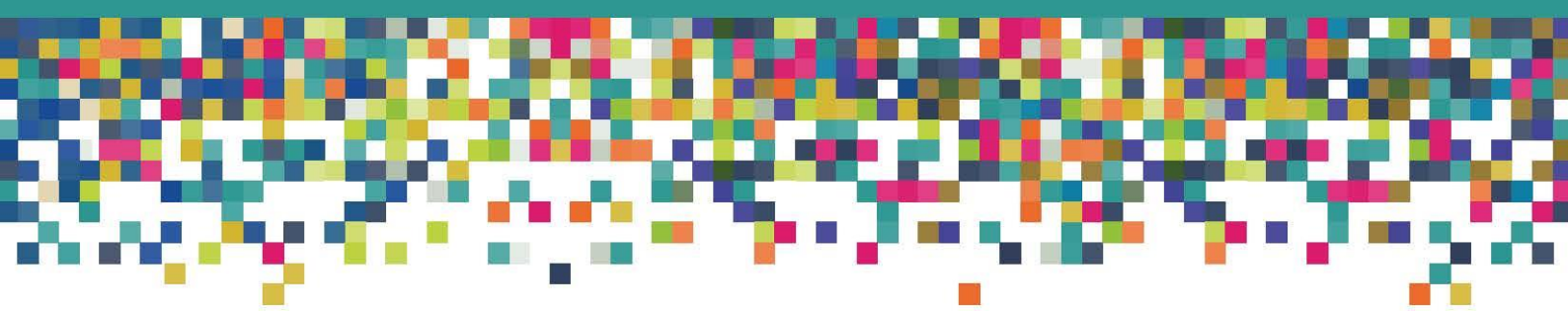




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THE MATTER OF ONLINE POLITICAL PARTICIPATION

A New Materialist Experiment on Emerging Adult
Participatory Practices in the United Kingdom, Ireland and the
Netherlands

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Abstract

The Internet has become a central aspect of politics on a global scale. As online political participation correlates with offline political participation (Bakker and de Vreese, 2011; Banaji, 2013: 464), spheres of engagement increasingly merge with one another. However, these two types of participation have been discussed as separate too often, and causal relations between the Internet and political engagement have hardly been researched (Boulianne, 2015: 536; Willems, 2019: 1192). This dissertation builds on New Materialisms and a 'politics of things' perspective to make the theoretical case for the unification of various participatory practices. It engages with the question of causality by undertaking an experiment rooted in the materiality of online spaces. A sample of 183 emerging adults took part in this experiment. Results show that distinguishing between different types of participation is indeed no longer productive. Moreover, findings highlight the causal relationship between social media spaces and willingness to engage in certain political activities. Based on this, the case for a unification of the online and offline spheres of participation and the materiality of the Internet is supported. These findings highlight questions about the ways in which political practices are influenced by design decisions.

INTRODUCTION

The Internet is both everywhere and nowhere – it is physically dependent on servers and cables, but it exists without a single location of primary residence. This means that a single digital act could partially occur in countless physical locations simultaneously, or an action in one place could result in effects in another place. (Wylie, 2019: 238).

The role of the Internet in politics has become undeniable. For instance, when the result of the Brexit referendum was announced in June 2016 blame fell on social media as “Russia used Twitter bots and trolls ‘to disrupt’ Brexit vote” (Gibbons, 2017). Similarly, after Trump won the US presidential election a few months later headlines read “Your Filter Bubble is Destroying Democracy” (El-Bermawy, 2016) and “Facebook’s failure: did fake news and polarized politics get Trump elected?” (Solon, 2016). Governments struggle with the growing entanglement of the Internet and politics. In 2016, for instance, the Internet was shut down in 27 countries (Nyabola, 2018: 8). It is clear that the public, governments and even academics are struggling to approach the online aspect of politics.

A substantial amount of media studies, communication and political science research has approached the intersection of the online space and the political process. On the one hand, this work has provided positive accounts of accessible and liberated online political utopias (Natale and Ballatore, 2014: 106), on the other social media and online spaces are singled out as the sole instigators of contemporary democratic crises (Margetts, 2019: 107). A common focus of this research is on the ways in which citizens engage politically because of, or through, the Internet (e.g. Bode, 2017; Bossetta et al., 2018; Dahlberg, 2004; Ingraham and Reeves, 2016; Papacharissi, 2004). Here the picture starts to emerge that the Internet is too complex to be seen as either good or bad. This focus on participation is replicated in this dissertation. However, here a New Materialist theoretical foundation is implemented, with the aim of producing a more holistic account of modern political engagement. Realistically, individuals engage politically not just in one type of sphere, but rather in intersecting spaces. Applying a ‘politics of things’ perspective (Willems, 2019: 192), an understanding of overlapping spheres can be applied in different areas. Embedding a New Materialist perspective additionally allows for recognition of the materials embedded and implicated in the digital (Hondros, 2015: 1). This dissertation thus re-evaluates a common dichotomization of the “online public sphere

and 'physical', offline public space" (Willems, 2019: 1197), while employing a New Materialist ontology in novel ways.

This dissertation presents an unconventional perspective on political participation, both theoretically and empirically. Meta-analysis shows that while online participatory practices are a common research topic, experiments are rarely used (Boulianne, 2015: 534; 2019: 49). This dissertation presents a web-based experiment (Reips 2002:243) to observe causal effects between online spaces and participation. This experiment operationalizes a New Materialist understanding of media into an observable empirical study. The chosen research population of emerging adults (18-27), is also generally overlooked in definitions of political participation (Pickard 2019:395). Through this experiment causal hypotheses are examined, but the strong theoretical component of this dissertation is also tested, asking: How can New Materialist theories be applied to understand an 'in-material', digital participatory space?

To answer this question a variety of concepts need to be discussed. The first chapter of this dissertation outlines contemporary works on participation and online spaces. It also explains its theoretical basis within New Materialisms and discusses previous work on the relationship between materiality and political participation. This leads to the formulation of a set of hypotheses, which are followed by a discussion of the methodology of the web-based experiment. After this a statistical analysis of the data is provided. Building on this analysis, a discussion of the results and their relation to New Materialisms is provided. Finally, conclusions about effects found in the experiment and the usefulness of a New Materialist perspective are discussed. Throughout these sections political participation amongst young people is approached in original ways. Original empirical results are provided, while this dissertation also demonstrates the importance of the renewal of ontological positions in our heavily mediated time.

THEORETICAL FRAMEWORK

Media studies, communications and political science scholars have actively researched the interaction of the political and the Internet. Studies on online spaces and politics are abundant, focussing on campaigning in the digital age (e.g. Bright et al., 2018; Cogburn & Espinoza-Vasquez, 2011; Conway et al., 2015; Enli & Simonsen, 2018; Evans et al., 2014; Graham et al., 2016; Kreiss & McGregor, 2018; Vergeer, 2013), or fake news (e.g. Allcott & Gentzkow, 2017; Bovet & Makse, 2019; Lazer et al., 2018; Levi, 2017), and filter bubbles (e.g. Flaxman et al., 2016; Groshek & Koc-Michalska, 2017; Kanai & McGrane, 2020; Pariser, 2012). One strand of this research hones in on political participation in a digitally networked context. This literature review presents new perspectives on this type of research. In doing this, it draws on novel combinations of theories of political participation, New Materialisms and the 'politics of things', while situating itself within contemporary empirical works. As such, it distances itself from the common juxtaposition of digital and offline participation (e.g. Vissers and Stolle, 2014). New Materialisms serve as the ontological and theoretical base. This combination of theories allows for a more holistic theoretical foundation for the investigation of political participation.

Empirical Context: Interface Design and Participation

In recent years a vast amount of empirical work on online political participation has also been undertaken. A majority of this research focuses on the choices made by citizens and social media users (e.g. Bode, 2017; Bossetta et al., 2018; Dahlberg, 2004; Ingraham & Reeves, 2016; Papacharissi, 2004). These works engage with traditional and digitally focussed definitions of political participation. Traditionally, political participation is defined as consisting of activities intended to influence the formation and decisions of governing bodies (Milbrath and Goel 1982; Verba and Nie 1987). This century, new definitions of political participation have emerged (di Gennaro and Dutton, 2006: 299). This 'digitally networked participation' recognizes activities online as political participation too (Theocharis, 2015: 6). This expansion of the definition of participation has its empirical implications. Questionnaire research on social media and political participation shows that participating online is associated with general political participation, for instance in Canada (Vissers and Stolle, 2014: 272), the USA (Feezell et al., 2009: 15), Hong Kong (Tang and Lee, 2013: 770), Sweden (Gustafsson, 2012:

1121), and Nigeria (Abdu et al., 2017: 7). In a sample of young people from seven European countries, a strong significant correlation between offline participation and various online participatory practices of 0.639 was found (Banaji, 2013: 57). Opposite to these findings, research also highlights that 'intense' Facebook use is negatively associated with participation (Vitak et al., 2010: 112), and the frequency of negative online participation (Lutz and Hoffmann, 2017: 885).

The prominence of questionnaire research in this field seems contradictory with the aims of many of these studies, which essentially investigate the effect of the Internet. Experimental research on the effect of social media is rare, which is why little can be said about the causal relationship between forms of participation and the online space (Boulianne, 2015: 534). However, as technologies such as social media interfaces and their features are not neutral, the effects of their design should be scrutinized. Essentially, social media design can be seen as the result of social struggle (Freedman, 2002: 434). Power dynamics, ideologies and hegemonies are embedded in technological design at every level (Costanza-Chock, 2020). Causal investigations of design expose the ways individuals benefit from and are oppressed by technological systems, based on their location in the "matrix of domination" (Collins, 2002: 18). The designs of online spaces are increasingly embedding our experiences, politically and otherwise. Experimental research, unlike other methodologies, allows for crucial investigations into the causal effects of online spaces and their design.

A few studies have taken a design focus through experiments. One infamous example experimented on millions of American Facebook users, without their explicit consent. Users were enrolled in a study on the effects of including an 'I voted' button on Facebook during the 2010 congressional elections (Bond et al., 2012: 1). It was found that turnout increased significantly if such a button was shown (Bond et al., 2012: 3). This study exemplifies that conscious design choices made by researchers, or social media companies, can affect political behaviour. More ethically sound field experiments also exist. For instance, Theocharis and Lowe sought out citizens without a Facebook account and recruited experiment participants to open a Facebook page, while the control group did not (2016: 473). They found that maintaining a Facebook page has a clear negative effect on participation (Theocharis and Lowe, 2016: 479).

Furthermore, a series of natural online field experiments on specific online affordances and participation was conducted by the Oxford Internet Institute. All of these experiments concerned “changes to the design of digital platforms” (Hale et al., 2018: 3). Differences in participation are then attributed to adjustments in the design of platforms. These experiments have shown that displaying popular petitions as ‘popular’ increased willingness to sign (Hale et al., 2014: 13). Likewise, displaying the number of people who have previously signed a petition affects people’s willingness to sign (Margetts et al., 2011: 339) and including ‘trending’ information has such an effect too (Hale et al., 2018: 15). Such stimuli, rooted in theories of ‘social information’ (Margetts et al., 2011: 322), thus strongly appear to have a causal relation with participation. Therefore, these findings support the idea that design can change the nature of participatory practices, showing that “small changes in the display of social information and the user interface may have significant impacts” (Hale et al., 2018: 15). The discussion of New Materialisms, media ontologies and ‘politics of things’ that follows here shows how this experimental focus on design, while not previously theoretically explicated like this, fits well with a New Materialist perspective which unifies discourses of online and traditional participation.

