Anticipating or Accommodating to Public Concern? Risk Amplification and the Politics of Precaution Re-examined

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ABSTRACT

Regulatory use of the Precautionary Principle (PP) tends to be broadly characterized either as a responsible approach for safeguarding against health and environmental risks in the face of scientific uncertainties, or as 'state mismanagement' driven by undue political bias and public anxiety. However, the 'anticipatory' basis upon which governments variably draw a political warrant for adopting precautionary measures often remains ambiguous. Particularly, questions arise concerning whether the PP is employed pre-emptively by political elites from the 'top-down', or follows from more conventional democratic pressures exerted by citizens and other stakeholders from the 'bottom-up'. This paper elucidates the role and impact of citizen involvement in the precautionary politics shaping policy discourse surrounding the UK Government's 'precautionary approach' to mobile telecommunications technology and health. A case study is presented that critically re-examines the basis upon which UK Government action has been portrayed as an instance of anticipatory policymaking. Findings demonstrate that the use of the PP should not be interpreted in the pre-emptive terms communicated by UK Government officials alone, but also in relation to the wider social context of risk amplification and images of public concern formed adaptively in antagonistic precautionary discourse between citizens, politicians, industry, and the media, which surrounded cycles of Government policymaking. The paper discusses the sociocultural conditions and political dynamics underpinning public influence on government anticipation and responsiveness exemplified in this case, and concludes with research and policy implications for how society subsequently comes to terms with the emergence and precautionary governance of new technologies under conflict.

Keywords: anticipatory governance; mobile telecommunications technology; precautionary principle; risk communication; Social Amplification of Risk Framework;

1. INTRODUCTION

Regulatory use of the precautionary principle (PP) is a recurring theme in health, environmental, and science and technology policy debates [1-6]. Advocates of the PP typically argue that adopting a 'better safe than sorry' approach addresses failings in the traditional machinery of governments to handle scientific uncertainties because it facilitates anticipatory policy debate and decision-making, which can allow for the forestalling of actions that could potentially threaten serious harm, or might otherwise lead to irreversible damage [4, 6]. Against this view, critics counter that the PP is ill-defined, incoherent, inconsistently applied, and lacks scientific credibility especially when its use narrows policy deliberations of countervailing risks or the weighing of costs and benefits across given activities [1, 7-11]. The PP is thus seen by critics as an unwelcome challenge to the dominance of economic and scientific policy discourse [6, 10, 12-14]. Consequently, questions commonly arise as to whether calls for precaution in policy discourse are more often employed to influence public confidence, or through a genuine interest to avert 'real' dangers and promote better knowledge and reasoned dialogue [5, 7-16].

However, the general assertions commonly underlying explanations for and against the governmental use and impact of precautionary policy instruments would benefit from more precise understandings of how and why the political warrant for adopting precaution first emerges, how this is publicly articulated and interpreted, and with what effect [17- 19]. Particularly, academic and policy debates about the PP tend to adopt visions of scientific citizenship that imply respectively different concepts and appraisals of citizen understanding, participation and political influence in science and

technology policy discourse [4, 20]. On the one hand, governmental use of the PP can be read as an attempt to 'open up' national debate about science, values and visions of the future of emerging technologies to participation with citizens whose valued input is thought to improve substantive knowledge as well as increase trust towards government more generally [6, 21]. In this form of precautionary discourse, citizen involvement in risk management is accordingly conceived to occur via 'upstream engagement' such that views are reflexively sought through consensual dialogue with decision-makers deliberating on pre-emptive regulatory options ahead of their implementation [18, 22, 23-25]. On the other hand, governmental use of the PP may be seen to arise in response to public dissatisfaction with existing regulatory provisions for safeguarding health and the environment [24]. In this view, precautionary discourse is more likely to be associated with social divisions or public fears over the future risks of emerging technologies irrespective of their benefits, and is often prompted by NGO lobbying and the social amplification of risk within climates of distrust [5, 15, 16, 24, 25, 26]. Consequently, questions abound concerning the possibilities for citizens to meaningfully understand, engage with, and contribute to precautionary policy debate in view of political constraints, the practical limitations of public expertise in science, the time and resource burdens of public participation, and the ability of citizens to challenge the dominant prescriptions of 'rational' policy arguments on non-scientific and non-economic grounds [12, 15, 27-29]. Such wide-ranging questions call for contextually based analyses to help elucidate the socially situated forms and dynamics that citizen participation in the 'politics of precaution' take in practice alongside the conditions that support or work against the meaningful involvement of citizens in precautionary policy debate and reform [15, 17, 30].

Addressing these issues, this paper critically re-examines the case of citizen involvement in the politics of precaution surrounding the UK Government's response to the association of health risks with electromagnetic field (EMF) radiation exposure from mobile telecommunications technology (MTT). The UK Government's decision-making on MTT and health is notable because policymakers are understood to have enacted precautionary measures on an 'anticipatory' basis in order to 'keep ahead of public anxieties' that had yet to significantly materialize [15, 31]. Which is to say, UK Government officials drew a political warrant for adopting a 'precautionary approach' from a perceived need to proactively allay public concern about MTT health risks. This view is underscored by research accounts specifying that concerned citizens are unable to exert any meaningful influence on precautionary policy discourse due to difficulties in mobilizing national campaigns against popular technologies and their inability to challenge the views of official experts on health grounds [9, 15, 27, 32]. Explanations for UK Government precaution have instead focused on the prevalence of political elite insecurities over past scandals such as the BSE crisis, along with prompts by media scare stories [15, 33].

Contrary to this received view, the main argument made by this paper is that accounts of the anticipatory basis of the UK precautionary approach to MTT and health are overstated. While the UK case is doubtlessly emblematic of the controversial application of the PP, we argue that it should not be understood in the simplistic anticipatory terms set out by UK government Ministers currently accepted. Instead, the UK Government's use of precaution should be interpreted in relation to the wider political context in which the need for pre-emptive measures to be taken for MTT and health was also articulated and amplified by citizens acting in concert with politicians and the media. Specifically, we identify that community actions

surrounding one localized mobile mast protest were especially instrumental in helping to crystalize public concern about MTT and health as a focal issue requiring a national Government response. We argue that the UK precautionary approach may accordingly be characterized as a 'ripple effect' arising through conventional Social Amplification of Risk Framework (SARF) processes [34] spurred by citizen actions from the bottom-up, as much as a 'trigger event' later instigated by government officials from the top-down.

