientificamerican.com/article/the-art-of-lying/>.

30. Eli Wolfe, *Catching the Brain in a Lie: Is “Mind Reading” Deception Detection Sci-Fi—or Science?*, CAL. MAG. (July 22, 2015, 11:19 AM), <https://alumni.berkeley.edu/california-magazine/just-in/2016-02-18/catching-brain-lie-mind-reading-deception-detection-sci-fi-or#:~:text=%E2%80%9CNovel%20neuroscience%20techniques%20might%20soon,of%20the%20crime%2C%E2%80%9D%20the%20Presidential.>

31. Farah et al., *supra* note 3, at 123.

32. Gershon Ben-Shakar & Eitan Elaad, *The Validity of Psychophysiological Detection of Information with the Guilty Knowledge Test: A Meta-Analytic Review*, 88 J. APPLIED PSYCH. 131, 131 (2003).

33. *Id.* at 131–32.

34. Daniel D. Langleben & Jane Campbell Moriarty, *Using Brain Imaging for Lie Detection: Where Science, Law and Research Policy Collide*, 19 PSYCH. PUB. POL’Y & L. 222, 223 (2013).

memory detection. Subsection C discusses a new neuro-based method quite unlike the other two: real time extraction of current thoughts.

#### A. *fMRI-based Lie Detection*

The fMRI-based lie detection method allows for analysis of blood oxygen-level dependent (“BOLD”) activity, which would permit interrogators to differentiate lying from truth-telling.<sup>35</sup> An fMRI is a medical imaging technology that makes use of strong magnetic fields to produce high-resolution, three-dimensional images of the body.<sup>36</sup> Every few seconds, the fMRI takes a snapshot of the current blood oxygenation levels in the brain.<sup>37</sup> The use of fMRI as an interrogation device to detect deception is premised on two assumptions: 1) brain activity requires blood flow;<sup>38</sup> and 2) several distinct areas of the brain are associated with lying.<sup>39</sup> Brain activity requires oxygen, which is supplied by oxygenated hemoglobin in the blood.<sup>40</sup> When a region of the brain increases its activity, blood flows to the region to satisfy the oxygen needs associated with the activity.<sup>41</sup> Thus, oxygenated blood flows to certain parts of the brain when a subject is lying, which can be contrasted against the scan of a subject’s brain when said subject is at rest or telling the truth.<sup>42</sup>

Two features of fMRI neuroimaging are relevant to Article 17 analysis. First, the imaging is neither physically invasive nor painful. The subject of the scan simply lays down flat on a table that slides into a donut-shaped circular casing.<sup>43</sup> Second, the device requires cooperation, as even a small “head movement could compromise the quality of the scan.”<sup>44</sup> For this reason, restraints, such as foam pillows, are typically used to immobilize the subject.<sup>45</sup>

35. *Id.*

36. *Id.*

37. *Id.*

38. Farhan Hyder Sahito, *Interrogational Neuroimaging: The Missing Element in Counter-Terrorism*, 3 INT’L J. INNOVATION & APPLIED STUD. 592, 595 (2013).

39. Langleben & Moriarty, *supra* note 34, at 223. A meta-analysis of the existing fMRI-based lie detection literature found that the regions that consistently showed deception-related activity were the “bilateral dorsolateral and ventrolateral prefrontal cortex, inferior parietal lobule, anterior insula and medial superior frontal cortex.” Farah et al., *supra* note 3, at 124.

40. Wagner et al., *fMRI and Lie Detection*, MACARTHUR FOUND. RSCH. NETWORK ON L. & NEUROSCI. at 1 (Feb. 2016).

41. *See id.* (explaining how neural activity is associated with oxygenated blood in the brain).

42. *Id.*

43. Thompson, *supra* note 9, at 1607.

44. *Id.* at 1625.

45. *Id.*



While fMRI-based lie detection was one of the first “mind-reading” technologies in the 21st century to gain significant attention from the scientific community, the technology has not developed into a viable lie detecting device. Studies have shown that fMRI-based lie detection is certainly better than chance at detecting deception, but not sufficiently accurate for admittance into a court setting.<sup>46</sup> Beyond accuracy concerns, other scholars have shown that previous fMRI-based lie detection studies cannot be certain that the neural activity measured was associated with lying or memory recall.<sup>47</sup> For example, subjects in three lab studies were tasked with “stealing” one of two potential objects and then asked to deny stealing both objects.<sup>48</sup> The fMRI-based lie detection method accurately matched between 71 percent and 90 percent of the subjects with the item they stole. A follow-up study, however, persuasively pointed out that subjects had a richer memory for the object they stole than the object they did not steal, and therefore the fMRI scan did not detect deception, but rather detected the subject’s familiarity with the stolen object.<sup>49</sup>

Two technological advancements, however, have increased the validity of fMRI-based lie detection and also of fMRI-based memory detection. First, scientists have developed a new approach made possible by machine learning to analyze fMRI results: multi-voxel pattern analysis (“MVPA”).<sup>50</sup> Classic fMRI-based lie detection associates certain regions of the brain (“voxels”) with lying.<sup>51</sup> This approach, nevertheless, ignores the fact that neural activity is typically distributed throughout the brain.<sup>52</sup> Rather than analyzing differences between brain regions, MVPA attempts to differentiate activities based on their unique distribution patterns throughout the brain.<sup>53</sup> This novel approach has already “enabled significant advances in memory detection research.”<sup>54</sup> Second, new neuroimaging technology, such as

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46. Andrew F. Kozel et al., *Functional MRI Detection of Deception After Committing a Mock Sabotage Crime*, 54 J. FORENSIC SCI. 220, 228 (2009).

47. Wagner et al., *supra* note 40, at 2.

48. *Id.*

49. *Id.*

50. Murphy & Rissman, *supra* note 4, at 21.

51. *Id.*

52. *Id.*

53. *See id.* (“For example, there is not any one location of the brain that shows significantly greater activity when a subject perceives the letter X versus the letter O, and yet distributed fMRI activity patterns within visual brain areas are capable of not only being used to decode which letter a participant is perceiving on a given trial, but also which of the two letters a participant is imagining.”).

54. *Id.*

Magnetic Particle Imaging (“MPI”), produces a brain scan that is one hundred times more sensitive than an fMRI and can capture very detailed information, whereas classic fMRI only offers a generalized snapshot.<sup>55</sup> Feeding more granular information obtained from an MPI into a machine learning algorithm will significantly increase the likelihood of discovering patterns associated with lying and memory detection.<sup>56</sup>

### *B. EEG Technology: Detecting Concealed Information*

Another brain-based approach that can be used to assess guilt or innocence is to determine familiarity with a distinct aspect of a crime. This determination can be made using an EEG to detect an electrical brainwave known as the P300.<sup>57</sup> The P300 response is a measurable spike in the brain’s electrical activity that typically occurs milliseconds after exposure to a familiar stimulus.<sup>58</sup> In a usual study, a subject is presented with a meaningful stimulus—one with which the subject has prior knowledge and experience—and a series of unmeaningful stimuli.<sup>59</sup> For instance, if the murder weapon was a gun, the guilty suspect would be randomly shown a number of unmeaningful objects, such as a knife or a hammer, as well as the meaningful object, the gun.<sup>60</sup> The subject’s brain, recognizing the gun, would then elicit a P300 response, but would fail to register a P300 response for the other objects, thus indicating guilty knowledge.<sup>61</sup>

Several features of EEG-based memory detection are relevant in determining whether this form of mind-reading constitutes coercion. First, like fMRI-based lie detection, the process is neither physically invasive nor painful. Indeed, the only contact with a subject is through the placement of small electrodes on the subject’s scalp which register and measure brainwaves.<sup>62</sup> Second, a subject does not have to verbally answer for the P300 response to register. Rather, the P300 response is subconscious and uncontrollable.<sup>63</sup> Third, unlike fMRI-based lie

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55. Wolfe, *supra* note 30.

