4

The Right to Mental Privacy

On Privacy, Freedom of Expression and Freedom of Thought

4.1 INTRODUCTION

Thus far, we have largely considered technologies that are capable of *changing* persons' mental states. However, today, a range of technologies are also being developed that can *gain insight into* the mental realms of others.[1] One example is the measurement of brain activity, which has enabled researchers to make inferences about individual mental states and faculties. In particular, fMRI and EEG can measure brain activity in a way that allows for inferences about what a person remembers, recognises, thinks or feels. EEG has been used, for example, to identify concealed memories about a criminal offence;[2] and fMRI has been used to reveal sexual orientation,[3] political ideology[4] or a person's craving for cocaine.[5] Recently, various research groups used neurotechnology together with emerging forms of artificial intelligence (AI) to decode mental content from brain activity, with some interesting first results.[6] According to Brownsword, with the development of these kinds of "brain-reading" technologies, "researchers have a window into the brains and, possibly, into a deeper understanding of the mental lives of their participants".[7]

In view of these developments, the private sphere of our inner minds may no longer be as inaccessible to others in the way it used to be, raising questions about how the law should protect *mental privacy*.[8] Various interpretations of a right to

[1] Farahany 2023.
[2] Rosenfeld 2018.
[3] Safron et al. 2017.
[4] Yang et al. 2022.
[5] Kober et al. 2016.
[6] Bellier et al. 2023; Tang et al. 2023.
[7] Brownsword 2012, p. 223.
[8] This point has been made by, among others, Farahany 2012a; Richmond, Reeds & Edwards 2012; Shen 2013; Ienca & Andorno 2017; Goering 2021; Ienca 2021; Ligthart et al. 2023a. Consider also, however, that the prior inaccessibility of the mind may be somewhat overemphasised, given humans' extensive, natural mind-reading capabilities (see Meynen 2018). The point might thus more precisely be that these developments render the inner mind even more accessible than it once was.

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mental privacy have been used in the literature.[9] Here, we understand this right in a broad sense, as a right not to reveal unexpressed mental phenomena such as mental states and content.[10]

Concerns about mental privacy raised by neurotechnology exceed the domain of medicine and scientific research, as the technology promises to be usable within other contexts too, including education, at work, in the military and criminal justice.[11] Presumably, these different contexts ask for tailored approaches to protect mental privacy. As before, our focus here is on criminal justice: more specifically, on neurotechnological "brain-reading" to predict future dangerousness – often referred to as "neuroprediction"[12] – within the context of rehabilitation.

Contemporary debates on the right to mental privacy vis-à-vis neurotechnology often focus on the *scope* of human rights. Scholars consider whether the protection of mental privacy is covered by the established framework of human rights law or whether it requires the recognition of a standalone and specific human right to mental privacy.[13] Meanwhile, as we saw in the preceding chapters, effective human rights protection of the mind not only depends on the scope of human rights, but also on their permissible *limitations*. In this chapter, we consider both the scope and permissible limitations of the right to mental privacy, with specific attention to the question of whether the protection of mental privacy has an absolute dimension in established human rights law.

The outline of this chapter is as follows. In section 4.2, we offer an overview of the human rights protection of mental privacy by three established human rights: (1) the right to privacy, (2) the right to freedom of expression, and (3) the right to freedom of thought. In section 4.3, we consider the interplay between these rights in their protection of mental privacy and explore a threshold criterion for engaging absolute protection by the right to freedom of thought. Along the way, we discuss the implications of our analysis for the non-consensual neuroprediction in criminal justice. Section 4.4 draws conclusions.

4.2 THE PROTECTION OF MENTAL PRIVACY IN HUMAN RIGHTS LAW

In response to recent calls to recognise a specific human right to mental privacy,[14] different scholars have argued that such a right is already protected within the existing framework of human rights law.[15] In particular, they point to the protective

[9] See, e.g., Ienca 2021, p. 5; Wajnerman Paz 2021; Goering et al. 2021; Ligthart 2025a.
[10] Ligthart 2025a.
[11] Ligthart 2022; Farahany 2023.
[12] Nadelhoffer et al. 2012; Aharoni et al. 2013; Tortora et al. 2020.
[13] Ienca & Andorno 2017; Yuste, Genser & Hermann 2021; Ligthart et al. 2021; Bublitz 2022.
[14] Ienca & Andorno 2017; www.neurorightsfoundation.org.
[15] Ligthart et al. 2021; Alegre 2022; Bublitz 2022, 2024; Hertz 2023; Istace 2023; Susser & Cabrera 2023.

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scope of (i) the right to privacy, (ii) the right to freedom of expression, and (iii) the right to freedom of thought – all three enshrined in human rights treaties across the globe. By adopting the 'living instrument approach' to human rights – which implies that human rights should be interpreted dynamically, in view of present-day conditions, including technological developments – it has been argued that these existing rights are well equipped to offer adequate protection against the non-consensual disclosure of mental states and content (be that either by forced testimony, non-consensual brain-reading, or the hacking of a person's BCI).[16] This living instrument approach was initially developed within the case law of the ECtHR,[17] but has now also been referred to by the UN Human Rights Committee (CCPR) when interpreting and applying the ICCPR.[18]

In this section, we consider how mental privacy is protected by the three human rights mentioned above – the right to privacy, the right to freedom of expression and the right to freedom of thought. We will show that it is evident that mental privacy is protected within the established framework of human rights law. However, much is still unclear about the right's permissible limitations.[19] Is mental privacy typically a qualified right, of which infringements can sometimes be justified, like for preventing crime? Or has it, on top of that, an absolute layer, that is, a dimension of mental privacy that can never be overridden in any circumstances?[20] And if the right to mental privacy has such an absolute layer, which infringements would then be covered by this absolute dimension? The issue of permissible limitations is central to section 4.3.

4.2.1 *The Right to Privacy*

The right to privacy has a robust foundation in human rights law. It is for instance recognised in the Universal Declaration of Human Rights (Article 12), the International Covenant on Civil and Political Rights (Article 17) and the European Convention on Human Rights (Article 8) – with the latter (as earlier indicated) referring to the right to "respect for private life".

What is meant by a right to privacy? According to the UN Human Rights Council, privacy can be considered "as the presumption that individuals should have an area of autonomous development, interaction and liberty, a 'private sphere' with or without interaction with others, free from State intervention and from excessive

[16] In the context of criminal procedure, the privilege against self-incrimination has the potential to offer additional protection to (some aspects of) mental privacy. For extensive analyses on the implications of the privilege against self-incrimination vis-à-vis non-consensual brain-reading, see Farahany 2012b; Shen 2013; Ligthart 2022.

[17] Harris et al. 2023, pp. 7–8.

[18] CCPR 13 August 2003, 829/1998 (*Judge/Canada*).

[19] Cf. Bublitz 2024; Ligthart & Van de Pol 2025.

[20] Cf. Ienca & Andorno 2017, p. 15.

