Crowdsource Cartography And Conflict: The Role Of The User In Influencing Map Discursive Realities

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ABSTRACT

This thesis will scrutinize the various means by which internet users, or self described map editors, employ tactics and interactions to advance geopolitical discursive realities on OpenStreetMap (OSM), a globally popular crowdsource cartography platform. Using the Russian occupation of Crimea, and the Russia Ukraine conflict at large as a salient case study, a selection of user ban reports from the OSM data Working Group's ban report archive were analyzed through employing qualitative content analysis. The results were then categorized by user tactic to identify their frequencies of occurrence, as well as qualitatively investigated to situate the findings within important contexts of the case study and broader topic at hand. By identifying tactical means by which internet users, through direct interaction with the OSM interface, have attempted to advance their respective discursive agendas within the scope of the case study at hand, this thesis aims to broaden literature on the shifting role of the internet user as an actor with increased agency in digital crowdsource cartography.

INTRODUCTION

The age old practice of cartography has played a focal role in shaping perceptions of human history as we know it, and it continues to do so today in the age of digitization. Historically, physical cartography as a salient (old) media object implied that maps primarily provided a static and *spatial* representation of physical and human geographies. Whilst this perception has always been a hotbed of deliberation, the digitization of cartography has in effect made the notion of map spatial solidness obsolete (Gekker, Hind, Lammes, Perkins and Wilmott 2018, 1), and in turn unveiled the unavoidable importance of the dimension of time, consequences of perspective and power play in shaping these discursive realities as we see in maps. In this light, maps become more than just a salient visual documentation, but one that is perpetually incomplete and heavily dependent on human narrative and agenda embedded in constant dance of power play. Therefore maps, more so in the age of digitization, become mediators of "ongoing stories" (Gekker, Hind, Lammes, Perkins and Wilmott 2018, 1) in which the map is subject to constant reinvention under changing discourses and influences. Stemming from this understanding, it is appropriate to ask *who* the actors with influential capacity in shaping digital cartography may be, as well as in what forms, and for what purposes, such influences are exerted.

Naturally, digital cartography much like traditional cartography that it precedes, is a medium that encodes the "world-views of their creators" (Soeller, Karahalios and Sandvig 2016, 1). However, studies on digital cartography often tend to underrepresent the role of the map viewer, internet user or *consumer* in influencing the discursive agendas present on digital maps. In addition, user centric tactics of intervention in the shaping of politically contested cartographic realities have seen a rapid rise since the introduction of crowdsourced collaborative digital maps (e.g. *OpenStreetMap*), in which both map creators as well as self described editors and map consumers play a key role in shaping the discourse behind visual representations, and in the process inevitably encoding their viewpoints, value judgements and biases into what many may perceive as neutral and objective depictions of cartography. Alongside valid concerns of informational integrity on such crowdsource platforms (Yang and Colavizza 2022), little studies have delved into how such internet users may employ this environment as a means of advancing geopolitical discursive agendas in spaces of conflict.

Given the aforementioned needs for academic expansion, this report intends to contribute to the understandings of map users or self described *editors,* as actors with capacity and agency to influence discursive representations of conflicts in digital crowdsource cartography, more specifically on *OpenStreetMap* and with an explicit focus on the Russia Ukraine conflict representation at large. Using critical cartography as a theoretical lens of analysis, this report poses the research question; *In what ways do online users employ tactics to exert politically discursive influence on the representation of the Russia Ukraine conflict on OpenStreetMap?* In turn, a breakdown of the research question unveils a series of cascading follow ups that are critical to delve into. How does crowdsource cartography differ from commercial cartography? What exactly is an open source platform? Do such platforms bode consequences for information integrity in the online space? As aforementioned, this thesis will zoom into the geopolitical dispute over Ukraine's Crimea, as well as the Russian invasion of Ukraine at large as a salient case study upon which OSM user behaviour will be scrutinized through conducting content analysis on a created sample from the OSM Data Working Group archive of user bans.