The paper has the following objectives: (1) to identify how public perceptions and perspectives about MTT health risks and precaution in the UK first arose; (2) to ascertain how and in what capacity local community stakeholders initially encountered and interacted with larger social systems and institutions with respect to MTT and health; (3) to specify the forms, content, and dynamics of community risk communications underpinning the social amplification of risk at different levels and over time; and (4) to elucidate what contribution risk amplification by community stakeholders made to the UK Government adoption of precautionary policy decisions. The paper proceeds by first outlining the 'received official view' that the UK Government's precautionary approach for MTT and health best represented a form of anticipatory governance occurring ahead of health risks becoming an issue of public concern, along with the main research arguments currently supporting and contesting this understanding. We then describe the conceptual and methodological framework employed to guide our inquiry drawing together sociocultural and political perspectives on the SARF and the possibilities for local communities to adaptively influence wider risk amplification processes and impacts. This is followed by a detailed case study analysis examining how UK citizens contributed to national precautionary policy debate and discourse on MTT and health. Finally, we discuss the

contextual conditions supporting risk amplification and the public interpretation of the need for precaution under conflict, and conclude with the wider research and policy implications of these findings.

2. THE ANTICIPATORY BASIS OF UK GOVERNMENT PRECAUTION FOR MTT AND HEALTH

The public emergence of MTT health fears in the UK initially centered on exposure to mobile handset radiation emissions, but soon grew to encompass the siting of MTT network infrastructure commonly known as ‘mobile phone masts’ as networks expanded into communities to meet phone signal coverage requirements [15, 35]. Health anxieties became more notably pronounced when the UK Government formally incorporated the PP into policymaking following its decision to appoint the Independent Expert Group on Mobile Phones (IEGMP) to conduct a major scientific inquiry into MTT and health uncertainties [15, 36]. The IEGMP appointment was explained by Tessa Jowell, MP, the UK Minister for Public Health, as a form of ‘anticipatory’ decision-making specifically intended to ‘keep ahead of public anxiety’ about MTT and health risks [37]. The IEGMP initiated a series of open meetings to receive public comment and the published findings, known as the ‘Stewart Report’, that advised formally adopting a ‘precautionary approach’ [38]. Although stopping short of proposing an outright ban on MTT, the recommendations included pre-emptive restrictions on radiation exposure while further scientific research could be undertaken, alongside firmer planning controls to strengthen regulation of industry network siting and community consultation practices [38].

The Stewart Report was welcomed and many of its main recommendations were accepted by the UK Government, albeit amidst demands by the national press to clarify whether MTT was 'safe or not', and criticism that adopting a precautionary stance had unintentionally and unnecessarily intensified public anxiety and confusion rather than provide reassurance [15, 39]. Nonetheless, in the received official view, the UK precautionary approach was characterized as an instance of 'anticipatory governance' [40] by which officials seemingly demonstrated a 'reflexive motivation' to 'build capacities in foresight and engagement' that would help scientists, policy makers and the public to better reflect on the issue of MTT and health. Supporting this view, Stilgoe [41] notes that the appointment of the IEGMP reformulated the question of scientific expertise and uncertainties about MTT and health as a 'co-production' between experts and non-experts by allowing citizens and other stakeholders a greater say in the issues and concerns shaping future MTT regulation, research and deployment. Burgess [15] also observes that these measures were all the more remarkable because they took place before a public association between MTT and health risks had firmly materialized besides some small-scale local anti-mast protests and the persistence of some media scare stories in the local and national press. Burgess [15, 31] further argues that the adoption of precaution was thus not a concession won by a groundswell of public pressure, or a recognizable popular campaign against MTT, as might conventionally be the case, albeit sensitized citizens were actively campaigning against the siting of phone masts in their local communities. Walls et al. [32] likewise remark upon the 'weak popular influence' of early mobile phone mast protests, and conclude that 'disparate campaigns' struggled to establish 'strong political momentum' prior to the appointment of the IEGMP Inquiry.

However, key questions remain as to why the UK Government then felt it especially necessary to adopt a precautionary approach in the absence of scientific evidence of harm or indeed wider public concern. Burgess [15] argues that the UK Government's handling of MTT and health was primarily driven by the 'politics of precaution' starting with a crisis in confidence in institutions at the top of society spurred by past regulatory scandals associated with poor prior handling of the BSE crisis. In order to avoid another 'BSE-type' problem, precautionary policy measures were instigated pre-emptively from the top-down with the intention to proactively allay any further media interest, which Burgess [15, 31] argues had become a surrogate for public concern. In the event, UK Government actions arguably resulted in the opposite effect leading to heightened public concern when the use of the precautionary approach was first officially announced [15, 39, 42]. Yet, the extent to which citizens played a firm role in contesting the adequacy of scientific knowledge and safety regulations prior to the commissioning of the Stewart Report is a matter of further contention. Burgess [15, 31] acknowledges that some conventional democratic pressure by citizens was apparent, but mainly in the form of letters of complaint sent by constituents to their Member of Parliament (MP) focusing on environmental impacts rather than health concerns. By contrast, Stilgoe [41, 43, 44, 45] gives greater weight to an upsurge of written complaints made to the UK Government National Radiological Protection Board (NRPB) expressing health fears about MTT, noting that the early advisory response that 'MTT radiation emissions met safety guidelines' became an endpoint for discussion, and this 'fragile discourse of compliance' did little to address public confidence in those measures as a basis for public safety. To date, little further has been documented on the veracity of claims concerning the anticipatory basis of UK government precautionary decision-making or the role and

capacities of citizen participation in the politics of precaution pre-empting the instigation of the IEGMP inquiry. Therefore, this study sought to address this apparent lacuna by elucidating how citizen involvement in the politics of precaution helped to shape national policy discourse and the basis of anticipatory decision-making on MTT and health in the UK. Before proceeding with the case study, we first specify the theoretical and methodological framework guiding our inquiry.