56. *See id.* (quoting neuroscientist Bobby Azarian, “[n]ot only is ultra-high resolution brain imaging technology coming soon, we can predict lie detection to be one of its earliest applications.”).

57. Murphy & Rissman, *supra* note 4, at 5.

58. *Id.* at 6.

59. *Id.* at 5.

60. *Id.*

61. *Id.* at 6.

62. *Id.* at 5.

63. Paul McGorrey, *Mind-reading Technology Should not be Used to Solve Crime*, THE

detection, EEG techniques require far less cooperation, since head movements do not necessarily distort data quality.<sup>64</sup> Fourth, whereas an interrogator may need to physically subdue a subject to ensure accurate fMRI scans, brain waves can be measured by simply placing a cap on a subject's head.<sup>65</sup> Finally, unlike an fMRI, an EEG can measure a subject's brainwaves while the subject is sitting comfortably in a chair.<sup>66</sup>

Numerous studies have proven that EEG-based memory detection is accurate and replicable in a lab environment.<sup>67</sup> Moreover, strategies have been developed to resist countermeasures, which are attempts by guilty subjects to distort EEG measurements.<sup>68</sup> Lastly, new techniques leveraging machine learning algorithms are currently being explored in the hopes of improving the classification rate of guilty and innocent subjects.<sup>69</sup>

Despite the technique's developmental progress, most researchers believe EEG-based memory detection is not yet ready for forensic application. Regardless, some countries are now attempting to determine whether successful tests in controlled laboratory settings can be replicated in real-world interrogation scenarios.<sup>70</sup> Other countries, defying expert consensus, have already licensed the technology for use in forensic assessments and preliminary criminal investigations.<sup>71</sup>

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CONVERSATION (September 25, 2017, 4:04 PM), <https://theconversation.com/mind-reading-technology-should-not-be-used-to-solve-crime-83874>.

64. Klaus Gramann & Max Plank, *The Use of Electroencephalography in Neuroergonomics*, in *NEUROERGONOMICS: THE BRAIN AT WORK AND IN EVERYDAY LIFE* 11, 11 (Hasan Ayaz & Frederic Dehais eds., 2018).

65. *Id.* at 12.

66. *Id.* at 11.

67. See, e.g., John Meixner & J. Peter Rosenfeld, *A Mock Terrorism Application of the P300-based Concealed Information Test*, 48 *SOCIETY FOR PSYCHOPHYSIOLOGICAL RES.* 149, 149 (2011). For example, in a mock-terrorism lab study, participants pretended that they were part of a deadly terrorist plot. *Id.* at 150. The participants in the terrorism category then wrote a letter to the "leader" of the plot revealing that there would be a bombing in Houston in July. *Id.* Later, when the participants were shown keywords (e.g., "bomb," "Houston," "July") the researchers were able to correlate P300 waves with guilty knowledge 100 percent of the time. *Id.* at 152. For unknown aspects of the crime, the researchers were able to identify ten of the twelve participants assigned to the terrorist group and did not misidentify any "innocent" participants. *Id.*

68. See generally Michel Funicelli et al., *An Independent Validation of the EEG Based Complex Trial Protocol with Autobiographical Data and Corroboration of its Resistance to a Cognitively Charged Countermeasure*, *APPLIED PSYCHOPHYSIOLOGY & BIOFEEDBACK* (2021); J. Peter Rosenfeld et al., *The Complex Trial Protocol (CTP): A New Countermeasure Resistant Accurate P300-Based Method for Detection of Concealed Information*, 45 *SOCIETY FOR PSYCHOPHYSIOLOGICAL RES.* 906 (2008).

69. Murphy & Rissman, *supra* note 4, at 15.

70. Univ. of Canterbury, *Brainwave Activity That Reveals Knowledge of Crime* (January 16, 2020), <https://medicalxpress.com/news/2020-01-brainwave-reveals-knowledge-crime.html>.

71. Murphy & Rissman, *supra* note 4, at 18.

Overall, EEG-based memory detection is a more promising technology than fMRI-based lie detection and requires minimal invasiveness and cooperation in an interrogation setting.

### C. Future Technology: Real-Time Thought Extraction

Advancements in artificial intelligence and machine learning have made real-time thought extraction possible. While fMRI-based lie detection detects a simple mental attitude (e.g., deception), and EEG-based memory detection focuses on recognition, real-time thought extraction has the potential to create “a live recording of what is going on in a person’s mind.”<sup>72</sup> Thanks to both fMRI and EEG technology, scientists can already decode rudimentary information about what a “person is currently perceiving, feeling, thinking about, imagining, remembering, attending to, intending to do, or even dreaming about.”<sup>73</sup>

Researchers believe it is only a matter of time before technologies can decode a subject’s internal dialogue and visually reconstruct the subject’s live thoughts.<sup>74</sup> In a recent study, for example, subjects watched a movie trailer while an fMRI scanned their brains.<sup>75</sup> The fMRI data was then translated by an artificial intelligence program, which recreated the trailer on a computer screen with a surprising level of accuracy and detail.<sup>76</sup> While current technology only scratches the surface of human thought, technology capable of producing an accurate recreation of current human thought may be only ten to fifteen years away from application in the law enforcement realm.<sup>77</sup>

As the Presidential Commission for the Study of Bioethical Issues

72. Gerben Meynen, *Brain-Based Mind Reading in Forensic Psychiatry: Exploring Possibilities and Perils*, 4 J.L. & BIOSCIENCES 311, 317–18 (2017).

73. Murphy & Rissman, *supra* note 4, at 3.

74. Jerry Kaplan, *The Machines That Will Read Your Mind*, THE WALL ST. J. (April 5, 2019, 10:55 AM), <https://www.wsj.com/articles/the-machines-that-will-read-your-mind-11554476156>.

75. Yasmin Anwar, *Scientists Use Brain Imaging to Reveal the Movies in our Mind*, BERKELEY NEWS (September 22, 2011), <https://news.berkeley.edu/2011/09/22/brain-movies/>.

76. *Id.* Researchers have also used an EEG to reconstruct videos from subjects’ neural activities. See, e.g., Matthew North, *AI Recreates Videos People are Watching by Reading Their Minds*, NEW SCIENTIST (November 26, 2019), <https://www.newscientist.com/article/2224866-ai-recreates-videos-people-are-watching-by-reading-their-minds/>. In one study, brainwave activity was measured as the subjects watched video clips that included nature scenes, people on jet skis, and human expressions. *Id.* The artificial intelligence program then reconstructed 234 videos and also successfully categorized 210 videos, providing tags such as waterfalls, extreme sports, or human faces. *Id.*

77. See Cherly Ann, *A Mind-Reading A.I.*, DATA DRIVEN INV. (December 7, 2019), <https://medium.datadriveninvestor.com/a-mind-reading-a-i-83e781ce927b> (“Instead of a police officer asking questions, they’ll stick a helmet on to decide what it is that’s going through your mind.”).

noted, these various neuroscience techniques “might soon reveal ... whether an individual recognizes a face or an object, possesses knowledge relevant to a legal proceeding, is lying or telling the truth, or even allow reconstruction of the visual imagery seen at the time of the crime.”<sup>78</sup> The legality of these promising interrogation techniques depends upon the interpretation of the term coercion in Article 17.

