ISEED – D5.2

Report on Reason and Emotion in Polarised Science-Informed Debates Online

Document ID: **D5.2 - PU**

Date of delivery: **30/09/2022**

Actual submission date: **30/09/2022**

Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Task leader for this deliverable*: **NTNU**

Documents status			
Version	**Date**	**Authors**	**Description**
V1.0	23/09/2022	Elin D. Huckerby (NTNU), Sophia Efstathiou (NTNU)	Draft of first release
	27/09/2022	Giuseppe A. Veltri (UNITN), Paolo Li Donni (UNIPA)	Internal panel - Evaluations and comments
V1.1	29/09/2022	Elin D. Huckerby (NTNU), Sophia Efstathiou (NTNU)	Second Release including evaluators' comments

Acknowledgements and disclaimer

Report on Reason and Emotion in Polarised Science-Informed Debates Online

Abstract

This report provides an overview of the literature that might inform the inquiry into the roles played by reason and emotions in online deliberation on science-informed, polarised topics, such as the climate emergency, related topics such as meat consumption or energy transition, vaccination programmes, or support for gender transitioning. It has been produced as part of the EU project *Inclusive Science and European Democracies* (ISEED), specifically as part of Work Package 5 'Deliberation Online', which pays particular attention to the matter of 'reason and emotion' in online debates. This report is, however, written to be of use to any researchers and policymakers concerned with the dynamics of 'reason and emotion' in deliberation. To be of such use, it takes the form of an overview of a range of entry points into the literature on 'reason and emotion', seeks to situate and contextualise this (potentially problematic) dichotomy, and shows how it comes to bear on thinking in a variety of settings and disciplines.

Keywords

Affect, Emotion, Reason, Rationality, Deliberation, Democracy, Politics, Social Media (SoMe), Online Debate, Polarisation, Science

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Executive Summary

Public debates in contemporary societies are a very complex object to investigate from a social science perspective. One key element is the relationship between rational thinking and emotions. Our understanding of both has been evolving through times, from a more philosophical perspective to the current cognitive and neuroscience takes on the relationship between the two. In human societies, however, reason and emotion cannot be easily disentangled by the social and political embodiment that characterizes the rich canopy of social interactions in the public sphere.

The present report, therefore, presents a range of possible approaches have been indicated, such as the 'nudge' literature in behavioural economics, literature on deliberation as a material practice, online discourse-making as a set of social practices and literature on the politics of affect and emotion (Ahmed 2004). Additionally, the project proposal suggested looking at work in science and technology studies, feminist theory, and affect studies.

The multidimensional aspects of both rational thinking and the role of emotions and affect suggest that, at least at this stage, focusing on only one of the theoretical frameworks available would preclude important insights provided by other alternative approaches. For example, the suggested 'nudging' literature centres on decision-making, but so do several other lines of research and argument. A critique that is often moved to this approach is the risk of compressing individual-based reasoning with a group level of analysis. For example, when in behavioural science research, a bias in reasoning is identified, it refers to the individual level of reasoning. Therefore, the bias is a deviation from a better decision for the individual. However, it might not necessarily be the case for a group level. An example is confirmation bias which is detrimental at the individual level but appears to be potentially beneficial at a group level.

As we are investigating public debates, the literature that addresses the roles of reason and emotion in shared deliberation and decision-making is of particular interest, and, as noted, specifically those contributions that consider deliberation as a social and material practice. A related category can be formulated by considering the politics of affect and emotion: how the presence and absence of affective content in public debates shape public opinions, judgments, group formation, and collective action. Another salient category is the literature that addresses online debates and their mechanisms: the difference it makes is that these debates take place in the virtual environment rather than in person. As we are addressing

science-informed topics, in particular, literature on these matters emerging from science and technology studies could be helpful. So could relevant literature from literary theory, feminist theory, and affect studies. Additionally, literature from as disparate fields as political/democratic theory, neuroscience, psychology, anthropology, sociology, and economics can offer further insights, and a selection of concepts from these different traditions are explored in this document.

The core messages of this review are:

- A more multifaceted view of how 'reason and emotion' play out in democratic discourse is vital to work that strives to achieve greater inclusion in the face of complex societal challenges.

- Facilitating informed debate and democratic participation relies on working *with* affective experiences and responses, not on excluding these from 'rational' debate.

- While the bounded rationality framework has provided an effective way of tackling people's decision-making, see the widespread adoption of 'nudging' first and now the complementary approach of 'boosting', it focuses on the individual level only, and it does not consider social and power relationships within society.

- One temptation of the behavioural approach could be the technocratic solution, i.e., an argument along the lines of 'given the limited rationality of the citizen, policy decisions should be the exclusive preserve of experts. Such an argument would go in the direction of favouring technocratic solutions. The application of behavioural economics to public policy, according to the approach of nudges that help citizens make better choices, seems to take such an attitude, prompting criticism of paternalism from liberals and pastoralism. In reality, bounded rationality is a condition that affects everyone, even experts. There are cognitive limitations that are even specific to experts, such as the *curse of knowledge.*

- An important alternative approach from social theory, by Hugo Mercier, proposes that reason *is* deliberation and that sound reasoning is the product of a collective, collaborative effort. Hence it is inherently linked to the notion of democracy: democracy preserves the very conditions for reasoning.

- Another mode to explore the interplay of reason and emotion and its role in inclusive science and democratic deliberation is through the work of feminist

scholars and science and technology studies scholarship in public engagement.

- Amon the latter context, we propose that new approaches to inclusion, such as art-based engagements with social, ethical and political questions, can be characterized as facilitating 'material deliberation'.

Background: ISEED, WP 5, and its aims

Inclusive Science and European Democracies – A Horizon 2020 Project

ISEED – *Inclusive Science and European Democracies* is an international research project funded by the European Union's Horizon 2020 Research and Innovation Programme (2021-2024, GA 960366). It seeks to support and facilitate inclusive, innovative, and reflective societies in Europe, specifically by "Developing deliberative and participatory democracies through experimentation" (https://iseedeurope.eu/about/).

ISEED posits that we face a crisis in democratic ideals in Europe. It observes that societal challenges such as responding to financial crises and the COVID pandemic can stimulate public scepticism and, at its worst, lead to feelings of powerlessness and disengagement with political process and democracy. Coupled with the rise of extremist, alt-right, exclusionist discourses and politics, such crises threaten European democratic values like inclusion, participation and diversity in public deliberation and political action. In response, the question ISEED explores is: What means do we have, besides political representation, to inspire and invite the people of Europe to actively participate and contribute to the knowledge-based democratic governance of Europe? ISEED is motivated by a desire to use insights from citizen science to explore modes of engagement and participation. Citizen science works by inviting and including non-scientists in the collection and production of scientific knowledge. ISEED analyses cases of successful citizen science to explore what we might learn about how to ensure people's informed inclusion and participation in knowledge-based democratic deliberation. Such insights are applied to cases of public debate on science-based issues, for example climate change or vaccination programmes. Attention is paid to publics traditionally included, but also focussed on counter-publics on the margins of these debates.

Why 'reason and emotion' in polarised science-informed debates?

This report is written as part of Work Package 5: *Prospects for participatory deliberation using digital technologies*. A key question in this WP is what roles 'reason and emotion' play in argumentation online. This WP aims to "unveil and analyse the explicit and/or implicit structure

of argumentation in polarised discourses in social media concerning the uses (and abuses) of science in public debate" (https://iseedeurope.eu/our-research/deliberation-online/): It uses "discourse analytic tools (e.g., the Penelope text analytical platform) to study the role of emotions, compared to logical reasoning and polarisation strategies in driving discourses within digital media, particularly in the context of the rise of populism in political debate." The result of these analyses is used to experiment with communication strategies, and to conduct interviews informed by the insights generated by the WP. Importantly, this WP aims not merely to analyse this matter through formalised approaches but also through the qualitative, philosophical analysis of online exchanges on polarising science-informed topics. The overall goal of these activities is to understand better the processes that drive decision-making in these discursive and affective spaces.

As a starting point for the qualitative analysis, a range of possible approaches have been indicated, such as the 'nudge' literature in behavioural economics (Thaler and Sunstein 2008), literature on deliberation as a material practice (S. R. Davies et al. 2012), on online discourse-making as a set of social practices (Shove, Pantzar, and Watson 2012), and literature on the politics of affect and emotion (Ahmed 2004). Additionally, the project proposal suggested looking at work in science and technology studies, feminist theory, and affect studies. The review this report contains has been undertaken to scope the literature on reason and emotion and inform work on the qualitative analysis.

Relevance of this review for other WPs in ISEED, and beyond

This report seeks to be useful to anyone concerned with the topic of 'reason and emotion' in deliberation and how to support inclusive (online) deliberation. While it maps out the interdisciplinary terrain in which WP5's qualitative work finds itself, this report is written to be of use to the project consortium as a whole, including stakeholders in the EU, to researchers beyond ISEED, and to publics, counter-publics and democracies beyond Europe.

Within ISEED, we see this report as particularly pertinent to work taking place in WP2, WP3, and WP6. WP2, "From participation to deliberation: Towards a new model of 'public sphere' for knowledge societies", aims to contribute toward an efficient model of deliberative participation in democratic societies. It seeks to distinguish key aspects of engagement and identify behavioural conditions for people's disposition towards engaging. The matter of 'reason and emotion'–and how these influence participation, inclusion, and debate–appears

of relevance to this work. WP3, "Mapping and interpreting deliberative and participatory processes", searches for best practices for engaging the public, and asks what effective communication in participatory processes looks like. It appears of importance to consider the roles that 'reason and emotion' play in these processes and practices. On similar grounds, this report is relevant for WP6, "From citizens and science to citizens and democracy", which asks how to implement a participatory model of the public sphere, and what methods and policies will work to this end.

The broader usefulness of this report is important to emphasise. Throughout ISEED's descriptions, the ideas of 'reason' and 'emotion' are–at least on the level of surface rhetoric– taken to be fairly stable constructs, possible to pull apart in order to set up a structural and structuring dichotomy. As this review shows, this is no longer unproblematic, or even viable. ISEED is unlikely to be the only research project, and the EU unlikely to be the only governing and policy-making body that approaches these notions as if they were given (at least to an extent). What this report provides is an overview of ways to question this pairing, and an introduction to why doing so matters. This report aims to give perspective and nuanced understanding by outlining the historical and philosophical roots of these distinctions, engaging with and at times challenging the 'reason versus emotion' dichotomy, and by suggesting how ethics and politics are shaped by how we conceive these constructs. Doing so can help situate what we are working towards as we aim for more inclusive democracy in Europe and beyond. A more multifaceted view of how 'reason and emotion' play out in democratic discourse is vital to work that strives to achieve greater inclusion in the face of complex societal challenges. Understanding affective responses is not limited to 'the body' or 'the human experience' but as a core element of cognition and reason-giving matters as we, for instance, discuss how to support those disproportionately affected by climate breakdown. It matters as we work towards sex- and gender equality across a diverse landscape of faiths and legislative systems, or as we consider the economic or affective mechanisms of marginalisation and racialisation in Europe and globally. Facilitating informed debate and democratic participation relies on working *with* affective experiences and responses, not on excluding these from 'rational' debate. A summary of this report for a broader audience will be posted on the ISEED-website to make it available as a resource for anyone within or beyond ISEED concerned with such matters.

Approach and Methodology

This report proposes that unreflectively using the terms 'reason' and 'emotion' to provide a structuring dichotomy, is conceptually, epistemologically, and politically problematic. It is not given that there is such a thing as 'reason' or 'rationality,' or even 'logic, separate and distinct from emotions and (bodily) affect. As this report shows, relevant scholarship increasingly problematises that there is an opposition here at all and instead considers affects and attitudes as integral parts of our processes of cognition and deliberation.

To illustrate why these constructs are less circumscribable than we often presume, this report takes a critical approach to the "reason" versus "emotion" dichotomy and begins by introducing literature that traces and problematises this trope. The philosophical schools that most explicitly and consistently have collapsed the distinction between reason and emotion are pragmatist philosophy, and phenomenology. These schools have shaped core strands of feminist theory, literary theory, deconstruction/poststructuralism, affect studies, and other approaches where the separation between body/experience and mind/reason undergoes further questioning and dismantling. Pragmatist philosophy is particularly important for the 'material deliberation' literature and the literature that understands online discourse-making as a set of social practices, mentioned above. As the Grant Agreement proposes these as starting points for the qualitative discussion in WP5, and, furthermore, as WP2 has adopted an explicitly pragmatist philosophical outlook, it seems fruitful to adopt pragmatist philosophy as the theoretical approach for this report.