3. THEORETICAL FRAMEWORK

The SARF was first introduced to broaden understanding of the complex social character and dynamics of societal responses to risk [36]. This framework is noted for providing instructive insights into why public responses to risk can often deviate from that which might be expected on the basis of expert risk assessments, and why the consequences of risk amplification and attenuation can often extend beyond expectations of direct physical harm [34, 46, 47]. The SARF principally describes two stages concerning 'amplification' in Stage 1 and 'ripple effects' in Stage 2 [47]. During the amplification stage, objects or events emerge and obtain 'signal value' as they become perceived and attributed as a 'risk' typically following an incident or the identification of a new potential threat that elicits public concern [34]. The risk signal then accrues further social salience and significance as the circulation and flow of risk messages and images spreads through various channels and is filtered by 'amplification stations', such as when news media outlets publicly report the risk in question. In Stage 2, risk concerns intensify and reach into institutions leading to secondary impacts known as 'ripple effects', such as economic losses, the imposition of tighter regulatory constraints, or the stigmatization of

technologies when different groups act on the risk information newly obtained [34, 48]. Conversely, SARF also specifies that risk signals may also be socially attenuated such that concerns are dampened when risk information is ignored and downplayed, or the risk is thought to be satisfactorily addressed (46, 49-53].

The SARF has since inspired a large body of studies that have employed the concept of risk amplification either as a general explanatory metaphor, or as a paradigm for guiding risk research and policy insights into how societal responses to risk emerge and unfold [46, 47, 54]. This research has shown that people's risk perceptions often move in line with the expectations of amplification and attenuation mechanisms, that risk perceptions may be heightened or dampened by certain qualitative hazard characteristics, that risk events are given added signal value through disreputable actions, or the attachment of 'stigma' when the public image of an object, activity, party or location is tarnished or corrupted, and the media has a prominent role in shaping risk concerns [48, 49, 51, 55-58]. However, both proponents and critics of the SARF have noted that the ideas and explanations underpinning the 'amplification' and 'ripple effects' mechanisms would benefit from greater theoretical precision and further research attention [47, 59]. For example, the interactions between Stage 1 and Stage 2 can often remain unexplained [47], and SARF's foundational reliance on the classic 'sender-receiver' model of communication arguably falls short of accounting for the cultural complexities and underlying power dynamics of the knowledge practices and social relations that underpin risk communication and the operation and wider influence of respective SARF components and processes [49, 59-61].

In response, proponents of the SARF further note that risk amplification necessarily requires active interpretation and filtering of risk information and images,

and that perceptions are not without consequence, otherwise risks would remain localized and irrelevant to wider communities [62, 63]. SARF studies have accordingly had a long standing interest in how 'worldviews', 'strategic intentions', 'organizational norms' and other factors influence the interpretation and communication of risk signals integral to risk amplification and ripple effects [47, 64, 65]. For example, the conceptual insights provided by the SARF have been used to help identify and examine interactions between social vulnerability to hazards, the distribution of social harms, and citizens' recourse to environmental justice [64, 66-68]. In turn, culturally and geographically situated accounts of the SARF have also specified that local values, social identities, and experiences of 'place attachment' shape the local constructions of risk, vulnerability, and responsibility, which provide an important basis and spur for public involvement in risk amplification [61, 69, 70]. The SARF has also been usefully extended to incorporate practical understandings of the 'politicization of risk' by underscoring how such aspects as 'agenda setting', 'finding salient workable solutions' and 'political expediency' figure prominently in political responses to risks for example [53, 69]. Latterly, advances in information technologies and the growth of social media are newly recognized to provide an important means of risk communication that can potentially be customized by users to efficiently circulate, exchange and extend the reach of risk messages [71-74]. The SARF therefore offers a broad conceptual framework for establishing if, and by what means, risk amplification and attenuation has taken place, which can be integrated with other perspectives to investigate the qualities, emergence, development, framing, content, and impacts of risk messages, signals and discourse [49, 51, 57, 69].

Contributing to this literature, we wish to theoretically elaborate how practices of risk amplification by citizens can help to elevate personal vulnerability and

objections to risk beyond a ‘local matter of concern’ to produce wider impacts at different social, political and economic scales over time [64, 75]. Particularly, we argue that risk amplification may at times characteristically reflect an ‘adaptive’ communicative response that is undertaken by citizens in ‘non-ideal’ contexts when local communities are confronted by intractable constraints and instrumental exchanges of risk related information, which are perceived to be against community interests [61; 76]. For example, past research indicates that citizens can assure wider public attention especially when they are able to rhetorically establish and renegotiate the boundaries of expertise and power underlying policy decisions, irrespective of official declarations of acceptable risk even in cases of mandatory technology rollout [27, 29, 34, 62, 77-80]. This follows observations that communities may engage in their own agenda building activities by appropriating different communication channels, such as the Internet, news media outlets, and political forums, as delivery vehicles for their own knowledge claims [81]. In this view, risk amplification and attenuation can occur not simply by way of heightened or dampened public perceptions arising from ‘passive information transfer’, but through ‘purposeful knowledge (co-)production and exchange’ when communities seek to reflect or reinforce risk understandings and concerns across places, at different levels, and over time [47, 60, 61, 82].

To elaborate, ‘risk amplification’ may accordingly incorporate multiform modes of rational action, strategies and resources variously designed and employed to gain political commitment, social acceptance, and policy and systems support for communities that consider themselves to be ‘at risk’ [83]. The occurrence of ‘ripple effects’ would in turn be contingent upon the successful translation of disruptive knowledge and beliefs into wider social and political understanding and action [61].

In such contexts, the processes and dynamics of risk amplification can be best understood to closely align with 'adversarial', 'advocacy', or 'issue orientated' forms and models of communication in which protagonists aim to foster public policy debate, the initiation of a program, or the resolution of a problem within a field of contest, rather than a general on-going process of social and political change or an idealized form of deliberative dialogue [60, 61, 84]. To be 'successful' in this sense may therefore require a community to incorporate and tailor different amplification strategies to not only collect and rhetorically structure information for dramatic effect and garner public sympathy, but also to negotiate political subsystem knowledge boundaries and open up new communication channels in order to make a persuasive case, form alliances, and win political approval and support [79, 61].

However, rather than falling into simplified notions of the inherent 'agency' or 'passivity' of individual citizens, the practices associated with risk amplification are argued to be reflective of the adaptive capacities, sociocultural understandings, and communicative resources that are grounded in community membership, knowledge, learning and values [66, 85]. This is because the local context of people's collective experience, learning, connectivity, and expertise contained within people's 'organizational milieu' provides key resources and motivational bases for variably enacting processes of reflexive interpretation, political inventiveness, and effective social action, which can potentially be brought to bear within a particular location or field of risk related activity in different places and over time [35, 61; 86, 87]. In this view, community vulnerabilities and potential responses to risk are as such inherently varied not only because communities differ in terms of their size, the scope of their collective norms, shared histories and sense of identity, but also their breadth of knowledge, the strength of their relational ties, along with the willingness of members

to participate, and because these attributes and collective resources must also be strategically mobilized in an uncertain contest between competing parties with respectively different energies, qualities and relative strengths [60, 63, 82].