### III. AN ELEMENTAL FORMULATION OF COERCION

This section argues that coercion, in the context of Article 17, requires the imposition of physical and/or mental discomfort (harm element) on the POW by way of force or threats (force element) for the purpose of compelling the POW to reveal information (compulsion requirement). This section further argues that torture is an aggravated form of coercion, as torture requires the infliction of more severe pain and suffering. Thus, coercion sets the minimum threshold level of severity necessary to violate Article 17.

This analysis will proceed in two parts. Subsection A summarizes two views on coercion: the Free Will Approach and the Duty Approach. Subsection B critiques these two approaches and argues for an alternative formulation.

#### *A. The Free Will Approach and the Duty Approach*

##### 1. The Free Will Approach

The Free Will Approach focuses on a POW’s autonomy to choose whether to divulge information.<sup>79</sup> Any method which compromises a POW’s ability to choose constitutes coercion.<sup>80</sup> Since mind-reading technology extracts valuable cognitive information against a subject’s will, use of this interrogation method violates Article 17.<sup>81</sup> This approach

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78. PRESIDENTIAL COMMISSION FOR THE STUDY OF BIOETHICAL ISSUES, *GRAY MATTERS: TOPICS AT THE INTERSECTION OF NEUROSCIENCE, ETHICS, AND SOCIETY* at 102 (2015).

79. Thompson, *supra* note 9, at 1617. See also JENNIFER ELSEA, CONGRESSIONAL RESEARCH SERVICE, *LAWFULNESS OF INTERROGATION TECHNIQUES UNDER THE GENEVA CONVENTIONS* at 15 (2004) (“The pertinent question appears to be whether the person subject to treatment designed to influence his conduct is able to exercise a choice and complies willingly or has no choice other than to comply.”). Notice, this definition is slightly different than the Free Will Approach’s, as it seemingly requires “treatment designed to influence” the subject. *Id.* Thus, mind-reading technology which does not require the subject’s cooperation might not be coercive under this definition, since the technology is not influencing the subject to do anything.

80. Thompson, *supra* note 9, at 1617.

81. *Id.*

does not require any application of harmful force on a subject; the only relevant factor is whether the method in question “has robbed the [subject] of his free will to choose.”<sup>82</sup> A notable endorser of this approach is the International Committee of the Red Cross (“ICRC”).<sup>83</sup>

Two sources of United States’ law seem to have heavily influenced adoption of this broad interpretation:<sup>84</sup> Manuals regulating intelligence gathering and Supreme Court jurisprudence.<sup>85</sup> Under Supreme Court precedent, a confession is the product of coercion if the “defendant’s will was overborne or if his confession was not the product of a rational intellect and a free will.”<sup>86</sup> In *Townsend v. Sain*, for example, the Supreme Court opined that a confession elicited while the defendant was under the influence of a “truth serum” would be inadmissible in court, because a truth serum would compromise a defendant’s ability to freely and rationally choose what information to reveal.<sup>87</sup>

Despite this holding, a Congressional Research Service Report (the “Report”) analyzing the lawfulness of interrogation techniques under the Geneva Conventions, found that “the standards that apply in criminal cases . . . probably do not apply to a determination of coercion under the Geneva Conventions.”<sup>88</sup> The Report offers no reason for this conclusion, but two compelling reasons exist which make it doubtful the Geneva drafters meant to incorporate this understanding of coercion. First, none of the drafting materials or official statements ever mention the Free Will Approach.<sup>89</sup> Second, the rights of a criminal defendant in the United States are protected by the United States Constitution, which has been interpreted to protect fundamental fair trial rights, such as the right against self-incrimination and the right to remain silent. POWs, however, derive their rights from international treaties, and under Geneva III, POWs do not benefit from the equivalent of domestic fair trial rights unless they are suspected

82. *Id.*

83. 2020 ICRC Commentary, *supra* note 11, art. 17 (“The decisive factor in determining whether coercion has occurred or is occurring is whether the method used deprives or impairs the prisoner of the exercise of free will and autonomy.”).

84. *See, e.g.*, Dep’t of the Army, FM 34-52, Intelligence Interrogation ¶ 1-8 (1992) [hereinafter FM 34-52] (“Physical or mental torture and coercion revolve around eliminating the source’s free will.”).

85. Thompson, *supra* note 9, at 1615.

86. *Townsend v. Sain*, 372 U.S. 293, 307 (1963) (internal quotation marks omitted).

87. *Id.* On the other hand, to assert coercion as a criminal defense, a defendant must show that he was under an objectively reasonable fear of imminent injury or death when he committed the alleged offense. *D’Aquino v. United States*, 192 F.2d 338, 359 (9th Cir. 1951).

88. ELSEA, *supra* note 79, at 14.

89. *See* discussion *infra* Part III. B.

criminals or are facing prosecution.<sup>90</sup> Moreover, the vast majority of POW interrogations are conducted to acquire strategic and tactical military information, not to obtain evidence of criminal guilt.<sup>91</sup>

The more influential source has been the United States Armed Forces' now-replaced Field Manual 34-52 Intelligence Interrogation (FM 34-52). Identical to its successor document FM 2-22.3, FM 34-52 states “[p]hysical or mental torture and coercion revolve around eliminating the source’s free will” and are “expressly prohibited by . . . Articles 13 and 17 [of Geneva III]”<sup>92</sup> The ICRC’s Commentary of 2020 on Article 17 (the “2020 ICRC Commentary”) cites FM 34-52 as proof that coercion includes any method that impairs POWs’ exercise of free will or autonomy.<sup>93</sup>

FM 34-52, however, does not actually support the broad interpretation of coercion assigned by the ICRC. First, that both torture and coercion “revolve around eliminating the source’s free will” does not reduce the cause of action for coercion and torture to simply one element (whether the information was received voluntarily). Rather, “revolves around” merely acknowledges the goal of tortious and coercive questioning: to acquire information against the detainee’s wishes. Torture, for example, also requires the infliction of “severe pain or suffering.”<sup>94</sup> Similarly, though the goal of coercive interrogation techniques is to acquire information against a subject’s wishes, this does not imply that the only element of coercion is loss of free will.

Second, the 2020 ICRC Commentary omits the important fact that FM 34-52 specifically defines coercion “as actions designed to unlawfully induce another to *compel an act* against one’s will.”<sup>95</sup> The compulsion requirement is crucial to assessing the legality of mind-reading because the techniques discussed in Part II do not require detainees to affirmatively act against their wills. Lastly, the 2020 ICRC Commentary seemingly relies on FM 34-52, even though it was replaced in 2009 by FM 2-22.3.<sup>96</sup> While FM 2-22.3 similarly contains the

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90. See Robin Geiß, *Name, Rank, and Serial Number and the Right to Remain Silent*, 87 INT’L REV. RED CROSS 721, 731–32 (2005) (Arguing that POWs gain the protection of fair trial rights when “questioning as to their individual involvement in potentially criminal activities begins.”) Note, while a country may accord all POWs fair trial rights starting at the beginning of capture, no country is bound to do so under Geneva III. *Id.* at 729.

91. *Id.*

92. FM 34-52, *supra* note 84, at ¶ 1-8.

93. 2020 ICRC Commentary, *supra* note 11, art. 17 n. 39.