After historicising the "reason versus emotion" dichotomy, and introducing the pragmatist approach, this report moves on to present relevant literature from a range of disciplines from a pragmatist point of view. It thus takes the form of a critical review of scholarly literature. A literature review can "help to provide an overview of areas in which the research is disparate and interdisciplinary," and synthesise "research findings to show evidence on a meta-level and to uncover areas in which more research is needed, which is a critical component of creating theoretical frameworks and building conceptual models" (Snyder 2019). A review of literature on 'reason and emotion' is thus a useful resource to compile as part of an inquiry into how these play out in online deliberation.

This report presents a meta-narrative review, a model introduced by Greenhalgh and colleagues in 2004 (Greenhalgh et al. 2005). Such cross-disciplinary reviews "illuminate a heterogeneous topic area by highlighting the contrasting and complementary ways in which researchers have studied the same or a similar topic" (Wong et al. 2013). The topic ("reason and emotion") is thus the focus, and the literature is drawn from a variety of fields. This

approach suits the aims of ISEED particularly well, also because Greenhalgh et al. (2005) developed their notion of meta-narrative reviews as a response to the challenge of providing policy advise on complex topics informed by diverse fields. Moreover, this is pragmatic approach that aims to both embrace and explain the diversity of the field and contextualise the knowledge it produces. Such reviews begin with an exploratory, unstructured, 'territory mapping' search, followed by appraisal, narrative synthesis, and a recommendations phase. A meta-narrative review of the literature on "reason and emotion" amounts to a preliminary study that enables the qualitative work in WP5 to proceed which doubles as an introduction to this complex topic useful for developing policy recommendations.

There are several ways to group the relevant literature, apart from by field. To select one, it helps to consider that the overall goal for WP5 is to better understand the processes that drive decision making in online rhetorical spaces. The suggested 'nudging' literature centres on decision making, but so do several other lines of research and argument. As we are investigating public debates, the literature that addresses the roles of reason and emotion in shared deliberation and decision making is of particular interest, and, as noted, specifically those contributions that consider deliberation as a social and material practice. A related category can be formulated by considering the politics of affect and emotion: how the presence and absence of affective content in public debates shape public opinions, judgments, group-formation, and collective action. Another salient category is the literature that addresses online debates and their mechanisms: the difference it makes that these debates take place in the virtual environment, rather than in person. As we are addressing science-informed topics in particular, literature on these matters emerging from science and technology studies could be helpful. So could relevant literature from literary theory, feminist theory, and affect studies. Additionally, literature from as disparate fields as political/democratic theory, neuroscience, psychology, anthropology, sociology, and economics can offer further insights.

However, it is beyond the reach of this report to give a comprehensive account of all the pertinent literature. Our aim is to give a cross-disciplinary overview of some of the most salient literature related to reason, emotion, decision making, deliberation, public debates, online debates, political action, and polarising science-informed debates. As outlined, the report aims to provide this within a critical narrative about how we understand the constructs of "reason" and "emotion". In accordance with the aims of a meta-narrative review, each section also provides an appraisal of the reviewed literature.

Reason and Emotion in Polarised Science-Informed Debates Online: Review of Relevant Literature

Problematising "Reason versus Emotion"

The notion of reason as a truth-tracking faculty, separate and distinct from emotions and/or bodily affect, has a problematic history that goes back at least two millennia. This history, and how the idea of Reason (or Rationality) – as a distinct and superior category to passions/emotions/affects – is tied to oppressive practices of, for instance, racism and sexism, is well established (Bernstein 1986; Haraway 1991; L. T. Smith 1999; Heikes 2016). In the last half-century, however, the reason-versus-emotions (or passions) dichotomy has been thoroughly challenged, to the extent that it is now a given that human decision-making and deliberation are *not* purely reason-abled processes. To claim that our experiences, standpoint, and affective responses play pivotal parts as we decide what we believe and what to do, is no longer controversial. Yet, we *do* still – at least in ordinary life – tend to think of some actions and (affective) responses as 'reasonable' and others as not. Even if we dispensed with the ontological (metaphysical) partition between reason and emotion, we would likely still be inclined to operate with a threshold value for just how much affective prodding or responding we would permit before a deliberation process would be deemed 'irrational' or manipulative. Systematically disentangling this matter is *far* from easy. Gripping it in a way that allows us to both think of affects as part of rationality while *also* letting us retain a sense of what is entailed in 'not-irrational', or biasing deliberation, is hard.

Why is the idea of "Reason" problematic? A short history of reason versus emotion in Western philosophy and theory

It is important – and not just for this study, but in society at large today – to understand why the idea of "Reason" became problematic. It might seem counterintuitive: was not the Enlightenment – and is not our progress – built on Reason? Steven Pinker is a famous proponent of this view. In his bestselling *Enlightenment now: The case for reason, science, humanism, and progress* Pinker insists on the capability of "reason and science" to "enhance human flourishing" (Pinker 2018). He has, however, received substantial criticism for

advancing an account where anything not inscribable into the individualist, rationalist, universalist framework of Enlightenment utilitarianism is at best secondary, and at worst detrimental to human progress (Goldin 2018; Noonan 2019). Such critics, and critics that contest the universalist framework of the human more generally (Sharpe 2016; Braidotti 2013; Muñoz et al. 2015), reject the view that the Enlightenment's teleological progress-narrative ought to be the story that governs their aims, practices, lives, and worldviews. That does not entail they are against either progress or science, only that these are evaluated against different criteria and sought integrated in other ways.

The critique of 'Reason' is not new. In 1986, the philosopher Richard Bernstein asked; "Why is there a rage against Reason? What precisely is being attacked, criticized, and damned? Why is it that when 'Reason' or 'Rationality' are mentioned, they evoke images of domination, oppression, repression, patriarchy, sterility, violence, totality, totalitarianism, and even terror?" (Bernstein 1986, 187). Bernstein described how there are two narratives about Reason unfolding in parallel. One story tells of how Truth and Reason overcomes setbacks and trials, gains in strength and power, spreads, and (eventually) prevails. The other, which he traces back to Fredrik Nietzsche, tells of 'relentless decline, degeneration, catastrophe, and forgetfulness': it is a story where historicising 'Reason' leads to the loss of Truth, of firm foundations, and to the spread of relativism and nihilism (Bernstein 1986, 186–87). The former is the story Pinker tells. The latter is the narrative taken up by philosophers such as Martin Heidegger, and shapes the thought of those, like Max Horkheimer and Theodor W. Adorno, who see the triumph of Reason not only as a misguided aim, but a vision that must be actively resisted, or it will lead to devastating techno utilitarianism (Horkheimer and Adorno 2022).

The first story is the traditional (male-dominated, Western) Enlightenment narrative. While ancient Greek philosophy drew a distinction between reasoned, justified, argumentation and persuasion not rooted in reasoning, and considered reason (logos) as a faculty that distinguished humans from animals, it was during the Enlightenment that the idea of Reason as a distinct metaphysical construct took hold. Rationalist philosophers such as René Descartes (1596–1650) and Gottfried Wilhelm Leibniz (1646–1716) had already aimed to establish firm grounds for rational thought, through demarcating an essentialist conception of Reason. While empiricists such as David Hume (1711–1776) objected that even human reasoning should become a matter of naturalistic inquiry – that reason was part of experience – it was Immanuel Kant (1724–1804) who solidified this Enlightenment narrative around Reason, and Reason as the divine essence that made us human. While Kant considered Hume's empiricism vital, he worked to synthesise rationalism and empiricism – to figure out the role of reason in practice, in experience, and in judgement. His ultimate aim was

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nevertheless to discern the extent to which the faculty of Reason allows us to get at unalterable truths.

Central to these endeavours (Hume excluded) is the desire to pin down what Reason *is*, as separate from experience, human bodies, and from 'the passions': from emotions and affect, and individual tastes and whims. One might say that the mind became a substitute for the soul – and to be separated, as the soul was, from the body. Reason was divinised by being posited as the essence of what makes us human, not only separate from the beasts, but from our animal nature. Pinker's 2018 narrative retains strong elements of this depiction still. We might call this *the teleological Reason narrative* (teleological denotes developments, progress, trajectories directed towards an ultimate end/purpose). In it, Reason is conceptualised as a Truth-tracking faculty that strives towards its eventual and inevitable triumph. It is separated from experience/passions/emotions/affect, and stands above individual differences and perspectives. Importantly, this narrative cannot be separated from a specific, essentialising conception of human nature where the mind/reason (or the soul as the religious absolute-truth-tracking faculty) stands apart from the material body.

The second story – where Reason becomes problematic – breaks with this tale. While Bernstein traces it to Nietzsche, it has roots in philosophies emerging alongside Descartes and Kant. Elisabeth van der Pfalz, princess Palatine of Bohemia (1618–1680) challenged the Cartesian dualist account. In letters to Descartes, she problematised the existence of a mind separated from and 'uncontaminated' by the body (Ebbersmeyer 2015). Similarly, Anne Conway and Margaret Cavendish in the 1660s and 1670s, and later Mary Astell, Damaris Marsham and Catharine Cockburn in the 1690s and early eighteenth century, criticise, each in different ways, the dualisms of male philosophers of their time, not unlike more recent feminist thinkers (Broad 2009). It is important to note the political implications of such dualist thinking about mind and body and to know that these thinkers, suppressed by the dominant Reason-narrative, were cognisant of the political and emancipatory potential of the challenges they mounted. The double move of keeping the mind and body strictly separated and associating the female with the bodily and irrational was used to ground discriminatory practices and politics. This extends to the view of nonhuman animals within Cartesianism. Cavendish specifically challenged Descartes' image of the animal-machine, as lacking reason and unable to feel pain. Cavendish argues that animals have a reason of their own, and intelligence that cannot be reduced to behavioural habits. She further challenges the supremacy of humans as arbiters of these questions:

> Concerning the Preeminence and Prerogative of *Man,* whom your *Author* calls *The flower and chief of all the products of nature upon this Globe of the earth;** I answer,

That Man cannot well be judged of himself, because he is a Party, and so may be Partial; But if we observe well, we shall find that the Elemental Creatures are as excellent as Man, and as able to be a friend or foe to Man, as Man to them, and so the rest of all Creatures; so that I cannot perceive more abilities in Man then in the rest of natural Creatures; for though he can build a stately House, yet he cannot make a Honey-comb; and though he can plant a Slip, yet he cannot make a Tree; though he can make a Sword, or Knife, yet he cannot make the Mettal. And as Man makes use of other Creatures, so other Creatures make use of Man, as far as he is good for any thing: But Man is not so useful to his neighbour or fellow-creatures, as his neighbour or fellow- creatures to him, being not so profitable for use, as apt to make spoil.

*[Henry More, *An Antidote against Atheism,* II.iii, 54

(Cavendish and Cunning 2019, 78)

These passages show that if the thoughts of philosophers such as Cavendish had not been subjugated under a simplified, patriarchal "Reason, the essence of Man, will win out"-narrative, our conception of reason and rationality as (if pure then) infallible, and of Man as above nature, might have long ago shifted in the integrative direction of contemporary science and theory (see the following chapters).

Writing in the same period, Baruch Spinoza (1632-1677), also resisted the idea of mind as independent of the world and critiqued understandings of Man as "above" Nature. Spinoza moreover emphasised human passions and affects:

Most of those who have written about the Affects, and men's way of living, seem to treat, not of natural things, which follow the common laws of nature, but of things that are outside nature. Indeed they seem to conceive man in nature as a dominion within a dominion. For they believe that man disturbs, rather than follows, the order of nature, that he has absolute power over his actions, and that he is determined only by himself. (III, Preface)

Spinoza specifically considered affects, whether as autonomously generated "actions" or other-inflicted "passions", which include affects like love, jealousy, and anger, as bound by laws of nature.

I shall treat the nature and power of the Affects, and the power of the Mind over them, by the same Method by which, in the preceding parts, I treated God and the Mind, and I shall consider human actions and appetites just as if it were a Question of lines, planes, and bodies. (III, Preface)

For example, in the third part of the *Ethics*, "Of the Origin and Nature of the Affects," Spinoza discusses a particular affect, "joy" (*laetitia*) as one of the primary affects; "that passion by which the mind passes to a greater perfection" (77). This affect of joy, which in Spinoza is always related to mind and body at once, is connected to pleasure or cheerfulness. However, these are only species of joy as they are chiefly related to the body. There is also a political dimension of the affect of joy in Spinoza through the connection he makes between passion and action: "Joy and sadness are passions by which each one's power... is increased or diminished, aided or restrained" (101). Spinoza was taken up by poststructuralist philosophers such as Gilles Deleuze, and incorporated in vital strands of twentieth century theory, such as feminist theory, and affect theory. In Deleuze, joy is, for instance,

 "what opens the capacity for being affected to the greatest number of things" (Deleuze 1988, 71). García Zarranz (2016) further examines the affect of joy as an ethics of dissent in relation to feminist practice.