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unsolicited intervention by other uninvited individuals".[21] Several moral rationales have been advanced as underpinning this right to privacy.[22] Many scholars emphasise the instrumental value of privacy for enabling freedom and autonomy, with some arguing (more strongly) that without the protection of private life, individual freedom and autonomy would be impossible.[23] Other scholars suggest that privacy has non-instrumental value, or value in-and-of-itself, such that in its absence people would fail to flourish.[24] And still others argue that a right to privacy is justified for respect-based reasons – that is, that refraining from intruding on a person's privacy is necessary to respect that individual as a person or being "with sensibilities, ends, and aspirations of their own".[25]

The right to privacy is relevant for our present analysis because obligations to reveal private mental phenomena – for example, using non-consensual brain-reading – are likely to infringe the right to privacy. The right to privacy is, after all, both widely applicable and broad in scope – both in the case of Article 17 ICCPR and Article 8 ECHR. It applies to state agents who might interfere with a person's privacy. It also requires that states adopt legislative and other measures to give effect to the protection of privacy.[26] And the right's breadth means that it should protect against a wide spectrum of privacy interference, including by modern means.

Looking first to the international context, Article 17 ICCPR "is a short but versatile provision, capable of answering a broad diversity of unlawful or arbitrary incursions into privacy (. . .) which could not have been specifically foreseen by its drafters".[27] For example, Article 17 ICCPR applies to AI systems that process personal data for algorithmic decision-making.[28] It also covers the protection of metadata, as such data, when analysed and aggregated, "may give an insight into an individual's behaviour, social relationship, private preference and identity".[29] Furthermore, the UN High Commissioner for Human Rights, when discussing the right to privacy, refers to data-driven technologies that "increasingly enable States and business enterprises to obtain fine-grained information about people's lives, make inferences about their physical and mental characteristics and create detailed personality profiles".[30] The High Commissioner considers informational privacy to be particularly important in the age of modern technology and digital

[21] UNHRC, The right to privacy in the digital age, A/HRC/39/29, 3 August 2018, par. 5.
[22] See, for example, Inness 1992; Corlett 2002; Marmor 2015.
[23] See, for example, Bates 1964, p. 432; Corlett 2002, p. 336; Alfino & Mayes 2003, pp. 6, 12.
[24] Moore argues, for example, that since we have a "near universal need for seclusion or separation at different times" from others, the ability to "control access to oneself (. . .) and to [one's] personal information is an essential part of human flourishing"; see Moore 2010, p. 33.
[25] Benn 1984, p. 227.
[26] CCPR General Comment No. 16, par. 1.
[27] Taylor 2020, p. 458.
[28] Special Rapporteur on the right to privacy, 25 January 2021, A/HRC/46/37.
[29] OHCHR, The right to privacy in the digital age, A/HRC/39/29, 3 August 2018, par. 5.
[30] OHCHR, The right to privacy in the digital age, A/HRC/39/29, 3 August 2018, pars. 5, 15.

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environments.[31] The High Commissioner also holds that the right to privacy of Article 17 ICCPR is not only impacted by the *examination* and *use* of personal data by humans or algorithms. Even the mere *generation* and *collection* of data relating to a person's identity, family or life will affect the right, "as through those steps an individual loses some control over information that could put his or her privacy at risk".[32]

In the European context, the ECtHR emphasises that "private life" is a broad concept that does not lend itself to exhaustive definition.[33] It is clear though that the right to private life covers the protection of "personal data". Referring to Article 2 of the Data Protection Convention 1981, the ECtHR defines personal data as "any information that relates to an identified or identifiable individual".[34] According to Article 3 of the EU Law Enforcement Directive (2016/680), "personal data" means "any information relating to an identified or identifiable natural person ('data subject'); (. . .) such as a name, an identification number, location data, an online identifier or to one or more factors specific to the *physical*, *physiological*, genetic, *mental*, economic, cultural or social identity of that natural person".[35]

The ECtHR considers the protection of personal data of fundamental importance to the enjoyment of the right to respect for private life and holds that Article 8 ECHR comprises "the right to a form of informational self-determination, allowing individuals to rely on their right to privacy as regards data which, albeit neutral, are collected, processed and disseminated".[36] When considering whether personal information relates to someone's "private life" in the meaning of Article 8 ECHR, and whether the collection, storage or use of that information infringes this right, the ECtHR has due regard to: (1) the nature of the records, (2) the results that may be obtained, (3) the specific context in which the information has been recorded and retained and (4) the way in which these records are used and processed.[37]

Examples of infringements of Article 8 ECHR in the context of criminal justice include taking and retaining a photograph on arrest, yielding fingerprints and cellular samples for DNA analysis, and the collection of personal information via a GPS tracking system.[38] Plausibly, the right to privacy also applies to the employment of other emerging technologies that yield personal data, including

[31] OHCHR, The right to privacy in the digital age, A/HRC/39/29, 3 August 2018, par. 5.
[32] OHCHR, The right to privacy in the digital age, A/HRC/39/29, 3 August 2018, pars. 5, 7.
[33] ECtHR (GC) 25 September 2018, 76639/11 (*Denisov/Ukraine*), par. 95 (see also section 3.3).
[34] ECHR (GC) 8 November 2016, 18030/11 (*Magyar Helsinki Bizottság/Hungary*), par. 192.
[35] Emphasis added. On this directive see Kosta & Boehm 2024. On brain data and the GDPR, see Rainey et al. 2020; Ienca & Malgieri 2022.
[36] ECHR (GC) 27 June 2017, 931/13 (*Satakunnan Markkinapörssi Oy and Satamedia Oy/Finland*), par. 137.
[37] ECHR 13 February 2020, 45245/15 (*Gaughran/UK*), par. 70; ECHR (GC) 4 December 2008, 30562/04 and 30566/04 (*S. & Marper/UK*), par. 67.
[38] ECHR 13 February 2020, 45245/15 (*Gaughran/UK*), pars. 70, 63; ECHR 14 April 2020, 75229/10 (*Dragan Petrović/Serbia*), pars. 69, 79; ECHR 2 September 2010, 35623/05 (*Uzun/Germany*); ECHR 14 April 2020, 75229/10 (*Dragan Petrović/Serbia*), pars. 69, 79.

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neurotechnological brain-reading such as with fMRI and EEG.[39] Such brain-reading could moreover produce *sensitive* personal data, allowing the drawing of inferences about, for example, emotions, sexual orientation and/or mental health.

Given its broad scope, there is reason to suppose that the right to privacy as guaranteed by Articles 17 ICCPR and 8 ECHR *also implies* a right to mental privacy. It is reasonable to suppose, first, that the ethical values thought to ground a right to privacy – that is, the values of freedom and autonomy, human flourishing, and respect for persons – are crucially advanced by the protection of mental privacy. Think of how a lack of mental privacy would likely limit the freedom and "natural flow" of people's ideas (and hence actions),[40] and of how some degree of *mental* seclusion and separation is plausibly necessary for beings like ourselves to function and flourish.[41] Second, legally, it is indeed plausible that a right to mental privacy is ipso facto covered by the general right to privacy. As Bublitz argues, it seems evident that the latter established right covers the former: "[s]everal international instruments protect a general right to privacy or private life. According to the standards of legal interpretation, this abstract right implies more context or domain-specific variations. In other words, mental privacy is implied by the more general right to privacy".[42]

Many lawyers will confirm and endorse this view. For example, already in their seminal article on the right to privacy published in 1890, Warren and Brandeis observed that "the common law secures to each individual the right of determining, originally, to what extent his thoughts, sentiments, and emotions shall be communicated to others".[43] This legal protection, they argued, is merely an instance of the general right to be let alone – the right to privacy – which could be invoked to protect against "invasion either by the too enterprising press, the photographer, or the possessor of any other modern device for recording or reproducing scenes and sounds".[44] Over a century later, the UN Special Rapporteur on the Right to Privacy (Article 17 ICCPR) warned "that constantly developing technologies pose important challenges for the protection of privacy: these technologies may reveal the most intimate behaviour, wishes, preferences and indeed the very thoughts of individuals in ways that previously were not possible".[45] As the UN Special Rapporteur on Freedom of Religion or Belief highlights, in the United States,

[39] Ligthart 2022; Bublitz 2024.