94. ELSEA, *supra* note 79, at 9.

95. FM 34-52 at ¶ 1-8 (emphasis added).

96. See Exec. Order No. 13491, 74 C.F.R. 4893 (2009) (requiring CIA and other Executive

“revolves around” provision,<sup>97</sup> it also contains a list of illustrative examples which constitute coercion:

Although no single comprehensive source defines impermissible coercion, certain acts are clearly prohibited. Certain prohibited physical coercion may be obvious, such as physically abusing the subject of the screening or interrogation. Other forms of impermissible coercion may be more subtle, and may include threats to turn the individual over to others to be abused; subjecting the individual to impermissible humiliating or degrading treatment; implying harm to the individual or his property. Other prohibited actions include implying a deprivation of applicable protections guaranteed by law because of a failure to cooperate; threatening to separate parents from their children; or forcing a protected person to guide [American] forces in a dangerous area.<sup>98</sup>

These impermissible examples all share a common attribute: they cause unpleasant and painful physical or mental suffering. Moreover, the examples of mental suffering seem limited to threats of violence or substantial punishment, such as separating parents from their children.<sup>99</sup> Inputting mind-reading technology into the list, as the Free Will Approach would mandate, would be a rather awkward addition. Overall, the ICRC’s position rests on shaky ground, as support for the Free Will Approach is absent in the Article 17 text,<sup>100</sup> the drafting materials,<sup>101</sup> and the ICRC’s own cited materials.<sup>102</sup>

Furthermore, application of the Free Will Approach poses a number of significant theoretical and practical problems. One such problem is that the Free Will Approach seemingly suggests that coercion is always successful. If a subject does not reveal the desired information, the subject’s free will has not been eliminated and there was therefore no coercion. This inference leads to the rather bizarre conclusion that an interrogator can permissibly inflict the maximum allowable suffering short of torture, which requires “severe” pain,<sup>103</sup> as long as the POW does not reveal information, yet cannot painlessly read the POW’s mind. Even more strange, this suggestion implies that the legality of a particular interrogation technique is totally dependent on the outcome. Take, for example, one situation in which a soldier is subject to significant abuse short of torture: Wall-standing, loud noise,

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agencies to proceed with interrogations “strictly in accord with the principles, processes, conditions, and limitations” FM 2-22.3 prescribes).

97. See FM 22-2.3, *supra* note 18, at 5-26 (“Physical or mental torture and coercion revolve around eliminating the source’s free will, and are expressly prohibited . . .”).

98. *Id.* at 5-22.

99. *Id.*

100. See discussion *infra* Part III. B.

101. See discussion *infra* Part III. B.

102. 2020 ICRC Commentary, *supra* note 11, art. 17 n. 39.

103. See *infra* notes 144–55.



sleep deprivation, hooding, and deprivation of food and water.<sup>104</sup> The soldier musters the will to resist relinquishing critical military intelligence. Under the Free Will Approach, the techniques used in this situation do not technically constitute ‘coercion.’ Imagine, however, the same soldier in an alternative scenario reveals valuable intelligence. Now, these same techniques would constitute ‘coercion.’

A more generous interpretation is that the Free Will Approach considers coercive any interrogation method that may objectively collapse the POW’s ability to rationally choose. Even with this interpretation, the previous problem persists: what acts may “objectively” destroy a POW’s autonomy and free will to choose? Are a few slaps and shaking objectively linked to the destruction of a POW’s free will? The dividing line between permissible interrogation methods and acts that “objectively” deprive a POW of his free will is not readily apparent.

## 2. The Duty Approach

The Duty Approach is neither widespread nor pervasive in commentaries on Article 17. In fact, the only mention of the approach is in an old Judge Advocate General (“JAG”) Opinion in response to an inquiry about the legality of truth serum.<sup>105</sup> In response to the inquiry, the JAG concluded that the use of a truth serum during interrogations violates Article 17.<sup>106</sup> The reason, according to the JAG, is that Article 17 was enacted to protect every POW’s duty “to refrain from giving military information to his captors.”<sup>107</sup> Thus, any “inquisitorial” interrogation method beyond standard questioning techniques must be banned to protect the POW’s obligation to remain silent.<sup>108</sup> If, as the JAG contends, Article 17 was passed to protect the POW’s duty to refrain from revealing damaging information to the

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104. Ireland v. United Kingdom, 2 Eur. Ct. H.R. (ser. A) ¶ 96 (1978), <http://hudoc.echr.coe.int/eng?i=001-57506>.

105. See Use of “Truth Serum”, *supra* note 22, at 708–09 (finding that the use of “truth serum” in questioning POWs would violate the Geneva Conventions). For information about the history and usage of truth serums in interrogations, see generally Brendan Borrell, *What is Truth Serum?*, SCI. AM. (December 4, 2008), <https://www.scientificamerican.com/article/what-is-truth-serum/> (recounting what truth serum is and its history vis-à-vis interrogation purposes). Truth serums are drugs, such as sodium amytal and sodium pentothal, that were administered under the belief that they “made people unable to censor themselves and they would just empty their memories into a narrative statement.” *Id.*

106. Use of “Truth Serum,” *supra* note 22, at 709.

107. *Id.* at 708–09.

108. See *id.* (affirming the prohibition of “coercion and treatment” in part based on POW duty to refrain from divulging information).

enemy, then the use of a mind-reading device, like the use of a truth serum, is surely prohibited. Such a device would eviscerate the POW's obligation to conceal information and would thus defeat the purpose of Article 17.

The JAG's approach rests on a misinterpretation of the ICRC's 1960 Commentary on Article 17 (the "1960 Commentary").<sup>109</sup> This ICRC analysis, which the JAG relied on, states that beyond ascertaining the POW's identity:

The Detaining power may very naturally be tempted to obtain additional information from the prisoner, both in regard to himself and concerning the circumstances which preceded his capture, for this is obviously of interest from the military point of view. The prisoner may, and indeed must, refrain from giving military information to the Detaining Power; he must therefore be protected against any inquisitorial practices on the part of that Power.<sup>110</sup>

The 1960 Commentary does not state that Article 17 was adopted to protect a POW's duty to refrain from revealing damaging information, as the JAG opinion claims. Rather, it simply recognizes the predicament of the POW: he is powerless in the hands of the detaining party whose interests directly conflict with his. The POW, under domestic law, must not reveal any damaging information or else he risks punishment. The detaining party wants to extract as much information as possible. Given that interrogation is inevitable,<sup>111</sup> Article 17 was adopted to ensure that the detainer did not abuse its power in its quest to elicit information, and therefore provided the POW basic humanitarian protection.<sup>112</sup> The diplomatic discussions preceding the adoption of Article 17 say as much, noting that the purpose behind Article 17's ban on coercive interrogation was "to give fuller protection to [POWs] against pressure on the part of a capturing

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109. See 1960 Commentary, *supra* note 27, at 156 (acknowledging the difficult circumstances facing POWs, but stopping short of stating a duty to refrain from revealing damaging information).

110. *Id.*

111. The notes of the Special Committee responsible for drafting Article 17 state "[i]t was idle to harbor illusions. A state which had captured prisoners of war would always try to obtain military information from them." *Preparatory Works of the Geneva Convention, 5th Meeting of Committee II, Friday 29 April 1949.*

112. HOWARD LEVIE, PRISONERS OF WAR IN INTERNATIONAL ARMED CONFLICT 106 (vol. 59, 1979) ("From the moment of capture there also arises the problem of the extent to which the Detaining Power may seek or extract information from the new prisoner of war. In Article 17 the [Third Geneva] Convention has attempted . . . to remedy the deplorable situation in this regard which existed during World War II."). See also Delbert D. Smith, *The Geneva Prisoner of War Convention: An Appraisal*, 42 N.Y.U. L. REV. 880, 884 (1967) (noting that the rules coming out of the Third Geneva Convention attempted to "create a 'right' to decent and humane treatment for the prisoner . . .").

state that wished to obtain information of a military character.”<sup>113</sup> Thus, Article 17 was not constructed to protect the POW’s obligation to withhold information. Such an argument rests on the unfounded assumption that the framers of Geneva III favored concealing information over eliciting it, when in fact they simply sought protection for powerless POWs.