Bernstein's placing of the origins of the counter-Reason story in Nietzsche is, then, a substantial oversimplification. Not only does it omit the above voices, whom Nietzsche does not accredit, but it also leaves out influences he does rely on. Nietzsche's questioning of the teleological Enlightenment narrative and critique of European, Christian moral commitments, as well as his (epistemological) perspectivism, in works such as *The Gay Science* (1882), *On the Genealogy of Morality* (1887), and *The Will to Power* (1901) takes up, for instance, the ontological irrationalism of Arthur Schopenhauer, and dominant themes in Romanticist poetry, criticism, and philosophy. It responds to the dialectical progress-narratives of German Idealism, and especially that of Hegel (Nehamas 1987 (1985); Nietzsche 2020; Milnes 2010; Hamilton 2016). The chapter 'Johann Georg Hamann: Metacritique and Poesis in Counter-Enlightenment' in (Hamilton 2016) offers great insight into romanticist thinking as attempting to conceive of the world and knowledge in a way that opposes Enlightenment rationalism. (Mack 2020) explores how "Spinoza's heritage in Romanticism" is, precisely, that "loss of one single, teleological line of thought".

Nevertheless, Bernstein's contrast between a teleological Reason narrative and a counter-Reason narrative is instructive. The former wants to keep Reason pure, the latter to complicate the picture. While Enlightenment thinkers like Descartes saw themselves as the exposers of superstition and prejudices, the the critical effort they sat in motion ends in the exposure of the teleological Enlightenment narrative as a myth (Bernstein 1986, 191). Contemporary theories emerging from the tradition where the notion of pure Reason was questioned, reject that there is reason, or ideas, separate from experience, culture, language, historical contingencies, and by this that there is inevitable progress towards Truth. In

postmodernist theories, for instance, the privileging of Reason is retold as a story about mastery and control This second story – we might then call this *the counter-Enlightenment narrative* – explains the privileging of Reason as emerging from a desire for mastery and control (Bernstein 1986, 195). Bernstein cites Stephen Kalberg, summing it up well: 'In mastering reality, [the aim of all types of rationality] is to banish particularized perceptions by ordering them into comprehensible and 'meaningful' regularities (Kalberg 1980, 1160)." This, Berstein observes, is the impulse those who critique the idea of Reason and its twin Rationality, which Nietzsche, Heidegger, Adorno, and, Bernstein adds, Max Weber, "rage" against. Bernstein sums up the critique of Reason/Rationality posed by modernist, postmodernist/poststructuralist/deconstructionist thinkers, and it is worth quoting at extensive length because it pithily brings together the core strands of this important, but often misunderstood and even lambasted, postmodernist critique of Reason -even if Bernstein - quite unfortunately- neglects to recognise the contribution of feminist thinking to these intellectual movements:(Bernstein 1986, 195). Bernstein cites Stephen Kalberg, summing it up well: "In mastering reality, [the aim of all types of rationality] is to banish particularized perceptions by ordering them into comprehensible and 'meaningful' regularities" (Kalberg 1980, 1160). This, Berstein observes, is the view of critics who "rage" against Reason, and its twin Rationality, such as Nietzsche, Martin Heidegger, Theodor Adorno, and, Bernstein adds, Max Weber. While Bernstein's genealogy of the sources of this "rage" is lacking in diversity, his explanation of the critique of Reason/Rationality posed by modernist and postmodernist/poststructuralist/deconstructionist thinkers is worth quoting at extensive length, because it pithily brings together the core strands of this important, but often misunderstood critique of Reason:

> What such thinkers as [Jacques] Derrida— and in a very different manner, [Michel] Foucault — have shown us is that such ideas as authentic dialogue, community, communication, and communicative rationality can potentially — and indeed have in the past — become "suffocating straightjackets," and "enslaving conceptions." This is already anticipated by [Walter] Benjamin's and Adorno's deep suspicion of what "communication" has become in an administered world — little more than the technological exchange of information to be utilized — input and output of "data." We need only listen to the political rhetoric of the leaders of the great superpowers to hear what "dialogue" means today — a form of skillful manipulation which seeks to obtain the greater military advantage.
>
> But there are even more subtle, unobtrusive, but pernicious dangers that need to be unmasked and revealed. There can be no dialogue, no communication unless beliefs, values, commitments, and even emotions and passions are shared in

common. Furthermore, I agree with [Hans-Georg] Gadamer and [Alasdair] MacIntyre that dialogic communication presupposes moral virtues — a certain "good will"— at least in the willingness to really listen, to seek to understand what is genuinely other, different, alien, and the courage to risk one's most cherished prejudgments. But too frequently this commonality is not really shared, it is violently imposed. A false "we" is projected. As I read Derrida, few contemporary writers equal him in his sensitivity and alertness to the multifarious ways in which the "history of the West" — even in its institutionalization of communicative practices — has always tended to silence differences, to exclude outsiders and exiles, those who live on the margins. The so-called conversation of mankind has been just that — a conversation of mankind, primarily white mankind. This is one of the many good reasons why Derrida "speaks" to those who have felt the pain and suffering of being excluded by the prevailing hierarchies embedded in the text called "the history of the West" — whether they be women, blacks, or others bludgeoned by exclusionary tactics.

As for Foucault — at his best — he shows us that if we take a cold, hard look at the discursive practices that underlie so much of modern "humanism" and the human sciences, we discover power/knowledge complexes that belie what their ideologues profess. In novel ways Foucault shows us the truth of Benjamin's claim, "There is no document of civilization which is not at the same time a document of barbarism." Sometimes what is required to communicate — to establish a reciprocal "we" — is rupture and break— a refusal to accept the common ground laid down by the "other." It is extremely easy to pay lip service to recognizing and respecting genuine plurality, difference, and alterity and perhaps nothing is more difficult than to achieve this in practice — and such practice is never completely stable or permanent. (Bernstein 1986, 205–6)

It is against this backdrop that the idea of "Reason" is rendered problematic. And it is thus against this backdrop that we see contemporary work as not only critiquing traditional conceptions of reason, rationality, truth and knowledge, but attempts to shed the innate desire for *mastery* taken to be at its core.

Such work thus innately objects to thought and language ("the mind") being removed from experience, materiality, cultural contingencies, affective forces and emotional responses. This includes but is not limited to work in contemporary feminist and queer theory, critical race theory, and affect studies, discussed in a next section. See for instance Barad 2003, 2012; Damasio 2003, Ahmed 2004, Plumwood 2002, Haraway 2016 .

A pragmatist conception of "reason" and "emotion"

Bernstein was a pragmatist philosopher and ends his discussion of the "rage" against "Reason" by warning that while we should expose the naïve, teleological Enlightenment narrative as myth, and while the Romanticist/Nietzschean (post)modernist critique of Reason is well warranted and important, we must avoid thinking of the *latter* as having a teleology: to think we are driven towards relativism and nihilism. Instead, he suggests, we must make a 'practical' commitment to communicative reason (Bernstein 1986, 207). As noted above, pragmatist philosophy offers a third path between the teleological Reason narrative and a counter-narrative leading to relativism and nihilism.

Pragmatist philosophy exerts a growing influence at our current post-postmodernist moment, in part because it offers a way between holding on to the "Reason and Truth (Science) will prevail"-narrative, and postmodernist relativistic attitudes. Pragmatism grants the point that there are no ultimate Truths, no (metaphysical) ontological distinctions of kinds. However, it resists relativism by instead focusing on making pragmatic, functional, use-considered distinctions. That is, a pragmatist approach would say there is no such thing as a faculty of "Reason" in and of itself, that exists separate from emotions. It would also say that the word "reason" currently plays a role in our language and ask what that role is. Does it work for us? To what ends? Could it be ameliorated? Replaced? If our ends are, say, the lessening of suffering and oppression, might it be that moving away from talk of reason and rationality as essential to human personhood would serve this purpose better? As seen above, many would say yes to this latter question.

In pragmatist (contemporary) philosophy, words accrue meaning through use – and changes as practices change (the most famous proponent of this view was Ludwig Wittgenstein, who was influenced by the early pragmatists). The word "true", for instance, accrues meaning through being the word we use to indicate that we condone what's being said as the best, or most useful way to put something. On this view, what's "reasonable" becomes a fully contingent matter. It will depend on what it is used to indicate, denote, cope with, within a particular culture, time, language and so on. Being "rational" becomes a matter of being capable of conforming to a particular language game. Much contemporary pragmatist thought revolves around giving an account of reasoning where which means engaging in a game of *giving and taking reasons*. Being able to justify what you claim. The lead proponent of this view is Robert Brandom, who, in books like *Making it Explicit: Reasoning, Representing, and Discursive Commitment* (Brandom 1994) *, Articulating Reasons* (Brandom 2003), and

Reason in Philosophy: Animating Ideas (Brandom 2009), give an extensive and detailed account of reason as a (legalistic) game of giving and taking justificatory *reasons*.

From a pragmatist point of view, emotions can count as reasons. Or, more precisely, as *causes*. Especially on the Rortyan account, the distinction between reasons and causes collapses, and we can talk of both justifications formulated in academic language and someone colloquially describing how they feel in a given situation as *causes* that lead to us holding beliefs or changing our minds. Considerations of why something should count as reasonable or persuasive is moved to considerations of practice and consequences:

> "The right way to construe this question is 'Why do you find what you just said persuasive?' That is a question which ignores the traditional distinctions between reasons and causes, psychology and logic, rhetoric and demonstration. It is a *practical* question, a polite version of the question 'What am I going to have to do to convince you?'" (Rorty 1985, 463).

That is, then, the baseline conception of "reason and emotion" proposed in this review. "Reason" is an idea that might be useful, depending on how and when it is deployed, but it is a culturally contingent idea that is also deeply problematic. The same applies to "emotion": as the below shows, contemporary research increasingly sees affective responses and motives as driving and shaping cognition and the game we play of giving and taking reasons. Rhetoric (of any genre, spoken or written), art included, displays of affect and emotions included, and the intellectual and affective effects of our observations and experiences alike, can all function as causes for solidifying or changing perceptions, affective responses, beliefs, and vocabularies, and in turn how we respond, resonate and engage in conversation. See (Kochan 2015) on why the epistemic importance of emotions is a neglected theme in philosophy and especially philosophy of science.

There is another important reason to turn to pragmatist philosophy to forge a route between the naïve teleological Enlightenment narrative and the counter-Enlightenment "we're doomed to and by nihilism" story. Pragmatism sets out to hold on to the animating aim of Enlightenment thinking more broadly: an end to, as Bernstein put it, "oppressive inequality, the institutionalization of freedom, and a reign of peace" (Bernstein 1986, 190). While it dispenses with the fantasy that Reason will – ultimately – win us these aims, pragmatism retains the aims, but reconstrue them as human-imagined goals worth working towards. Pragmatism asks us to posit such aims and then consider our practices in relation to them: do our practices work, or not? There is an Enlightenment hope at the core of both ISEED and the EU as an institution-building project: improvement of our practices, the alleviation of injustices and oppression, and a more peaceful future is possible. The question ISEED centres, is how we might change our (communicative) practices to aid this aim. Pragmatist philosophy offers

an approach to retain such core elements of Enlightenment thinking while encouraging us to become increasingly attuned to its problematic history and to the effects of how we engage to realise core aims (Brandom 2021). For further literature on pragmatism and related approaches, see, for instance, (James 1907), (Dewey 1917, 1929, 1930), (Wittgenstein 2009), (Rorty 1979, 1989), (Grimstad 2013), (Curtis 2015), (Dieleman, Rondel, and Voparil 2017), (Shusterman 2018), (Llanera 2020).

Following this background in philosophical thinking, we next approach the matter of "reason and emotion" in a range of contexts – an overview that can serve as a guide to the literature on this topic.

Scientific Conceptions of Affect and Emotion: Neuroscience, Psychology and Behavioural Economics

The above backdrop is vital to analysing how "reason and emotion" play out in democratic deliberation, particularly deliberation online. It allows one to question this dichotomy as one approaches how these notions are deployed in various disciplines, including – and perhaps even especially – the scientific literature. This section explores the distinction between reason and emotion in scientific fields including neuroscience, psychology and behavioural economics.