4. DATA AND METHODS

The case study methodology employed a number of data collection strategies and sources of evidence focusing on historical instances of communicative action and 'actual social processes' [88] that emerged during the early stages of the UK knowledge controversy over MTT and health. Initial desk research of media reports and Parliamentary records uncovered key details of one early public protest against a mobile phone mast that became the focus of this study. The data collection was subsequently extended through in-depth face-to-face interviews with 18 protest group members, 2 local newspaper journalists, 2 local NGO representatives, 2 industry representatives, and the local Member of Parliament associated with the protest. The research sample was recruited by initially contacting a small number of participants that had been publicly identified in newspapers and official records to be involved the protest, which was then extended through a 'snowballing' procedure.

The interviews included a mixture of 'narrative' and 'episodic' questions to allow participants to tell the 'biographical story' of their participation in historical events, as well as to help clarify the 'reality' of concrete events they had constructed, the meaning that they ascribed to them, and how their perceptions of the issues surrounding the events informed their views [89, 90]. These accounts were triangulated with different data sources [91], including public documents and follow-up interviews with key participants, to help to verify details as well as to crosscheck

accounts and the interpretation of events developed in this paper. For example, during the interviews some participants made reference to documents and text sources, including newspaper reports, press clippings, campaign newsletters, press briefings, scientific literature, written correspondence, and websites, which were volunteered, provided upon request, or obtained independently through further desk research to be incorporated into the dataset. These primary materials are prioritized as supportive evidence in the case study narrative. While the location of the community protest and the identities of key participants involved in this research are publicly documented and have a public profile, the names of residents and other stakeholders have been changed or anonymized for confidentiality purposes.

5. CASE STUDY FINDINGS

5.1. The Battle of Whinney Lane

In the early hours one October morning in 1998, construction workers for a major UK mobile telecommunications network service Operator began working in a field adjacent to Whinney Lane, a road situated in a small rural village bordering the North Yorkshire countryside. Using two small bulldozers, a crane and a digger, the workers broke through the field hedgerow and began excavating the site for a mobile phone mast, antenna and ancillary power supply cabin. Upon investigating the disturbance, residents were informed that the Operator had all of the legal means and planning support needed to develop the site, which was soon confirmed by a phone call with a local Council planning official. The residents convened a community meeting that evening to organize a series of actions against the mast development. They first

obtained and closely scrutinized the mast development plans submitted to the local planning authority by the Operator thereupon discovering several inaccuracies and omissions. Particularly, the Operator had neither submitted the necessary landscaping scheme, nor obtained written permission, for removing the 'listed' (protected) ancient hedgerows bordering Whinney Lane. Contact with the Council for the Protection of Rural England confirmed residents' suspicions that this meant the Operator had likely caused criminal damage. The residents petitioned Council officials about their discovery, but found them to be unwilling to discuss the development and denied residents the opportunity to raise their objections at the upcoming Council meeting. This 'unsympathetic' response by officials was considered by residents to stand in stark contrast to much more accommodating treatment of the Operator, which was permitted to submit application amendments that were approved retrospectively by the Council by phone 48 hours later.

Following an Internet search, the residents became aware of alleged health risks associated with MTT. They raised this with the Operator, but were told that phone mast safety was officially 'guaranteed' by the NRPB, and that it was no longer on the World Health Organization's (WHO) agenda. However, the residents noted from their own search that the NRPB had stated it could not categorically rule out the possibility of non-thermal effects. Moreover, mast exclusion zones ranging between 150 and 500 meters had been widely adopted elsewhere by local authorities in Denmark, Australia and New Zealand and closer to home in the neighboring county. Many residents then felt justified in rejecting the 'official line' by industry and government that exposure to MTT was 'unquestionably safe'. Other residents, by contrast, felt less concerned by any potential health risks, but nonetheless thought the 'health threat' posed by this new technology would provide good 'PR ammunition' to support their campaign against the

mast. Accounts of the Operator's failed attempts to assuage residents' health fears were also subsequently conveyed in a community campaign newsletter:

> There was also an 'interesting' presentation by a PR lady, apparently aimed at allaying our health fears. She talked of radio frequencies, saying that exposure to those at the 'dangerous' end of the spectrum (X-rays, radioactivity etc.) was akin to standing in a constant stream of Ping-Pong balls. Being subjected to mobile phone signals however, was to be hit by just a few Ping-Pong balls at intervals. Therefore safe. Question from the floor: 'You can choose to have an X-ray whenever you like and the exposure is in fractions of a second. Exposure to mobile phone signals is compulsory and constant. Might there be cumulative effects?' Awful silence and exchange of glances between [Operator] personnel. (Campaign Newsletter October 1998)

The Operator's attempts to trivialize MTT radiation exposure and its effects had not taken into account how such comparisons could be interpreted. Meanwhile, the risk comparisons made in communications by residents to explain public exposure to MTT and justify taking precautions were arguably employed with much greater force:

> With the lessons of X-rays, asbestos, CJD and smoking still fresh in our minds – all were considered "safe" to the public at one time or another – we think it's only common sense to show a precautionary red flag to mobile phone masts and keep them well away from the public until we can be absolutely sure they are safe. (Letter to the Editor, Harrogate Advertiser October 1998)

The residents also petitioned their local politician, Mr Phil Willis, Member of Parliament (MP), for his help, employing similarly tough and uncompromising rhetoric to set out the strength of ill-feeling towards the Whinney Lane mast development:

> The arrogance of the company defies belief. Not only do they arrive in our community unannounced and uninvited, they then plough through ancient, protected hedgerows, turn what was a pleasant field into a quagmire and attempt to erect a stark steel tower disfiguring the innocent brow of a hill. "Rape" is certainly the word that springs to mind. I don't want to get overly dramatic about all this, but I do feel that [the Operator] has crashed into our midst, taken off with what it wanted and then sneered at our impotent attempts to resist while it hurried off to find another victim. Our innocent countryside has been violated, and [the Operator] has neither the sense nor the sorrow to help it onto its feet after the attack. Let alone apologize. But rapists don't do they. (Whinney Lane residents' letter to Mr Willis MP, 28 October 1998)