[40] This phrasing is from Sher 2021, p. 92, though Sher is talking about how internalised prohibitions on thought would plausibly limit mental freedom. Virginia Woolf remarked, somewhat similarly, that "A lock on the door means the power to think for oneself", see Woolf 2001, and also McCarthy-Jones 2019.

[41] Brownlee comments on how "we all need routine moments of silence and solitude as a balm for the soul" and this seems applicable to the mental realm specifically, see Brownlee 2020, p. 96. Brownlee points to the creative leaps that we make when we labour (and have space) alone, and we could make a similar point about the value of thinking (and being allowed to think) alone, without scrutiny.

[42] Bublitz 2022, p. 7. See also Bublitz 2024.

[43] Warren & Brandeis 1890, p. 198.

[44] Warren & Brandeis 1890, pp. 205–206. See also Bublitz 2022, p. 7.

[45] UN Special Rapporteur on the right to privacy, 15 October 2018, A/HRC/37/62.

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"courts recognise that an individual right to privacy encompasses mental privacy".[46] Likewise, in the European legal context, it has been argued that the right to respect for private life pursuant to Article 8 ECHR covers, among many other things, the protection of mental privacy.[47] These observations seem to confirm that a right not to reveal thoughts, emotions, sentiments, preferences, wishes, or other private mental phenomena – a right to mental privacy – is covered by the general right to privacy.[48]

Non-consensual neuroprediction arguably *infringes* the right to privacy,[49] notwithstanding that the right is unlikely to *prohibit* neuroprediction across the board. Recall that infringements of the right to privacy can be justified under both Article 17 ICCPR and 8 ECHR if they have an non-arbitrary basis in domestic law and are necessary for and proportionate to a legitimate purpose, such as the prevention of crime and disorder.[50] Given that permissible privacy infringements have included, among many other things, secret surveillance and DNA testing for the purpose of preventing crime and protecting the rights of others,[51] and legally obliging witnesses to reveal their knowledge and memories about a criminal offence in court,[52] the right to (mental) privacy is unlikely to prohibit, in principle, *all* non-consensual applications of neuropredictive technologies that reveal private information about brain and mental states for the purpose of preventing crime.[53] We return to this in section 4.3.

4.2.2 *The Right to Freedom of Expression*

The secrecy of our mental states and content also receives protection from the right to freedom of expression, guaranteed by Articles 19 ICCPR and 10 ECHR.[54] The relevance of this right to the protection of mental privacy lies in its negative aspect, guaranteeing the freedom *not* to express oneself. This negative freedom is something we have an interest in possessing. We have an interest in having a "reasonable measure of control" over the ways in which we express and present ourselves to

[46] UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380, par. 26, referring to Long Beach City Employees Assn. v. City of Long Beach (1986); Stanley v. Georgia (1969).

[47] Ligthart et al. 2021; Ligthart 2025a.

[48] Cf. Bublitz 2022, p. 7, who notes that: "Proponents of a novel, standalone right to mental privacy need to show why this reading is false; why privacy of the mind is, in principle, different to, say, the privacy of the bedroom. Without this, it seems they are merely different domains of application of a broader idea, the right to be let alone."

[49] Ligthart 2022.

[50] We highlighted this in Chapters 2 and 3. See also Lavrysen 2018; Taylor 2020, pp. 459–471.

[51] Taylor 2020, pp. 476–479; Harris et al. 2023, pp. 538–539, 542–545.

[52] In the ECHR context, privacy complaints on this issue have been interpreted as concerning the freedom of (non-)expression: ECHR 23 October 2018, 26892/12 (*Wanner/Germany*). See next section.

[53] Ligthart 2022.

[54] Ligthart 2022, p. 253; Istace 2024.

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others[55] – consider how expressing ourselves might sometimes open us up to social scrutiny and potential social harm.

The freedom not to express oneself was clearly emphasised by the European Commission on Human Rights (EComHR) in the case of *Strohal/Austria*, where the EComHR argued that "the right to freedom of expression by implication also guarantees a 'negative right' not to be compelled to express oneself, i.e., to remain silent".[56] The Grand Chamber of the ECtHR "does not rule out that a negative right to freedom of expression is protected under Article 10 of the Convention, but finds that this issue should be properly addressed in the circumstances of a given case".[57] Recently, the ECtHR confirmed that the right to freedom of expression has a negative aspect: "A holistic protection of the freedom of expression necessarily encompasses both the right to express ideas and the right to remain silent; otherwise, the right cannot be practical or effective."[58] Compelling the applicants to express a message with which they disagreed infringed the right's negative aspect in this case. In the same vein, the General Comment to Article 19 ICCPR states: "Freedom to express one's opinion necessarily includes freedom not to express one's opinion."[59]

This is, in our view, a logical implication of the *freedom* to express oneself, which entails that the expression of opinions, ideas and other information is freely chosen – that one can freely choose between expressing and not expressing oneself. A right not to express opinions, ideas, feelings, knowledge and other kinds of information corresponds, in our view, almost seamlessly to a right to mental privacy – at least, if one understands this right as a right not to reveal unexpressed mental phenomena such as mental states and content.

Apart from few exceptions,[60] the content of an expression is irrelevant to the applicability of the right to freedom of expression.[61] Referring to the work of the CCPR, Taylor writes that the freedom of expression protects the dissemination of content "which many, in some cases most, may find unwelcome or repugnant (spanning pornography, offensive art, anti-Semitic messages or messages in support of terrorism)".[62] Likewise, according to the ECtHR, the right to freedom of expression is "applicable not only to 'information' or 'ideas' that are favourably received or regarded as inoffensive or as a matter of indifference, but also to those that offend, shock or disturb".[63] As such, the scope of the right to freedom of expression is

[55] Marmor 2015, p. 7. Note that Marmor is speaking of the moral value of privacy more generally here, but the point clearly also has relevance for the more specific freedom not to express oneself.

[56] EComHR 7 April 1994, 20871/92 (*Strohal/Austria*). See also EComHR 1 March 1993, 17488/90 (*Goodwin/UK*), par. 48; EComHR 13 October 1992, 16002/90 (*K./Austria*), par. 45.

[57] ECHR (GC) 3 April 2012, 41723/06 (*Gillberg/Sweden*), par. 86. Cf. ECHR 23 October 2018, 26892/12 (*Wanner/Germany*), pars. 39–42.

[58] ECtHR, 22 October 2024, 39446/16, 106 and others (*Kobaliya and Others/Russia*), par. 84.

[59] CCPR General Comment No. 34, par. 10.