New Materialism as an Ontology of Media Studies

To allow for a discussion of New Materialist perspectives on interface design and online political participation at a later stage, the broad ontological assumptions of New Materialisms must be addressed. Therefore, this discussion moves away from political participation and media in a more general sense, to present an overview of the theories of New Materialisms first.

In the 1990s, the theories of New Materialisms came into use within feminist thought (Dolphijn and Tuin, 2013: 153). New Materialisms, as the term suggests, build on the materialism that juxtaposed the humanist enlightenment attitude in the nineteenth century (Bennett and Joyce, 2009: 2). Moreover, it draws on philosophies of existence dating further back, it is largely indebted to Spinoza (Ansell-Pearson, 2017; Dolphijn and Tuin, 2013: 94). The theories of New Materialisms are usually feminist or Marxist in nature (Dolphijn and Tuin, 2013: 20). It is

because of this varying basis of theories, and the variety of ways in which theorists build on Deleuze, Foucault, Descartes and Spinoza, that one might choose to speak of New Materialisms (plural) rather than a singular new materialism (Coole and Frost, 2010: 4).

New Materialisms accept an idea of unity over duality. This is not to say this idea was 'invented' in this theory, as a variety of indigenous traditions (Gosden et al., 2006: 2) have displayed this understanding for a long time. For instance, West-African Anlo-Ewe traditions have provided far more unified conceptions of experience for centuries (Geurts and Adikah, 2006: 38). New Materialism refers to itself as 'novel' because it has a 'Western' focus and, for instance, builds on the claims in Spinoza's 1677 Ethics. As such New Materialisms forgo versions of this knowledge which exist elsewhere.

New Materialisms assumes a unity between mental and physical, where "the mind is the idea of the body, making the body necessarily the object of the mind" (Dolphijn and Tuin, 2013: 94). The New Materialist project thus restates this idea of unity, which rather than juxtaposing the body and the mind, the material and the mental, the physical and the ethereal, centres the assumption of monism over dualism (Dolphijn and Tuin, 2013: 85–86; Parikka, 2012: 95). Monism essentially sees the idea of oneness as a central truth in which everything is unified (Schaffer, 2018). New Materialisms mainly express their adherence to monism by unifying the material and the social into one (Coole and Frost, 2010: 9). In doing so, like original materialism, it opposes the dualist approaches of modern and postmodern social sciences (Harris, 2016: 155; Monforte, 2018: 379). Alongside the active pursuit of unity, New Materialisms offer an alternative to constructionism approaches by engaging with non-human actors (Monforte, 2018: 380). Through an integration of scientific theories, and a broad definition of agency, New Materialisms present an account in which matter is more than 'merely' an environment for the human experience (Coole and Frost, 2010: 9). Essential to this centring of materiality are some critical assumptions.

First, New Materialisms offer an understanding of the natural sciences, their measurement tools and their evolving findings as essential to ethics and social theory (Barad, 2007: 6). To understand a contemporary social reality, it is imperative to critically engage with the paradigms that often shape what is perceived as truth (Monforte, 2018: 379). Secondly, crucial to centring materiality in the understanding of the social are reconceptualizations of agency.

Alongside human agency, often presupposed in the social sciences, New Materialisms describe materials as agentic too (Fox and Alldred, 2016: 25). Here one can recognize the ways in which New Materialisms reflect assumptions made in Actor-Network Theory (ANT) and Science and Technology Studies (STS), where non-human actors are agentic too (Bennett and Joyce, 2009: 5; Latour, 2000: 113). The New Materialist view on agency creates equality between human and non-human actors: “the human species is being relocated within a natural environment whose material forces themselves manifest certain agentic capacities” (Coole and Frost, 2010: 10). Derived from this movement of unification, is the third ontological assumption of material and human unity and equality. New Materialisms do not share a materialist ontology in which “everything is material or physical” (Ansell-Pearson, 2017: 92). Contrastingly, New Materialisms function on an ontologically ‘flat’ basis, in which “culture and nature cannot be differentially privileged” (Fox and Alldred, 2016: 20). These three central assumptions of New Materialisms distinguish the approach from constructionism, realism, and ‘old’ materialism.

The ways in which New Materialisms describe the nature of reality and social knowledge also impact perceptions of media and their roles. Specifically, here, attention will be paid to social media as these are currently studied in relation to political participation most prominently. Media from a New Materialist perspective, are an important object of study not just for their cultural value, but also for their material existence, as “our material lives are always culturally mediated, but they are not only cultural” (Coole and Frost, 2010: 27). The base assumptions of New Materialisms interact with theories of media and communication in varying ways.

Materializing the media, specifically the Internet, is a complicated task. This is the case because of the prevailing notion “that the internet is an immaterial ‘cyberspace’, a virtual world, separate from the material world” (Hondros, 2015: 1). However, social science has experienced a ‘material turn’ in the past two decades (Casemajor, 2015: 5). Building on this turn infrastructure studies contests the illusion of “wirelessness” by examining how the digital is entangled in physical structures such as datacentres and undersea cable networks (Starosielski, 2015: 53–54). Moreover, German traditions of media studies have specialized in the examination of software and hardware in the Internet (Parikka, 2012: 96). An explicitly New Materialist approach to digital media is found in Digital Materialism, which builds on

the introduction of the New Materialist natureculture concept by Donna Haraway (Casemajor, 2015: 5–6). Natureculture, unifies the human, cultural, and the natural as inseparable elements of reality (Malone and Ovenden, 2016: 1). Adapting this concept to a digitally mediated context, in Digital Materialism one can speak of medianatures, which ground media in material, cultural and physical practices (Parikka, 2012: 97). Such an understanding of digital media sees online media as increasingly material, without necessarily being tangible (Casemajor, 2015: 9). Social media then also constitute a “material-semiotic” nature, where their signs possess a certain intangible materiality (Thomas, 2015: 34).

This Digital Materialism presents a new way of understanding materials, “it rejects a conception of materiality which is solely based on the fact that humans may touch, feel, see, or hear a sensation” (Reichert and Richterich, 2015: 6). This type of materiality is the “weird” and “vibrant” materiality of the Internet – which is mediated strongly through non-solid or ‘in-material’ objects (van den Boomen et al., 2009: 9; Parikka, 2012: 96). Here online materiality is understood as ‘in-material’, “[defying] immediate physical contact, yet which is incorporated in materiality rather than floating as a metaphysical substance in virtual space” (van den Boomen et al., 2009: 9). Thus, through infrastructure studies, German media studies traditions, and most strongly here through Digital Materialism elements of New Materialisms have taken shape in media studies. The Internet, though complex, is not without its materiality and therefore can very well be studied with a New Materialist perspective, as non-solid, weird, vibrant and ‘in-material’.

The Matter of the Political and the Participatory

The critical nature of New Materialist theory is not enough to link this theoretical concept to political participation. In the contemporary, media saturated situation political participation is linked to a variety of media practices, but not as often to materiality. Human intention, rather than material context, has long been the main element of political participation (Milbrath and Goel 1982; Verba and Nie 1987). From a perspective of New Materialisms, it would be worthwhile to examine participatory acts in their contexts of matter, carefully considering the nature and agency of, for example, a campaign sign or a voting ballot. However, the project of political participation scholarship was preoccupied with another conceptual challenge during the ‘material turn’: the Internet and its’ place in the participatory ecosystem.

During this tumultuous time online activities such as, sharing and commenting on social media sites, were added to definitions of political participation (e.g. Halupka, 2014; Theocharis, 2015). The Internet-centric expansion of the definition of political participation (Bimber, 2003) faced resistance. Prominent is the view that this type of activity is “slacktivism” (Morozov, 2011), a mere semblance of engagement that achieves little result (Dean, 2005: 53). These concerns are largely abandoned here, as they have been refuted. “Tiny acts of participation”, as expressed online, sporadically gain incredible traction which can amount to real change (Margetts et al., 2015: 197). This view of ‘tiny acts’ and the possibility of change echoes some of the descriptions of power offered in New Materialisms. A New Materialist understanding of power, sees a struggle for power as contained in constant small renegotiations and replications of the status quo (Harris, 2016: 165). However, this connection between New Materialisms and online political participation is hardly ever formed (Asenbaum, 2019: 2).

Materials have sometimes been included in the expansion of political participation. However, these perspectives hardly draw on New Materialisms directly. For instance, arguments around the expansion of citizenship and participation norms increasingly include consumer practices as a form of engagement (Micheletti et al., 2004; Theocharis and Deth 2018: 150). However, this characterization of consumerism as political often poses itself as post-materialism (Copeland 2014: 263; Theocharis and Deth 2018: 155). This theorization, while describing an inherently material act, ignores the importance of materiality by its descriptions of post-materialist values. In contrast, through the perspective offered by New Materialisms, political consumerism exemplifies the entanglement of the political and the material in a straightforward manner.

Other theorists more explicitly make this link between materialist perspectives and the expansion of political participation. Here special attention is given to the arguments made by Wendy Willems (2019) and Noortje Marres (2012). While not explicitly referring to New Materialisms as a source, both these scholars present arguments that often fit with a New Materialist perspective. Willems, inspired by the ‘material turn’ argues that the distinction between analogue and digital participation is arbitrary in many contexts, based on her investigation in Zambia (Willems, 2019). Learning from the Global South she describes how

access to technology, and the circulation of analogue activism are far from separate (Willems, 2019: 1193). In Kenya, too, politics and movements for change have been found to be dependent on a combination of digital platforms, offline conditions, and the people using these systems (Nyabola, 2018: 77). Technologies and infrastructures shape and manifest the political in South Africa too (Schnitzler, 2013: 673). Willems' description of unity, and contention of the false dichotomy between digital and analogue participation resembles the New Materialist perspective. Moreover, Willems (2019: 1202) introduces the 'politics of things', which refers to

the way in which things, objects, infrastructures and physical space remain crucial to political communication in a digital age, and how objects such as party regalia and the built environment become politicized and digitally remediated in particular contexts.

Marres, too, refers to the 'material turn' in her argument (2012: 6). She engages with traditional ideas of political participation, such as those presented by Verba and Nie, or the pessimistic account by Putnam, and refutes these through an introduction of material importance. Drawing more intensely on STS and ANT (Marres, 2012: 10), she presents a view in which materials are heavily involved in political participation. However, unlike New Materialisms, in her account materials are slightly less agentic, because her focus remains on human use of the material as a measure and form for engagement. This material type of engagement, and its examination help uncover how, some forms of participation have been privileged over others (Marres, 2012: 8).