*B. A More Faithful Interpretation of Coercion: Protecting POWs from Harmful Interrogation Techniques*

This section primarily argues that “coercion” as used in Article 17 contains a harm element. This definition derives from: 1) the plain meaning of the word “coercion” at the time Article 17 was drafted; 2) the term’s neighboring statutory text; and 3) a comparison of Article 17 with its predecessor in the 1929 Geneva Convention.<sup>114</sup> Moreover, this definition squares with the purpose behind the prohibition of coercive interrogation: to protect POWs from harm and suffering that accompanies it. This purpose is evident from the historical context behind Article 17’s inclusion in Geneva III: the brutal mistreatment of POWs during World War I and World War II.

1. Textual Analysis

Under the Vienna Convention on the Law of Treaties, statutory interpretation begins with the plain meaning of the text because the statute conveys the drafters’ purpose.<sup>115</sup> Statutorily undefined words are given their ordinary meaning.<sup>116</sup> In United States jurisprudence, ordinary meaning is typically derived from dictionaries from when the statute was enacted.<sup>117</sup> When Geneva III was drafted and ratified, the unambiguous generalized definition of coercion contemplated three of the four elements specified above: (1) the use or threat of physical and/or mental force against (2) another (3) in order to compel a certain

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113. *Final Record of the Diplomatic Conference of Geneva of 1949*, at 250 (Berne 1949), [https://www.loc.gov/rr/frd/Military\\_Law/pdf/Dipl-Conf-1949-Final\\_Vol-2-A.pdf](https://www.loc.gov/rr/frd/Military_Law/pdf/Dipl-Conf-1949-Final_Vol-2-A.pdf).

114. Convention Relative to the Treatment of Prisoners of War art. 17, Jul. 27, 1929, 47 Stat. 2021, 2 Bevens 932 [hereinafter 1929 Convention].

115. See Vienna Convention on the Law of Treaties, art. 31(1), May 23, 1969, 1155 U.N.T.S. 331 (“A treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose.”).

116. *Id.*

117. See *MCI Telecomm. Corp. v. AT&T*, 512 U.S. 218, 227–28 (1994) (assessing the meaning of the word “modify” by looking at various dictionary definitions published around the time the statute was enacted).

course of conduct against the subject's will.<sup>118</sup> Even the 2020 ICRC Commentary recognizes this as the “ordinary” definition, but inexplicably adopts the Free Will Approach in the very next sentence.<sup>119</sup>

Absent from the plain meaning definition, however, is the harm element. Instead, the harm element is inferred from the verb “inflict” in the surrounding statutory text. Article 17 reads: “No physical or mental torture, nor any other form of coercion, *may be inflicted* on prisoners of war to secure from them information of any kind whatever.”<sup>120</sup> Rewriting Article 17 in the active voice, the Article would state: ‘The detaining power may not *inflict* any physical or mental torture, nor any other form of coercion, on prisoners of war to secure from them information of any kind whatever.’ In common usage, what is “inflicted” is usually something that is very unpleasant or painful that results in discomfort or suffering to the recipient.<sup>121</sup> In 1961, *Webster's Dictionary* defined “inflict” to mean “to lay (a blow) on, cause (something damaging or painful) to be endured.”<sup>122</sup> Similarly, the *Oxford Universal Dictionary* defined inflict to mean “to lay on as a stoke, blow, or wound.”<sup>123</sup> Thus, properly understood from the context, the prohibition on coercion is the prohibition against inflictions of *cruel* and *inhuman* suffering in order to secure information.<sup>124</sup>

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118. See, e.g., *Coercion*, *supra* note 25. This definition was also used in other legal fields: For example, in the labor law field, coercion was defined as “pressure exerted on employees to deter them from participating, or to impel them to participate, in self-organization and collective bargaining or to influence their choice of a bargaining agent.” *DICTIONARY OF LABOR LAW TERMS* (2d ed. 1953). Moreover, the modern definition is essentially the same: Oxford Dictionary defines coercion as “the practice of persuading someone to do something by using force or threats.” *OXFORD ENGLISH DICTIONARY* (3d ed. 2000). Note that the ordinary dictionary definition requires two more elements than is required in the Free Will Approach.

119. See 2020 ICRC Commentary, *supra* note 11, art. 17 (“The decisive factor in determining whether coercion . . . is occurring is whether the method used deprives or impairs the prisoner of the exercise of free will and autonomy.”).

120. Geneva III, *supra* note 11, art. 17 (emphasis added).

121. For example, Cambridge Dictionary defines inflict as “to force someone to experience something very unpleasant” and provides this example: “The suffering inflicted on these children was unimaginable.” *Inflict*, *CAMBRIDGE DICTIONARY* (2021) <https://dictionary.cambridge.org/us/dictionary/english/inflict>. According to Oxford Languages, to “inflict” means to “cause (something unpleasant or painful) to be suffered by someone or something” and provides this illustrative example: “[T]hey inflicted serious injuries on three other men.” *Inflict*, *OXFORD LANGUAGES* <https://www.google.com/search?q=inflict&oq=inflict&aqs=chrome.0.69i59j35i39j69i59l2j0i433j69i60l3.978j1j7&sourceid=chrome&ie=UTF-8>.

122. *Inflict*, *WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH* (1961).

123. *Inflict*, *THE OXFORD UNIVERSAL DICTIONARY ON HISTORICAL PRINCIPLES* (1972).

124. Other scholars also understand “coercive interrogation” to entail a harm element. See Glod & Smith, *supra* note 16, at 148 (“Thus, Article 17 serves to protect the prisoner from yielding

The Free Will Approach cannot be squared with the inclusion of the verb “inflict.” Inflicting “the loss of autonomy” or the “subversion of the free will” does not comport with the unpleasant and painful connotation that is usually associated with the term “inflict.” Nor is Article 17’s phraseology a common way of expressing the prohibition on subverting someone’s will. It would be unnatural, for example, to describe an interrogator’s conduct, which includes administering mild physical blows and aggressive shouting, as “inflicting a loss of autonomy” on the recipient. Ultimately, if the drafters truly intended to communicate the Free Will Approach, they would have constructed the coercion prohibition in an altogether different way.

The inclusion of the phrase “other form” in Article 17 provides further textual evidence that coercion requires an infliction of suffering and abuse. Article 17 bans physical torture, mental torture, and “any *other form* of coercion.”<sup>125</sup> The statute does not state ‘no physical or mental torture, nor any *form* of coercion, may be inflicted on POWs.’ If Article 17 was written that way, it would perhaps suggest that coercion and torture are distinct prohibitions. Rather, the inclusion of the term “other” makes it clear that physical and mental torture are examples, among “other[s],” of coercion. Members of a common category must have some shared characteristic that unites them. Since torture falls under the umbrella category of coercion in Article 17, the “other” prohibited “forms” of coercion must have at least one shared quality with torture.