THEORETICAL FRAMEWORK

From Analog to Digital Cartography

In order to better understand the shifting role of the map consumer from an actor of observation or *consumption* of maps, to an actor with agency to influence discursive realities as they are presented, it is important to briefly summarize the journey of cartography as a media object from its analog form to a digital ongoing phenomenon. With regards to academic discourses, literature in the field of cartography makes a clear distinction of the transition from *analog* cartography, to the predecessor *digital* cartography. Lammes appropriately describes analog cartography as somewhat predetermined, essentially that such cartography can "only marginally" be altered and for the most part, is a stable "representation of spatial relations", in which the cartographer had to make certain unchangeable choices regarding visual representations (Lammes 2017, 1020). Interestingly as well, Lammes puts a clear emphasis on the role of the map maker as a primary influence in shaping discursive realities, in the sense that a physical map may be annotated, folded, or physically altered post production, however the core visual layer remains a pre-set unalterable reality. Nonetheless, this notion has been historically disputed by critical cartographers even predating the emergence of online digital cartography.

In the late 1980's, JB Harley was a forefront scholar who challenged the supposed ontological stability of maps, proclaiming that a critical issue in the broader academic consensus relating to the field is the premise that cartographers engage in an "unquestionably scientific or objective" task of documentation (Harley 1989, 1). In fact, Harley takes a staunchly critical stance all throughout, referring to the understanding of maps as *scientific* objects as "ontological schizophrenia" (Harley 1989, 2) that is a result of unchallenged myths spun by cartographers framing their craft as a *neutral* science. In Harleys view, cartography was not necessarily what cartographers sold it as, and to truly understand its history, the forces influencing mapping would have to be understood. Thus, the author proposes the need to deconstruct our understanding of cartography governing rules through employing Foucaldian understandings of discourse and power (Harley 1989, 4) in that maps do not simply present knowledge, but rather *produce* it. This notion of viewing cartography as intrinsically bound to power and discourse is staple to understandings of critical cartography, allowing further speculation towards the complex web of actors and influences that shape the discursive realities we see on maps. Through this, Harley in turn also rejects the scientific objectivity of

cartography, an understanding that has been shaped by post 17th century assumptions that maps are a documented "mirror of nature" (Harley 1989, 4). Stemming from this need of divergence, the author discusses an alternate set of cartographic rules to which he claims cartographers through history have operated with an intentional silence towards, namely rules that govern the *cultural* production of maps (Harley 1989, 5), and in process encode certain values, politics, social classes and narratives to these media objects. With the age of digitization and the emergence of digital cartography, the contested notion of map fixity and neutrality has effectively "disintegrated", thus giving rise to the notion of maps as mediators of "ongoing stories" (Gekker, Hind, Lammes, Perkins and Wilmott 2018, 1) that are not just spatial, but bound to time and discursive context as well. As such for Harley, a map is never fully completed, but rather exists in a permanent "semi finished state" (Gekker 2016, 4) as a set of discursive claims bound to time and context. In this light, digital cartography is understood as a social construction rather than a scientific object (Gekker 2016, 2).

Harleys understanding of cartography is framed by Kitchin, Gleeson and Dodge (2013) as the "descriptive" qualities of maps, whereas in contrast, more modern critical cartographers like Wood and Fels (2008) propose viewing maps as possessing "prescriptive" qualities. In other words, whilst Wood and Fels still accept the ontological stability of maps in their final form, they advance that maps also attempt to shape and form the world as much as representatively display it (Gekker 2016, 2). Therefore, Wood and Fels see this prescriptive nature to not necessarily lie in the *immutable* surface of the map itself, but rather the layers of context, discourse, and ideology that are *loaded* onto this surface as various sign systems (Wood and Fels 2008, 189). In this light, the map is no longer a salient representation of reality, but of a certain employed *ideology* which, for Wood and Fels, fundamentally boils down to the assertion of authority, primarily over territory (Wood and Fels 2008, 190). Wood and Fels describe authority in this context as a delegated result of understanding maps as reference objects, much like a dictionary is a reference point for definitions, or a calendar is a reference point for dates (Wood and Fels 2008, 191). This authority is inherently prescriptive in nature, and transforms digital cartography into a vehicle for advancing discursive and context bound realities (Wood and Fels 2008, 191). In this understanding, narrative and discourse play a focal role in shaping map realities as we see them, which in turn poses queries as to who exactly are actors with capability to influence these representations.