Neuroscience

Presenting her theory of 'constructed emotions' in 2017, Lisa F. Barrett, one of the most influential neuroscientists of today, writes:

> The science of emotion has been using folk psychology categories derived from philosophy to search for the brain basis of emotion. The last two decades of neuroscience research have brought us to the brink of a paradigm shift in understanding the workings of the brain, however, setting the stage to revolutionize our understanding of what emotions are and how they work. In this article, we begin with the structure and function of the brain, and from there deduce what the biological basis of emotions might be. The answer is a brain-based, computational account called the theory of constructed emotion. (Barrett 2017b, 1)

In this article, and in her book *How Emotions Are Made: The Secret Life of the Brain* (Barrett 2017a), Barret goes on to argue that it is the traditional *philosophical* ideas of reason and emotions that led us astray. Scientists, she writes, "must abandon essentialism and study emotions in all their variety" (Barrett 2017b, 16). Emotions, on her account, "should be modelled holistically, as whole brain-body phenomena in context." Barret is worth quoting again at some length:

> Emotions are constructions of the world, not reactions to it. This insight is a game changer for the science of emotion. It dissolves many of the debates that remained mired in philosophical confusion, and allows us to better understand the value of non-human animal models, without resorting to the perils of essentialism and anthropomorphism. It provides a common framework for understanding mental, physical, and neurodegenerative disorders... and collapses the artificial boundaries between cognitive, affective, and social neurosciences... Ultimately, the theory of constructed emotion equips scientists with new conceptual tools to solve the age-old mysteries of how a human nervous system creates a human mind. (Barrett 2017b, 16)

What is on display in Barret's work, is a way of understanding cognition, 'reason', where affective responses are woven into the very fabric of reasoning. They influence and even facilitate reasoning. Reasoning as well as emotions become constructs that are not only emergent and contingent upon our experiences and lifeworld, but notions that dissolve as ontological categories, and become pragmatic constructs conditioned on cultural situation, language, communities, relationships – on all the imprints, biological and others, that go into making up a mind and heart, in a body, in a place, in a culture. Emotions become integrated *enablers* of reasoning. Attitudes set up and shape the game of giving and taking reasons.

The twenty years of literature that Barrett refers to includes a vast amount of literature of lesser relevance to this review. But the trend she points to of the literature starting to describe labels for emotional-states as contingent, began in the 1990s with books such as *Passion and reason: Making sense of our emotions* (R. S. Lazarus and B. N. Lazarus 1994). Lazarus & Lazarus argued that emotions and thought processes are inherently linked, and thus that feelings are not 'irrational'. But, unlike Barrett, they took a set of core emotions to simply exist (as ontological categories). Presumed universal feelings such as love and jealousy are here/were thus explored in depth to explain the processes that underlay them. Hence, while this work ties emotions and psychology to the study of the human brain, it does not make the kind of anti-essentialist *philosophical* break Barrett makes with what might be called the standard model (governing since Charles Darwin proposed it in 1872, in *The Expression of the Emotions in Man and Animals* (Darwin 1897 (1872))). Similarly, Kurt Danziger argued in 1997 in *Naming the Mind*: *How Psychology Found Its Language* (Danziger

1997) that "psychological properties are intelligible features of the world only by virtue of their display within a discursive context" (Danziger 1997, 190). He shows the history of these concepts and suggests their content will always be in flux: new concepts will emerge as our understanding progresses. However, Danziger does think there are such things as natural kinds – the categories of psychology and feelings are just not of such kinds (they are instead of 'human kids', Danziger suggests, with Ian Hacking). Hence, while he goes some way towards the kind of pragmatic break Barrett makes, he does not move to fully reject essentialism.

Another touchstone in this canon is Antonio Damasio's work. In 1994 he published the widely read *Descartes's Error: Emotion, Reason, and the Human Brain*, which explained emotions as body and brain phenomena. Descartes' error, Damasio suggested – provocatively at the time – was to ground his theory of existence and knowledge on cogito, the mind. For reasoning is, Damasio showed, inextricably linked to affects and emotional processing (A. R. Damasio 1994). In *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*, Damasio tackles the idea of consciousness from a similar perspective (A. R. Damasio 1999). In these books, as in more recent work, Damasio stresses influenced by Spinoza the biological and evolutionary origins of feelings and emotions, what he terms 'the physiology of feeling states' (A. Damasio and Carvalho 2013, 143). Barrett does not deny this physiology, but takes a considerably more holistic approach. She summarises it well in a recent newspaper article, "culture is not a mere moderator of our biology" but "a fully fledged cause", meaning that even though our physiology gives rise to certain body states, our perceptions and articulations of these are utterly intertwined with the history of our language and culture, our experiences, and our communities (Barrett 2022). This is in line with the pragmatist approach outlined above, that collapses the distinction between reasons and causes.

While this overview does not include the vast literature that studies responses to stimuli, social experiments, psychological experiments, and so on, undertaken to understand better human reactions and behaviours, any of the above-mentioned literature can, however, be consulted to identify a substantial quantity of such work. What is apparent from this – even if one sides with Barrett's critics – is that the conceptualization of "feelings", "emotions", "affects" in science is changing. The model emerging over the last two decades is one where there is no clear distinction between emotions and reason – where both are seen as categories contingent on language and culture and on the structure of human patterns of thought and human pattern-seeking – see also (Baron-Cohen 2020). Speaking with Brandom and pragmatism again seems helpful here because the pragmatist approach to such conceptualisations permits us

to operate with whatever grids we wish to place on the world, as long as we remain mindfully aware that we are making pragmatic distinctions, functional distinctions, in order to grab hold of phenomena, narrate our understanding, predict or control – but are *not* homing in on essential kinds (i.e. making ontological distinctions). The upshot of this, then, is that talk of 'reason and emotion' as playing distinct roles in deliberation is rendered even more problematic in light of recent neuroscience and psychology. If one sides with Barrett and agrees with the need for anti-essentialising our concepts, then a pragmatist conception of rationality as culturally conditioned practices of giving and taking reasons – where making emotional appeals is part and parcel of this game – is rendered as the more helpful alternative. Pragmatism aligns with feminist epistemology in conceiving of knowledge and of knowing practices as contextually dependent and shaped. We next turn to how such inter-dependencies have been conceptualised within economics and psychology in terms of 'bounded rationality' and, when seen to lead to systematic mistakes, as 'biases'.

Behavioural Economics: Bounded rationality, the public sphere and the clash of values
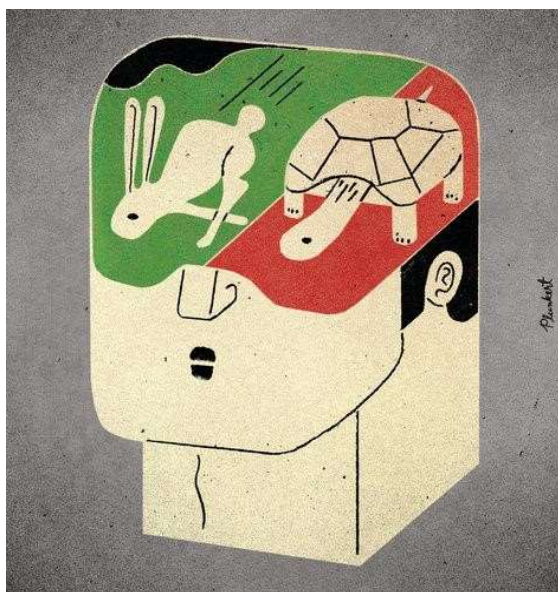
In this section, we discuss how our understanding of human psychology and how people make decisions has changed in recent decades. These aspects are crucial for understanding the context in which public policy interventions occur. We will start from the research in psychology that has outlined the hypothesis of bounded rationality, which affects ordinary citizens and experts. The unrealistic image of the citizen as a perfectly rational agent is replaced by the human being acting in a context of limited cognitive resources and alternating accurate analytical models with decision rules, or heuristics, to make decisions under conditions of uncertainty and complexity. We will also briefly discuss the implications of cognitive bias for debate in the public sphere. In the last part, we address the issue of values as a further element of diversity and potential conflict between different social groups.

Bounded and entrenched rationality: heuristics, bias and identity

For a long time, in economics, but not only, a model of how people make decisions, known as 'rational decision theory,' has dominated. According to this model, people's preferences have a well-defined structure, and choice is a quasi-automatic mechanism in which the individual applies his or her preference system to a limited set of options (e.g., the set of products that are possible given the available funds). Over the past two decades, psychologists have distinguished between two systems of thinking with different capabilities and processes (Evans, 2003 and 2008; Kahneman, 2011; Kahneman and Frederick, 2002; Metcalfe and Mischel, 1999; Sloman, 1996; Smith and DeCoster, 2000; Strack and Deutsch, 2004), which have been referred to as System 1 and System 2 (Stanovich and West, 2000) as depicted in Figure 1. System 1 (S1) consists of high-capacity intuitive thinking, relies on associations acquired through experience and makes decisions quickly and automatically. System 2 (S2), on the other hand, involves low-capacity reflective thinking, relies on rules acquired through culture or formal learning, and computes information in a relatively slow and controlled manner. The processes associated with these systems have been defined as Type 1 (fast, automatic, unconscious) and Type 2 (slow, conscious, controlled), respectively (Frankish and Evans, 2009). Table 4.1 briefly presents the main characteristics of the two modes of thinking. The dual-system perspective has become increasingly popular, even outside academia, since the publication of Daniel Kahneman's book *Thinking, Fast and Slow* (2011). Kahneman and Tversky's work led to Kahneman winning the Nobel Prize in Economics in 2002 for his contribution to explaining valuations and decisions under conditions of uncertainty. The

research was jointly developed by Kahneman and Tversky, who could not reach the Nobel Prize because he succumbed to cancer in 1996. First of all, the two psychologists criticized the then prevailing theories according to which people's evaluations under conditions of uncertainty could be approximated, on average, by those of a statistician (Bayesian, to be more precise). In opposition to these theories, the thesis was proposed that simple rules of automatic evaluation, called heuristics, were at play. Positive in themselves[1] , since they allow very cognitively demanding evaluations to be made quickly, heuristics induce systematic *biases*. In a famous paper from 1974, the two authors identified three heuristics: *representativeness*, the tendency to assess the probability of a phenomenon according to its similarity to a stereotype; *anchoring*, the tendency to assess probabilities from a piece of information even if it is not relevant; and *availability*, i.e. the assessment based on the ease with which one 'collects' information (e.g. in memory) about an event (Tversky and Kahneman, 1974).

Figure 1 Representation of the two modes of decision-making processes

Source: *New York Times*.

Table 1 Schematic view of the two modes of reasoning and their features.

System 1	System 2

Fast, automatic, effortless, limited sense of control	Slow, requires attention, is cognitively expensive. Allows you to consider costs and benefits, is lazy and challenged by too many choice options or cognitive *overload*
Based on mental shortcuts	Reflective, based on deliberation and careful use of logical rules
Activated: when speed of response is important; to avoid decision-making paralysis; when System 2 is sluggish or inactive (due to fatigue, lack of attention, etc.).	Activated: when System 1 cannot process the information; can intervene and correct System 1 when an error is realized.

The academic success was remarkable, to the point that a real field of study emerged on the borderline between psychology and economics (called *Behavioural Economics*), thanks to the elaboration of 'prospect theory'.

Prospect theory is a representation of choices under conditions of uncertainty that includes three elements: probability weighting - people are more optimistic or pessimistic than probabilities statistically indicate -, loss aversion, which causes normally risk-averse people to prefer risk over a loss, and dependence on choices on a reference point, which makes people non-consequentialists (Kahneman and Tversky, 1979). Note that prospectus is the definition used by Kahneman and Tversky to define a lottery, which is how we commonly, in economics, describe options in a choice problem (in the sense that certainty is considered to be a limiting case, of probability equal to one, compared to the general case of uncertainty).

Over the years, many heuristics and biases have been identified. In Table 1.2, we list some of the most common and discussed in the scientific literature. As illustrated in the table, heuristics and the resulting biases can affect different elements of the decision-making process, memory, probability perception and the formation and use of beliefs.

At this point, we must introduce another very important aspect, the relationship that exists between our beliefs and our identity. According to research within social psychology, an important component of our identity is defined by our social environment and in particular, by the social groups to which we are attached, shaping one's so-called *social identity* (Tajfel, 1978). Every social group possesses a core set of beliefs that create the common basis for mutual understanding and support among the members of that group. These core beliefs are very important for a person because they represent the meeting point between the individual and the group. Recent studies using magnetic *resonance imaging of* the brain (fMRI or *Functional Magnetic Resonance Imaging*) have shown how such beliefs are processed in a different brain region from that normally used for rational reasoning (Berns *et al.*, 2012). The

consequence of this is that such beliefs could be very resistant to logic or empirical evidence because to question them is to damage our membership in the social group in which we identify, jeopardising the social benefits we receive.

Another important aspect in this context is that of so-called motivated cognition (*motivated reasoning*) (Kahan, 2013), as we usually call the unconscious tendency of individuals to adapt their processing of information to conclusions that satisfy a certain end or objective. Let us consider a classic example. In the 1950s, psychologists asked experimental subjects, students at two Ivy League colleges, to watch a film that contained a series of controversial refereeing decisions made during a football game between teams from their respective schools. The students at each school were more likely to see the referees' final decisions as correct when they favoured their school than when they favoured their rival.

Table 2 List of common heuristics and their implications.