While evidently deploying dramatic language about the environmental impacts, and rationalizing that past health risk lessons justified the need for precaution, the residents also indicated that they were not simply fighting against the technology the mast represented: 'What's at stake here is not only our unique and irreplaceable countryside, but also our belief in the accountability of our local elected representatives on the council and planning committee.' (Residents' letter to Mr Willis MP, 28 October 1998). Mr Willis, MP, agreed to lend his support to the residents' protest against the development, and on the day the mast was delivered he joined an estimated 60 protesters gathered at Whinney Lane whom had used their cars to form a blockade

halting the movement of telecommunications equipment onto the site. During this disruption, the protesters fortuitously uncovered the mast delivered to the site did not match the design specified in the plans. A local Council official whom had been dispatched to address the protest conceded that this discrepancy was sufficient grounds to request the construction workers to withdraw from the site. Under further pressure from Mr Willis, MP, the Operator's onsite representative agreed to a 'stay of execution' on the development while the MP could arrange to meet the Operator's company Chairman to discuss matters.

Following the initial forestalling of the development, a 2-month long protest ensued that residents described as best reflecting 'a game of cat and mouse' with the Operator. First, the residents left their cars in place to maintain the blockade as much as possible and commenced a 'round-the-clock vigil' over the site. In response, the Operator appointed security guards at the site to move the protestors on and keep disruptions to a minimum. Two lawyers amongst the residents determined that, while residents could not occupy the actual site on which the development was taking place, the security guards were nonetheless powerless to move them from the adjacent highways land in front of the site. This technicality established a legal basis for the blockade to continue. The protesters also turned the confrontations with security guards to their favour as further PR ammunition by publicly criticizing the 'bullish tactics' and 'rent-a-thug army' employed by the Operator. Subsequently, the Operator's community liaison officer informed residents that company workmen would be conducting an 'important' site visit, but would not disclose the purpose. When the residents convened an emergency meeting at the site, along with local journalists that were now reporting on protest developments, they were met by the unusual scene of workers floating a telecommunications air balloon several meters above the ground. Residents were only

then told that this was simply a routine transmissions test and that there was ‘no need to worry’. The incident was nonetheless considered a ‘ruse’ engineered by the Operator to make a mockery of residents and to try the patience of the journalists covering the protest. Afterwards, the Operator declared that they would proceed with the development, but intended to relocate the mast to an alternative site once one became available. The residents were by this point deeply distrustful of the Operator and dismissed these declarations of intent. When this information was relayed to Mr Willis, MP, it further transpired that the date of the development coincided with the meeting he had scheduled with the Operator’s senior representatives in London. The ensuing correspondence from Mr Willis, MP, to the Operator’s CEO and the National Acquisitions and Estates Manager iterated in no uncertain terms that the consequences of going against their prior agreement would likely entail a larger protest than before, a substantial media presence, and a massive boost of bad publicity to the ‘good name’ of the Operator (correspondence between Mr Willis, MP, and Operator, 10 November 1998).

5.2. Media amplification

Recognizing the need to raise wider public awareness and support, one of the protesters, a professional copyrighter, crafted a ‘newsworthy’ story of the ‘Battle of Whinney Lane’ to ‘pitch’ to his contacts in the regional and national media. The various objections being raised were succinctly captured in a letter published in the local newspaper:

> In Whinney Lane and across the country, the democratic process is being sidestepped by a telecommunications company that exploits weak planning controls and ill-prepared Councils. [The Operator] is hell bent on erecting masts. In addition to growing concern at the possible dangers of mobile phones (Tuesday's edition of The Sun had a two page spread on the subject) the National Radiological Protection Board cannot guarantee that there may not be non-thermal effects on residents living in the proximity of masts. The [Operator's] site is four meters from a well-used footpath, 80 meters from where children play and 89 meters from housing with two large schools nearby. This should be a matter of great concern for the Council. (Letter to the Editor, Harrogate Advertiser 20 November 1998)

These concerns were further backed up by the regional coordinator of *Friends of the Earth* in a follow-up *Letter to the Editor* that also drew attention to the consequences of ignoring potential health risks. The campaign also became a regular feature in the local press and on the local radio station, but not without receiving criticism from other residents pointing out that the protestors should not complain when they no doubt enjoyed the benefits of mobile phone ownership. Determining that being dismissed simply as 'NIMBYs' would undermine their cause, the protesters issued a strong rebuttal letter published the following week that set out their personal objections against the mobile phone mast, as well as the wider repercussions of mobile phone ownership in terms of health fears and impacts on the countryside that affected everyone.

Following sustained petitioning of local and national media contacts the campaign was picked up as a four-minute feature segment on the BBC primetime consumer program *Watchdog*. While welcoming this, some residents held reservations

that the program makers might view the complex issues surrounding their protest to be ‘too indigestible for a modern media audience’. On the day of filming these fears were confirmed when the program makers arrived with a ‘ready-made script’ that portrayed the residents as a ‘well-bred army', and proceeded to orchestrate shots of protestors marching up and down Whinney Lane waving banners and singing ‘We Shall Overcome’. This footage was explained to be necessary in order to provide a visual focus and ‘human interest story’ to support the news angle of ‘little people versus big business and bungling bureaucracy’. Afterwards, the residents felt pleased that the broadcast drew favorable publicity and national attention to their cause, but were somewhat dismayed the segment turned out to be more a light entertainment piece than the serious investigation they had hoped for. Residents were also incredulous that the Operator had declined to take part in the program, making ‘no comment’ on the grounds that there was not enough preparation time. The Watchdog program makers later apologized to the residents for the way in which the segment had been produced, but informed them of widespread public support received for their stand against the Operator as indicated by the large volume of phone calls, emails, and letters sent to the program makers following the show. The program makers also alerted residents to fellow anti-mast campaign groups.