[60] See e.g. Van Rijn 2018, p. 772.

[61] Taylor 2020, p. 538.

[62] Taylor 2020, p. 544.

[63] ECHR (GC) 7 February 2012, 39954/08 (*Axel Springer AG/Germany*), par. 78.

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considered "extremely broad".[64] The logical implication of this is that the negative freedom not to express oneself is broad too.

Interestingly, the right to freedom of expression protects not only the *substance* of information but also a diverse range of *forms and means* by which information is expressed, transmitted and received.[65] For example, among many other things, the ECtHR has applied the right to speech, poetry, painting, radio, film, handcuffing oneself to a barrier during protest, disrupting foxhunting by blowing a hunting horn and performing a puppet show satirical of politicians.[66] The General Comment on Article 19 ICCPR mentions spoken, written and sign language, non-verbal expression such as through images, objects of art and dress, and legal submissions.[67]

So, both Articles 19 ICCPR and 10 ECHR guarantee a broad right to freedom of expression. They protect opinions, ideas, facts, value statements and other information of almost *any content*, transmitted through practically *any means*, which may, in theory, also concern neurotechnological means, such as fMRI, EEG and BCI. Crucially, they also protect the freedom *not* to express; and given this, the right to freedom of expression likely protects against the obligation to disclose private information, such as mental phenomena, through neuroprediction.[68]

Similar to the right to privacy, the right to freedom of expression pursuant to Article 10 ECHR will not *prohibit*, in principle, the non-consensual use of neuropredictive tools, as the right may be subjected to "formalities, conditions, restrictions or penalties" that have a legal basis and are necessary within a democratic society for the legitimate interest of, among other things, preventing disorder and crime.[69]

Note, however, that Article 19 ICCPR distinguishes between, respectively, the right to *hold opinions* without interference and the freedom to *express information and ideas of all kinds*. Whereas the latter freedom to express information (including opinions) may be limited, for example for the protection of public order, the former may not: the right to freely hold opinions is an absolute right, not susceptible to

64 Rainey, McCormick & Ovey 2021, p. 488.

65 CCPR General Comment No. 34, par. 12; ECHR (GC) 15 December 2005, 73797/01 (*Kyprianou/Cyprus*), par. 174; Harris et al. 2023, p. 599.

66 ECtHR (GC) 15 December 2005, 73797/01 (*Kyprianou/Cyprus*) (speech); ECtHR (GC) 8 July 1999, 23168/94 (*Karataş/Turkey*) (poetry); ECtHR 24 May 1988, appl.no. 10737/84 (*Müller and others/Switzerland*) (painting); ECtHR 28 March 1990, 10890/84 (*Groppera Radio AG and Others/Switzerland*) (radio); ECtHR 20 September 1994, (*Otto-Preminger-Institut/Austria*) (film); ECtHR 3 May 2022, 18079/15 (*Bumbeș/ Romania*) (handcuffing); ECtHR 25 November 1999, (*Hashman and Harrup/UK*) (blowing a hunting horn); ECtHR 20 October 2009, 41665/07 (*Alves da Silva/Portuga*) (puppet show).

67 CCPR General Comment No. 34, par. 12.

68 Ligthart 2022, p. 139; Ligthart et al. 2023a, p. 12. Note, that the right not to be compelled to *express* oneself suggests that for its applicability, a person should be compelled to *act* in a way that qualifies as *expressing themselves*. Therefore, the right is unlikely to apply to neuropredictive tools that do not involve any kind of engagement of the person that could possibly qualify as "expressing" information, such as an MRI-scan showing that one has tumour in the frontal lobe (Ligthart 2022, p. 145).

69 Cf. ECtHR 23 October 2018, 26892/12 (*Wanner/Germany*).

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restriction or limitation,[70] and this right "includes [the] freedom *not* to express one's opinion".[71] Hence, strictly speaking, the protection of mental privacy, in the form of privacy of *opinion*, is absolute under Article 19 ICCPR. Regarding neuroprediction in criminal justice, the relevance of this absolute component of Article 19 ICCPR will probably be limited. Neuropredictive applications in this domain are likely to reveal information about phenomena such as self-control and emotional processing, and thus hardly qualify as revealing the person's *opinion* about something. Infringement of the absolute right to freedom of opinion is, therefore, unlikely. Article 19 ICCPR thus does not necessarily prohibit *all* non-consensual usage of neuroprediction – provided that such usage does not qualify as compelling persons to express "opinions".

4.2.3 *The Right to Freedom of Thought*

The right to freedom of thought, conscience and religion is guaranteed by Articles 18 ICCPR and 9 ECHR, and is often espoused as being central to the enjoyment of other basic rights and liberties, as well as being crucial for democracy.[72] The right is often considered to consist of an internal and external dimension, offering protection within the so-called *forum internum* and *forum externum*.[73] The internal dimension of the right is often considered to be absolute, not permitting "any limitations whatsoever".[74] It covers the freedom to have, change and adopt a religion, conviction and thought. In the external dimension, the right guarantees the qualified freedom to *manifest* religion and belief. The manifestation of *thought*, however, is not protected by the right to freedom of thought pursuant to Articles 18 ICCPR and 9 ECHR. These Articles only protect *unmanifested* thought. The manifestation of thoughts, such as through speech and expression, is protected by the right to freedom of expression.[75]

In the internal, absolute dimension, the right to freedom of thought is generally considered to guarantee three substantive freedoms: (1) that no one is compelled to reveal their thoughts, (2) that one's thoughts are not impermissibly altered and (3) that no one will be sanctioned for their thoughts.[76] The UN Special Rapporteur on Freedom of Religion or Belief holds that the first freedom implies that *mental privacy* is a "core attribute" of freedom of thought and also includes, arguably,

[70] CCPR General Comment No.34, par. 5, 9; Taylor 2020, p. 543.
[71] Our emphasis. Taylor 2020, p. 542. See also CCPR General Comment No.34, pars. 9–10.
[72] Swaine 2018; McCarthy-Jones 2019.
[73] Roberts 2020; Bublitz 2021.
[74] CCPR General Comment No. 22, par. 3; UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380; Vermeulen & Roosmalen 2018. But the absolute nature has recently been challenged: Ligthart 2025c.
[75] Evans 1997, p. 285; Loucaides 2012, pp. 84–85.
[76] Vermeulen & Roosmalen 2018; Bublitz 2021; UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380.