Heuristic name	Effect	Nature
Bandwagon effect / social proof	The tendency to do (or believe) things because many other people do or believe the same thing	Decision-making processes
Confirmation bias	The tendency to seek or interpret information in order to confirm one's own beliefs	Decision-making processes
Consistency bias	The tendency to erroneously remember one's past beliefs or behaviour as consistent with current ones	Memory
Selective perception	The tendency of expectations in conditioning perceptions	Decision-making processes
Status quo bias	People's tendency to prefer things to stay as they are	Decision-making processes
Availability heuristic (Availability heuristic)	The tendency to estimate the probability of an event based on the vividness and emotional impact of a memory, rather than on objective probability	Probability and beliefs

Overconfidence bias (unwarranted assumption)	The tendency to overestimate one's abilities	Probability and beliefs
False consensus effect (False consensus effect)	A person's tendency to overestimate the degree to which others agree with him	Life social
Fundamental attribution *fundamental attribution error*	People's tendency to overestimate and emphasise explanations based on individual characteristics (e.g. personality) for the behaviour of others while underestimating the role and influence of context on the same behaviour	Life social
Loss aversion	People's tendency to prefer avoiding losses over acquiring comparable gains	Decision-making processes

The researchers concluded that the emotional stakes the students had in affirming their loyalty to their respective institutions shaped what they saw on the tape (Hastorf and Cantril, 1954). A goal or objective can 'motivate' cognition in the sense that it can direct mental operations, in this case sensory perceptions, in other cases, evaluations regarding empirical evidence, or the performance of mathematical or logical calculations, which we would expect to function independently of such a goal or objective. Motivated cognition is best understood as a description or characterisation of a process and not as an explanation in and of itself. For an authentic explanation, within the frame of social psychology, we would need to know, at a minimum, what the need or goal was that motivated (or directed) the agent's mental processing and the precise cognitive mechanism(s) by which perceptions or beliefs operated to generate support for the goal.

Examples of goals or needs that can motivate cognition are diverse. They include fairly simple things, such as a person's financial or economic interests *tout court. They* can, however, be intangible in nature, such as the need to sustain a positive self-image or protect ties with others with whom someone is intimately connected and on whom someone may depend for support, emotional or material. Mechanisms are also diverse and include dynamics such as *distorted information seeking*, which involves the exclusive (or prevalent and systematic) use of evidence that is congruent rather than incongruent with the motivating goal; *biased assimilation*, which refers to the tendency to selectively credit and discredit evidence in patterns that promote, as opposed to those that frustrate the goal; and *identity-protective cognition*, which reflects people's tendency to react dismissively to information when accepting

it would cause them dissonance or anxiety. Identifying these more concrete, empirically established mechanisms and giving a plausible, structured account of how they are at work is crucial; otherwise, assertions of 'motivated cognition' become circular - 'X believes it was useful because; the evidence is that it was useful for X to believe it'.

Identity-protective *cognition (identity-protective cognition* in English) is a form of motivated cognition (Kunda, 1990; Kahan, 2013), in which case the goal is to protect one's status within a group whose members share clear and defined cultural traits. There is experimental evidence of protective cognition in studies showing that people opportunistically alter the weight they assign to the same test depending on the congruence with their identity (Druckman, 2012). It happens that different positions on a topic of public debate become strongly conditioned by belonging to a certain group. In these circumstances, individuals treat the information they receive in a way that promotes their adherence to the position associated with their reference group (Sherman and Cohen, 2006; Kahan, 2015).

The relationship between our goals, our identity, and how our information-gathering and decision-making processes are affected contributes to a picture of the context of limited rationality in which we all find ourselves. As we have seen so far, a vast scientific literature has been accumulating over the last twenty years on the various mental shortcuts that are part of the way human beings evaluate and make decisions. These should not necessarily be seen as something negative but rather as mechanisms to save cognitive resources. In most cases, such rules work well in the sense that they manage to make decisions quickly. Problems arise, however, when they are applied in the 'wrong' context; in fact, being automatic, they always lead to error in the same direction. If we add the trivial consideration that the number of complex decisions that an individual has to make nowadays is so high, it becomes evident that their use becomes indispensable but at the same time causes errors of judgement and a source of mistaken decisions.

In Table 1.2, we have selected from the long list of mental shortcuts and distortions (Gilovich, Griffin and Kahneman, 2002) those that we consider particularly important in the context of the public sphere. We must also remember that they do not operate in isolation but can combine with each other.

Availability Heuristic

Let us take the case of the so-called *availability heuristic* (Manis *et al.,* 1993) because it lends itself well to easy illustration. This mental shortcut causes us to overestimate the incidence of events that are easily recalled in our memory. This usually happens because they are frequently seen or because they leave a strong emotional trace in our memory. In the second

case, for example, if one is mugged, the traumatic event leaves a very strong mnemonic trace, so we tend to overestimate how many muggers are around and, therefore, how dangerous the environment is in which we live. In the case of mere exposure, the picture becomes more complicated. If we add the role of the media and their preference for what constitutes a newsworthy story, we can immediately imagine what the problem might be. Suppose a person is exposed to media that give much emphasis to crimes, even if this person lives in a safe place. In that case, the *availability heuristic* may lead him to believe that he lives in a dangerous place if his judgement is based on a quick assessment (using what we have defined as System 1). It is therefore clear that in the case where a particular event receives a lot of attention, the effect will be a distortion of the true probability of that event. This dynamic is often used to explain, for example, the difference between the perceived level of crime in a country and its actual prevalence.

The other heuristic that plays a very important role in the dynamics of the public sphere is the so-called *confirmation bias*[2]. This tendency to select the information available to us in a way that confirms our beliefs is often the cause of the polarisation of opinions in a community or group (Kuhn and Lao, 1996; Lord, Ross and Leppter, 1979). The public sphere naturally needs processes of persuasion between different social groups. In other words, people must be able to change their minds and be persuaded of the goodness of ideas that are not theirs. When this does not happen, compromise is difficult and conflict much more likely. This is because processes of social change often occur through *informational influence. By* presenting information that the majority does not know or does not expect, one is able to capture attention and get people to start questioning points of view that differ from their own.

These debates have come to the fore today because of the controversy over 'hoaxes': artfully fabricated news stories designed to provoke waves of indignation, especially on social networks. In some cases, the term post-truth politics has been coined (Robert, 2010), and it has been suggested that they may have played a role in recent election episodes such as Brexit (Jeffery, 2016). The term fake *news* (hoaxes, in fact) has recently come into common usage: such a focus on how people find and use information online highlights a growing concern about the impact of widespread digital platforms in our democratic and social life societies. There was a time when the net was considered a revolutionary force capable of fostering social and political action by groups of people who viewed traditional aggregators such as parties with little interest. For instance, there was no shortage of emphasis on the crucial role that digital technologies would supposedly play in the so-called 'Arab Spring'. The same can be said about the umbrella movement in Hong Kong or the colour revolutions in Eastern Europe. At the same time, less obvious are the changes occurring in the way people

access information and how this information circulates online. The latter issue is crucial to better understand the case of fake news and, in general, a dark side of the web that is becoming increasingly visible.

Once we have made it clear that people use mental shortcuts, it is easier to understand how information is consumed online. Often due to context or some design tricks, internet users are led to use their System 1 of evaluation, with its quick decision-making heuristics, rather than System 2. When we inappropriately use an inappropriate rule, we generate a systematic error of judgement. People are vulnerable to many constraints, and some are particularly important in the context of information selection. The *confirmation bias* discussed above is particularly important here. This confirmation bias serves to reassure our personal and social identity, which is why it is very difficult to be persuaded to accept information that challenges our worldview or the narrative we share with our group. Another strong tendency we have is to be easily persuaded by the tendency to conformism (social proof), that is, to affirm the truth of a proposition just because it seems that many people do.

Considering people's limited rationality is only one piece of the jigsaw to understanding what is happening in the public sphere in the digital age. Equally important is the design of online platforms and the network dynamics they induce. What we know about *social media*, for instance, contradicts some of the prevailing narratives and rhetoric in public opinion. For instance, the idea of social media as a more open and democratic source of information than traditional mass media ignores the fact that most online users are not active users. In other words, those who produce content are a small minority compared to the user community. Several empirical studies indicate that the percentage of active users varies between 1 per cent and 5 per cent on many platforms. This translates into the fact that active users in social networks and online communities are a group with specific characteristics, and therefore their content represents their opinions rather than those of the whole community. It is a self-selected group because only a certain type of people end up being active users. In general, the content generated by such users is rather homogeneous, rather than reflecting a diversity of opinions that is the supposed strength of non-professional sources of online news compared to professional ones. Even on a broader platform, people's social network reflects their opinions, just as social networks do in real life: people have a tendency to segregate their contacts, establishing links with similar people. This phenomenon is called the 'homophily' of networks. Today, the availability of large databases on people's online activity and the analysis efforts of a growing number of researchers give us a truer picture of digital social networks.

According to what we have described so far, very often online, we are surrounded by people like ourselves. In our social networks, we are very vulnerable to confirmation bias, and

we use platforms that, in recent years have made an effort to guide us towards the information we want, filtering what is different and customising our 'information diet'. For example, Facebook's Newsfeed algorithm selects, among those posted in our network of friends, the content it thinks will be most relevant to us. Possible consequences range from the formation of bubbles to the arbitrary selection of content, to the 'resonance box' phenomenon, which generates an echo effect, making us see and hear the same content that reflects what we believe (Parisier, 2012).

All the above was not necessarily a problem when the information exchanged was mainly related to the personal life of users. However, today social media platforms have become the main tool for many people to inform themselves, but in the meantime the design remains the original one, designed for personal life-oriented use. The rationale for sharing information on social media is not based on accuracy but on interest and closeness in terms of ties in one's network of contacts, regardless of one's trustworthiness. It may happen that we share something that a friend has shared before us without paying much attention to the content, if, at first glance, it appears to be consonant and relevant. All this is exacerbated by the timing of communication on social networks: we do not have time to carefully evaluate the information we see (trivially, we cannot read everything), and consequently, we use heuristics to decide what to read and what to share, for instance, the shortcut of 'social proof': what has been shared by many people is more likely to be shared further. On a theoretical level, if each person who shared a piece of information conducted an evaluation independently of other people, we could conclude that mere 'success' in terms of sharing would indeed be a measure of quality. However, this is not what happens in social media, where we find three phenomena: evaluations are not independent but correlated, social proof is used as a substitute for evaluation, and finally, conformity with our a priori evaluations becomes a criterion for weighting what is shared.

Some social scientists have warned of these potential problems. Sunstein (2017), in his book on the political psychology of social networks, offers a worrying picture of current trends in American politics. In the recent past, Evgeny Morozov has criticised utopian expectations of the web in relation to social and political change. In recent times, Twitter founder Evan Williams, one of the pioneers of the social web, has also declared his disappointment in how social media platforms influence the political and social life of our societies. There are, of course, positive examples of how the web has helped promote social change, but the initial utopian enthusiasm is probably over. It is evident that the psychological characteristics and social dynamics of human beings, constitutive of their nature, do not disappear once transposed to the digital environment.

There are also malicious actors online who are aware of the possibility of manipulation on a scale unprecedented in human history. Hoaxes have always existed, but this is the first time that they have the possibility to circulate in news bubbles and sounding boards. This dynamic is dangerous because fake news can induce a priori position-building dynamics in the various groups debating an issue, helping to generate political polarisation (which can also occur simply through the sounding board effect). In a democracy, it is essential that someone can change their mind through a positive and constructive process of persuasion between individuals.

The sophisticated actions of online propaganda are based on an awareness of these dynamics: carefully launching hoaxes in the right nodes of a social network can encourage wide dissemination, exploiting sounding boards where people's critical defences are rather low. Once a piece of fake news receives enough exposure it can bounce back several times in a sounding board, with several people sharing the same piece of information. To close the circle, the availability heuristic, already mentioned, suggests that one tends to give more importance to what is easiest to retrieve from memory, causing online exposure and this mental shortcut to become self-perpetuating.

Between using information about users to create a detailed profile of them, mapping their social networks and exploiting the potential viral nature of online information dissemination, so-called 'computational propaganda' is already a reality. The most powerful forms of computational propaganda involve both algorithmic distribution and the action of human subjects (so-called *trolls*) working together. Social media are used as a tool for the manipulation of public opinion, albeit in different ways depending on the topic or context. In authoritarian countries, social media platforms are a primary means of social control. This is especially true during political and security crises. In democracies, social media are often used for computational propaganda, either through the manipulation of opinion on a large scale or through targeted experiments on particular segments of the public.

Experts and bias

At this point, after discussing the limits of human rationality and thus of citizens, the issue of how public governance should be considered takes on a different perspective because it is unrealistic to imagine conditions of perfect rationality in the decisions of the actors involved. The dynamics of public opinion formation are subject to the influence of individual cognitive limits because these do not cancel each other out but instead have a cumulative effect as they are systematic.