The most prominent element of torture is the high degree of physical or mental pain.<sup>126</sup> Given that physical and mental torture were the illustrative examples of coercion chosen by the drafters, it is likely that this prominent characteristic is the common element of torture and other forms of coercion. Put in more plain terms, it would be strange if a neighbor, when asked to identify an act constituting “mental torture,” “physical torture,” and “any other form of coercion,” responded with

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to a temptation to divulge information due to fear of pain and to guard the prisoner from other external pressures.”); Maria F. Blanc, *Moral Permissibility and Legitimacy of the Use of Coercive Interrogations: Implications for the Intelligence Professional, Participating Health-Care Professionals, and Society*, 1 INT’L J. INTEL. ETHICS 122, 123 (2010) (“[T]he essence of coercive interrogation is the imposition of a time-limited physical and mental discomfort on the interrogatee so as to force information out of him.”).

125. Geneva III, *supra* note 11, art. 17 (emphasis added).

126. Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment art. 1, Dec. 10, 1984, 1465 U.N.T.S. 85 (defining torture as “any act by which *severe* pain or suffering, whether physical or mental, is intentionally *inflicted* on a person.”) (emphasis added).

‘reading someone’s mind using fMRI.’ The differing factor, of course, would be the degree of pain inflicted, as torture requires the infliction of “severe pain,” whereas other forms of ill-treatment typically require milder inflictions.

Indeed, in other statutory contexts in which torture was deemed an aggravated form of a less severe treatment, courts have similarly found that the common element binding torture and the less severe treatment was the infliction of pain.<sup>127</sup> For example, Article 3 of the European Convention on Human Rights (the “European Convention”) states: “[n]o one shall be subjected to *torture* or to *inhuman* or degrading treatment or punishment.”<sup>128</sup> The European Court on Human Rights (the “ECHR”) has interpreted this provision to mean that torture is an aggravated form of inhuman treatment that requires the infliction of very severe and cruel suffering.<sup>129</sup> In *Ireland v. United Kingdom*, the court addressed the use of certain British military interrogation techniques—wall-standing, loud noise, sleep deprivation, hooding, and deprivation of food and water—against suspected members of the Irish Republican Army.<sup>130</sup> The ECHR held that these techniques did not rise to the level of torture.<sup>131</sup> In its decision, the ECHR first noted that the principal difference between torture and other inhuman treatment is “the intensity of the suffering inflicted.”<sup>132</sup> Torture, the court concluded, carries a “special stigma” and should be limited only to those practices of a “particular intensity or cruelty.”<sup>133</sup> The court then held that the interrogation techniques did not possess the requisite severity level to

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127. See *Prosecutor v. Br anin*, Case No. IT-99-36-T, Judgment, 483 (Int’l Crim. Trib. for the Former Yugoslavia Sept. 1, 2004) (noting that “[t]he seriousness of the pain or suffering sets torture apart from other forms of mistreatment.”). Moreover, Article 1(2) of the Declaration on the Protection of All Persons from Being Subjected to Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment states: “Torture constitutes an aggravated and deliberate form of cruel, inhuman or degrading treatment or punishment.” G.A. Res. 3452 art. 1(2) (Dec. 9, 1975).

128. Convention for the Protection of Human Rights and Fundamental Freedoms, Nov. 4, 1950, 213 U.N.T.S. 222 (entered into force Sept. 3, 1953), amended by Protocols Nos. 3, 5, 8, & 11 (which entered into force Sept. 21, 1970, Dec. 20, 1971, Jan. 1, 1990, and Nov. 1, 1998, respectively) [hereinafter ECHR], available at [https://www.echr.coe.int/documents/convention\\_eng.pdf](https://www.echr.coe.int/documents/convention_eng.pdf) (emphasis added).

129. *Ireland v. United Kingdom*, 2 Eur. Ct. H.R. (ser. A) ¶ 167 (1978), <http://hudoc.echr.coe.int/eng?i=001-57506> (finding that since the techniques used caused “physical and mental suffering” and “led to acute psychiatric disturbances during interrogation” they fell under “inhuman treatment” as defined in the European Convention).

130. *Id.* at ¶ 96.

131. *Id.* at ¶ 168.

132. *Id.* at ¶ 167.

133. *Id.*

constitute torture, but did find that the interrogation practices represented inhuman and cruel treatment.<sup>134</sup>

On the other hand, where acts cause little or no physical or mental suffering, the ECHR has declined to find any violation of the prohibition against inhuman treatment: In *Rainen v. Finland*, the court found that the act of physically restraining a person for two hours, even though completely unnecessary, did not attain “the minimum level of severity” necessary to find a violation of the European Convention.<sup>135</sup> Thus, in other statutes which, like Article 17, deem torture an extreme form of less severe treatment, tribunals have found a minimum level of suffering required to constitute a violation of the less severe treatment.

## 2. Purpose and Historical Context

The drafters’ intent, as evidenced by historical context and their preparatory work, also confirms that coercion requires the infliction of harm.<sup>136</sup> Article 17 derives from an analogous provision in the 1929 Geneva Convention (the “1929 Convention”).<sup>137</sup> The corresponding provision of the 1929 Convention, Article 5, provided that “[no] pressure shall be exercised on prisoners to obtain information regarding the situation in their armed forces or their country.”<sup>138</sup> Article 17 expanded the ban on “pressure” to prohibit “physical or mental torture, [or] any other form of coercion.” While “pressure” was changed to “coercion” in Geneva III, English translations of the 1929 Convention typically substitute “coercion” for “pressure” in Article 5,<sup>139</sup> as do scholarly commentaries.<sup>140</sup> Thus, adding color to the word “pressure” would shed light on the precise meaning of the word “coercion” in Geneva III.

134. *Id.* at ¶ 168.

135. *Rainen v. Finland*, 2 Eur. Ct. H.R. ¶¶ 54, 59 (1997), <http://hudoc.echr.coe.int/eng?i=001-58123>.

136. Under the Vienna Convention on the Law of Treaties, a treaty “shall be interpreted . . . in the light of its object and purpose.” See Vienna Convention on the Law of Treaties, *supra* note 115. When discerning the treaty’s purpose and intent, it is proper to consult the preparatory work of the treaty and the circumstances surrounding its adoption. *Id.*

137. 1929 Convention, *supra* note 114, art. 5.

138. *Id.*

139. For example, the official interpretation of the 1929 Geneva Convention from French released by the Office of the Registrar in the United States contained the word “coercion” in place of “pressure” in Article 5. Herbert Hoover, *A Proclamation by the President of the United States* (August 1932), [https://avalon.law.yale.edu/20th\\_century/geneva02.asp#art5](https://avalon.law.yale.edu/20th_century/geneva02.asp#art5).

140. See, e.g., John E. Wehrum Jr., *The Status of United States Prisoners of War Under the Code of Conduct for the Armed Forces*, 21 CATH. U. L. REV. 133, 141 (1971) (quoting Article 5 of the 1929 Convention and substituting “coercion” for “pressure.”).

### a. The 1929 Convention

Article 5 in the 1929 Convention codified the growing international sentiment that a detaining power should not use violent interrogation tactics against detainees to obtain military information.<sup>141</sup> For example, the 1863 Lieber Code, one of the first modern attempts to codify the law of war, states that the “the modern law of war permits no longer the use of any *violence* against prisoners in order to extort the desired information or to punish them for having given false information.”<sup>142</sup> International law, however, lagged behind state action on this matter such that by the start of World War I in 1914, no international treaty formally outlawed harmful interrogations practices.<sup>143</sup>

To fill this void in international law, countries signed special bilateral POW agreements with rival belligerents to ensure humane treatment of their captured soldiers.<sup>144</sup> For example, a 1918 Agreement between the British and German governments (the “1918 Agreement”) strictly forbade “forcible means of any kind to compel prisoners of war to give information about their army or their country”<sup>145</sup> Moreover, the 1918 Agreement provided that “[p]risoners of war, who refuse to give information may neither be threatened nor insulted nor subjected to any other treatment that puts them in a less favourable position than other prisoners.”<sup>146</sup> The language used here is similar to the language used in Article 5 of the 1929 Convention, and nearly identical to the language used in Article 17.<sup>147</sup> These similarities strongly suggest that Article 17 sought to proscribe harmful

141. See LEVIE, *supra* note 112, at 107 (“Prohibitions on the use of force to compel prisoners of war to divulge information to the enemy are not a recent development.”).