In this dissertation materiality is included in the definitions of political participation in order to reveal new modes of participation as well as the ways in which these are valued and restrained. In doing so, it draws on all three strands of participation outlined above. It recognizes the importance of intent, as outlined in traditional definitions of participation, while foregrounding that these definitions have not taken the 'intent' of materials into account. Moreover, it draws on broader, online, definitions of political participation. It especially recognises that digitally networked participation, in creative individualized and spontaneous ways creates "a new and distinct mode of participation well fitted within a general taxonomy of political participation" (Theocharis and Deth, 2018: 158). The online material political participation under scrutiny here, is thus not the only form of participation, but merely an aspect of engagement in contemporary times. Finally, drawing on the two theories above, this

dissertation aims to fully involve the ways in which some ‘in-material’ materials are involved in participatory efforts. Drawing on perspectives developed in the Global South, this dissertation employs the ‘politics of things’ (Willems, 2019: 11) as an essential element of online political participation. The ‘politics of things’ is not separate from online participation, and, as I argue, online political participation is essentially also a ‘politics of things’ in a form of public engagement (Marres, 2012: 2).

Experimental New Materiality: Operationalizing New Materialisms

Throughout this literature review, topics not often discussed in conjunction have been connected: experiments, mediated political participation, New Materialisms and the ‘politics of things’. These matters will also be linked empirically, through the design of an experiment. Such an experiment builds on the use of interface changes in previous experiments on political participation (Hale et al., 2018: 3). This focus on design exemplifies the centrality of ‘in-material’ or weird materiality of online platforms in the study of digitally networked political participation. This emphasis on weird materials allows for the consolidation of narratives of traditional political participation and digitally networked participation, as these types of participation both interact with material surroundings. Centring an experiment on specific ‘in-material’ objects in specific online spaces allows for precise research, often lacking in this field (Boulianne, 2019: 49).

Additionally, employing an experimental design to investigate the role of online ‘in-material’ features suits the epistemological and ontological assumptions of New Materialisms well. “In order to grasp the politics of objects, we must pay attention not just to objects, but also to the technologies and settings which enable them to operate” (Marres, 2012: 105). Experimental methods fit a New Materialists perspective of politics (Connolly, 2013: 402), because engaging with constantly renegotiated power in different ways might produce different outcomes. Additionally, New Materialisms appreciation of the natural sciences and its epistemologies suits use of one of the most traditionally ‘scientific’ methods: the experiment (Toohey, 2019: 940). Therefore, the design of an experiment on the ‘in-material’ materiality of political participation online suits not only the focus on design in other experimental work, it allows to answer calls for stronger investigation of causal relationships between online spaces and participation, and respects New Materialisms appreciation of scientific methodologies.

To conduct such an experiment some of the concepts outlined in this review have to be operationalized. One of the base assumptions of the experiment developed in this dissertation is the New Materialist assumption of monism. While the experiment focusses on the manipulation of online design to study effects on participatory practices it does not assume this participation is solely online or solely traditional. Rather, in a form of monism, it unifies these types of participation, which are all always materially mediated, through the 'politics of things', where even the intangible online space is imbedded in objects (Willems, 2019: 1204). Building on this base, the experimental design assumes two central elements. Namely, a New Materialist understanding of power and a Digital Materialism based understanding of the materiality of online spaces. As outlined here, New Materialisms understand power as constantly renegotiated, in small but important ways (Harris, 2016: 165). In the experiment design this understanding of power will come to the fore through the centrality of 'tiny acts of participation' as central units of analysis (Margetts et al., 2015: 214). The stimulus in the experiment thus centres around small but important changes in web space design, while the response variables also constitute various tiny participatory acts. Furthermore, drawing on Digital Materialism, a central element of the experiment design is the conception of online interface elements as weird or 'in-material' materials (van den Boomen et al., 2009:9; Parikka, 2012: 96). Accordingly, these interface elements are attributed their own material agency. These interface elements can thus, on an equal level with human elements, influence participatory practices. Moreover, the difference between the experiment control and stimulus is achieved through changes in online materiality. As "constructedness does not deny materiality" (Barad, 1996: 181), these online experimental changes are rooted in materiality, and as such in New Materialisms.

Hypotheses

This theoretical grounding and discussion of various empirical predecessors leads to the formulation of a set of hypotheses which will be scrutinized in the following sections. Causal hypothesis formulation is essential to the structure of experimental research (Berger, 1998: 249; Neuman, 2004: 228). Previous experiments have described how social information has a tendency to cause increased involvement in micro acts of participation (Hale et al., 2014, 2018;

Margetts et al., 2011, 2015). In this study it is assumed that the materiality of social media affordances embeds such social information, therefore:

Hypothesis 1: Emerging adults in Ireland the Netherlands and UK on average will show more general involvement in participatory activities when presented with social and political issues within the 'in-material' space of social media interfaces.

Moreover, as an understanding of the 'politics of things' is employed to bridge the gap between online and offline participatory practices here, assumptions are made about the co-occurrence of different participatory practices. On the basis of the positive relationship found in a variety of studies on the interaction of online and offline political participation (Bakker and de Vreese, 2011: 464; Banaji, 2013: 56; di Gennaro and Dutton, 2006: 311; Kim et al., 2017: 899) the following hypothesis takes shape:

Hypothesis 2: Emerging adults in Ireland, the Netherlands and UK who report more offline participation are also more likely to report more online participation, and vice versa.

Involved in the pre- and post-test of the study design various participatory practices are repeated. As previous political participation is indicative of future participation (Jennings and Markus, 1988: 309; Smith, 1999: 558) it is formulated:

Hypothesis 3: Emerging adults in Ireland, the Netherlands and UK who report higher past participation, regardless of experimental treatment, will on average report higher hypothetical future participation.

Finally, this dissertation also deals with the suitability of New Materialisms as a theoretical framework for understanding digitally materialized participation. This is tested through the experiment. However, the theoretical complexity of New Materialisms cannot just be caught in hypotheses. Therefore, this project also asks, how can New Materialisms theoretical work be applied in an 'in-material', digital participatory space?

METHOD AND METHODOLOGY

New Materialisms present us with a broad theoretical basis for the investigation of the intersection of online and offline participation, putting forward a strong focus on the 'in-material' constraints and opportunities for engagement created in online spaces. This specific project employs an online, or web-based, experiment to this purpose. Ontologically and epistemologically this methodology has been justified from a New Materialist perspective, but it also has methodological benefits. Substantively, the investigation of political participation benefits from experimental research as engagement is a directional action (Boulianne, 2015: 534; Gerber et al., 2008: 39; Harder and Krosnick, 2008: 532). Experimental research is concerned with this type of causality: "compared to other social science methods, experiments offer the strongest test of causal relationships" (Neuman, 2004: 228).

Moreover, online experiments have some specific advantages. First, web-based experiments have a wide range of practical assets not found in traditional experiments such as "speed, low cost, external validity, experimenting around the clock, a high degree of automation of the experiment (low maintenance, limited experimenter effects), and a wider sample" (Reips, 2002: 244). Crucially this type of experiment also specifically fits an investigation into online practices itself. Web-based experiments enable large scale investigations of collectives and society, exploring "the Web not only as an object of sociological interest in itself but as a tool for doing social science" (Salganik and Watts, 2009: 461). Moreover, web-based experiments, while posing issues related to circumstances of participation and administration, benefit from some of the advantages of field experiments (Gross, 2017: 561). Participants can take part in relatively natural settings, for instance at home, as a result unconventional participants are more easily included (van Steenbergen and Bocanegra, 2016: 1715).

Sampling

These participants, in this case, are emerging adults in the Netherlands, Ireland and the United Kingdom (UK). Previous work found that while Ireland and the UK are distinctly different countries, participatory practices amongst the young in these two places are nearly identical in this "Anglo-Celtic cluster" (Sloam, 2016: 352). This is why respondents from these countries are aggregated into one cluster in analysis. Samples of people aged 18-27 are taken from these

populations. This age range captures inhabitants of both regions conventionally known as 'emerging adults' (Subrahmanyam et al., 2008: 422). This age group is a fascinating research case as emerging adults are seen as both more and less engaged (Snell, 2010: 259). Moreover, as emerging adults determine the future of democracies their engagement is a crucial research subject (Farthing, 2010; Henn and Foard, 2012). During this phase of life participatory practices are developed and learnt (Neundorf et al., 2013: 93). Additionally, as 'in-material' participation is unconventional, and the young increasingly engage in non-institutionalized and online modes of participation (Sloam and Henn, 2019: 2), their participation is extremely relevant here. Finally, the interesting similarities and differences between these regions justifies the comparison of these populations. As the Anglo-Celtic cluster has some of the lowest numbers of young adult political participation, and the Netherlands some of the highest in the EU, this comparison could yield interesting results (Kitanova, 2019: 12–13). Focussing on two regions which are similar in geographical cultural, social and political ways, but with different participatory patterns amongst the young provides an interesting minimally different case, that is simultaneously influenced by the researchers' own experiences, locations and knowledge (Lund, 2014: 231).

Various techniques were employed to sample from these populations. Due to physical restrictions imposed by governments to stop the spread of covid-19, all sampling took place online. While this naturally restricts the ability to sample randomly, online sampling does fit the online focus and conduct of the experiment itself (O'Connor and Madge, 2017: 425). The sampling here takes the common experimental form of a quota and convenience sample (Meltzer et al., 2012: 251; Mullinix et al., 2015: 110). The quota element focusses on inclusion of the two regions, aiming to achieve equal numbers in both. Unlike other studies, the sample here does not solely include students, but also other young people, allowing for more robust results (Hooghe et al., 2010: 94). Additionally, speaking for the robustness of the convenience quota sampling employed here, comparative experimental communication tests have shown large similarities between population samples and convenience samples (Mullinix et al., 2015: 123).

Practically speaking a link to the online experiment was distributed through friends, university professors and professionals. Additionally, the link was distributed on social

media, an effective way to access hard to reach populations and collect responses (Bhutta, 2012: 59). In many ways the sampling design mirrors the research focus presented here, embedded in multiple online materials respondents were able to interact with the research content, while the experimental content interacted with them in turn.

Design

The weird 'in-material' materials of social media are given shape in the form of a series of societal images in this online experiment. Using the software Qualtrics, common for the design and distribution of web-based experiments (Paolacci et al., 2010: 415), a series of questions and images are presented to respondents. The 'in-materiality' of the Qualtrics software thus embeds the actions of respondents, like all mediated materials do (Parikka, 2012: 96). The web-based experiment included both experimental and questionnaire elements, all of which can be found in Appendix A.

First, the design of the questionnaire elements was largely based on political participation indices employed by the European Social Survey (European Social Survey, 2018; Harrison et al., 2011), online political participation indices developed in media studies (Ohme et al., 2018; Theocharis and Deth, 2018) and a pilot test of these indices in a previous paper. This pilot test provided a basis to shorten indices of traditional and online participation to six questions. These indices were adopted as both pre-tests and post-tests, allowing for the design of classical experiment involving random assignment of conditions (Neuman, 2004: 238). Responses to the pre-test were given on a scale where the respondent indicates how often they have engaged in any of the twelve activities over three months (Talò and Mannarini, 2015: 803). This proved suitable for the questions which were available in both English and Dutch, based on the respondents preference, as this scale was previously tested for both English and Dutch translations (Lewis and Hermans, 2003: 98). For the post-test respondents indicated their hypothetical agreement with the societal images on a scale from 0 (disagree completely) to 100 (agree completely). They also reported their hypothetical engagement in any of the twelve activities in response to experimental images. Additionally, demographic information was also collected. This was done at the end of the survey to adhere to a "high-hurdle technique", to avoid dropout where: "motivationally adverse factors are announced or concentrated as close to the beginning of the Web experiment as possible" (Reips, 2002: 249).