One temptation could be the technocratic solution, i.e. an argument along the lines of 'given the limited rationality of the citizen, policy decisions should be the exclusive preserve of experts. Such an argument would go in the direction of favouring technocratic solutions. The application of behavioural economics to public policy, according to the approach of nudges that help citizens make better choices, seems to take such an attitude, prompting criticism of paternalism from liberals and of pastoralism, as Foucault (2005) puts it, from post-modern critics of Neoliberalism (Jones *et al.*, 2013). In reality, bounded rationality is a condition that affects everyone, even experts. There are cognitive limitations that are even specific to experts, such as the *curse of knowledge* (Camerer, Loewenstein and Weber, 1989; Birch and Bloom, 2007; Hinds, 1999). This name is used to identify the tendency in experts to project the same level of knowledge onto their interlocutors, regardless of their actual level of information, generating enormous difficulties in predicting their reactions and behaviour and fostering tensions and polarisation in debate because argumentative opacity can be perceived as a form of rhetorical artifice.

Among the early work of Kahneman and Tversky is a famous study on how even statistical experts were subject to systematic errors in estimating the sample representativeness (Kahneman and Tversky, 1974). In a more recent study, researchers have shown that scientists' evaluation is distorted by the tendency to judge a study by the importance of the topic rather than by the content or methodological contribution of the work itself (Wilson *et al.*, 1993). Even in terms of predictive performance, experts are by no means immune to unwarranted presumption and there are numerous studies on the overestimation of their actual predictive ability, which has been revealed to be rather poor (e.g. Tetlock, 2005) and only slightly better than *random guessing*. Surprisingly, in Philip Tetlock's (2005) well-known study, experts did better when they had to make predictions outside their field of study. The reasons for this performance are due to a particular set of cognitive biases that afflict experts rather than the ordinary citizen. Of course, this is not to say that experts do worse than the ordinary citizen. The poor performance of experts is still superior to that of the person who knows nothing about the subject. It is simply, in many cases, no better (or only very slightly) than the prediction ability of the average informed citizen. Steven Schnaars collected expert predictions about future technological developments in the 1970s and 1980s in newspapers, books, academic journals, etc. and found that 80 per cent of the predictions were wrong (Schnaars, 1989).

In an unfortunately neglected seminal contribution, Thorngate (2001) highlighted socio-psychological deviations from instrumental rationality in the policy formulation, design and implementation process. As the essay dissected the role of analysts concerning these

deviations, one can extend the same discourse to evidence in general since analysts are the ones in charge of providing data and research on the factual and intrinsic aspects of policies. In a nutshell, Thorngate asserted that politicians or bureaucrats introduce or modify policies not (only) for the rationality of intervention but also for peer competition, for incentives to promote, and to defend their legitimacy. In such a context, although evidence is the best argument to defend the rationality of a measure, it may end up playing a minimal role, leaving ample room for socio-psychological factors. When entering the public policy domain, the expert would like to be the doctor or the scientist, but the *policy maker is* unlikely to agree.

A much-studied phenomenon in psychology, which may be the case here, is that of cognitive dissonance (Festinger, 1957), which refers to making efforts to maintain cognitive consistency and avoid dissonance concerning one's behaviour, values, and beliefs. As Ross (2013, p. 115) states, these efforts can create problems in the presence of conflict. If policymakers are driven to avoid cognitive dissonance, they may cling to views that are not conducive to the most efficient and rational decisions.

Thus, experts are not immune to the condition of bounded rationality and are subject to cognitive distortions in their choices. Some authors, inspired by a collective choice approach, have reversed the behavioural economics perspective, invoking the limits to regulation in the name of regulators' cognitive biases and limitations (Cooper and Kovacic, 2012; Tasic, 2011). Tasic (2011) enumerates a long list of traditional heuristics and biases that would also apply to decision-makers, inducing decisions that are neither rational nor efficient. Others, paraphrasing Hirschman's concept of the hidden hand, postulate that policymakers are exposed to the risk of the malign invisible hand, due to the unwarranted presumption of being able to correctly design interventions or accurately diagnose problems (Flyvbjerg and Sunstein, 2016). Sunstein has emphasised this risk several times, and proposes cost-benefit evaluation as a control mechanism (Kuran and Sunstein, 2000; Sunstein, 2000). Other correctives of a social nature include the *peer* review process.

Of course, we can also think about the design of mechanisms that induce *policy makers* to make good decisions. This is, after all, what constitutional engineering is for. At a more micro level, we can identify the need to use heuristics to reduce the complexity of the problems to be addressed, even for experts, and to contain the possibility of systematic errors. The latter argument makes the technocratic temptation less valid on the level of efficiency, and is independent of the other criticism, discussed in Chapter 1, regarding its democratic legitimacy. The divergence of opinions in complex societies is not only reducible to the expert/non-expert pair, but also to differences in value assessment, which we address in the next section.

Behaviour and values

Divergences and possible conflicts between actors in the public sphere are not only due to the presence of cognitive limitations that may lead to diverging and conflicting positions. The other potential reason lies in the fact that different social groups may hold different values. This induces social groups to create alternative social representations of economic, scientific etc. issues (Sammut *et al.* , 2015).

What exactly do we mean by *values*? There is a vast scientific literature on the subject that we cannot deal with here, but essentially values are considered to be fundamental orientations in people's choices, often also having a moral and ethical dimension. Much has been written about their origins, a topic that has preoccupied theorists such as Kohlberg and Piaget who generate extensive knowledge about the role of socialisation processes in moral development (Kohlberg, 1981). Sociological approaches have also examined the social and religious roots of values (Durkheim, 1912; Parsons, 1961), while we also encounter theorists who have emphasised the social and evolutionary-instinctive foundations of values (Freud, 1900). Yet, despite the different research traditions on origins, there is a consensus that "values [...] derive from human experience" (Williams and Albert, 1990, p. 286), which enable the evaluation of states and situations and guide behaviour (Adler, 1956; Allport, 1937; Feather, 1982; Hechter, 1993; Joas, 2001; Kluckhohn, 1951; Kristiansen and Zanna, 1988; McClelland, 1985; Rokeach, 1968; Schwartz and Bilsky, 1987; Williams, 1960).

When we make general assessments of the goodness or otherwise of situations, events, persons, states of affairs, we speak of values. To resolve an eminent confusion, *attitudes* drive an individual to act in preference towards a specific object, entity or situation (Allport, 1937; Feather, 1982; Rokeach, 1968 and 1973) and have the capacity to influence preferences and express values, they do not act as a standard for evaluating general modes of behaviour and goals. The difference and importance of values stem from the fact that they not only express attitudes, preferences and desires but also normative judgements about what is appropriate or desirable in human behaviour (Dewey, 1939). We feel committed to our values, not because we have to, as in the case of social norms dictated by normative expectations (what we believe others expect of us, as defined by Bicchieri, 2017), but because we assign a constitutive character to them. As such, values have an engaging and enduring quality but, at the same time, give us a sense of freedom (Meisch and Potthast, 2010). In many ways, the tension between values and behaviour is similar to that between attitudes and behaviour. In general, people's attitudes (their beliefs) are good predictors of behaviour (their

actions); however, there are several mediating variables and the relationship between the two is not linear (see Festinger's concept of cognitive dissonance, 1957). How to bridge the gap between the abstract, emotional internal conception of values and the more concrete judgement and action is a complex issue. People may be aware of a value and even find it of great importance, but not behave in such a way as to demonstrate its implementation. A more in-depth reflection of the relationship between values and behaviour is offered by Tsirogianni and Gaskell (2011), who refer to the distinction, originally proposed by Charles Morris, between 'conceived' and 'operational' values (1956): while conceived values may be widely shared, operational values may vary depending on the social context.

The last point, related to the discussion above, concerns the importance of contextual and situational factors for the implementation of values. People implement and combine relational patterns depending on their values, social position, group or institutional or cultural context, relationships with others, etc. For example, the availability of recycling facilities, the quality of public transport, and the supply of goods, commodities or prices can strongly influence people's engagement in pro-environmental behaviour (Vining and Jew, 1992; Vlek and Steg, 2007).

The two best-known approaches to studying values at the macro level are Inglehart (1977 and 1997) and Schwartz (1992). They both classified the different values that characterise human cultures and put forward hypotheses on the change of values over time. Inglehart's (1997) theory of changing values in advanced industrial societies is often used to explain conflicts between social groups: these conflicts arise between groups with values from the previous era and those with post-industrial values. Post-industrial values are understood, for example, as values such as individualism, self-expression, and empathy towards the natural environment.

The role of values in creating different points of view becomes evident when it is interpreted in the context of the relationship between experts and ordinary citizens. An example of this is the case of risk perception. One of the leading scholars of this latter research topic, Paul Slovic, has studied issues where differences between experts and ordinary citizens are due to genuine differences in culture and values. For example, experts often tend to measure risks by the number of lives lost (or years of life). At the same time, ordinary people make a more subtle distinction between 'good deaths' and 'bad deaths', i.e. between accidental fatalities and deaths that occur in the course of a voluntary activity such as skiing. This distinction is value-based because a risk taken voluntarily is perceived qualitatively differently from an 'involuntary' one (e.g., environmental). Common statistics overlooks these legitimate distinctions. Slovic is sceptical about the objective risk being 'out there waiting to be

measured (Slovic, 2010). Human beings have invented the concept of 'risk' to help them face and understand the dangers and uncertainties of life. Although these dangers are real, there is - according to Slovic - no 'real' or 'objective' risk that can be unambiguously quantified. The point here is that the richness of the risk assessment that comes from a community inhabiting an area should not only be considered the result of irrational attitudes but also the expression of a qualitatively different perception of risks that can enrich the official one and avoid making prediction errors based on experts' distortions.

Therefore, there are various reasons for potential conflicts in the public sphere, both because of the common condition of limited rationality shared by ordinary citizens and experts and because there are inescapable value differences in assessments of social and economic reality. From this point of view, resolving value conflicts through the use of 'evidence' is a temptation into which many have fallen but which actually needs to be explicitly problematised. In the next chapter, we deal with this issue by also discussing the methodologies of collecting and validating evidence, which has often been interpreted in a rigid and deterministic manner.

Behavioural Economics and Nudging

One of the most discussed contributions to policy-making theory of the last fifteen years is, 'nudging'. Given that rationality is 'bounded', shaped by contextual, environmental and affective factors, can we design environments that steer action in desirable ways? In *Nudge - Improving decisions about health, wealth, and happiness*, Richard H. Thaler and Cass R. Sunstein suggest that we can benefit from setting up systems of 'nudging' in a range of areas of life. 'Nudges' are an 'aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not' (Thaler and Sunstein 2008, 6). The reason for the qualifiers is to avoid the objection that nudging is manipulative or reduces personal freedom. Thaler and Sunstein envisage nudges as 'gentle' mechanisms, that might operate well in conjunction with incentives like, for instance, taxing sugar.

The aim of nudging is to help individuals and collectives make choices better aligned with their fundamental interests, like staying healthy – it is to design resistance to bad choices into the choice architectures we nevertheless operate in. Thaler and Sunstein suggest that nudging can be a driver for better decisions in many areas of life, and substantial literature

has been produced to investigate and/or promote this claim. See for instance (N. C. Smith, Goldstein, and Johnson 2013) for a study relating nudging to consumer policy making, see (Bucher et al. 2016) for a review of the literature on nudging and food choices. The applications of nudging go beyond what Thaler & Sunstein originally envisaged: see (Bovens and Marcoci 2020) for the use of nudges to further acceptance for gender-neutral bathrooms. (Congiu and Moscati 2022) reviews the debate on nudging to date and considers its definitions and effectiveness.

The idea of nudging has, however, also attracted strong criticism, especially by those who worry that nudging is a form of manipulation (Bovens 2009), or that it may be guided by and reinforcing particular culturally specific norms, including sexist or racist ones. As Evan Selinger and Kyle Powys Whyte discuss, the nudge that takes the form of the picture of a fly on which one is guided to urinate would be deeply offensive to cultures that value all forms of life equally, including to indigenous Native American cultures in the USA; another example offered by Trevor Pinch and cited in this work is of German male drivers being wont to ignore the verbal admonition made to them by their BMW in the voice of a woman when speeding, while a male voice seems to have a better effect at getting the right behavioural response (Selinger and Whyte 2011, 930-931). What would then be the 'right' way to nudge without falling into the business of reinforcing and/or piggybacking on problematic norms to begin with? (Selinger, E., & Whyte, K. 2011). Is there a right way to nudge? The practice and ethics of choice architecture. Sociology Compass, 5(10), 923-935. ; Selinger, E., & Whyte, K. P. (2012). Nudging cannot solve complex policy problems. European Journal of Risk Regulation, 3(1), 26-31.).