142. U.S. Department of War, Instructions for the Government of Armies of the United States in the Field, General Orders No. 100, Apr. 24, 1863 (emphasis added).

143. The Hague Conventions of 1899 and 1907, for example, imposed upon POWs the obligation to reveal their identity to the enemy, but did not impose any specific obligation on detaining parties to refrain from employing harmful interrogation practices beyond a general requirement of humane treatment. See LEVIE, *supra* note 112, at 107.

144. *Id.*

145. Agreement Between the British and German Governments Concerning Combatant Prisoners of War and Civilians, Gr. Brit-Ger., July 14, 1918, 111 BFSP 279 (emphasis added).

146. *Id.* art. XXIX.

147. Compare *id.*, with 1929 Convention, *supra* note 114, art. 5 (“No pressure shall be exercised on prisoners to obtain information regarding the situation in their armed forces or their country. Prisoners who refuse to reply may not be threatened, insulted, or exposed to unpleasantness or disadvantages of any kind whatsoever.”) and Geneva III, *supra* note 11, art. 17 (“No physical or mental torture, nor any other form of coercion, may be inflicted on prisoners of war to secure from them information of any kind whatever. Prisoners of war who refuse to answer may not be threatened, insulted, or exposed to any unpleasant or disadvantageous treatment of any kind.”).



applications of force.

Few reported post-World War II cases discussed violations of Article 5 of the 1929 Convention.<sup>148</sup> One case, however, found that unlawful interrogation under Article 5 required physical or mental suffering be inflicted on a POW.<sup>149</sup> In the *Trial of Erich Killinger and Four Others*, three German military interrogators were accused of contravening Article 5.<sup>150</sup> To secure information, the interrogators allegedly heated the POWs' cells to an uncomfortable level, deprived the POWs of medical attention, and physically struck the POWs.<sup>151</sup> As a matter of law, the court concluded that in order to prove unlawful interrogation under Article 5, the prosecution must prove that the "interrogation amounted to what could be described as *physical or mental ill-treatment*."<sup>152</sup> The court found that the practices constituted ill-treatment and convicted the German interrogators.<sup>153</sup> Thus, the *Killinger* decision confirmed that Article 5's prohibition against applying "pressure" is similar to the Lieber Code's prohibition against "violence" and the 1918 agreement's prohibition against using "forcible means."

#### b. Geneva III

The impetus for Article 17 was the need to clarify the prohibition against harmful questioning in the face of widespread violations of the 1929 Convention during World War II.<sup>154</sup> The framers did not advocate for additional limitations on interrogation techniques, but merely a more precise formulation of the term "coercion" to limit interrogational discretion.<sup>155</sup> Thus, Article 17 preserved Article 5's harm requirement. The circumstances surrounding the reformulation of Article 17 and the drafters' own statements leave little room for doubt

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148. See LEVIE, *supra* note 114, at 291 (Noting that there are relatively few reported "World War II (1939-45) war crimes trials involving the question of allowable and prohibited methods of interrogating prisoners of war in the quest for information of military value.").

149. See *Trial Of Erich Killinger And Four Others*, 68 (Brit. Milit. Ct., Wuppertal, Nov. 26th-Dec. 3rd, 1945) [hereinafter *Killinger*].

150. *Id.*

151. *Id.*

152. *Id.* (emphasis added).

153. *Id.* at 67.

154. See Smith, *supra* note 112, at 892 (noting that "[t]he experiences of World War II had demonstrated that coercion was not a self-defining term. The activities engaged in within several interrogation camps made it necessary to limit interrogation discretion. By forbidding any other form of coercion, [Geneva III] made clear that physical and mental torture do not exhaust the possibilities; indeed, any form would also be prohibited.") (internal quotations omitted).

155. *Id.*

as to this objective.

During World War II, parties to the conflict engaged in brutal treatment of POWs.<sup>156</sup> POWs were regularly sent to covert interrogation camps placed outside the influence of the ICRC.<sup>157</sup> There, POWs were often beaten and brutalized for information.<sup>158</sup> To acquire military information at one POW camp, Nazi interrogators “kicked [POWs], pulled their nails out, drowned them, hanged them from beams by their legs[,] and hammered nails into their elbows, knees and hip joints.”<sup>159</sup> One scholar offered this sober assessment of the standard interrogation methods used:

Before an interrogation began, the suspect was routinely roughed up for the shock value. The effect of this arbitrary viciousness was to daze, humiliate, and throw prisoners off balance at the outset in the contest of wills with their inquisitors. . . . Once begun, the process was nearly irreversible. If the prisoner had nothing to say under mild torture, the screws were progressively tightened. He might be dead or dying before his tormentors could bring themselves to accept that he did indeed know nothing.<sup>160</sup>

The Geneva III framers believed that widespread violation of the 1929 Convention was made easy by imprecise formulations and thus sought to make their 1949 version more precise.<sup>161</sup> The attempt to create a precise formulation is evident in the elaboration of the term “coercion” in Article 17.<sup>162</sup> The elaboration was primarily motivated by the fact that “coercion” is not a self-defining term and the resulting ambiguity lent interrogators significant discretion.<sup>163</sup> The framers thus

156. See Stuart Dowell, *A Hell ‘Worse Than Auschwitz’ Where Thousands Were Tortured and Slain is Turned Into a Memorial Site*, THEFIRSTNEWS (June 7, 2019), <https://www.thefirstnews.com/article/a-hell-worse-than-auschwitz-where-thousands-were-tortured-and-slain-is-turned-into-memorial-site-6250> (reciting various acts of violence inflicted on POWs during World War II).

157. 1960 Commentary, *supra* note 27, at 163.

158. *Id.*

159. Dowell, *supra* note 156.

160. Steven M. Kleinman, *The Promise of Interrogation v. the Problem of Torture*, 43 VAL. U. L. REV. 1577, 1584 (2009) (quoting Joseph E. Persico, *PIERCING THE REICH: THE PENETRATION OF NAZI GERMANY BY AMERICAN SECRET AGENTS DURING WORLD WAR II* at 81 (The Viking Press 1979)).

161. The preliminary Commission first set up by the ICRC to assess revisions to the 1929 Convention following World War II states this: “As to the principles which should govern any such revision, several different opinions were expressed. Certain delegations stressed that the provisions of any future Convention should be more detailed and precise, experience having shown that vagueness in the wording led to most varied and sometimes arbitrary interpretations.” Int’l Comm. of the Red Cross, *REPORT on the Work of the Preliminary Conference of National Red Cross Societies for the Study of the Conventions and of Various Problems Relative to the Red Cross* at 69 (Geneva, July 26-Aug. 3, 1946), [https://www.loc.gov/rr/frd/Military\\_Law/pdf/RC\\_report-1946.pdf](https://www.loc.gov/rr/frd/Military_Law/pdf/RC_report-1946.pdf).