Kitchin and Dodge understand maps in this regard as constantly co-created, in the sense that maps are made, and then subject to constant *re-creation* through every interaction or act of its

use. Thus, Kitchin and Dodge position their own critical understanding of maps as inherently subject to ontological *destabilization*, in that digital cartography simply cannot avoid becoming a "processual" object rather than a salient documentation (Kitchin and Dodge 2007). In doing so, the authors open an avenue for understanding *mapping* as a process (how they become), rather than *maps* as objects (what they are). Through this, Kitchin and Dodge contend that maps emerge as constant co-creative products in which a mix of contexts, interpretations and habitual practices both by the map *maker* and map *reader* endlessly shape a final product (Kitchin and Dodge 2007, 21). In his book Science in Action (1987), Bruno Latour also previously explored how cartography can be shaped by cultures and mechanisms of production to become a tool of power and authority over truth claims. Latour argues that the immutable and ontological stability of maps comes not from their content, but rather through familiar and standardized protocols of creation that allow maps to be understood beyond cultures and boundaries. Using his coined Actor Network Theory (ANT), Latour demonstrates how maps are a product of an assemblage of actants and actors, each with varying purposes, discourses and aims that ultimately shape maps as we know them. This is where the role of the map user, or *consumer*, becomes highlighted as a possible actor with capacity to influence discursive realities as they appear on maps.

Types of Digital Cartography

In a broad sense, digital cartography can be split into two camps; commercial cartography and crowdsourced cartography. The former is primarily corporate and tech giant driven digital cartography (e.g. Google Maps) that in practice attempts to adhere to a set of norms and regulations most often set by requirements of international institutions (such as the UN), or in adherence to state demands (Crampton 2011, 108). As such, this may create the impression that commercial cartography is neutral in nature and not subject to outside discursive influences. In practice the reality is not this simple, as observed in cases where an unavoidable conflict of perspectives takes place. In such settings, commercial cartography platforms seemingly favor an approach called "border personalization" (Soeller, Karahalios and Sandvig 2016, 1). This is when custom tailored border and toponym choices are displayed to users based on their IP address locations. As Gekker describes it, this represents a form of "casual power" exertion, in which the design practices on part of the map makers are employed to satisfy map users in a personalized manner. In such cases, one cannot help but notice a certain power play taking place, in which the platform seems to delegate a surprisingly high degree of importance to the opinions of the map viewers, albeit not to the extent in which it may heavily undermine accuracy. Furthermore, as such platforms are commercial in nature,

being at the helm of territorial ambiguity and dispute is not favorable to a corporate venture. As such, commercial cartography platforms would much rather satisfy the broadest audience possible even when it requires conflict mediation of this inherently biased nature. Nevertheless, some argue that by doing so, such decisions introduce a counterproductive ambiguity through selective addition and omission of information, that may further entrench territorial disputes by lending or removing legitimacy from geopolitical ideologies (Quinn and Tucker, 1). As articulated by Soeller, Karahalios and Sandvig, the accurate depiction of territorial dispute or uncertainty is a technical and moral challenge in itself, but more importantly, the decision to depict any sort of uncertainty *at all* is also a conscious "value judgement" (Soeller, Karahalios and Sandvig 2016, 1) on part of such companies that the involved countries may indeed disagree with.

In terms of the latter, being crowdsourced cartography, the role of the user in shaping the discursive realities present in the digital cartography is much more obvious and transparent. Crowdsourcing in cartography can be understood as data collection and contribution by amateur users, which is then aggregated into geospatial data sets (Pfoser 2016, 1). One such prominent example is *OpenStreetMap*, an open source mapping artifact that is primarily sustained upon by "complex social networks" (Ballatore 2014, 215) of internet users on a voluntary contribution and administration basis, much like *WikiPedia*. Community members maintain ties and coordinate through a variety of online methods, and in some cases even offline physical methods, with a shared ideological goal. Nevertheless, just as with any overarching community, there is the existence of ideological, social, technical and geographical sub factions of interest and motivations (Ballatore 2014, 216). As such, crowdsource cartographic platforms are subject to considerably shifting boundaries and authorities, given the ever changing active and inactive users (Ballatore 2014, 216). As expected, an open edit license approach poses its own set of challenges with ontological stability and information validity, as in some cases, even the very map editors themselves may be emotionally invested in certain geopolitical ambitions, thus encoding their viewpoints into the construction of the map itself (Quinn and Tucker, 5). Furthermore, the very open nature of OSM allows for edits to the contents to take place at any given time, often culminating in provocative arguments and "edit wars", in which users mass replace each others edits for an unpredictable amount of time, putting any notion of neutrality under heavy scrutiny (Quinn and Tucker, 2). As such, there is a much more evident influential capability of the map viewer in shaping the discursive realities as they appear. It is precisely the latter, being crowdsource cartography, that will be a central media object of analysis for this thesis given its approach to cartographic editing that may embolden the role of internet users in advancing discursive realities through direct