The final question concerned a manipulation check (Highhouse, 2009: 557), where respondents describe what they think was being researched.

The experimental element embedded in the questionnaire took the shape of images depicting social issues. These issues were concerned with LGBT+ rights and environmental protection, issues often salient amongst the emerging adult population (Pickard, 2019: 383; Russell et al., 2010). For both the experimental and the control conditions respondents were presented with two images (see also Appendix A). One depicting a pride flag and stating: “OUTLAW HATE CRIME AGAINST LGBT+ PEOPLE: CHANGE HATE CRIME LAWS. The home office should re-classify hate crime against lgbt+ people as aggravated offences” (or a Dutch translation), a statement adopted from LGTB+ UK-based organization Stonewall, and COC in the Netherlands (Bachmann and Gooch, 2017: 13). The second image shows an airplane and the text: “WE NEED TO PROTECT THE ENVIRONMENT. International laws should prohibit flights cheaper than train journeys within Europe” (or a Dutch translation) based on proposals put forward internationally by Extinction Rebellion (Mendick and Blackall, 2020). These statements thus concern actual proposals put forward by advocacy groups, that are yet to see government responses. This hopefully limits outside perceptions from impacting the experiment result, while the images still concern pressing and important matters to the studied population.

The images are thus very similar across the control and experimental condition to minimize context effects (Smith et al., 2009: 431), however, a difference in social media materiality surrounds these images. As stated in the research hypotheses these types of ‘in-materials’ could have an agentic impact on engagement in all types of participatory activities. The experimental condition is based on Instagram’s experimentation with the removal of like numbers from posts (Paul, 2019), and the prominence of social information in previous experiments (Margetts et al., 2015: 132). In the experimental condition the same images are shown, and the same questions about hypothetical engagement and agreement are asked, however, the images are embedded in a manufactured Instagram environment. In this way the experimental condition expresses the focus on a specific social medium, its materiality and its relation to participatory practices. In this manufactured Instagram environment two supportive, but vague, comments are displayed, as well as the number of likes, the account

'posting' the images and other common 'in-materials' of the Instagram interface. In the control condition, in contrast, no such features are depicted as the social images are shown simply on a white background.

Reliability, Validity and Ethics

As the experiment outlined here engages not only with empirical hypotheses but also a theoretically informed research question, it is essentially a theory-directed experiment (Neuman, 2004: 232). This has some implications for the reliability and validity of the experiment and its results. The reliability of research concerns the replicability over time and populations (Golafshani, 2003: 598). Thus, concerning questionnaires and experiments, reliable measures produce the same results over repeated use (Kirk et al., 1986: 41). This reliability is tested through the comparison of questionnaire results between the two populations. Moreover, the documentation of the experiment, design and analysis, allows for the independent repetition of the experiment. Finally, the web-based experiment allows for very clear instruction and constant implementation of the measures, ensuring stability reliability (Neuman, 2004: 253).

The validity of research essentially concerns whether measures actually concern the intended concepts (Golafshani, 2003: 601). The validity of the measures and experiment are in part ensured by the ways in which the instrument is based on previous research (e.g. Margetts et al., 2015; Ohme et al., 2018; Sibley et al., 2011). Moreover, web-based experiments, through rigorous testing and consistency of software have been shown to allow for great external validity (Reips, 2009: 376). The external validity, the ability to generalize to a larger population (Campbell, 1986: 76), will also be ensured by the discussion of the results, which will not go beyond the sampled population or scope. Internal validity is ensured also through pre-testing of the web-based experiment, specifically on six close contacts (Reips, 2009: 381), including debriefing interviews (Onwuegbuzie et al., 2008:4) to establish a clear, understandable experiment. Moreover, the manipulation check question ensures to test the convergent validity by testing if the experimental conditions remain undetected and are understood correctly (Highhouse, 2009: 557).

Finally, concerning the validity of the statistical analysis, the analysis of the data was pre-registered with the OSF before the commencement of analysis on June 30th 2020. This reduces the chance of Type I error strongly, and holds analysis to high standards (Lindsay et al., 2016). The registration can be accessed from August 20th onwards on OSF (<https://osf.io/2j9sv>). The analysis and pre-registered analysis can be compared in this manner.

Ethics

The ethics of experimental and Internet-based research are very important. While web-based research provides access to new types of respondents (Reips, 2002: 244), it also inherently excludes other types of respondents (O'Connor and Madge, 2017: 242). This, as already related to the exploration of validity, begs that the population and sample here specifies the exclusion it naturally creates. Theoretically, as the weird materials of social media are concerned, this exclusion is justified. However, it is crucial to be cognisant of the people, predominantly older people and people with few financial resources (Buckingham, 2007: 50), excluded from this theorization of participatory practices. Moreover, the validity of consent becomes complicated when research takes place without a researcher present (Eynon et al., 2017). This is why here consent terms are split out over multiple questions. Finally, experiments essentially contain some deception, which creates ethical issues (Hertwig and Ortmann, 2008: 86). In this experiment, deception was contained to its absolute minimum, the goal of the questionnaire is explicitly stated at the start of the questionnaire, moreover, the experimental images are introduced through additional text which restates the research goal and emphasises the ways in which answers are used. Moreover, the experimental conditions are minimally different, the images are the same, only their contexts vary slightly.

ANALYSIS OF RESULTS

This questionnaire, with its embedded experimental element collected online responses from June 10th 2020, until July 20th 2020. In total this achieved a sample of 349 responses. Taking into account completion, consent and appropriate locations and ages, the sample analysed here represents 52.44% of these responses (n = 183). These respondents are all considered emerging adults (Subrahmanyam et al., 2008: 423) between the ages 18 – 27 ($\mu = 23.1$, $\sigma = 1.86$). The responses taken into account here are only those that were recorded with an IP-address in the UK, Ireland or the Netherlands. The UK and Ireland are collapsed into an ‘Anglo-Celtic cluster’ here as youth participation in these two countries is very similar (Sloam, 2016: 532), and there were insufficient Irish responses for a separate analysis. Table 1 depicts the diversity of this sample. Roughly similar sample sizes were achieved for the two geographic regions (n = 84, n = 99), and the control and experimental conditions (n = 92, n = 91).

	GB (N=80)	IE (N=4)	NL (N=99)	Overall (N=183)
gender				
male	30 (37.5%)	1 (25.0%)	29 (29.3%)	60 (32.8%)
female	48 (60.0%)	3 (75.0%)	66 (66.7%)	117 (63.9%)
other	1 (1.2%)	0 (0%)	3 (3.0%)	4 (2.2%)
missing	1 (1.2%)	0 (0%)	1 (1.0%)	2 (1.1%)
education				
secondary	0 (0%)	0 (0%)	26 (26.3%)	26 (14.2%)
a-level	8 (10.0%)	0 (0%)	1 (1.0%)	9 (4.9%)
bachelor	36 (45.0%)	3 (75.0%)	20 (20.2%)	59 (32.2%)
master	36 (45.0%)	1 (25.0%)	52 (52.5%)	89 (48.6%)
ethnicity				
Latinx	2 (2.5%)	0 (0%)	1 (1.0%)	3 (1.6%)
Asian	22 (27.5%)	2 (50.0%)	2 (2.0%)	26 (14.2%)
Black	4 (5.0%)	1 (25.0%)	0 (0%)	5 (2.7%)
Mixed	6 (7.5%)	0 (0%)	8 (8.1%)	14 (7.7%)
Other	5 (6.2%)	0 (0%)	1 (1.0%)	6 (3.3%)
White	41 (51.2%)	1 (25.0%)	87 (87.9%)	129 (70.5%)
age				
Mean (SD)	23.2 (1.83)	25.3 (0.957)	22.9 (1.87)	23.1 (1.86)
Median [Min, Max]	23.0 [19.0, 27.0]	25.5 [24.0, 26.0]	23.0 [18.0, 27.0]	23.0 [18.0, 27.0]
condition				
control	40 (50.0%)	2 (50.0%)	50 (50.5%)	92 (50.3%)
experiment	40 (50.0%)	2 (50.0%)	49 (49.5%)	91 (49.7%)

Table 1. Demographics of the sample (n = 183), GB: Great Britain, IE: Ireland, NL: Netherlands.

Evidently, this sample overrepresents white, highly educated women. In this sense it mirrors a university student sample, where these groups are also overrepresented (Hooghe et al., 2010: 94). This type of skewed sample limits generalizability of the results (Leyva, 2017: 467) and this must be kept in mind when examining the results discussed here. However, due to the experimental element of this project some conclusions about patterns within human behaviours might still be generated (Meltzer et al., 2012: 252). Furthermore, as is visible in Figure 1, the location of the responses in this sample is diverse within both regions of interest. With this sample the hypotheses outlined in the theoretical framework are tested.

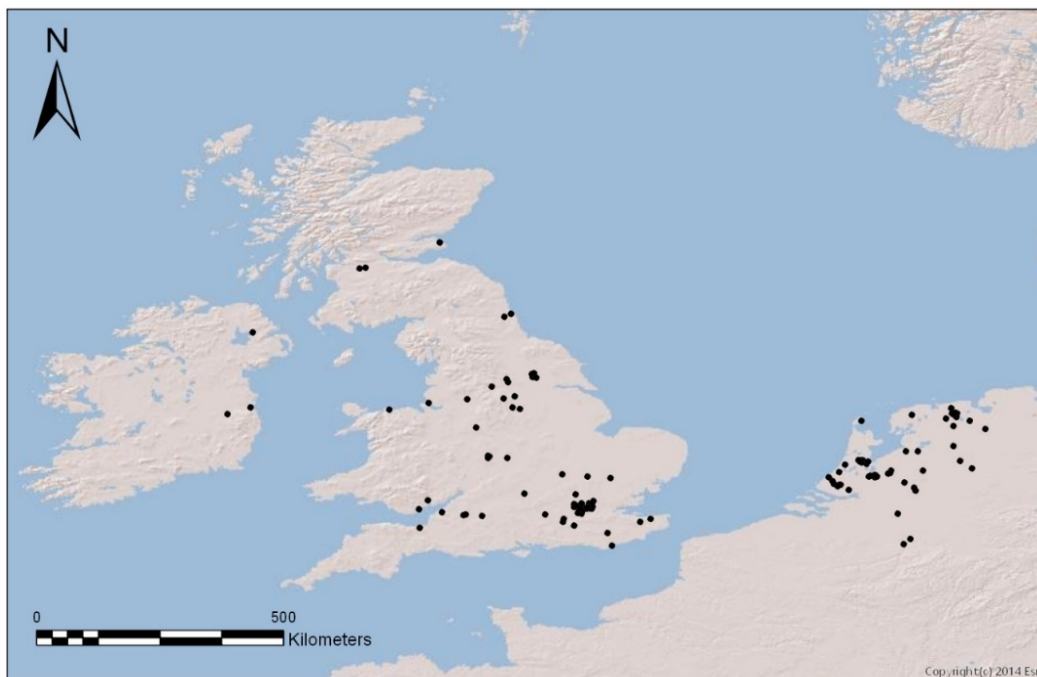


Figure 1. Map of IP addresses in the sample data.