In a 2013 comment, (Wilkinson 2013) usefully summarises criticism and attempts at 'salvaging' the concept of a nudge (see (Saghai 2013) for this attempt at 'salvaging'). Other approaches to habilitating nudging as a non…[interventional? what was that term?] approach, contrasts it to more forcefully limiting strategies such as 'prodding', or more…such as 'boosting'. Hausman 2018 argues that nudging unhelpfully lumps together a range of fundamentally different ways of shaping choices, such as encouraging or discouraging, informing, activating or inciting, training or educating, deceiving, brainwashing, 'Nudging (in a narrow sense): changing the choice circumstances to neutralize or to exploit deliberative foibles' (Hausman 2018, 18). (Schmidt and Engelen 2020) provides a very helpful and insightful overview of the ethics of nudging.

(Levy 2022) takes these criticisms up and argues that 'nudging doesn't manipulate us. Nor do nudges bypass reasoning. Instead, nudges work by providing genuine evidence to agents, and when they change behavior, the change occurs in response to this evidence'

(Levy 2022, 132–133). He admits that it is 'because nudges appear to influence choice without offering reasons that both opponents and proponents of nudges believe that nudging is paternalistic' (Levy 2022, 135), but he considers nudges as a form of 'higher order evidence' available to us, by way of providing implicit recommendations for what to do, as we make decisions (Levy 2022, 139).

Democracy and Deliberation

How would recent advances in psychology and behavioural economics influence democracy and the shape and possibilities for inclusive deliberation in democratic societies?

Levy's (2022) suggestion is that policies such as nudges can be seen as higher-order 'evidence': assuing that there is a decision-maker who is taking this evidence into account in shaping their action. Even if we assume that such an ideal a decision-maker is conscious of their choices and decision-making, and even if we assume that there is a shared 'value' which such nudges nudge decision-makers towards, in paternalistic, welfare-maximising contexts, the nudging would be designed by the 'system' or 'those who know better'. Appropriate processes, modes of ensuring inclusion, transparency and the avoidance of reinforcing pernicious stereotypes in implementing such policies would be crucial to design here, alongside any policy-instruments based on nudging.

This conception of nudges changes further if emotion and cognition are held to co-produce beliefs: if, as J. Mercer suggests (referencing advances in neuroscience like the ones outlined above), credibility is instead an 'emotional belief' (Mercer 2010). Mercer observes that we often use emotions *as evidence*. How we feel might make a choice appear right or wrong.

In an article on emotional appeals in deliberation, Keith Dowding sums this up well:

> Given that our cognitive processes are so tightly bound up with emotional ones, McDermott (2004, p. 699), Stein (2012), Jeffrey (2014), and others argue they should not be analyzed independently. Mercer (2010) points out that people often use emotions as evidence; indeed, to some extent, the appeal to intuitions in analytic moral theory is an appeal to our feelings (Haidt 2012, Greene 2013). At this level, the bedrock of evidence for justification is an emotional one that achieves its appeal only if shared. Semantic intellectual justifications here are attempts to provide more general principles to guide us in other courses of action. The use of intuitions from one example to provide a justification for action in another example, whilst appearing to be reasoned justification, is an attempt to frame one issue in terms of another. Such framing is often seen as a rhetorical device, agenda setting, or, perhaps, manipulation. However, to the

extent that such framing is the way in which we use our feelings as part of our moral intuition, it forms part of the process of reasoning. We need to distinguish framing as manipulation from the way that we naturally frame as part of our reasoning process.

Our emotional state can also lead us to differentially assess the same evidence. Haidt (2012) and Greene (2013) both describe experiments where responses to standard intuition-pump imaginary cases can be affected by the presence of bad smells or other environmental features set up within the experiment. Another study suggests that in prisoners' dilemma-type games, fear reduces and guilt increases cooperation (Nelissen et al. 2007). Bechara (2011) suggests that our very preference formation depends not only on the evidence and assessment of probability given our previous beliefs, as in standard Bayesian modeling, but also on our emotional attachment to outcomes. This implies that desire might affect belief, or might at least affect our assessment of the importance of the probabilities that engender our belief. Thus, again, skillful rhetoricians using the same evidence can sway audiences one way or another by engaging different emotions. Engendering fear before giving facts might lead to a different response from that stimulated if instead guilt is inculcated beforehand. Given that some emotions, such as fear or anxiety, can be non-cognitively induced through background ambience, groups can be noncognitively swayed even as they engage their cognitive apparatus. (Dowding 2018, 249–50)

Dowding usefully suggests that what matters, is to consider the point at which emotional appeals become manipulative.

How might we, then, conceptualise decision making against the backdrop of advances in neuroscience and other fields which now amount to an exceptionally strong case for the need to consider emotion and affect as an integral and vital part of reasoning? In 'Applying the Theory of Constructed Emotion to Police Decision Making', J. Fridman, Barrett et al use the theory of constructed emotion Barrett proposes (see previous section) to decision-making under 'evocative circumstances', and suggest that this theory can be 'can be used to guide future studies of realistic decision making' (Fridman et al. 2019). While such approaches that considers decision making as a fully embodied process appear to be in infancy, their suggestion might be staking out a future, more naturalistic and, vitally, holistic direction for decision making theory. If we do, then, consider reason and emotion to co-produce our beliefs and decisions, the question of when emotional appeals cross some threshold and become manipulative – succeed in, as Levy put it, 'bypassing reasoning' – becomes the pivotal question. As just mentioned, Dowding proposes a helpful approach to this matter. On this picture, Dowding points out, it is not reasonable to assume we are being manipulated only because our emotions are engaged. In (Dowding 2018) he suggests that appeals to both

reason and emotions can be evaluated as non-manipulative if there is a common cause, emotional honest (honesty of belief). On this picture, emotional appeals can legitimately, as Brandom puts it, enter into the game of giving and taking reasons.

It also seems vital to note that we do not lose our ability to form and understand and use arguments simply because emotion is an integral part of reasoning, profoundly linked to reasoning. This is an aspect of the view of reason presented in, for instance, Mercier and Sperber's *The Enigma of Reason: A New Theory of Human Understanding* (2017), where reason is seen as a form of intuition, and a behaviour that developed for *public* use, rather than as a faculty for introspective justification (Hugo Mercier and Sperber 2017). Reason is a tool that helps humans in their social cooperation. They succinctly outline their core view in the abstract to a previous article:

> 'Reasoning is generally seen as a means to improve knowledge and make better decisions. However, much evidence shows that reasoning often leads to epistemic distortions and poor decisions. This suggests that the function of reasoning should be rethought. Our hypothesis is that the function of reasoning is argumentative. It is to devise and evaluate arguments intended to persuade. Reasoning so conceived is adaptive given the exceptional dependence of humans on communication and their vulnerability to misinformation. A wide range of evidence in the psychology of reasoning and decision making can be reinterpreted and better explained in the light of this hypothesis. Poor performance in standard reasoning tasks is explained by the lack of argumentative context. When the same problems are placed in a proper argumentative setting, people turn out to be skilled arguers. Skilled arguers, however, are not after the truth but after arguments supporting their views. This explains the notorious confirmation bias. This bias is apparent not only when people are actually arguing, but also when they are reasoning proactively from the perspective of having to defend their opinions. Reasoning so motivated can distort evaluations and attitudes and allow erroneous beliefs to persist. Proactively used reasoning also favors decisions that are easy to justify but not necessarily better. In all these instances traditionally described as failures or flaws, reasoning does exactly what can be expected of an argumentative device: Look for arguments that support a given conclusion, and, ceteris paribus, favor conclusions for which arguments can be found.' (Hugo Mercier and Sperber 2011)

Mercier and others have contributed other studies of interest to the study of the role of reason and emotion in deliberation, perhaps especially those on how we *underestimate* the benefits of group discussion for reasoning (Hugo Mercier et al. 2015) and the case for this finding being cross-culturally robust (H. Mercier et al. 2016), as well as their look at how reasoning abilities can and should be taught (Hugo Mercier et al. 2017).

There is good reason to emphasise Mercier's work as useful, for the implication of the view he proposes is that **reason *is* deliberation**, that sound reasoning is the product of a collective, collaborative effort. Hence it is **inherently linked to the notion of democracy: democracy preserves the very conditions for reasoning**. Mercier's view also then matters for the question of why there is such antagonism and misunderstanding online: if reasoning is faulty when undertaken by an individual, but asymptotically improves when undertaken as a collective effort, then individuals sitting behind a keyboard are not engaged in the kind of process actually required to reach a sound judgment, but are instead fronting individual fragments of what should be a non-solitary process.

The literature on how contemporary advances in neuroscience and our understanding of 'reason and emotion' affects our understanding of democracy and deliberation is rapidly advancing. William E. Connolly's 2002 book *Neuropolitics*, alongside the rise of neuroimaging, might be said to have given rise to a new subfield in political science. In a recent article, Alexander Livingston explains:

> Connolly's recent writings propose to pluralize the way democratic theorists think about thinking itself by introducing the notion of a "visceral register" of experience. For example, *Neuropolitics* draws on recent findings in neuroscience, as well as the radical empiricism of Henri Bergson and William James, to propose a layered conception of thinking where rational belief works in tandem with moods, affects, and instincts operating below the level of consciousness. Political judgements taking place at this visceral register play a critical role in shaping political conduct, and transgress any neat compartmentalization of private faith from public reasons. (Livingston 2020, 56).

Similarly, two years later in 'The feeling of rationality: the meaning of neuroscientific advances for political science. Perspectives on politics' (2004), Rose McDermott suggested that such advances in neuroscience ought to be included in political science to a much greater extent, specifically to get away from an outdated view of human reasoning as 'rational': while the importance of emotion in 'political science has frequently been either dismissed or ignored in favor of theories that privilege rational reasoning, emotion can provide an alternate basis for explaining and predicting political choice and action' (McDermott 2004). (McDermott draws on Dermott, but not Connolly.) In 'Neuropolitics: Twenty years later' (2017), Darren Schreiber reviews the state of the field, defining 'neuropolitics' as 'the intersection of neuroscience and political science, and it has the interdisciplinary goal of transforming both disciplines'. (Schreiber 2017) This article provides an excellent overview of the literature written at the juncture of these fields. Schreiber also warns that 'the ethical implications and the threats to

democratic deliberation [neuroscience poses] are woefully underappreciated — and undertheorized' (125).

But just how hard it is to get at the roles of reason and emotion in deliberation and democracy – and in everyday thought as well as scientific though – is illustrated in a brief, 2020 overview of 'the roles of emotion in deliberative theory', by Michael A. Neblo. He writes:

> In ordinary language, people often treat emotion as the opposite of reason. Deliberative democrats, however, typically use "reason" in a rather different way. They regard arbitrary power, not emotion, as the opposite of reason. Emotion, then, is not at all contrary to reason. Critics who rely on ordinary language to claim that deliberative democrats denigrate emotion are likely to misconstrue how both reason and emotion are deployed. In fact, most deliberative democrats have always assigned emotion an indispensable role in their theories. That said, emotion's role in deliberation needs more, and more systematic, elaboration. I identify twelve distinct roles for emotion in deliberative theory and practice, clearing the way for a more fruitful research agenda on the role of emotion in democratic deliberation. (Neblo 2020, 923)

The roles he enumerates are: Normative Relevance, Motivation to Deliberate, Inputs, Outputs, Unmediated Inputs, Background, Enabling Conditions, Cross Check, Analogs, Application, Motivation to Act, and Struggles for Recognition. Neblo's overview not only states how different people and different inquirers have varying conceptions of what "reason and emotion" means. It also illustrates well how siloed our current fields of academic inquiry are: only two references figure in both Schreiber and Neblo's reviews, and only partially as co-authors.

Affect as Power: Material Deliberation and the Politics of Affect and Emotions

Another mode to explore the interplay of reason and emotion and its role in inclusive science and democratic deliberation is through the work of feminist scholars and science and technology studies scholarship in public engagement. Art-science collaborations and methodologies have become more common in public engagement with science (PES) and public understanding of science (PUS), especially within Science Communication, Urban Planning, Social and Cultural Geography and Critical Design (cf. Davies et al 2012, Irwin et al 2012; see Delgado et al 2010 for a useful taxonomy of approaches to public engagement). Admittedly, artworks can stimulate ethical reflection on technology or science without being designed to do so as part of PES, PUS or RRI (e.g. Vaage 2016, Efstathiou 2017). And critical reflection on technology is not only emanating from the social sciences and humanities but

comes also from within the arts and performance (Pérez et al 2019). However there are more and more examples of artistic and art-based work that is intentionally created to mobilise not only reason but affect, and to reflect on the ethics and social roles of science and technology in these enriched 'material' modes.