Following the broadcast, Mr Willis, MP, secured a meeting between the residents, the Operator, and the local Council to try to form an agreement about the proposed developed. The residents were able to draw a number of concessions from the Operator. Particularly, the mast was now to be relocated a further 40 meters away from housing, and to help minimize visual impact the residents were able chose the style of mast they preferred following a chauffeur driven tour of phone masts around the region. The broken ancient hedgerow was replaced with new bushes and trees, and the field

was re-landscaped. Yet, despite winning these concessions, the end outcome was not perceived to be a complete victory by all. Some residents were especially fearful of the health risks that might now be associated with exposure to radiation from the new phone mast residing in their community. Some protestors also felt that these concessions were 'hard won' and made as part of a final ultimatum from the Operator to choose from two positions in which they could either take the least worst option without objection, or risk that the development would proceed on the Operator's preferred position now the residents had exhausted all other available options in their fight against Council planning approval.

5.3. Political Ripple Effects

Following their national television appearance on *Watchdog*, the protestors received an invitation to form a delegation with Mr Willis, MP, to attend an inquiry called by the Northern Ireland Assembly at Stormont into the health risks associated with mobile phone masts. At the meeting scientists gave presentations on MTT safety and campaign experiences were shared. Mr Willis, MP also consolidated his commitment to residents to continue to lobby Government on the issue in Parliament. Subsequently, when back at Westminster Mr Willis, MP, became heavily active in objecting to the 'policy of containment and expediency' through which he accused the Government of disenfranchising his local constituents from the MTT planning process (personal interview Mr Willis, MP, 2002; see also [15]). Mr Willis, MP, gathered cross-party support from fellow MPs who were also becoming increasingly inundated with letters from worried constituents about the health effects of mobile phone masts. Capitalizing on this groundswell of disquiet, in January 1999 Mr Willis, MP,

successfully secured support for an 'Early Day Motion and Question' to be put forward to the House of Commons to present and debate the issues of MTT, planning, and public health. In what turned out to be one of the most well attended adjournment debates of the year, Mr Willis, MP, argued that his constituents had been badly let down by the planning and public health systems respectively. The case was then put to Parliament that planning arrangements were unduly weighted in favour of industry Operators against environmental and public health interests. To illustrate that this was not an isolated concern Mr Willis, MP, also highlighted that, in addition to the 'swelling post-bags' of MPs and Ministers, the issue of mobile phone masts had in fact been the subject of 88 written questions tabled by MPs to the Department of Environment, Transport and Regions (DETR), 3 earlier Adjournment debates, and 3 Early Day Motions attracting 91 signatures from MPs. Pressing forward the key issue of MTT and public health Mr Willis, MP, reiterated the precautionary arguments first made to him by his constituents:

> Although I do not wish to be alarmist, I hope that the Minister agrees that neither his Department nor the Department of Health can categorically state that telecommunications masts and mobile phones do not pose a threat to public health […] After recent findings on smoking, passive smoking, asbestos and Creutzfeldt-Jakob disease, any Minister would be foolish to rule out the possibility of a health risk (House of Commons Hansard Debates 18 January 1999 pt. 39 [92])

Mr Willis, MP, then outlined in greater detail the available scientific evidence and scientific opinion of the WHO and the US Food and Drug Administration to make the

case that the 'jury was still out' on the health risks, arguing that this called for the implementation of the PP:

> What I am a suggesting, and what the WHO is suggesting, is a cautionary approach. That would be in line with our obligations under the Maastricht treaty, which introduced the precautionary principle as a legal obligation in article 130-r(2) of the treaty of Rome. (House of Commons Hansard Debates 18 January 1999 pt. 39 [92])

Mr Willis, MP, then made proposals for revising current health and planning policies to curtail the activities of mobile industry Operators, which he argued would give much needed added security to residents, and in his closing argument made a final appeal to forestall another UK government health controversy:

> How much better to say in five years time that we were right to be cautious than to have another BSE-type problem heaped upon us (House of Commons Hansard Debates 18 January 1999 pt. 39 [92])

In response, the Parliamentary Under-Secretary of State for the Environment, Transport and the Regions, Mr. Nick Raynsford, MP, welcomed the debate, and making direct reference to Mr Willis, MP's, constituents announced that new planning procedures would now be put in place to overcome the problems they had encountered:

> We believe that the new procedures will overcome the problems described by the Hon. Gentleman, and I hope that they will *prevent any further sieges of*

> *Whinney Lane or anywhere else*. (House of Commons Hansard Debates for 18 January 1999 pt 40 [93] [emphasis added])

The Minister also accepted the 'quite reasonable anxiety' about the environmental and health impacts of MTT and offered reassurances to the MPs present that the NRPB guidelines were well established and consistent with other international guidelines. He also drew attention to an internal Parliamentary consultation that was now concurrently underway within the Department of Health, and closed by further assuring MPs that their concerns had been recognized and were being addressed:

> I stress that the Government are concerned, and are taking steps to deal with the problems that have been identified. We shall continue to pursue the research in respect of health risks that the Hon Gentleman has anticipated. I hope that he will accept that the real concerns he has voiced have been accepted by the Government. (House of Commons Hansard Debates for 18 January 1999 pt 40 [93])

Three months later in April 1999, and before the internal consultation had concluded, the appointment of the IEGMP Inquiry into MTT and health was announced. The Stewart Report [38] acknowledged that there had been much political activity on MTT and health in the run up to the Inquiry and specifically credited Mr Willis, MP, as the foremost influential politician to raise the issue within Parliament. The MTT network service Operator involved in the Battle of Whinney Lane was singled out especially for criticism by the Stewart Report [38] concerning inadequate public consultation and siting practices. In anticipation of this outcome, the mobile Operators had appointed a

new industry spokes-body to design and implement a nationwide public relations program to show it was now adopting a more 'responsible' approach for addressing community consultation requirements in a bid to offset the perceived need for further restrictive planning arrangements by the UK Government [41].

6. DISCUSSION

This case study brings a necessary spotlight to the role and impact of citizen involvement in the social amplification of risk underpinning the 'anticipatory' adoption of precaution in the case of MTT and health in the UK. The findings primarily show that citizens played a stronger role in helping to spur the political warrant for adopting a precautionary approach for MTT and health than previously understood. In this section, we draw out some key analytical observations concerning the dynamics, processes and impacts of risk amplification exemplified by this case.