intervention with map interfaces, a tactic that is less possible to take place on commercial cartography.

Given the operational difference between commercial and crowdsource cartography platforms, this thesis will only employ crowdsource cartography as a platform of analysis, more specifically the platform *OpenStreetMap*. This is primarily because commercial cartography platforms disallow edits to their geospatial data via an open license, whereas crowdsource cartography platforms are defined by this very approach. As such, crowdsource cartography platforms delegate an unprecedented responsibility to internet users in order to create, maintain and defend "digital geospatial artefacts" on nothing more than implicit trust in contributing internet users (Ballatore 2014, 214). In addition, an open license environment means that the role of the user as an actor with agency in shaping the geospatial realities found on such crowdsource cartography platforms is much clearer and researchable as a phenomenon.

Open Source Platforms and Information Integrity

Following the distinction made between the two key forms of digital cartography, it is important to understand the nature of how the latter, being crowdsource cartography, functions in practice and what consequences being an open source platform may bode for the validity of information. *OpenStreetMap* is certainly not the first, nor the only form of open license crowdsource informational platforms on the web. Perhaps much more popularly known, Wikipedia is one of the largest online encyclopedia projects and free information repositories that exists, primarily relying on both contributions and regulation by self assigned online volunteers (Yang and Colavizza 2022, 1). Nevertheless, as articulated by Yang and Colavizza, it is this very same radical openness to user contribution that in turn very much compromises the informational integrity of Wikipedia as an encyclopedic source (Yang and Colavizza 2022, 2). In their study, the authors identify various chokepoints in which informational integrity comes under question. One such avenue is identified in citations, more specifically that news media outlets comprise the most common of Wikipedia article citations and may comprise up to 30% of all external sources in their Wikipedia citations corpus (Yang and Colavizza 2022, 3). Thus, such articles will often contain significant amounts of outdated or unsubstantiated claims, as well as politically polarized perspectives that technically do not adhere to Wikipedias NPOV (Neutral Point of View) policies (WikiPedia 2023). In another study by Don Fallis scrutinizing the epistemological stability of Wikipedia, the author rightfully identifies various means by which an open source environment constitutes a significant dilemma with regards to information

integrity. In a section dedicated to epistemic concerns related to Wikipedia, Fallis highlights various shortcomings, such as contributor anonymity making it very difficult to ever identify whether an individual is qualified enough to write on certain topics. Fallis also touches upon intentional deceptive disinformation campaigns on part of Wikipedia editors, citing an example in which certain internet users had edited the Wikipedia page of journalist John Siegenthaler to falsely claim that he was involved in the Kennedy assassinations. The disinformation remained on the Wikipedia page for more than four months (Fallis 2008, 1665). In other coordinated campaigns highlighted by Fallis, a television host had encouraged his following to edit Wikipedia entries on endangered African elephants to claim that their numbers had actually tripled in the past six months (Fallis 2008, 1665). In both these cases highlighted by the author, internet users and self described editors had attempted to advance a certain discursive narrative through direct, and often malicious, interactions with the platform interface.