Davies et al. (2012) illustrate this approach in their own project, engaging citizens to reflect on urban spaces through photography. By taking photos during a city walk, people were invited to map and materially reflect on urban ecologies of waste and value. In this mode of 'deliberation' what is possible to see, notice or feel as important found its place in a discussion among participants first the form of an image -a look, instead of the standard academic and political form of argument-based conversation or text. Davies et al (2012) define engagements of this type as 'material deliberation':

> "processes of deliberation and citizen engagement which incorporate an awareness, openness or sensitivity to non-traditional modes of deliberative interaction, including, but not confined to, the sonorous (music, singing, laughter, shrieks, noise), the discursive (gossip, storytelling, anecdote, polemic, drama), the material (objects, bodies, sites, places) and the affective (hate, love, fear, attachment, nostalgia, intuition, pleasure). Such engagements [therefore] show a sensitivity to the situated nature of all encounters, deliberative or not, as embedded in particular spaces, material configurations, and temporalities." (Davies et al. 2012, 353)

We here propose that new approaches to inclusion, such as art-based engagements with social, ethical and political questions can be characterized as facilitating 'material deliberation'. Further, this material mode of deliberation opens up to engage with nonhuman stakeholders in technology development. We consider three relatively recent experiences utilising art-based approaches to democratic inclusion, which focus on ethical and philosophical questions around science and technology innovation.

(a) The Theatrical Debate

Inspired by the participatory theater form Forum Theater of Augusto Boal, Frank Kupper and colleagues in the Netherlands have created the 'theatrical debate' form (Kupper 2017). This theatrical form was used in the production of the play *Nano is Big*, one of many projects in Nanopodium (cf. Krabbenberg 2013). The theatrical debate shares Augusto Boal's interest in including the audience in shaping and steering stage action. But Frank Kupper was also inspired by the pragmatist philosophy of John Dewey, (Dewey 1920, 1922, 1932).

Dewey analysed moral deliberation as a process of 'reflective inquiry' made up of three phases: identifying a situation as a problem, considering this problem situation from multiple perspectives, and trying out different solutions to the problem (Kupper 2017, 84-85). Crucial for reflective inquiry, for Dewey, are a capacity for 'moral imagination', and -crucially for Kupper- the method of 'dramatic rehearsal' which allows one to explore a situation and its moral-cultural impacts in terms of its range of possible imagined outcomes (ibid, 81). Now, one could imagine multiple modes of 'dramatic rehearsal', including just imagining different outcomes to one's actions, formats like thought experiments, narrative or scenario-based deliberation (see also Swierstra and van der Burg 2009). A crucial element in these 'rehearsals', for Dewey, is that they are 'dramatic': They involve action, and the imagination of *action* (or *drasis* in Greek). According to Dewey, affect and 'emotional sensitivity' are crucial in shaping moral responses to imagined outcomes (ibid, 86). And, as Kupper explores, dramatic rehearsals can also take the form of 'drama' -as theatre, and as emotionally loaded dramatic situations- to develop exercises in 'anticipation' (cf. Barben et al 2006).

Kupper's 'theatrical debate' provides a means of reflective inquiry into technology by dramatically rehearsing different alternatives live with a nonspecialist audience. The format is used to stage and rehearse, dramatically, the different possibilities for the future of emerging technology (in *Nano is Big,* of nanotechnology). The 'theatrical debate' introduces issues discussed in academic and popular discourse through vignettes that are acted out on stage in real time, with a live audience, in a partly improvised manner. The action is directed by a facilitator (the figure of the Joker in Boal's Forum Theater), who mediates between the public and the actors, inviting the public to select which points of the plot, which relationships and which aspects of a technology to explore further (for example, should we explore the possibility to diagnose a terminal illness, or to create dangerous materials via this technology?). The possibility to modify the plot 'live', Kupper argues, activates the audience's (and we would add also the actors') 'moral imagination' helping to 'dramatically rehearse' and reflectively inquire into possible nanotechnology futures (Kupper 2017).

Importantly, the threshold for engaging in a 'theatrical debate' is relatively low, as audience members do not need to have prior knowledge of nanotechnology to engage with the drama. The format of a theatrical 'conversation' invites a 'material deliberation' on nanotechnology: it uses a discursive format alternative to argumentation. It engages affect and the senses, as the audience members can see, hear and empathise the effects of an alternative scenario to nanotechnology development.

(b) Synthetic Aesthetics

The 'theatrical debate' was developed by the vision and experience of one interdisciplinary scholar, combining social science, humanities and artistic expertise in the same person who then brought others together. Another approach is to invite people from different disciplines to work together -in this case inviting artists to collaborate with scientists.

This approach was explored in the UK-based project 'Synthetic Aesthetics', which invited artists and scientists to collaborate in the broader field of synthetic biology and bioart/critical design. Jane Calvert and Pablo Schyfter (2017) describe how scientists were 'matched' with artists into six pairs (one of whom had applied together) and whose work the social scientists were supposed to study. It turned out that the artists/critical designers shared a great part of the aims of STS scholars, at least in Calvert and Schyfter's assessment, while their methods were deemed considerably more (or at least differently) effective compared to those of the STS scholars. A main output of the project and a shared aspect of artistic and scientific laboratory practices was the possibility to make stuff: to materialise ideas and critiques on science and technological development through concrete activities or artworks. These items were co-shaped and allowed to emerge by co-contamination among the scientists and the artists/designers resulting in a materialised critique. Speculating about synthetic biology futures thus took shape -and smell and taste even- in a manner that no STS text, no matter how vibrant, could. Plus, as Calvert and Schyfter (2017) describe, the whole work was done in a fun, playful manner, using humour to stimulate and engage reflection in a different more attractive and inclusive tone than one's standard academic text.

A telling example from 'Synthetic Aesthetics' is the design, by artist Sissel Tolaas and scientist Christina Agapakis, of human-bacteria-grown cheese. The cheese was grown in the lab using bacteria extracted from body parts such as noses, armpits and toes. The project challenged the perception of some bacteria/body parts as 'dirty' or contaminating, and yet showed how perfused our lifeworlds are with these micro-macroorganisms. In this quite humorous manner, this cheese became a hub of questions holding multiple living links, literally and figuratively, to how the human and nonhuman get tangled up in old and new biotech practices. The love of smelly cheese and disgust for smelly body parts mirrored contrasting relationships we have to bacteria as contaminants or as essential parts of the human microbiome. These artistic practices, joined with scientific questions, helped speculate on technoscientific futures in an engaging, playful but still critical manner (cf. Ginsberg et al. 2014). This offers yet another material form of deliberation, materialising questions into concrete artifacts, which can extend and engage stakeholders beyond the human. Using the

concept of Davies et al (2012) we consider some modes of art-based material deliberation on technology, ethics and society.

(c) Playing with pigs

By attending to the material and the felt, art-based work in RRI can extend to include non-human stakeholders in technology development. This type of trans-species RRI is evident in Tolaas and Agapakis's project, where bacteria are made visible as active in producing things we love and hate, but it is even more evocatively illustrated in the work of Clemens Driessen with farm pigs in the Netherlands.

The philosopher and cultural geographer Clemens Driessen worked with game designers, pigs and farmers to develop a video game that intensively farmed pigs could play. The game was designed as an exercise in 'enriching' pigs' lived environment. 'Enrichment' is a technical term for the mandate that laboratory and farmed animals should be stimulated, with e.g. toys or material, so that they can perform species-specific abilities, e.g. to burrow or play, while in captivity. The game could be played between a human and a pig via an interface on a tablet computer: the human could control where light dots move on the wall of the farm, much like shining a laser that a cat can chase. Once the pig muzzled the dot on the wall, the dot would explode in confetti and sound, creating a sensual reward for the pig -and same for the human on the other end.

The game dubbed "Pig Chase" created a window into the life of the captivated pig, inviting people to "play with their food" on a whole other level. People could move their food around before it became dead meat -and they could allow and invite their food to play with them. This game and the experience of playing it offered an intense and, for some, a disturbing experience. By making visible the 'others' at the start of the food chain and reflecting on human-animal relations in food production, the game created strong affective responses and questions, perhaps evoking standard ethical/critical questions around animals as labourers, but in a new material mode (Driessen et al. 2014).

Enriching methods for inclusion in democratic deliberation

In concluding this report, we reflect on art-based approaches to democratic deliberation. One way to characterise the contribution of these approaches to public engagement is to notice that art *brings the body back* as a central actor of moral deliberation

and imagination, activating affect, sensuous knowledge and lived experience to "command attention and inspire action" (Young 2001, 686). The philosopher Iris Marion Young is perhaps most well known for her essay "Throwing like a girl", a reflection on how women learn to inhabit their bodies as limited, breakable or bound up in space (Young 1980, see also Ahmed 2017). Attending to the - marginalised, gendered, racialised, queered, disabled- body is a political act under a feminist lens. Attending to the whole body politic can thus also be understood as attending to bodies, besides minds, and to the diversity of bodies, as a site of politics.

Sarah Davies and colleagues, inspired by Young's work, argue that democratic deliberation on science and technology should extend to performative approaches. Performative approaches are often utilised by political activism, producing 'culture in action' (Swidler 1986): think for example of the actions of PETA against the fur industry, . Performance is also studied and cultivated as its own field of research, as for example in applied theater. Iris Marion Young poses the question: Isn't rational debate and deliberation enough for politics? Shouldn't activists stop their "show", already? Young argues that performative approaches are needed and complementary to political debate, as they engage other means for expression, communication and deliberation (Young 2001). Following Davies and colleagues' (2012) proposal, the arts, and especially the performing arts (music, dance, theatre, performance art, game design) hold crucial expertise for promoting 'material deliberation'. The art-based engagements we considered

> "incorporate an awareness, openness or sensitivity to non-traditional modes of deliberative interaction, including, but not confined to, the sonorous (music, singing, laughter, shrieks, noise), the discursive (gossip, storytelling, anecdote, polemic, drama), the material (objects, bodies, sites, places) and the affective (hate, love, fear, attachment, nostalgia, intuition, pleasure)." (Davies et al. 2012, 353)

Feminist accounts of responsibility offer further principled grounds to attend to affect and materiality as part of reflection and inclusion in democratic deliberation. If we follow the philosopher and STS scholar Donna Haraway, responsibility can be analysed as a response-ability, i.e. as an ability to respond in relation to morally significant others (2008). This 'ability' we call responsibility is had and exercised differently by different bodies in society, and it is conditioned by material and social structures. Not all bodies are awarded an equal say and access to political argumentation -not even to speech. Haraway's posthumanist ethics calls for a recognition of non-human 'companion species' as our kin, and of humans as 'becoming-with' nonhuman significant others (Haraway 2008).

Modes for material deliberation open up to consider democratic deliberation not only in the abstract form of (human) argumentation, but as constituted through encounters with significant others, in context. By mobilizing the sonorous, discursive and affective these engagements "show a sensitivity to the situated nature of all encounters, deliberative or not, as embedded in particular spaces, material configurations, and temporalities." (Davies et al. 2012, 353).

To follow Ben Anderson, "Affects are understood as impersonal intensities that do not belong to a subject or an object, nor do they reside in the mediating space between a subject and an object. Thus, the key political and ethical task for a cultural politics of affect is to disclose and thereafter open up points of potential on the 'very edge of semantic availability' (Williams 1977, 134) by comprehending the genealogies, conditionalities, performativities, and potentialities of different affects" ("Modulating" 161).

Affects, then, are not property; they are not owned by subjects. Rather, as Sara Ahmed argues in *The Cultural Politics of Emotion*, they are relational; they circulate between bodies constantly generating new encounters through spatial processes of "approximation," "disorientation," and "reorientation." Affects are also simultaneously located and deterritorialized and, as such, flow between the individual and the collective, the personal and the public. In the words of anthropologist Kathleen Stewart,

> "Ordinary affects are public feelings that begin and end in broad circulation, but they're also the stuff that seemingly intimate lives are made of … They are a kind of contact zone where the overdeterminations of circulations, events, conditions, technologies, and flows of power literally take place" (2–3).

Following Stewart's articulation of public feelings as contact zones, other feminist theorists have delved into affect as a cross-border concept that allows for the emergence of different forms of social relations and ethical intervention.

Forms of affect not only leave traces in human bodies and other materialities but also impregnate the incorporeal. Affect thus occupies a slippery terrain that spreads across the ethical, sociopolitical, economic, and cultural realms. Deleuzian-inflected philosophers have exploited what could be referred to as the "translocationality" of affect as a site of potential and possibility (Deleuze and Guattari; Braidotti).

We thus propose that approaches that bridge reason and emotion can contribute to democratic inclusion by facilitating new approaches for a material deliberation online, which may engage a broad array of stakeholders, even beyond the human. Art-based democratic engagement can make critical questions engaging for nonspecialist audiences, creating

playful -yet potentially deep- engagements, inviting participation and play to engage stakeholders, also beyond the human.

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