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a right to remain silent.[77] According to the Rapporteur, the freedom not to be compelled to reveal one's thoughts is currently under threat by, inter alia, neurotechnologies that allow the drawing of inferences about a variety of unexpressed mental states.[78] Likewise, considering the potential of neurotechnological lie detection and memory detection in criminal justice, Bublitz finds it "hard to imagine a better paradigmatic case against which freedom of thought should provide protection".[79]

However, the scope of the mental privacy protection afforded by the right to freedom of thought depends, considerably, on how one interprets "thoughts" in the context of this right. As discussed in Chapter 3, some have argued for a broad interpretation, such that the right protects *any* mental state with content and thinking as a mental process (robust-scope view).[80] For example, O'Callaghan et al. have argued that thought in the meaning of Articles 18 ICCPR and 9 ECHR "can be understood as encompassing all forms of unmanifested mental activity, including 'deliberation, imagination, belief, reflection, reasoning, cogitation, remembering, wishing, sensing, questioning, and desiring'".[81] On such an understanding, the freedom not to reveal private "thoughts" comes down to a broad right to mental privacy – that is, a right not to reveal *any* unexpressed mental state and content. As also discussed in Chapter 3, for the interpretation of the right to freedom of thought pursuant to Article 18 ICCPR, such a robust interpretation receives some support,[82] also from the UN Special Rapporteur on Freedom of Religion or Belief.[83]

Adopting such a broad scope would have profound effects on the human rights protection of mental privacy: if we assume a broad understanding of "thought", the privacy protection offered by the right to freedom of thought will considerably overlap with both the right to privacy and the right to freedom of expression. All three rights will then imply a right *not* to reveal unexpressed personal mental states and content. This poses a theoretical difficulty, as the protection of mental privacy by the right to freedom of thought is considered *absolute*, as opposed to the *qualified* protection offered by the right to privacy and, in the European context, the freedom of non-expression. This raises the question: How should the law distinguish between the applicability of either absolute or qualified mental privacy protection?[84] The answer to this question will be crucial for the permissibility of interferences with

77 UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380, par. 26. Also: Alegre 2022, p. 27. For a critical analysis of the report, see Ligthart et al. 2022; O'Callaghan et al. 2023.
78 UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380, pars. 26, 69, 76, 94.
79 Bublitz 2014, p. 8. See also McCarthy-Jones 2019; Hertz 2023. Cf. Ligthart 2022.
80 McCarthy-Jones 2019; Alegre 2022; Bublitz 2025; Hertz 2025.
81 O'Callaghan et al. 2024, p. 7.
82 As opposed to the interpretation of Article 9 ECHR: Chapter 3, section 3.2.
83 UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380.
84 Ligthart 2025a; Ligthart & Van de Pol 2025.

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mental privacy, including through non-consensual neuroprediction in criminal justice. We explore this question in the next section.

4.3 TOWARDS A THRESHOLD FOR THE RIGHT TO FREEDOM OF THOUGHT?

For the remainder of this chapter, let us assume a broad scope of the right to freedom of thought along the lines of the robust-scope view.[85] Let us also assume that, therefore, mental privacy is protected by both the absolute right to freedom of thought and the qualified rights to privacy and to freedom of expression. We then have the following question: How should judges determine which interferences with mental privacy would engage either absolute or qualified protection? How should they determine when the absolute right to freedom of thought applies to a specific case of privacy interference, such as the neuroprediction of convicted persons?[86]

At present, neither the law, jurisprudence, literature nor the report on freedom of thought by the UN Special Rapporteur provides clarification about this issue. However, in recent work, different scholars have suggested developing a *severity threshold* to determine whether a mental interference, such as revealing private mental phenomena with neurotechnology, would infringe and therefore violate the absolute right to freedom of thought.[87] For example, Bublitz proposes to adopt the "seriousness" of the privacy interference as a guiding principle for determining whether revealing (information about) unexpressed thought infringes the right.[88] He suggests a threshold for infringement that requires "interferences of some intensity or gravity", the assessment of which may draw on a range of factors, including the importance of the content of the thought, the nature of the interference and the intrusiveness of the means by which a thought is detected.[89]

Developing such a threshold for the applicability of a specific human right is not uncommon in human rights law.[90] It may indeed be a suitable approach for distinguishing absolute from qualified protection of mental privacy – that is, for distinguishing between the application of either the right to freedom of thought or the right to privacy/freedom of non-expression.[91] Meanwhile, it raises the question of which "interferences" can be considered "serious" enough to infringe the absolute right to freedom of thought.[92] There are different ways to explore and examine this question, including the use of thought experiments and involving ethical considerations and psychological or neuroscientific views on the intensity of different types of

[85] Bublitz 2025.
[86] Cf. Bublitz 2025, p. 20.
[87] Ligthart et al. 2022; Ligthart & Van de Pol 2025; Bublitz 2025; O'Callaghan & Shiner 2025, p. 13; Hertz 2025.
[88] Bublitz 2025, p. 19.
[89] Bublitz 2025, p. 18.
[90] Gerards 2013, p. 102. See also Chapter 3, section 3.3.1.
[91] See also Ligthart et al. 2022.
[92] Ligthart 2025b.

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interference with thought.[93] Furthermore, the law itself may provide some helpful guidance.

As Christoffersen writes, "[t]he relationship between relative and absolute rights will often be one of *lex generalis/lex specialis*: the relative provisions provide a general and wider measure of protection at a lower level, whereas the absolute provisions generate more specific and narrower protection at a higher level".[94] Consider, for example, the protection of bodily and mental integrity under the ECHR.[95] The qualified right to respect for private life in Article 8 ECHR provides broad protection of bodily and, possibly, also mental integrity in a large variety of instances.[96] On top of that, the prohibition of ill-treatment of Article 3 ECHR provides further absolute – though much narrower – protection of bodily and mental integrity, that is, protection against a category of grave and harmful interferences.

The ECtHR has developed a legal mechanism to distinguish absolute from qualified protection of bodily and mental integrity under Article 3 and 8 ECHR. In order to determine the applicability of the absolute prohibition of ill-treatment – over and above the qualified right to respect for private life – the ECtHR employs a severity threshold: Article 3 ECHR only applies to treatment attaining a "minimum level of severity". Although the prohibition of ill-treatment is absolute, the severity threshold is typically relative and depends on all circumstances of the individual case.[97] These include certain *characteristics of the treatment* (like its physical and mental effects and the manner and method of its execution), the *context* in which the treatment was imposed (such as in prison or in an atmosphere of heightened tension and emotions), *characteristics of the victim* (like one's sex, age and state of health) and the *purpose* for which the treatment was inflicted together with the intention and motivation behind it.[98]

The ECtHR considers these factors relevant for distinguishing absolute from qualified protection of bodily and mental integrity. We suggest that it is worth exploring whether these factors *also* prove useful for distinguishing absolute from qualified protection of mental privacy,[99] though we acknowledge the differences between integrity and privacy rights. In sections 4.3.1, 4.3.2 and 4.3.3 we consider the potential relevance of (1) characteristics of the interference, (2) the context of the interference and (3) the characteristics of the victim for distinguishing absolute from qualified protection of mental privacy. We do not consider the potential relevance of the *purpose* or *intention* of an interference – the fourth factor mentioned above. Including such a factor would ultimately amount to including a proportionality test,

93 Cf. Bublitz 2025.
94 Christoffersen 2009, p. 156.
95 See Chapter 3.
96 Nowak 2012; Michalowski 2020, p. 408.
97 ECtHR (GC) 26 October 2000, 30210/96 (*Kudła/Poland*), par. 91.
98 ECtHR (GC) 15 December 2016, 16483/12 (*Khlaifia and Others/Italy*), par. 160; ECtHR 1 June 2010, 22978/05 (*Gäfgen/Germany*), par. 88.
99 Ligthart & Van de Pol 2025.

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adding a qualification to the absolute protection of mental privacy.[100] The question, then, becomes whether a certain intervention, in a certain context, given the characteristics of the victim, is proportionate in light of the purpose or intention of the intervention. However, what we aim to delineate here is the type of cases that would receive *absolute* protection from the right to freedom of thought, that is, *regardless* of the importance of the purpose of the interference.