6.1. Adaptive Capacities and Risk Amplification

The case study indicates that the politics of precaution surrounding MTT and health in the UK were much more reflective of SARF processes and the exertion of conventional democratic pressure than previously thought. Past research focusing on the role and impact of citizen involvement has tended to downplay the possibility for citizens to make a meaningful contribution to national MTT and health risk policy debate on the grounds that, while the MTT health issue is national in scope, campaign efforts by sensitized individuals to raise wider public concern struggle to gain political momentum because the concerns articulated by sensitized citizens become subsumed by a disempowering 'rational' scientific discourse, which limits the potential for citizens to organize collective action and challenge expert knowledge

[15, 27, 32]. The case study findings presented here demonstrate to the contrary that dissenting voices and localized civic resistance to MTT can make a wider national contribution to arguments for the role of precaution in health, science, and technology policy, and that multiform rationalities, resources, capabilities and influence of citizens should therefore not be pre-judged or overlooked [78, 90].

Notably, while initially community resolve to fight against the mast cohered around the environmental damage and visual impacts the mast would have on the locality, community objections quickly grew to reflect multiple contestations against dominant presumptive scientific assertions and wider regulatory policy provisions [29], which to that point had facilitated the unquestioned disenfranchisement of citizens from mast siting operations in their local community. Particularly, the protestors managed to communicate their clear dissatisfaction with social relations of dependency and deference to official scientific, economic, and environmental arrangements, and then turn these constraints into wider justification for change that would in principle be to the benefit of everyone [29]. This also helped the campaign to stave off accusations of 'NIMBY-ism' and affirm a legitimate basis for resistance to the benefits of socio-technological progress [94] that subsequently resonated both locally and widely, with the story being picked up by regional and national media outlets and obtaining strong political support.

From a 'SARF' perspective [34, 62], the Battle of Whinney Lane characteristically provided a focal risk event that obtained signal value giving rise to the circulation of risk messages that were in turn filtered by amplification stations through various channels such as local and national media. Adding to these observations, the case study findings contribute further contextual insights into how the local community operated adaptively as an agent of risk amplification in 'non-

ideal' circumstances. Particularly, a key salient dynamic of risk amplification concerned the confrontational manner in which the residents of Whinney Lane squarely objected to mast siting arrangements through deploying strategic actions that materially disrupted the development, appropriated knowledge and official documents, exploited legal loopholes, made health risk claims, and variously enrolled NGOs, political and media connections to the cause in order to help mobilize public support and to act as channels for the delivery of campaign messages. The antagonistic exchanges surrounding the Battle of Whinney Lane not only fueled community antipathy and resolve, but also reflected most poorly on the Operator when depictions of the poor treatment of the protesters were purposefully incorporated into community communications. This gave added 'signal value' to the cause by strengthening the basis upon which the protesters were able to publicly state and defend their grounds for vehemently disagreeing with siting practices and call for wider policy reform.

Another consistent feature of the campaign was the sustained and adept use of tough and uncompromising rhetoric, which incorporated risk comparisons alongside a flair for deploying emotive language to effectively convey why a firm stance against mobile mast developments ought to be adopted. As similarly observed of other anti-mast protests [15, 27], the protagonists of the Battle of Whinney Lane foregrounded 'risk' and 'precaution' in their articulation of objections to MTT. This line of argumentation was chosen as much for the instrumental and symbolic value of attaching the 'stigma' of past health scares to current uncertainties about MTT and health as for any genuine health fears held by certain group members, but also contained reasoned justifications for adopting precaution. The success of these activities notably necessitated the effective deployment of wide-ranging sociocultural

skills, competences and resources held within their organizational milieu in order to formulate persuasive arguments, make constructive alliances, and extend political influence beyond the local confines of the community into wider national media and political fields. [47, 85]. The professional acumen, knowledge, experience, and relations held within the community were key to providing a shared basis for the alternative expertise, communicative competence, and political inventiveness needed to support on-going processes of reflexive interpretation and contestation of the many issues surrounding siting practices and the risks of MTT. Without which, the instrumental progression of risk concerns from a small rural community to the Houses of Parliament may not have met with such success.

6.2 The Longue Durée of Precautionary Ripple effects

The focus of the present case study notably looks beyond the formal application of the PP as a policy instrument under conventional circumstances, and instead places emphasis on the instrumentalities and practices of precautionary discourse that framed the political warrant for its use as they emerged and rippled out over time. National precautionary discourse can be understood to have first been underpinned by early local protest activities that prefigured the later opening up of more consensual opportunities for citizens to contribute to scientific and policy deliberations as might be conventionally expected of PP instruments [77]. The Battle of Whinney Lane was long and hard fought, requiring on-going efforts by the protesters to rebut criticism and forge of areas of common ground by making appeals to the wider democratic sensibilities and interests underpinning their case for public concern and policy reform [79]. The findings trace how precautionary arguments were first articulated by citizens, and how these local concerns about the impacts of

MTT on the environment and public health were subsequently received by the media, and eventually rehearsed by their elected representative in Parliamentary discourse, eliciting a precautionary response from the UK Government. Insofar as the precautionary arguments surrounding the Battle of Whinney Lane appear to have been taken seriously by UK Government officials, the concessions directly drawn from Ministers in Parliamentary debate directly acknowledged that the concerns raised constituted an important public issue warranting further regulatory attention. The key declaration made by Ministers that citizens 'had been heard' and 'official action would be taken' thereby marked a clear break with the 'fragile discourse of compliance' that had previously characterized official risk discourse [43]. The 'anticipatory' basis of precautionary decision-making by the UK Government was as such presaged by external public concern that was clearly articulated amongst politicians in the most well attended Parliamentary adjournment debate of the year. While it was not possible for this study to elaborate on the individual thinking of UK Government officials behind these pronouncements, the Battle of Whinney Lane clearly provided a concrete example of negative public sentiment towards MTT and health that would have helped to 'cohere and amplify' the diffuse public concerns contributing to the sense of anxiety that is said to have spurred politicians into precautionary action identified by Burgess [15]. Following this, we observe that UK precautionary measures were adopted more reactively and within a context of greater political ambiguity and antagonism than has previously been considered, and as such were characteristic of a SARF ripple effect [34]. Moreover, these broader contextual considerations may also contribute to further explanations of the controversial reception and apparent failure of official precautionary communications attenuate public risk perception following the publication of the Stewart Report [15, 39, 42, 95].