Critical Cartography

Following a thorough delve into surrounding academic literature on the topic, as well as phenomena related to crowdsource digital cartography, it seems that to best understand the case at hand, critical cartography will be employed as the theoretical approach to understanding the environment created by such open source cartography, as well as the means by which online users may employ this environment for advancing geopolitical discursive agendas in areas of conflict. Critical cartography is an approach that seeks to understand the ways in which maps reflect the norms and cultures of their makers, as well as how political, social and economic contexts can play a decisive role in shaping the discursive realities we see on maps. To define critical cartography, this report employs the explanation by Crampton and Krygier, that critical cartography are "new mapping techniques" and the accompanying "theoretical critiques" (Crampton and Krygier 2006, 11). Unlike academic cartography, which tends to understand cartography as "neutral and scientific" documentation, critical cartography challenges this notion by linking the concept of geographic knowledge directly to power, in effect displaying cartography as a media object of political context (Crampton and Krygier 2006, 11). In this approach, cartography, landscape, or even *space* no longer become static or neutral concepts, but rather ones that must be seen as a cultural and social phenomena of their own right (Corner 1999, 223). Critical cartography is indispensable as a theoretical lens to this report as it primarily creates avenues for critical speculation. As aforementioned by key critical cartographic scholar JB Harley, critical cartography emerged as a much needed critique to the supposed neutral objectivity and ontological stability of maps. He advanced that researchers need to take into account the various means by which the map

maker, employed software and other influences may distort the truth (or outright lie) by employing certain discursive positions as objective truths (Harley 1989, 6). Within this critical approach, Harley proposes to understand maps as "social constructs" that are in essence products of "rules of society" and "rules of measurement", both which may appear fixed yet are constantly subject to negotiation (Harley 1989, 6). Using understandings of discourse and power by Foucalt, amongst other thinkers, Harley opens avenue to question the processes that led to maps being perceived as scientific objects, and how in effect we can deconstruct this inaccurate notion. Latour employs his Actor Network Theory to further open avenues to question the assemblage of actors and actants that mutually shape cartographic realities, whilst employing cartography as a vehicle of authority.

CASE STUDY: THE RUSSIA UKRAINE WAR

As a salient case study, this thesis will work upon scrutinizing the various means in which internet users and self described map editors attempt to influence geopolitical discourses regarding the Russian occupation of Crimea, as well as the broader Russia Ukraine conflict at large. As such, a brief overview of the timeline of occupation and current stage of interstate affairs can be important in order to form a thorough understanding of the thesis at hand.

February 2014 in Ukraine saw the *Euromaidan Revolution* that ousted elected President Viktor Yanukovych and his government after an unexpected policy pivot in late 2013 had the Ukrainian government choose deepening ties with Russia as opposed to a political association and free trade agreement with the European Union. Earlier in 2013, the Ukrainian parliament had overwhelmingly approved finalizing the Ukraine-EU agreement, albeit with strong opposition and coercive pressure from Russia to drop the negotiations (Dinan, Nugent and Paterson 2017, 3). Public discontent with the authorities culminated in widespread protests throughout Ukraine, citing mass corruption, abuse of power and the influence of oligarchs in locking Ukraine into a continued Russian sphere of influence (Marples and Mills 2014, 9). In January and February, clashes between protesters and the authorities had claimed the lives of 108 protesters and 13 police officers, which was followed by an unanimous vote of no confidence for President Yanukovych in the Ukrainian parliament. Citing this decision as illegal, president Yanukovych officially asked for aid from Russia, which in turn fomented pro-Russian counterprotests in Ukraine's southern and eastern regions, culminating in an interstate war that saw the occupation and annexation of the Crimean Peninsula into Russia proper (Panek and Brychtova 2015, 2). In addition, it was the Ukrainian oblasts of Donetsk and Luhansk declaring

independence from Ukraine, militarily backed by Russia. Almost ten years later in February 2022, Russia once more ignited the Russo-Ukrainian war by launching a wide scale invasion into further Ukrainian territories. Soon after, Russian President Vladimir Putin signed a decree on the illegal annexation of four Ukrainian oblasts - Donetsk, Luhansk, Kherson and Zaporizhzhia - into Russia proper despite an ongoing full scale war and undefined boundaries. Given the tendency of inflated casualty numbers and false information, it is very difficult for analysts to estimate the human toll of Russias further invasion into Ukraine, but the United Nations pits an estimate of over 8,000 Ukrainian civilian deaths alone (United Nations, 2023). Given the background of this conflict and the resumption of hostilities in early 2022, internet users behaviour on *OpenStreetMap* has interestingly reflected such hostilities with occasional flare ups of information wars. OSM's Data Working Group has effectively documented a timeline of information wars conducted on its platform through internet users advancing Russian and Ukrainian geopolitical interests respectively. As aforementioned, this thesis will analyze a selection of user ban reports from the OSM Data Working Group's archive of user ban reports to better identify the various tactics by which such internet users advance geopolitical agendas on the platform.