Before proceeding, we wish to clarify that, in line with the current status of the law, we assume that the right to freedom of thought is an absolute human right. We are aware of recent suggestions to formulate strict exceptions or inherent limitations to the right,[101] and we think these suggestions deserve serious consideration.[102] We also recognise that many theorists doubt that *truly absolute* rights exist at the level of fundamental morality. As Brownlee puts it, "when the numbers [or stakes] get large enough, we all tend to become consequentialists".[103] However, in this explorative section we follow the dominant view in human rights law and accept that there is value in recognising a limited number of human rights as absolute *at the level of law* (e.g., the prohibition of torture, the prohibition of slavery, and some aspects of the freedom of thought, conscience and religion). The question of how to distinguish absolute from qualified protection of mental privacy therefore arises.

4.3.1 *Characteristics of the Privacy Interference: Means and Targeted Mental Phenomena*

A general characteristic of an interference with mental privacy that may be relevant for distinguishing the applicability of the absolute right to freedom of thought from the qualified right to privacy or freedom of expression, relates to the *method* of revealing personal mental states. Of course, this can be interpreted in different ways, however, as we will explain, we consider this aspect in terms of "control" – more specifically the level of *control* the employed method leaves to the person whose mental states are being revealed. Regarding interventions that aim to *change* or *modulate* a person's mental states (like neurointerventions), Bublitz has argued that the level of self-control a person retains should be relevant to the applicability of the absolute right to freedom of thought, as infringements of the *freedom* of thought typically disrespect a person's *control* over their own thoughts and thinking. According to Bublitz: "This is a necessary, but not a sufficient condition, and it forms part of a test of infringement: Does an intervention respect the other as a free

[100] Cf. Vermeulen & Battjes 2018, p. 384; Harris et al. 2023, pp. 272–273. See on this issue under Article 3 ECHR also Addo & Grief 1998; Mayerfield 2008; Greer 2015; Mavronicola 2021.
[101] Loucaides 2012; McCarthy-Jones 2019; Bublitz 2021; Ligthart 2025c.
[102] Cf. Ligthart et al. 2022; Ligthart 2025c.
[103] Brownlee 2019, p.114.

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and self-controlled thinker; or does it undermine or bypass control? The latter infringes freedom of thought, the former may not."[104]

A similar line of reasoning may be explored regarding the privacy dimension of the right to freedom of thought.[105] One of the dominant approaches to information privacy conceives of privacy as a right to *control* personal information.[106] For example, as Fried argued, "privacy is not simply an absence of information about us in the minds of others; rather it is the *control* we have over information about ourselves".[107] The emphasis on controlling personal information is also reflected in the law. For instance, under Article 8 ECHR, the ECtHR has recognised a right to "informational *self-determination*".[108] Furthermore, recital 7 of the European GDPR states firmly that "natural persons should have *control* of their own personal data". The value of controlling personal information, including mental states, seems also relevant to mental privacy under the right to freedom of thought. As the drafters of Article 9 ECHR put it, the right to freedom of thought, conscience and religion intends to protect "not only from 'confessions' imposed for reasons of State, but also from those abominable methods of police enquiry or judicial process which rob the suspect or accused person of *control* of his intellectual faculties and of his conscience".[109]

It appears generally accepted that within the *forum internum* the right to freedom of thought is absolute. Hence, absolute human rights protection of mental privacy, one could argue, may at least be warranted regarding means that disclose thoughts directly from the *forum internum*, that is, means that do not involve any form of expression and conscious control whatsoever, and to which consent is not obtained. An example of such means could be the hacking of a person's BCI, which seems to destroy the core essence of mental privacy, that is, the person's *ability to control* the disclosure and dissemination of private mental content.[110] Bublitz has argued in the same direction, proposing that the "main condition prompting freedom of thought protection is the revelation of *unexpressed* thoughts", which means that "the

[104] Bublitz 2021, p. 82. See also Bublitz 2020b and, for discussion, Focquaert & Schermer 2015; Douglas 2018; Levy 2020.

[105] Bublitz 2025; Ligthart & Van de Pol 2025; Ligthart 2025a.

[106] Allen 2000; Schwartz 2000, p. 820.

[107] Fried 1968, p. 482 (original emphasis).

[108] ECHR (GC) 27 June 2017, 931/13 (*Satakunnan Markkinapörssi Oy and Satamedia Oy/Finland*), par. 137.

[109] EComHR, *Preparatory work on Article 9 of the European Convention on human rights*, Strasbourg, 16th August 1959, pp. 3–4 (emphasis added).

[110] Contrast obligations to reveal through *self-controlled* means of expression one's religious adherence, by taking a religious oath in court, by filling in a wage-tax form, or by providing personal information to receive an identity card, which the ECtHR considered to concern the *qualified* freedom to *manifest* religion and belief: ECtHR 3 June 2010, 42837/06, 3237/07, 3269/07, 35793/07 and 6099/08 (*Dimitras and others/Greece*); ECtHR 21 February 2008, 19516/06 (*Alexandridis/Greece*); ECtHR 17 February 2011, 12884/03 (*Wasmuth/Germany*); ECtHR 2 February 2010, 21924/05 (*Sinan Işik/Turkey*). ECtHR 20 June 2020, 52484/18 (*Stavropoulos and others/Greece*), par. 44. Also: ECtHR 15 June 2010, 7710/02 (*Grzelak/Poland*), par. 87.

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rightholder has not manifested them through voluntary actions such as speech".[111] He submits that neuroimaging "does not work *through* the person as a subject – by coercing or compelling her – but bypasses her as a subject to extract unexpressed thought. This breach of the inner sphere may suffice to reach the required level of seriousness".[112]

Following this line of thought, the non-consensual use of neuroimaging for the purpose of risk assessment in criminal justice may, in some instances, be considered to infringe the absolute right to freedom of thought – that is, when they do not involve any form of expression and conscious control whatsoever. However, since identifying relevant mental phenomena, such as certain intentions or inclinations, with neurotechnology will usually require at least some engagement from the person themselves (e.g., performing a task, observing stimuli, not manipulating the assessment), it is questionable whether their non-consensual use can regularly be considered to completely bypass or undermine the person's mental control.

Another relevant characteristic of mental privacy interference that could contribute to determining the "seriousness" of the interference relates to the precise *mental phenomenon* that is targeted and revealed. The significance of a person's interests in not revealing information about certain types of mental states and content may be important.[113] For example, there may be good reasons to assume that the significance of the interest in not revealing one's political or religious ideas could justify absolute protection from the freedom of thought.[114] The significance of the person's interest in not revealing one's sexual preferences may be another example. Meanwhile, the personal interest in having one's mental privacy respected may be weaker in relation to more trivial information about mental phenomena, of which absolute human rights protection would be less persuasive. One could think of a person's memory about a specific event, like the lovely sunset one experienced in Italy last summer,[115] a person's intention to grab a cup of tea during the coffee break or one's opinion about a new Netflix series.