162. Smith, *supra* note 112, at 892.

163. *Id.*

recommended changing “pressure” to “moral or physical torture” as well as “any other form of coercion” to make clear the “prohibition of maltreatment of any kind whatsoever.”<sup>164</sup> Notably, the term “maltreatment” is very similar to the term ill-treatment used in the *Killinger* case.<sup>165</sup> Both indicate that the detaining party is prohibited from inflicting abuse on POWs. According to the *Oxford Universal Dictionary*, “maltreat” means “to abuse, ill-use; to handle roughly or rudely.”<sup>166</sup> *Webster’s Dictionary* similarly defines “maltreat” as “to treat ill; treat roughly; abuse, mistreat.”<sup>167</sup> Thus, the overarching aim of the drafters was to clearly eliminate abusive interrogation practices.

Moreover, other scholars who have examined the drafting history of Article 17 agree that its purpose was to respond to the widespread cruel treatment perpetuated against POWs. The more specific formulation of Article 17 was designed to “eliminate[] tortious questioning,”<sup>168</sup> respond to “the increased brutality of interrogation techniques developed in World War II,”<sup>169</sup> and to “limit interrogation discretion” to prevent the rampant abuse seen in war camps.<sup>170</sup> The 1960 ICRC Commentary notes that the drafters “were not content to confirm the 1929 text,” and instead made it “more categorical” in response to the “great hardship” inflicted on captured POWs and the “flagrant violations” of Article 5 during World War II.<sup>171</sup> The overwhelming evidence suggests that Article 17, then, clearly meant to proscribe mentally and physically damaging interrogation practices. This conclusion confirms that coercion requires the harmful application of force on a POW for the purpose of compelling information.

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164. Int’l Comm. of the Red Cross, *Report on the Work of the Conference of Government Experts for the Study of the Conventions for the Protection of War Victims* at 123 (Geneva, April 14-26, 1947), [https://www.loc.gov/rr/frd/Military\\_Law/pdf/RC\\_report-1947.pdf](https://www.loc.gov/rr/frd/Military_Law/pdf/RC_report-1947.pdf).

165. Killinger, *supra* note 149, at 68.

166. *Maltreatment*, THE OXFORD UNIVERSAL DICTIONARY ON HISTORICAL PRINCIPLES (1972).

167. *Maltreat*, WEBSTER’S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH (1961).

168. Neil McDonald & Scott Sullivan, *Rational Interpretation in Irrational Times: The Third Geneva Convention and the “War on Terror”*, 44 HARV. INT’L L.J. 301, 308 (2003).

169. Wehrum Jr., *supra* note 140, at 141 n.38 (quoting Smith, *supra* note 112, at 891–92).

170. Smith, *supra* note 112, at 892.

171. 1960 Commentary, *supra* note 27, at 163.

#### IV. APPLYING ARTICLE 17 TO MIND-READING TECHNOLOGY: NO PAIN, NO PROBLEM

Given that the literal act of reading someone's mind is painless and noninvasive<sup>172</sup> and assuming reading someone's mind does not cause mental suffering,<sup>173</sup> mind-reading does not constitute coercion and therefore does not violate Article 17. Yet, the acts taken to induce a noncompliant detainee's cooperation may violate the harm element. The legality of the use of mind-reading technology, therefore, is probably instrument-dependent and varies based on both the level of cooperation required and the acts needed to ensure compliance.

##### A. *Evaluation of Current Mind-Reading Instruments*

EEG-based memory detection and real-time thought extraction would not violate Article 17 because EEGs require a minimal amount of cooperation.<sup>174</sup> First, an EEG does not require a noncooperative detainee to be immobilized. An EEG can record data even while the subject is moving, so the detainee does not have to be restrained. Second, an EEG permits data collection in a perfectly normal interrogation environment. An interrogator can simply place an EEG cap on a detainee's head and conduct a routine interrogation. Because an EEG is neither physically invasive nor painful, the use of an EEG-based mind-reading device on a noncooperative POW would not violate Article 17.

When an fMRI is used to extract cognitive information, however, the question of legality is much closer though still a 'yes' under Article 17.<sup>175</sup> It is true that a noncooperative subject must be immobilized while undergoing an fMRI, as even slight head movements during the scanning process can compromise the quality of the scans. Moreover, interrogators have to forcibly place the subject onto the table that slides into the fMRI scanner. And an fMRI does not permit scanning in normal interrogational environments, as the noncooperative detainee must be slid into the scanner. Thus, it is not all that unlikely that a claustrophobic detainee might experience mental suffering while in the fMRI machine and that this could rise to the level of coercion. While this Note establishes harm as an element of coercion, it does not seek to establish the threshold of harm that gives rise to liability under

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172. See discussion *supra* Part II.

173. See discussion *supra* note 28.

174. See discussion *supra* notes 62-69.

175. See discussion *supra* notes 42-45.

Article 17. Answering that question is critical to a determination about the legality of fMRI-based mind-reading, but is beyond the scope of this Note.

*B. Mind-Reading is Not Coercive Even if It Facilitates More Coercion*

Even if the application of mind-reading technology is painless, one scholar, Jonathan Marks, believes mind-reading technology may actually exacerbate instances of coercion and torture.<sup>176</sup> Marks contends that because current mind-reading devices only indicate whether a detainee is lying or has knowledge about a valuable topic, a mind-reading device will merely act as a screener that will then facilitate “more aggressive interrogation” to elicit more specific information.<sup>177</sup> If mind-reading technology facilitates greater inflictions of harm on detainees, such technology may violate Article 17.

Marks’ line of reasoning is unavailing, however, for multiple reasons. First, his argument rests on the faulty assumption that critical information cannot be gleaned solely from a mind-reading device. Through a series of questions, a lie-detector, however, *can* obtain valuable information, such as the enemy’s susceptibility and capacity to attack, and whether the enemy is planning an attack. Thus, mind-reading devices can acquire critical information without the need for additional interrogation.

Second, even if mind-reading technology facilitates further interrogation, it is doubtful that it will make the detaining power more or less likely to violate Article 17. Marks’s argument rests on the assumption that a detaining party will coerce or torture detainees who it suspects have valuable information. Yet, there are many reasons why a detaining power may suspect a detainee is withholding information, such as the detainee’s rank, demeanor, or the circumstances surrounding their capture. Detaining parties are frequently faced with uncooperative detainees who they suspect have valuable information, and yet still choose to lawfully interrogate them without resorting to unlawful methods.

Third, even assuming that a detaining power was more likely to aggressively interrogate a detainee, Marks does not take into account that mind-reading devices would screen out detainees with no valuable

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176. Jonathan H. Marks, *Interrogational Neuroimaging in Counterterrorism: A No-Brainer or a Human Rights Hazard*, 33 AM. J.L. & MED. 483, 495 (2007).

177. *Id.* at 499.

information and may reduce total instances of coercive interrogation.

## V. CONCLUSION

Insistence that Article 17 prohibits the use of mind-reading devices ultimately ignores both the text and spirit behind Geneva III, and renders its protections counterproductive. Prohibitions on mental and physical abuse contained in Article 17 of Geneva III should be strictly followed. The use of mind-reading technology, however, is completely painless and is therefore not proscribed by Article 17. Moreover, an interpretation of Geneva III that would forbid mind-reading on POWs fails to deal with captors' overwhelming incentives to use the technology. If any blanket prohibition on the use of mind-reading technology would assuredly be broken, captors who have already violated Article 17 would also disregard other limits on interrogation. Thus, allowing some mind-reading will also increase compliance with Article 17 and validate the spirit and goals of the framers of Geneva III. Instead of determining whether mind-reading is legally permissible altogether, the focus must be on resolving which kind of mind-reading instruments are permissible under Article 17.