To test these hypotheses responses to various questions, split up over indices, have to be aggregated. This is specifically the case for the indices of digital political (Cronbach $\alpha = 0.73$), and traditional political participation (Cronbach $\alpha = 0.65$). In these indices respondents reported the frequency of their engagement in 12 political activities.

	PC1	PC2	PC3
like	-0.5991978	0.54805691	-0.09323883
online petition signing	-0.5401139	0.56560845	-0.04954567
public post sharing	-0.6172856	0.59112158	-0.20542181
private post sharing	-0.4551070	0.11823762	0.34257054
profile picture	-0.5066422	-0.15502147	0.07161071
contact politicians online	-0.6131153	-0.06317474	-0.53505401
offline petition signing	-0.4579419	-0.26695982	0.32122457
wearing badge	-0.6428922	-0.19984136	0.13887693
boycotting	-0.4212371	0.22468225	0.57082300
attend a protest	-0.7090216	-0.26213899	0.17113044
join political party	-0.6578161	-0.49749136	0.02199815
contact politicians offline	-0.6314897	-0.42140231	-0.42336013

Table 2. Principal components of past participation: Q6 – Q18 (n = 183).

While a simple summation of the 12 question scores aggregates indices into single variables in a straightforward manner, both principal component analysis and confirmatory factor analysis could create more representative aggregate variables (Bartholomew et al., 2011: 289). Principal component analysis reduces data to fewer variables while maintaining the variance of the dataset (Jolliffe, 2002: ix). The coordinates of the first three principal components for participation are shown in Table 2. The three selected principal components had eigenvalues ($\lambda_1 = 4.006$, $\lambda_2 = 1.667$, $\lambda_3 = 1.119$) larger than the acceptable value of 1 (Bartholomew et al., 2011: 124; Jolliffe, 2002: 115). The first principal component shows a summary variable of disengagement, indicated by the negatively loaded relatively big coordinates. The second principal component aggregates liking, online petition signing, sharing political content online and boycotting products. This produces a variable that reflects newer forms of political participation. Finally, the third political component mainly creates a positive sum of privately sharing political content, signing offline petitions, and boycotting products, possibly hinting at an co-occurrence of less public forms of political participation.

While these component coordinates provide an interesting insight into what type of participatory activities generally occur together, they do not reflect contemporary definitions of political participation as split along the traditional and digital divide (Theocharis and Deth, 2018: 142). To usefully engage with the literature and hypothesis outlined here, these principal components will not be employed in further analysis.

Moreover, for a two factor confirmatory factor analysis, following the theoretical distinction of participatory practices, both the Tucker-Lewis Index (0.798) as well as the Comparative Fit Index (0.748) are smaller than 0.9, indicating bad fit (Marsh et al., 1988: 393). Therefore, in further hypothesis testing summations of past participation will be used since these provide both clear interpretability, and allow for engagement with current discourses on political participation. These indices are not perfect, as indicated by their just acceptable Cronbach α 's (Taber, 2018: 1279), but considering their previous use (e.g. Ohme et al., 2018; Sibley et al., 2011) and agreement with the contemporary studies and literature, they serve as a suitable measure in this study.

Through these summations the first hypothesis that is explored based on this data is H2. This hypothesis states: Emerging adults in Ireland, the Netherlands and UK who report more offline participation are also more likely to report more online participation, and vice versa. To test this a Pearson correlation is performed on the summation of digital political participation (Q6-Q11) and traditional political participation (Q12-Q18). In this correlation missing data is omitted. This test shows $r(174) = .49$, $p < 0.001$, also displayed in Figure 2. This reveals that there is indeed a relatively strong positive association between reported engagement in traditional political participation and reported engagement in digital political participation. This association provides grounds to reject the H0, which would state there is no relation between the two types of engagement, at all conventional levels of significance ($\alpha < 0.001$).

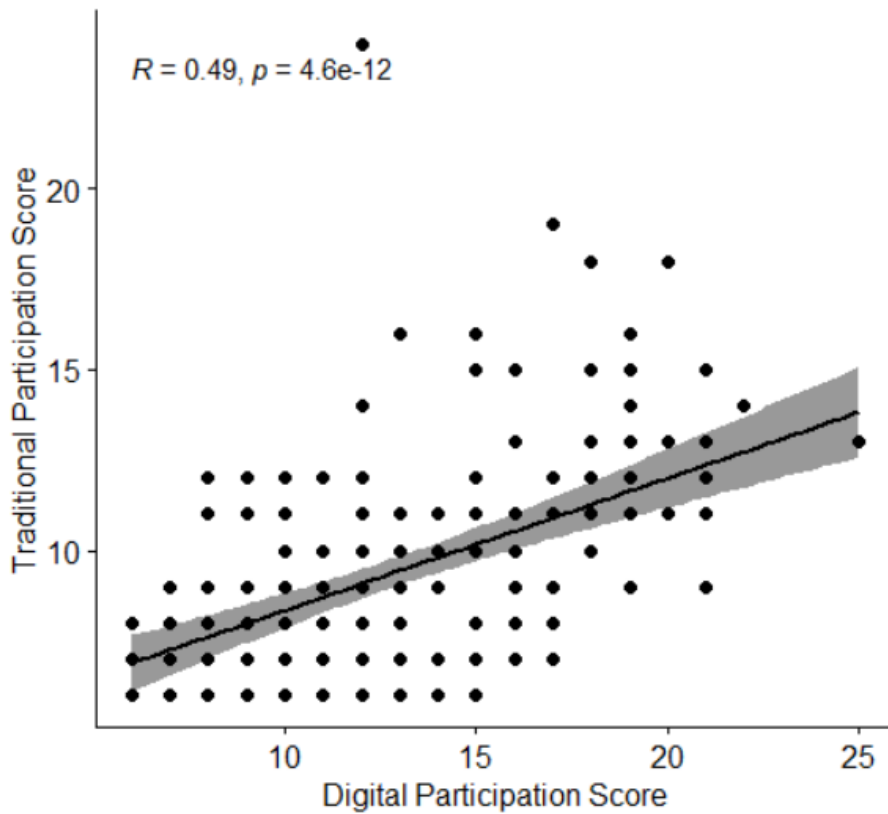


Figure 2. Correlation between digital and traditional participation (n = 183).

This correlation statistic shows it is unlikely that H2 is false, as offline and online political participation are significantly and strongly correlated. Increases in frequency of offline political participation are associated with increases in frequency of online political participation in this sample.

The other two hypotheses outlined in the theoretical framework are tested through a variety of multiple regression models. To run linear regression in a fair way certain assumptions about the nature of the data have to be met, namely: independence of observation, linearity of data, homoscedasticity of errors and normality (of errors) (Williams et al., 2013: 9). For a general test of hypothesis 1 and 3 a multiple linear model which has the number of hypothetical acts engaged in after being presented the baseline or experimental conditions, controlling for demographics information and past participation was created.

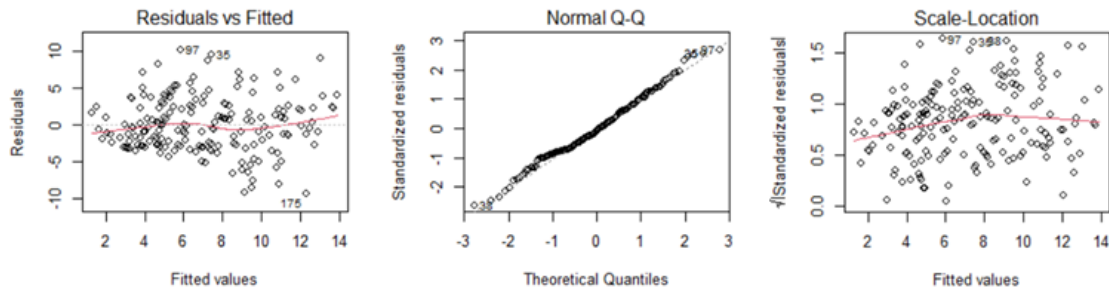


Figure 3. Linear model 1 (total) residuals scatterplots.

Figure 4 depicts a representation of this model, where the summations of participatory practices are assumed as latent variables. In Figure 3 the residuals of this model, all without patterns, are shown in scatterplots. This implies the assumptions for linear regression are met. The focus of this model is on the association between the experimental condition (0 = baseline, 1 = experimental condition) and the hypothetical participatory acts, the other elements of the model are included as controls.

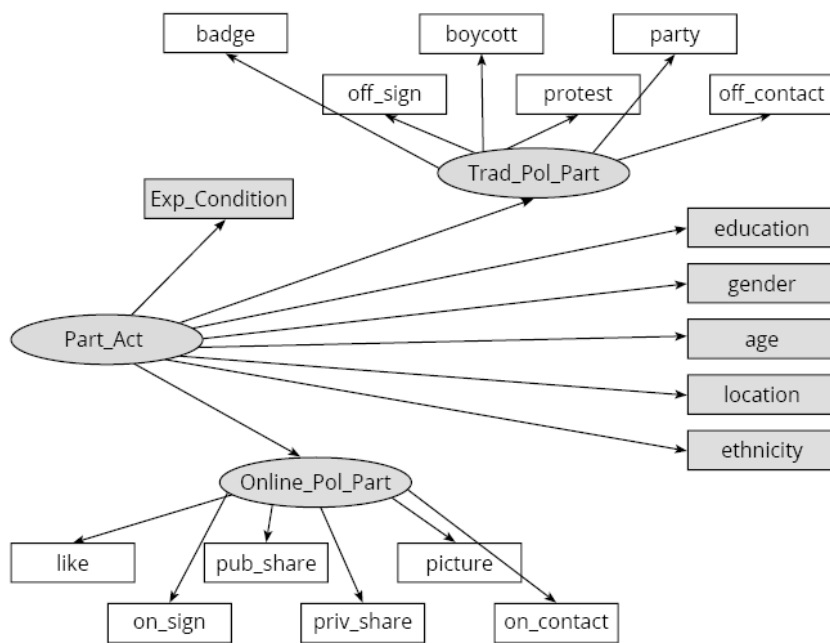


Figure 4. Multiple linear model of hypothetical engagement on condition.

Moreover, by relating past participation to hypothetical future participation hypotheses 1 and 3 can be tested simultaneously.

Coefficients	Estimate	Standard Error	T-value	P(>t)
Intercept	0.75855	5.43407	0.140	0.88915
condition	-0.09017	0.60211	-0.150	0.88113
trad participation	0.35028	0.11417	3.068	0.00252 **
dig participation	0.47814	0.08732	5.476	0.00000 ***
gender (= female)	1.66457	0.64462	2.582	0.01068 *

Table 3. Regression coefficients participation model 1 (P > 0.0001 ***, 0.001 **, 0.01 *).

Some explanatory variables are omitted from Table 3, as they were included only as controls and were not significant. Based on this table it can be observed that controlling for education, gender, age, location, ethnicity and experimental condition, there is a positive association between hypothetical future engagement and both past traditional and digital participation at the significance level $\alpha < 0.001$. For every one-unit increase in past traditional participation (essentially more frequent involvement or more types of engagement), holding control variables and the experimental condition constant, hypothetical engagement increases with 0.35. Similarly, for a one-unit increase in past digital participation holding control variables and the experimental condition constant, hypothetical engagement increases with 0.48. Notable, here, is that past digital engagement shows not only a larger positive relationship with hypothetical future participation in general, but also at a stricter significance level of $p < 0.0001$. These findings substantiate not rejecting H3. This sample of data shows strong associations between past participation and self-reported future participation.