Whereas many would probably agree that the secrecy of political opinions deserves stronger privacy protection than the secrecy of a preference for tea or coffee,[116] much of the area in between is grey. What about emotions: whether one feels happy or sad? What about an opinion about a colleague? A memory about

[111] Bublitz 2025, p. 21 (original emphasis). See also O'Callaghan & Shiner 2021, p. 135: "only when thoughts are unmanifested they should be deserving of absolute protection."

[112] Bublitz 2025, p. 21 (original emphasis).

[113] Cf. Bublitz 2025.

[114] Cf. ECtHR February 2010, 21924/05 (*Sinan Işik/Turkey*), par. 42; ECtHR 8 July 2008, 9103/04 (*Georgian Labour Party/Georgia*), par. 120.

[115] Interestingly, the ECtHR approaches legal duties of witnesses to disclose their memories of a particular event, like a criminal offence, under the *qualified* right to freedom of expression rather than under the *absolute* right to freedom of thought: ECtHR October 2018, 26892/12 (*Wanner/Germany*).

[116] Note that connecting the level of privacy protection to the sensitivity of personal data is common in the law. See, e.g., Special Rapporteur on the right to privacy, 20 July 2022, A/77/196, pars. 6–8.

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a criminal offence? Or a wild fantasy of becoming famous one day? Is the personal interest in keeping information about these mental states secluded from others significant enough to engage absolute mental privacy protection? It is hard to answer this question in isolation from other relevant considerations – perhaps most notably, the *context* within which one is obliged to reveal information about them. For instance, in the future, neuropredictive tools may well reveal information about different types of mental phenomena, ranging from emotional responses and reduced self-control to sexual orientation and information indicative of mental disorders. Whereas, in general, the significance of the personal interest in not revealing these types of information plausibly differs between them, their disclosure and use in the context of criminal justice for risk assessment may have similar adverse effects on the interest of personal liberty. For example, all such information could potentially contribute to the assessment of a certain expected risk of recidivism and, therefore, leading to the rejection of a parole request. Let us turn to considering the relevance of the context of a mental privacy interference in more detail in the next section.

4.3.2 *Context of the Privacy Interference*

The significance of the personal interest in not disclosing mental states – which may be a relevant consideration for granting absolute protection, as discussed in the previous section – plausibly depends on the context within which one is obliged to do so. In some contexts, being forced to revealing one's true views and ideas may be unpleasant but is unlikely to harm vital personal interests. Meanwhile, in other contexts, the revelation of private ideas, thoughts and feelings may have significant detrimental effects, ranging from not being offered a job, to the deprivation of liberty, and even death.

Consider, for instance, how the risk of being harmed by expressing one's homosexual feelings and desires depends significantly on the country (legal system) in which they are disclosed. Or consider the obligation to provide information about one's emotions and intentions in the context of requesting a gun license, which could result in the rejection of one's request, compared to being obliged to disclose emotions and intentions in the context of a criminal prosecution, which could result in a conviction. Whereas the former seems not to face any principled objections, and many would feel it should be permissible, the latter is in principle prohibited in most legal systems by the right to silence and the privilege against self-incrimination,[117] which, according to some, primarily aims to protect the accused's mental privacy.[118] As such, the context wherein one reveals information about specific mental phenomena appears to affect the personal interest in (not) doing so. Perhaps, this could

[117] See also Articles 14(3)(g) ICCPR and 6 ECHR.

[118] Dann 1970; Arenella 1982. See Dressler, Michaels & Simmons 2021, p. 446; Farahany 2012b with further references. Cf. Gerstein 1970; Galligan 1988.

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inform our normative analysis of whether, when and which mental states deserve either absolute or qualified protection from human rights.

These intuitions about different informational norms applying in different (social) contexts are reminiscent of Nissenbaum's philosophical account on information privacy. In her book *Privacy in Context*, Nissenbaum argues that privacy concerns should not be limited solely to concerns about control over and access to personal data. Rather, privacy is also about context-dependent social norms that govern the "appropriate flow of information" in different settings and relationships, ranging from family, friends and the workplace to schools, health care and law enforcement. Nissenbaum calls this conception of privacy "contextual integrity",[119] which, in practice, means that different rules and norms apply about confidentiality, access to and control over personal data across different contexts, such as the context of friendship, doctor-patient relationships and criminal justice.[120]

Although the dominant account in law conceives of privacy as *control* over personal information, the ECtHR does consider the *context* of an interference with personal data relevant under Article 8 ECHR. In determining whether an interference with personal data infringes the right to respect for private life, "the Court will have due regard to the specific context in which the information at issue has been recorded and retained".[121] Perhaps, a context-based understanding of privacy may also inform our legal thinking about attributing either absolute or qualified protection to interferences with mental privacy. This may be particularly relevant to the evaluation of mental privacy interference in the context of criminal justice, such as through neuroprediction, since the personal interests at stake in this context are often significant, such as the limitation of personal liberty and a possible decline of well-being as a result of extending the duration of incarceration (due to one's being at "high risk" of reoffending).

4.3.3 *Characteristics of the Victim: Vulnerability*

When assessing, under Article 3 ECHR, whether a specific treatment attains a minimum level of severity and thus engages absolute protection of bodily and mental integrity from the prohibition of ill-treatment, the ECtHR takes account of a variety of personal characteristics of the victim, such as their sex, age and state of

[119] Nissenbaum 2010, pp. 231–232.

[120] Nissenbaum stresses that her framework of contextual integrity is, primarily, a justificatory framework for establishing whether emerging technologies, systems and practices that affect the flow of personal information are morally legitimate. It is not meant as a theory for a legal right to privacy nor a definition of privacy as a legal concept. Nonetheless, Nissenbaum believes her account on information privacy can serve as a foundation for law and regulation by providing a standard against which legal rights and regulation can be tested, as there seems no inherent problem with context-specific legal regulation: Nissenbaum 2010, p. 236. See also De Groot, Tesink & Meynen 2024.

[121] ECtHR 13 February 2020, 45245/15 (*Gaughran/UK*), par. 70. See also ECtHR (GC) 4 December 2008, 30562/04 and 30566/04 (*S. & Marper/UK*), par. 67; ECtHR 25 September 2001, appl.no. 44787/98 (*P.G. and J.H./UK*), par. 57; De Vries 2018, p. 673.

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health. In the case of *Khlaifia and Others/Italy*, the Grand Chamber phrases and, arguably, broadens this factor by appealing in more general terms to the victim's *vulnerability*: "In order to determine whether the threshold of severity has been reached, the Court also takes other factors into consideration, in particular (. . .) [w]hether the victim is in a vulnerable situation, which is normally the case for persons deprived of their liberty."[122]

Various groups of people have been identified as being particularly vulnerable in the ECtHR's case law, including children, people with mental disabilities and persons deprived of their liberty.[123] These groups are considered vulnerable because they are more susceptible to harm than others.[124] By recognising them as vulnerable, the ECtHR acknowledges their challenges and specific needs and underlines the duty of states to provide enhanced protection of people belonging to these groups.[125]

Could a person's vulnerability also be relevant to the question of whether an interference with mental privacy should engage either absolute or qualified protection from human rights? Some people may be more vulnerable to (severe) interference with their mental privacy than others. Think, for example, of those who are illiterate, using a BCI for non-medical purposes such as in gaming, who might be less able to understand, oversee and, therefore, resist the potential threats to mental privacy posed by emerging neurotechnology. Other vulnerable persons may include minors, elderly, people with mental disabilities[126] and convicted persons deprived of their liberty who are 'offered' neurotechnology.[127]