We suggest that public understandings about risk and intended precautionary actions were not simply confined to matters of passive information reception and consensual participation in 'upstream' deliberations [96], but also developed critically in view of wider politicized ambiguities about the competence, credibility and motivations of policy makers and industry, which has a bearing on public trust and deference to official decisions [25, 95-99]. Consequently, if the UK Government's precautionary stance was seen to be a hard-won concession resulting from public and political pressure, this could ultimately have undermined official declarations of the anticipatory and proactive basis upon which policy makers portrayed themselves as behaving responsibly, and by which the goals of ameliorating concern and winning public trust might otherwise be presumed [32, 101, 102]. Nevertheless, the politicized discourse that prefigured official actions demonstrated the abilities of citizens to rethink health and environmental regulations in more precautionary terms that ultimately helped to spur more reflexively motivated policy understandings and a more consensual democratic approach to MTT network siting practices by officials and industry in view of the imposition of a new technology that was proliferating in the apparent absence of public oversight or Government restrictions [40, 100].

6.3 Case study limitations

Some limitations to the case study are also to be noted. Particularly, we caution against generalizing idealized conceptions of politicized risk citizenship that might be ascribed to the co-construction of the science and technology policy ostensibly implicated in this case [35, 43, 86]. First, the sociocultural resources, capacities and expertise adaptively deployed by protestors in the 'Battle of Whinney Lane' were integral to their success, but these attributes might not necessarily be

available close at hand to other community protest groups, albeit knowledge can be shared and useful lessons learned vicariously within an active public sphere [60]. Second, UK Parliamentary constituency arrangements facilitate direct local contact between politicians and the citizens they represent, but this potential political channel for risk amplification might also not be directly replicated elsewhere. Third, the antagonistic relations and sense of disenfranchisement felt and publicly narrated by residents was a key contextual feature that served to add signal value to objections made during the Battle of Whinney Lane. However, the power of such arguments would be less clear cut in the case of later protests that occurred subsequent to the Stewart Report because of the openness of the IEGMP Inquiry to public input and the subsequent adoption of planning reforms that required better provision for citizen consultation by industry Operators and local councils to improve community relations [12, 27, 35, 22]. Fourth, it is noteworthy that the protesters were unable to maintain full control over their campaign narrative, which was regarded by the media to be insufficiently digestible in all its complexity. Rather, the story of the Battle of Whinney Lane gained traction as it was filtered through media amplification stations in part because it was simplified, reframed and repackaged to fit with traditional media tropes such as 'David vs Goliath' as exemplified by the portrayal orchestrated by the *Watchdog* program makers. While it might be speculated that nowadays traditional news channels and broadcasters can be circumvented through the use of modern social media environments that allow campaigners to directly author and extend the mass reach of their messages [71, 72], this may not necessarily directly correspond to greater risk amplification because the dynamics of digital communications are far from clear cut. The circulation of risk messages in social media is commonly subjected to distortion, manipulation, and fragmentation,

alongside facing fierce competition with other content for attention, which thereby confers even less control and requires the adept use of a wider range of communicative competencies and skills [73, 74].

7. CONCLUSIONS

This case study contributes to current research and policy understandings of the politics of precaution surrounding MTT and health in the UK by re-examining citizen involvement in the social amplification of risk preceding the UK Government's official adoption of a precautionary approach. Actions by local community protesters are found both to have gained national media attention and to have prefigured a key Parliamentary debate that articulated citizen concerns and spurred the Government recognition of MTT and health as an important public issue warranting further regulatory attention in the months immediately preceding the appointment of the IEGMP. Furthermore, the risk amplification processes observed characteristically embodied adaptive responses by citizens to 'non-ideal' circumstances that called for creative risk communicative solutions in order to surmount immutable asymmetries contained within MTT network siting practices [61, 76]. The form and dynamics of risk amplification were underpinned by socioculturally embedded processes of active sense-making and adaptive use of knowledge and communication resources and skills which animated the political possibilities for a vulnerable community to represent risk, escalate controversy, mobilize networks of resistance and counter expertise, and re-negotiate power relations, in contravention to accepted Government policy and scientific opinion [26, 78-80].

We conclude that the findings provide an important challenge to the received official view of the anticipatory basis of UK Government precautionary decision-making, in which officials are portrayed to have acted pre-emptively and citizens are thought to have made little discernable contribution to national precautionary policy discourse. The 'anticipatory' basis of precaution rather reflected varying forms and styles of disclosure along with different logics through which pre-emptive actions and decisions about the future were understood, legitimized and realized by different stakeholders at different stages well before, during, and after the appointment of the IEGMP [20, 100]. Moreover, the broader context of antagonistic relations surrounding siting practices may also be an overlooked factor potentially contributing to explanations of the apparent policy failure of UK Government communications to garner public understanding and acceptance of the requirement for precautionary measures.

The findings also attest to the importance of delineating how such issues as institutional maneuvering, group interactions, and political dynamics can act in concert with public concern to shape the way that risks are amplified, why policy responses are mobilized to address them, and the particular forms and impacts through which ripples take effect and manifest over time [53, 61, 69]. We suggest therefore that the conceptual understandings and findings elaborated in this paper help to provide further insight into the structure, stability and trajectory of associations between risk amplification and precautionary ripple effects over time, and call for further analysis of the political interactions and sociocultural conditions in which citizen involvement in techno-scientific controversies can contribute to the societal dynamics and impacts of risk [35, 70].

Following this, we conclude with a call for further critical examination of the risk amplification practices and contexts that precede the emergence and communication of ostensibly anticipatory policy decisions, and in particular how the political dynamics of pre-emptive policy decision-making differentially shape the emergence, development and public interpretation of precautionary policy measures. We recommend that studies which invoke or employ the SARF specify, if not indeed explicitly test, which underlying communication models best apply to describe risk amplification processes and mechanisms, and how this varies over time, because uncritical assumptions about the context and characterization of risk amplification and its effects may otherwise be misaligned or misplaced [60]. In some cases, criticism of ostensibly reasonable community responses and precautionary arguments that have arisen adaptively to fit the context of public vulnerabilities to risk, institutional constraints, and industry practices might be misdirected [76]. Incorporating these contextual considerations more explicitly into the SARF would help to foreground attention to the forming of linkages between community knowledge, performance and social relations in the rhetorical identification, production and negotiation of institutional subsystem boundaries thought to be key elements in bridging Stage 1 and Stage 2 risk amplification processes. Renewing this conceptual focus would fit with the general ambition expressed by proponents to be broadly comprehensive and sufficiently flexible to integrate new theoretical perspectives, illuminate the temporal and spatial duration and changing character of risk amplification and ripple effects, and to generate new policy insights across different social and institutional contexts [34, 56, 65].

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