With regards to the first hypothesis, the effect of the experimental manipulation on engagement in participatory activities, the model depicted in Figure 4 and Table 3 does not show significant results. Moreover, the direction of the effect in this case contradicts the hypothesis as it is slightly negative. However, this model aggregates all participatory activities for both political images as its outcome variable. When this model is split up further, different results help nuance the findings of Table 3. In the second model, outlined in Figure 5, all 12 hypothetical participatory activities are still summed into the outcome variable, however, this variable now concerns only one cause. This enables taking a respondents agreement (0-100) with the cause into account as a controlling variable.

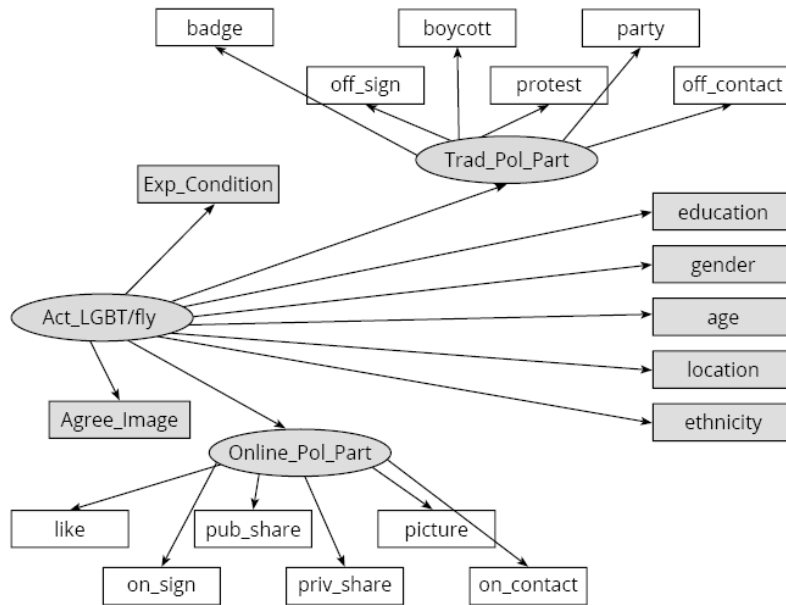


Figure 5. Multiple linear model of hypothetical engagement on condition and agreement split by topic.

The first iteration of this model presents the associations between the control variables, agreement with the image on LGBT+ issues, the experimental condition and the number of participatory acts respondents would engage in to deal with the depicted LGBT+ cause. As can be seen in Figure 6, regression assumptions are also met.

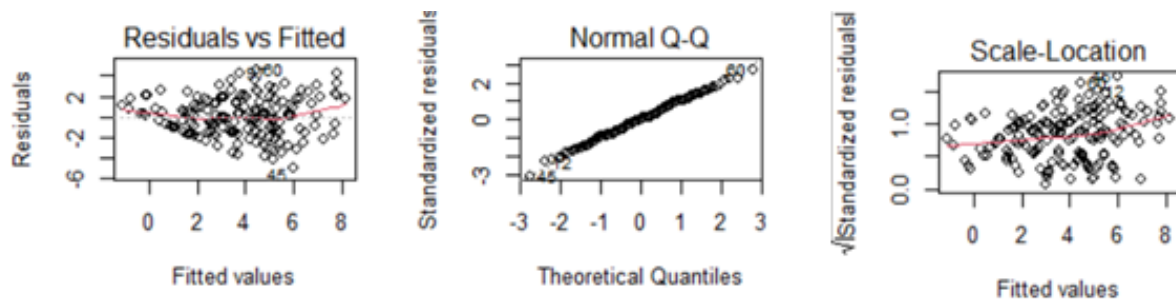


Figure 6. Linear model 2 (LGBT+) residuals scatterplots.

This model already helps nuance the results outlined in the first model. Table 4 again displays only (significant) variables of interest. Not only are the results of the first model, with regards to the association between past and future participation mirrored, new findings also come to light. First, it is worth mentioning that this model shows that respondents who self-report as a gender different than male, on average and controlling for the other variables, score higher on participatory activities on this LGBT+ cause at the level $\alpha < 0.005$. Moreover, agreement

with the image significantly correlates with activities engaged in. However, the experimental treatment still does not show a significant relation, while notably here the direction of its coefficient has changed to be positive.

Coefficients	Estimate	Standard Error	T-value	P(>t)
Intercept	-1.207924	2.696636	-0.448	0.65479
condition	0.079340	0.299703	0.265	0.79155
trad participation	0.165316	0.056581	2.922	0.00397 **
dig participation	0.212944	0.044776	4.756	0.00000 ***
image agreement	0.032587	0.005529	5.894	0.00000 ***
gender (= female)	0.769918	0.323745	2.378	0.01855 *
gender (= other)	2.078859	1.039174	2.000	0.04710 *

Table 4. Regression coefficients participation model 2: LGBT+ (P > 0.0001 ***, 0.001 **, 0.01 *).

When examining the third version of this model where the focus is on the participatory activities regarding the environmental cause, the overall negative loading of the condition coefficient in the largest model is explained. This model, too, met the assumptions to run linear regression, as explored in the plots in Figure 7. When exploring the results of this analysis, the variables of interest of which are given in Table 5, a slightly different picture emerges than discussed with relation to the LGBT+ cause. The difference in these models suggest, as was not hypothesized prior to this study, that various participatory practices might vary based on the type of cause they concern.

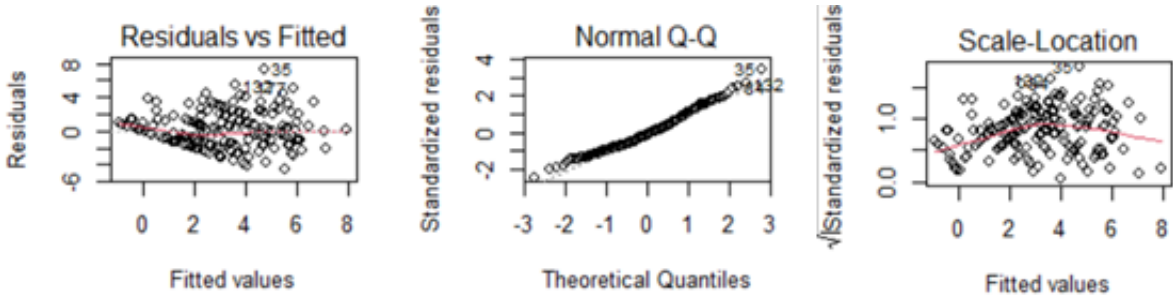


Figure 7. Linear model 3 (environment) residuals scatterplots.

The coefficients of this model show the negative loading of the experimental condition, though this loading is still not significant. Moreover, gender, in a substantively logical sense, seems less of a significant explanatory variable here.

Coefficients	Estimate	Standard Error	T-value	P(>t)
Intercept	-0.033456	3.129996	-0.011	0.991485
condition	-0.050087	0.346377	-0.145	0.885203
trad participation	0.123502	0.066321	1.862	0.064368 .
dig participation	0.196761	0.050222	3.918	0.000131 ***
image agreement	0.039802	0.005759	6.911	0.000000 ***

Table 5. Regression coefficients participation model 3: Environment ($P > 0.0001$ ***, 0.05 .).

As with the LGBT+ cause, agreement with the cause does seem to show a significant relation with engagement in participatory activities.

None of these models, thus, offer strong support for hypothesis 1, or essentially the effect of the social media ‘in-material’ on participatory activities. This hypothesis should not be dismissed entirely. Running binary logistic regression on separate activities (0 = would not engage in that activity, 1 = would engage in that activity) while controlling for demographics and agreement, still shows a slightly more of a nuanced version of this data. Binary logistic regression was ran for all 12 participatory activities and split up along the two causes. Only a few of these regressions showed significant results with relation to the experimental condition. The significant results of these binary logistic regressions, controlling for agreement, past participation, and demographics, are displayed in Table 6. Here, strikingly, the act of signing petitions both online and offline with relations to the environmental cause is negatively associated with the experimental condition. The coefficients of binary logistic regressions are best understood as log odds, which entails, that if a respondent encountered the experimental condition rather than the baseline condition, their odds of signing an offline petition, on average, decrease with $(\exp(-0.7685)) = 0.4637081$. Essentially the experimental condition decreases the odds of signing an offline petition on the environmental cause with $((1 - 0.4637) * 100\%) = 53.63\%$.

Coefficients	Estimate	Standard Error	T-value	P(>t)
like(fly)				
Intercept	-0.02001	3.146	-0.022	0.982096
condition	0.15128	0.28612	1.891	0.058592 .
like (lgbt+)				
Intercept	-0.321420	3.684646	-0.087	0.93049
condition	0.952180	0.395644	2.407	0.01610 *
sign offline (fly)				
Intercept	-4.79584	3.37358	-1.422	0.155147
condition	-0.76850	0.38865	-1.977	0.048001 *
sign online (fly)				
Intercept	1.077	8.14486	0.005	0.99573
condition	-0.13206	0.23769	-1.800	0.07187 .

Table 6. Regression coefficients binary logistic models ($P > 0.01$ *, 0.05 .).

Similarly, the experimental condition is associated with a $(1 - (\exp(-0.132) * 100\%)) = 12.37\%$ decrease in odds of signing an online petition on the environmental cause, controlling for the other variables.

Finally, for both causes, there is also a significant effect of the experimental treatment on the odds of liking a political post. In this case, the effect is positive. For the environmental cause the experimental treatment, rather than the base condition, controlling for the other variables, increases the odds of liking a participatory post with $((\exp(0.15128) * 100\%) - 1) = 16.33\%$. For the LGBT+ cause this effect of the experimental treatment increases the odds of liking a participatory post with $((\exp(0.95218) * 100\%) - 1) = 159.14\%$. This provides some interesting insight between the 'in-material' environment of social media and engagement in participatory activities.

Essentially the results outlined here provide basis to assume that hypothesis 1 and 3 are likely reflective of reality. Past participation is associated with future participation, and digital participation to traditional participation. The results regarding hypothesis 2, which predicted positive effects of social media 'in-materials' on participation are less straightforward. As shown in the binary logistic regressions in Table 6, the presence of social media 'in-materials', as in the experimental condition, does have a slight effect on willingness to engage in a few

participatory practices in this sample. All these findings speak to different aspects of New Materialisms as will be outlined in the discussion below.

DISCUSSION OF RESULTS

The results of this online experimental operationalization of a New Materialist framework produced a set of empirical results that are worth discussing for their theoretical implications. This will not only provide explanations for the acceptance and rejection of the hypotheses outlined above, but will also engage with the broader question: How can New Materialist theoretical work be applied in an 'in-material', digital participatory space? This discussion is permitted by the quality and generalizability of this web experiment (Germine et al., 2012: 855). Simultaneously, it is worth to keep in mind the underrepresented populations here, due to the inaccessibility of the Internet and the skew of distribution and inclusion in the sample (Hooghe et al., 2010: 94; O'Connor and Madge, 2017: 242). All the theoretical statements made here realistically only speak for a privileged population. It is imperative that further research, less impacted by spatial and time constraints, should make further efforts to investigate different and diverse populations.