Much has been written about different types and conceptions of "vulnerability" and how it could be relevant to the law. Here, we wish to briefly point to the work of Robert Goodin, who argues that governments, private companies and natural persons bear a special responsibility for protecting those who are particularly vulnerable.[128] Goodin conceives of vulnerability as a relational concept. People are vulnerable to the actions of others – that is, to the infliction of harm on them by others. This kind of relational vulnerability creates a special responsibility of those to whom others are particularly vulnerable: "If *A*'s interests are vulnerable to *B*'s actions and choices, *B* has a special responsibility to protect *A*'s interest; the strength of this responsibility depends strictly upon the degree to which *B* can affect *A*'s interests."[129] This special responsibility applies primarily to the

[122] ECtHR 15 December 2016, 16483/12 (*Khlaifia and Others/Italy*), par. 160.
[123] Peroni & Timmer 2013; Harris et al. 2023, p. 243.
[124] Peroni & Timmer 2013.
[125] Timmer 2013; Limanté 2022, p. 30. Cf. ECtHR 15 December 2016, 16483/12 (*Khlaifia and Others/Italy*), par. 161.
[126] We are aware of the literature criticizing this so-called "labelling approach" to vulnerable groups and persons. Engaging in this debate on how to conceptualize and use "vulnerability" for normative analyses would, however, exceed the scope of this book. See for this, e.g., Fineman 2008; Luna 2009; Rogers, Mackenzie & Dodds 2012.
[127] Cf. Ligthart, Dore-Horgan & Meynen 2023.
[128] Goodin 1985. On vulnerability, see also Rogers, Mackenzie & Dodds 2012.
[129] Goodin 1985, p. 118.

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protection of so-called "vital interests" or "primary goods", such as food, shelter, physical and mental health, self-respect and civil liberties (which includes the civil liberty of mental privacy).[130]

Goodin argues that a person's vulnerability or dependency does not really cause moral concern in and of itself. However, it "necessarily creates opportunities for the strong to *exploit* the weakness of those who are vulnerable and dependent", and this is what causes moral concern and requires taking special responsibility to protect the vulnerable.[131] Exploitation is often defined as taking *unfair* advantage of other people, which implies a normative judgement about those who exploit.[132] Perhaps, this could be relevant to the law too, as a person's vulnerable status may not only increase their risk of being *harmed* (i.e., having their mental privacy interfered with) but also add an additional *wrong* when others, such as government officials, take *unfair* advantage of a person's vulnerable status by yielding, processing and/or disclosing intimate information about people's private mental states and content.

Possibly, this additional wrong could be relevant to determining whether an interference with mental privacy should engage either absolute or qualified human rights protection.[133] As Goodin argues, in no case should people's vulnerabilities "be so severe and asymmetrical that one party has exclusive, discretionary control over resources that the other needs to protect his vital interests".[134] He calls this the principle of "preventing exploitable vulnerabilities". If we apply this principle to the case of protecting mental privacy, absolute prohibition of discretionary control by others over revealing mental content of (certain) vulnerable persons may be appropriate.[135] Whether and how this principle of "preventing exploitable vulnerabilities" could indeed be relevant to the application of the absolute right to freedom of thought, and whether it would fit within the ICCPR and ECHR frameworks, merits further elaboration.

Regarding the neuroprediction of convicted persons, different vulnerabilities could, potentially, be relevant. First, the vulnerable position arising from incarceration – that is, the incarcerated person's "vulnerability at the hands of the authorities, who exercise complete control over her throughout her detention".[136] Second, research shows that incarcerated persons have high rates

[130] Goodin 1985, p. 111.
[131] Goodin 1985, pp. 193–194 (emphasis added).
[132] Zwolinski, Ferguson & Wertheimer 2022, par. 2.2.
[133] Cf. the absolute Article 4 ECHR, for the application of which the exploitative character of a particular treatment is a central element: Jovanovic 2020.
[134] Goodin 1985, p. 206.
[135] Cf. the debate on thought "manipulation", where the exploitation of vulnerabilities is sometimes referred to as a relevant factor for infringing the absolute right to freedom of thought: Teo 2024; Keese & Leiser 2025; UN Special Rapporteur on the Freedom of religion or belief, 5 October 2021, A/76/380, par. 35.
[136] ECtHR 13 May 2008, 52515/99 (*Juhnke/Turkey*), par. 76.

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of psychiatric disorders,[137] which could add to a person's vulnerability.[138] Third, one could argue that, with the rise of neurotechnologies, every person is inherently vulnerable to the exploitation of the lack of control we have over the neural correlates of mental states. As Bublitz argues, "many neuroimaging methods exploit the fact that people lack control over the physiological correlates of thought".[139] Whether, and, if so, to what extent, these different forms of vulnerability should indeed be relevant to the application of the absolute right to freedom of thought is an open question in need of further research.

4.3.4 *Brief Recap*

In this section, we explored how the law could distinguish between the *qualified* protection of mental privacy, provided by the right to privacy and right to freedom of expression, and the *absolute* protection offered by the right to freedom of thought. This will be highly relevant for the permissibility of mental privacy interferences, which are likely to occur in neurorehabilitation. Analogous to the "minimal level of severity" threshold for the applicability of Article 3 ECHR, we explored the possibility of developing a severity threshold for infringing the privacy dimension of the absolute right to freedom of thought. For the construction of such a threshold, we suggested four potentially relevant factors: (1) the method of revealing mental phenomena, focusing on the level of the subject's control; (2) the significance of the personal interest in not revealing specific mental phenomena; (3) the context of the privacy interference; and (4) the person's vulnerability.

4.4 CONCLUDING REMARKS

The personal interest in mental privacy receives considerable protection from the ICCPR and ECHR. This protection is anchored across three different human rights: the right to privacy, the right to freedom of expression and the right to freedom of thought – the latter being considered an absolute right. Some forms of non-consensual neuroprediction in criminal justice plausible interfere with mental privacy and, therefore, potentially infringe the right to privacy and the freedom of non-expression. Regarding the right to freedom of thought, our analysis showed that the right's relevance largely depends on how one interprets "thought". On a broad understanding, which receives some support regarding Article 18 ICCPR (as opposed to Article 9 ECHR), some forms of neuroprediction might be capable of revealing protected "thoughts". One could think of brain data allowing to draw inferences about sexual orientation, or about an intention to commit a criminal offence.

[137] Fazel et al. 2016.
[138] Ligthart, Dore-Horgan & Meynen 2023.
[139] Bublitz 2025, p. 21.

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In this chapter, we also explored how the law could distinguish between the *absolute* protection of mental privacy offered by the right to freedom of thought, and the qualified protection provided by the right to privacy and right to freedom of expression. This issue will be crucial for the permissibility of mental privacy interference, such as through neuroprediction. We considered the possibility of developing a severity threshold for infringing the privacy dimension of the absolute right to freedom of thought. For the construction of such a threshold, we identified four potentially relevant factors: (1) the method of revealing mental phenomena, (2) the significance of the personal interest in not revealing certain mental phenomena, (3) the context of the privacy interference and (4) the person's vulnerability.

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