First, as was shown in the correlation in Figure 2, this online experiment provides relatively strong grounds to substantiate hypothesis 2. Essentially, a strong association between participating online and offline was found. This result mirrors a lot of previous work on online political participation where such strong correlations were also found amongst young people (Bakker and de Vreese, 2011: 465; Banaji, 2013: 57). As patterns of emerging adult participation generally differ between the Netherlands and the Anglo-Celtic block (UK and Ireland) (Kitanova, 2019: 12–13; Sloam, 2016: 532) comparison of this result in the two regions provides more insight.

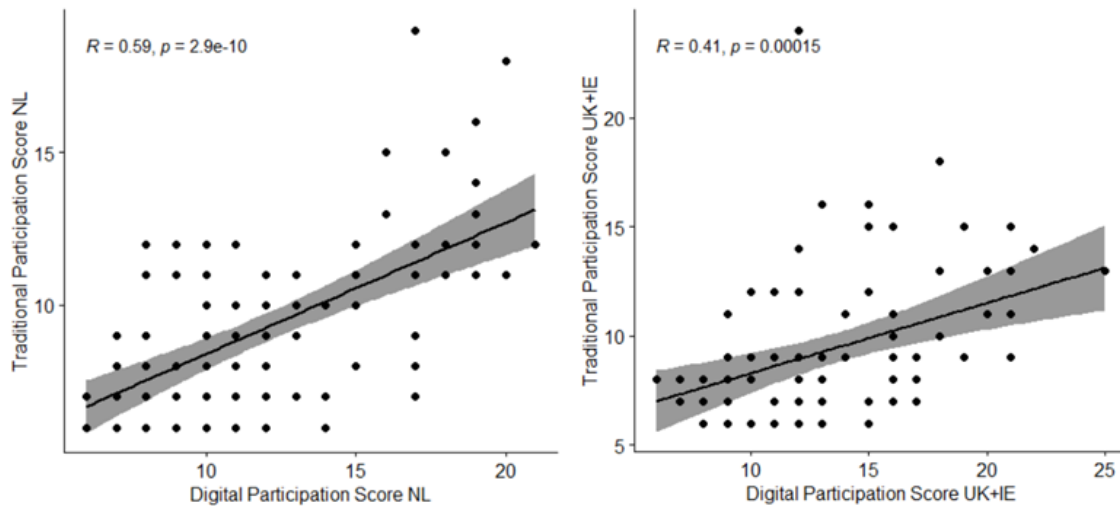


Figure 8. Correlation between digital and traditional participation split by region.

Noteworthy in these two different correlations, as illustrated in Figure 8, is that while the correlation between these two 'types' of participation is significant in both regions, the correlation is stronger in the Netherlands than in the Anglo-Celtic block. Moreover, the scatterplots illustrate that in both locations most participants engaged in a few activities of both types, whereas fewer participation engaged in a lot of participatory activities in general. The patterns of participation appear similar in the two regions, but traditional participation ($\mu = 9.2$) and digital participation ($\mu = 12$) are more closely aligned in the Netherlands, whereas in the Anglo-Celtic block traditional participation ($\mu = 9.5$) is more markedly uncommon than digital participation ($\mu = 13.7$). This might explain why emerging adults in the latter block have been described as less involved, their participatory practices are less conventional and therefore might not have been recognized in different types of previous research (Pickard, 2019: 395; Pitti, 2018).

This correlation, supporting the general strong association between these typically distinguished types of participation, and the principal components found in the data which were not split along this divide, help support the idea that this separation of types of participation is unproductive. This echoes previous research on youth participation as "an a priori distinction between online and offline civic and political activities is far from helpful in understanding civic participation among young people" (Banaji, 2013: 57). Moreover, it is supported by the New Materialist argument for monism in all aspects of societal analysis

(Coole and Frost, 2010: 9; Dolphijn and Tuin, 2013: 85; Harris, 2016: 155; Monforte, 2018: 379; Parikka, 2012: 95).

Hypothesis 3, which spoke to the pre- and post-test of the experiment was also corroborated by the data derived from this web-based experiment. The regression Tables 3, 4 and 5 show the significant associations between both past traditional and digital participation and future hypothetical participation. Past participation and hypothetical future participation thus seem to be related to each other. In part, this outcome is extremely expected based on previous research and the consistency of human behaviour (Jennings and Markus, 1988: 309; Smith, 1999: 558).

However, what has been discussed little in research so far is the relation between different types of participation and self-reported future participation. Research has shown what types of government interference discourage engagement (Mou et al., 2011: 342), or what societal contexts promote either offline (Zaff et al., 2008: 39) or online political engagement (Feezell, 2016: 495). What has remained unexplored is what type of past participation fosters future participation. While, the interconnectedness of digital and traditional participation is a central theme both theoretically and empirically here, the regressions do show a persistent difference in the associations between digital participation and indicated future participation, and traditional participation and future participation. Naturally, in this experiment future participation is both hypothetical and self-reported and longitudinal data would likely produce a more truthful result (Zaff et al., 2008: 43). However, the web-based experiment does hint at a consistently stronger and more significant association between future participation and past digital participation than this same association with traditional practices. This raises important questions for future research, namely; what type of participation creates sustainable experiences of engagement, and what type of engagement could actually discourage future participation?

Finally, the experimental element of this research shed some light on hypothesis 2, which essentially described the relationship between online 'in-material' spaces and political participation. Table 4, 5 and 6 reveal a complicated relationship between participation and 'in-material' spaces. Overall, hypothesis 2 should be rejected. There is no significant relationship between political content being presented in a social media space and increased political

participation. This seems to contradict previous findings from field experiments where embedded sociality, such as might exist in social media 'in-materials', increased participation (e.g. Bond et al., 2012; Hale et al., 2014; Margetts et al., 2011). Moreover, in the case of environmentalism, the findings that displaying social information increases willingness to sign petitions (Margetts et al., 2011: 339) is contradicted directly. However, positive relations between liking posts and embedding political content in a social media context were also found.

The test of this hypothesis, and the most direct empirical test of the influence of social media 'in-materiality' on political participation thus creates a rather complicated picture of the relationship between online materiality and participation. Building on a New Materialist ontology, where "everything is material or physical" (Ansell-Pearson, 2017: 92), taking into account the 'politics of things' where the physical political can be mediated digitally and vice versa (Willems, 2019: 1202) and the importance of materiality in political participation (Marres, 2012: 10), this experiment replicates the complexity of the theoretical entanglement of materiality, agency, and the digital. It is productive to examine the implications of the positive significant relationship between social media 'in-materials' and the liking of political posts. Assuming "that digital media have a material substrate" (Hondros, 2015: 2) it can be argued that materials in fact are not "antithetical to participation" (Marres, 2012: 9). In fact, here, embedding power in the digital (Parikka, 2012: 96) while recognising power as constantly materially mediated and re-arranging (Bennett and Joyce, 2009: 2), these relations between the digital space and the digital act can amount to powerful expressions of participation.

This, combined with the significant negative relationship between petition signing and the social media environment begs us to question the impact of interface design. Through focussing on the materiality of such interfaces and 'excavating' what this materiality is and does (Parikka, 2012: 97) a new perspective on the online space and participation can emerge. As raised by previous experiments without this material focus, small changes in design can have significant political impacts (Aragón et al., 2017: 14; Hale et al., 2018: 15). Here too, it was shown that political behaviour is likely to be influenced by the presence of a social media environment both in negative and positive ways. Recent studies have examined how gamified interfaces might increase political participation (Chen et al., 2020: 43), or how interfaces might

limit people with disabilities' opportunities to participate (Bastien et al., 2020: 221). However, as tentatively explored here, it will be worthwhile to further investigate what specific 'in-material' elements of social media interfaces foster engagement in different types of political behaviour.

Essentially, in the discussion of this final hypothesis it has become clear what merit an understanding of the social media space as a material space has had. Conceptualizing such a space as agentic in a New Materialist (Coole and Frost, 2010: 9) manner facilitates new discoveries. It has become evident that this digital of interface has political effects, not just because of how it is being 'used' by people, but through its own agentic shaping of behaviour. Understanding these weird vibrant materials better, will promote a more integrated comprehension of contemporary political participation. Social media interfaces do not simply hinder political participation, as the slacktivism argument (Morozov, 2011) suggests, nor do they create a utopian space for participation. Rather, by seeing online spaces as material and agentic, and by seeing participation in a monist manner both a positive and negative version of a mediated reality can be held simultaneously.

Throughout the discussion of these results various elements of New Materialism were brought in to theoretically contextualise these findings. The results themselves have made a case for a monist perspective (e.g. Harris, 2016: 155) on different participatory practices, substantiating the arguments to re-think the digital/material dichotomy of participation (Willems, 2019: 1197). Moreover, the findings presented here also underline a New Materialist understanding of power as continuously re-negotiated through small-scale interactions (Bennett and Joyce, 2009: 2), such as 'liking' (Margetts et al., 2015: 197). The experimental element of this research, and some of its significant results, also show the ways in which materials exercise a power over actions (Bennett and Joyce, 2009: 4). Finally, these results are completely embedded in an understanding of the digital space as intangible 'in-material' (Coole and Frost, 2010: 5; Hondros, 2015: 2; Parikka, 2012: 96). In this way, not only through the results of this research, but also its thorough construction of an experiment, the research question asked here is answered. New Materialism provides a strong critical basis for the design of experiments necessary in research on participation, while allowing for a new and analytical interpretation of results. The theoretical framework demonstrated here presents an ontology and

epistemology diverging from the social constructionist perspective often employed in social sciences (Coole and Frost, 2010: 27). The methodology and results presented here demonstrated the usefulness of the theories used here. A New Materialist ontology is not just a suitable for the study of media and politics, it is rather quite necessary for a more holistic investigation of how media spaces influence political behaviour.

CONCLUSIONS

Since the material turn in media studies (Casemajor, 2015: 5), accounts of political uses of media have started to take more material angles. New foci on the intersections of the material and mediated political arose (Asenbaum, 2019: 3), for instance paying special attention to bodies and embodiment (Lupton, 2019; Matich et al., 2019; Willems, 2019). However, New Materialisms in media and communication studies have been discussed only as theoretical stances to consider or accounts of agency to keep in mind, not as the basis for empirical work. Theoretical accounts of the intersection of New Materialisms and digital media have slowly grown in number, offering us tools to deal with the intangible digital as 'weird' vibrant 'in-materials' (Parikka, 2012: 96) and digital matter (Casemajor, 2015: 10). But where in literature studies the introduction of a New Materialist theoretical focus led to an empirical equivalent through a renewed use of archival research (Plate, 2020: 6), this has not occurred for media studies in the same way. In this dissertation this step was taken tentatively. Not just, by highlighting the theoretical merit of New Materialisms, with their monism, agentic matter and powerful vibrant matter for media studies. But also through the design and analysis of a web-based experiment with a theoretical foundation in New and Digital Materialisms. This not only showed how the New Materialist 'in-materials' of social media environments can influence political behaviour in a sample of emerging adults, but also, possibly more importantly, how New Materialisms can be operationalized in media studies. The findings from this experiment highlighted the centrality of 'in-materials' in online political participation, and also helped make the case to re-think the outdated and over-repeated dichotomy of online and traditional participation. These findings helped nuance the

conceptions of participation in the Anglo-Celtic cluster and the Netherlands among emerging adults.

Contemporary political participation is especially creative and innovative among young adults (Sloam and Henn, 2019: 2) who are increasingly rebelling against the status-quo (Kaplan, 2020: 412). Many of them have found effective ways to organise, voice dissent and express themselves politically online (Boulianne and Theocharis, 2020: 113). While this development is powerful, ignoring the materiality of these types of engagement overlooks huge influencing factors, and consequences. As found in this dissertation, the ideologically embedded design of the online spaces (Costanza-Chock, 2020; Freedman, 2002) can influence participation, both in the digital as well as in the physical space amongst a young population. These types of realizations should help strengthen the argument to centre 'in-materiality' in the study of (online) political participation. Furthermore, New Materialism has been shown here to be a suitable theoretical framework for this centring of materiality in media studies.

Therefore, further research should advance this perspective as a basis for empirical investigations. In such studies, many of the aspects of participation that did not come to the fore here should take the centre stage. More diverse samples should be examined, as should the ways in which different social media influence various participatory practices in all parts of the world. The case presented here has been highly Western centric, not just in the selection of its population, but in its choices of political topics and social media. As the roots of New Materialisms have been with non-Western cultures for centuries (e.g. Geurts & Adikah, 2006: 36) and the 'politics of things' emerged from the Global South (Willems, 2019) it is essential these frameworks are applied globally. New Materialisms, are exceptionally suitable for examining the issues of our time as these theories deal with race, class, gender, the body and environmentalism holistically and complexly. As our politics and realities are dealing with these issues, so should our theories.

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APPENDIX A

Appendix A: Questionnaire (English)



English - United Kingdom ▾

Some people engage with political and societal issues online, others do not. Think back to the last **3 months**, how often have you done the following things on average?

How often have you...

	never	occasionally	at least once a month	at least once a week	nearly every day	don't know
...liked' an update concerning a political or societal matter on social media?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...signed an online petition?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...shared posts concerning political or societal matters on social media?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...shared a piece of political information in a private group chat (such as on WhatsApp or messenger)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...changed your profile picture on social media because of a political or societal matter?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...via email or social media contacted a politician to express your opinion?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



English - United Kingdom ▾

There are many different ways of trying to improve society or help prevent things from going wrong, some people do these and others do not. Think back to the last **3 months**, how often have you done the following activities on average?

How often have you...

	never	occasionally	at least once a month	at least once a week	nearly everyday	don't know
...signed a petition? (not online)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...worn or displayed a campaign badge/sticker?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...boycotted or refrained from buying certain products because of how they were produced?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...taken part in a lawful public demonstration?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...worked for/with a political party or action group?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
...contacted a politician, government or local government official?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Some people don't vote nowadays for one reason or another. Did you vote in the last national election?

- yes
- no
- I was not eligible to vote
- don't know



English - United Kingdom ▼

Now two images dealing with societal issues will follow. Please imagine that you've encountered these images in your everyday life. Examine the images and then answer the questions about the societal issues depicted, and if and how you would engage with these issues. The images and the situation here are hypothetical. Your responses are very important to the research project, but do not have any effect outside this study. The way you answer the questions here will be completely anonymous and will not have any consequences on society or any of the issues presented here.



Control group condition



English - United Kingdom



To what extent do you agree with the cause and proposed societal change shown in this image?

Strongly disagree 0 10 20 30 40 50 60 70 80 90 100 Neither disagree or agree Strongly agree



Which of the following actions do you think you would engage in to support or oppose the cause and proposed societal change shown in the image? (pick all that apply)

boycott companies based on their support or opposition to this message

wear a badge/sticker supporting or opposing the cause

share the image on social media

change my profile picture with a banner to support or oppose the cause

share the image in a private chatgroup

'like' or 'dislike' (e.g. angry reacts on Facebook) this image on social media

contact a politician or government official to raise the issue

sign a petition (offline)

contact a politician or government official on social media to raise the issue

get involved with a political organisation supporting or opposing this cause

take part in a demonstration to get the law changed or oppose this law

sign a petition (online)



WE NEED TO PROTECT THE ENVIRONMENT



International laws should
prohibit flights cheaper than
train journeys within Europe

To what extent do you agree with the cause and proposed societal request shown in this image?

Strongly disagree 0 10 20 30 40 50 60 70 80 90 100 Strongly agree
Neither disagree or agree



Which of the following actions do you think you would engage in to support or oppose the cause and proposed societal change shown in the image? (pick all that apply)

boycott companies based on their support or opposition to this message

wear a badge/sticker supporting or opposing the cause

share the image on social media

change my profile picture with a banner to support or oppose the cause

share the image in a private chatgroup

'like' or 'dislike' (e.g. angry reacts on Facebook) this image on social media

contact a politician or government official to raise the issue

sign a petition (offline)

contact a politician or government official on social media to raise the issue

get involved with a political organisation supporting or opposing this cause

take part in a demonstration to get the law changed or oppose this law

sign a petition (online)



Experiment condition



To what extent do you agree with the cause and proposed societal request shown in this image?

Strongly disagree 0 10 20 30 40 50 60 70 80 90 100 Strongly agree



Which of the following actions do you think you would engage in to support or oppose the cause and proposed societal change shown in the image? (pick all that apply)

boycott companies based on their support or opposition to this message

wear a badge/sticker supporting or opposing the cause

share the image on social media

change my profile picture with a banner to support or oppose the cause

share the image in a private chatgroup

'like' or 'dislike' (e.g. angry reacts on Facebook) this image on social media

contact a politician or government official to raise the issue

sign a petition (offline)

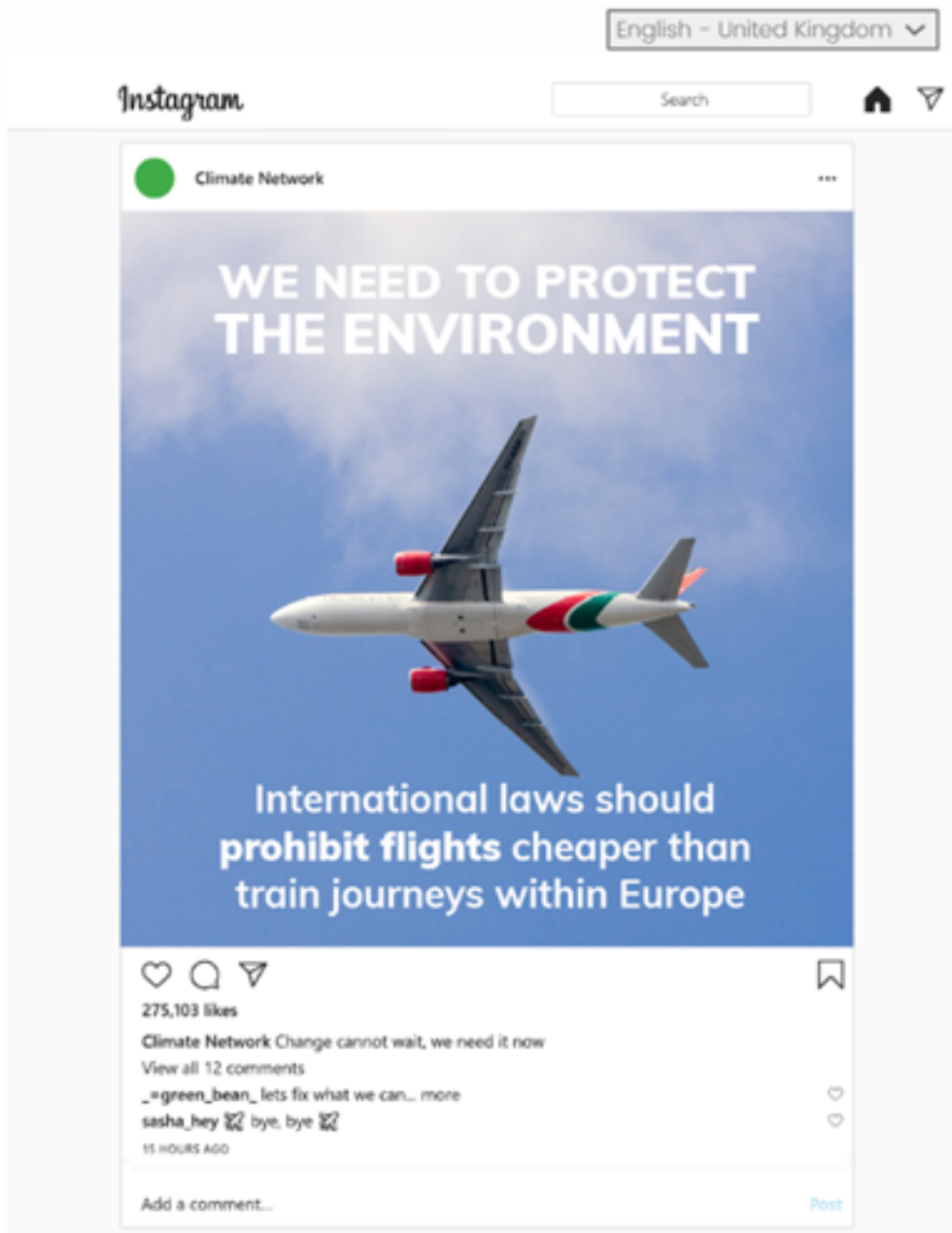
contact a politician or government official on social media to raise the issue

get involved with a political organisation supporting or opposing this cause

take part in a demonstration to get the law changed or oppose this law

sign a petition (online)





To what extent do you agree with the cause and proposed societal request shown in this image?

Strongly disagree 0 10 20 30 40 50 60 70 80 90 100 Neither disagree or agree Strongly agree



Which of the following actions do you think you would engage in to support or oppose the cause and proposed societal change shown in the image? (pick all that apply)

boycott companies based on their support or opposition to this message

wear a badge/sticker supporting or opposing the cause

share the image on social media

change my profile picture with a banner to support or oppose the cause

share the image in a private chatgroup

'like' or 'dislike' (e.g. angry reacts on Facebook) this image on social media

contact a politician or government official to raise the issue

sign a petition (offline)

contact a politician or government official on social media to raise the issue

get involved with a political organisation supporting or opposing this cause

take part in a demonstration to get the law changed or oppose this law

sign a petition (online)



English - United Kingdom ▼

What gender do you identify as?

male

female

other

prefer not to say

What is your age?

What is your ethnicity?

Asian

Black

Mixed/multiple ethnic groups

Latinx

Other

White

What language do you speak in your everyday life?

English

Dutch

Other

What is your highest completed education?

primary school

secondary school (gsce)

a-levels

university bachelors

university masters

don't know

prefer not to say



English - United Kingdom ▼

To understand how the questionnaire comes across, could you briefly describe what you think this research tries to investigate, and how? Thank you!



Done! Thank you so much for taking part in this research project, your responses are invaluable. Again, if you have any concerns/questions, do not hesitate to contact the researcher: **redacted**

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