Given that this stage of conflict between Russia and Ukraine has largely taken place in the past decade or so, it serves as a relevant case study regarding conflict representation in digital cartography platforms. In existing literature, the Russian occupation of Crimea has served as a case study in previous researches. One such example is by Panek and Brychtova, who assessed the representation of the Crimean peninsula in various global digital cartographic platforms such as Bing or Yahoo!, in comparison to Russia centric cartography platforms such as mail.ru and digimap.ru (Panek and Brychtova 2015, 3). The authors also include a section of analysis pertaining to *OpenStreetMap*, in which they identify that the platform had favored representing Crimea as belonging to both Russia and Ukraine - with a *disputed* status - until the conflict was resolved (Panek and Brychtova 2015, 4). In another study by Ballatore (2014), the author assesses instances of digital cartographic vandalism by drawing attention to the case of toponym and place name changes by internet users between Russian and Ukrainian dialects in the Crimean peninsula (Ballatore 2014, 218). Thus, the existence of previous literature that utilizes Crimea, as well as the broader Russia Ukraine conflict as a case study when conducting research related to digital cartography, creates a strong argument for its reliability as a case study in such a research avenue.

METHODOLOGY

<u>Content Analysis</u>

Content analysis is a methodological approach most often found in social sciences, that has gained a precedence in digital humanities and new media academia as both a quantitative and qualitative tool for identifying themes, narratives and relationships within textual and visual data. As raised by various scholars concerned with internet methodologies (Erlhofer, 2010; Vogt, Gardner, & Haeffele, 2012), content analysis provides a potential solution to the limitations of sampling internet data due in part to the practical challenges posed by the vastness of the internet and the technical challenges posed by the lack of data indexing and categorization. More specifically in this regard, content analysis allows for a thematic and context laden approach to categorizing and analyzing internet based data that big data methods simply miss out on. Mahrt and Scharkow go further to reiterate this in their research, as they argue that smaller scale content analyses can provide equally meaningful outcomes as big data analysis of online content when performed correctly (Mahrt and Scharkow, 2013).

Using theoretical understandings from critical cartography, qualitative content analysis will be employed as a methodological approach for understanding internet user and self described map editor tactics in disrupting map realities or advancing discursive agendas through *direct* interaction with the map interface. With regards to the case study, this thesis will focus on malicious user behaviour primarily pertaining to the geopolitical dispute of Crimea, and the greater war waged by Russia on Ukraine in order to narrow the relevant data set. Within this thesis, qualitative content analysis will be conducted by analyzing a publicly available archive of user ban reports provided by *OpenStreetMap* foundations *Data Working Group*, an OSM based regulatory community that since 2013 is primarily concerned with identifying and resolving instances of cartographic vandalism, copyright violations, edit wars and automated bot activity on the platform (OpenStreetMap Foundation, 2013). This archive of ban reports provided by OSM's Data Working Group constitutes a chronological archive of all user bans and corresponding reasons that have been issued by moderators on users and map editors. These publicly available ban reports are archived in a list of user blocks, each with a corresponding HTML link containing the name of the blocked user, the admin responsible for issuing the violation, and a provided description on the offense that resulted in the penalty (List of user blocks, 2023). The user ban archive represents an "underutilized qualitative source of information" (Quinn 2020, 1) that provides insight into the inherent issues with data integrity for

such crowdsource platforms, as well as for identifying the scope and tactics of an online map consumers role in advancing discursive agendas in digital maps. In previous studies on crowdsource cartography, this archive of user ban reports has been utilized as a case study of analysis in various ways. Neis, Goetz, and Zipf had undertook a study that scrutinized a selection of user ban reports to better understand the nature of vandalism incidents with the aim of developing automated tools for identifying malicious behaviour (Neis, Goetz, and Zipf, 2012). Quinn and Tucker had also utilized the archive of user ban reports on OSM to identify cases where geopolitical contestation and dispute played an influence on user malicious behaviour (Quinn and Tucker, 2017). Furthermore, Sterling Quinn had also conducted a study that utilized the user ban archive on OSM to quantitatively categorize user behaviour and qualitatively analyze the impact of such categorized behaviour on information validity on crowdsource cartography platforms (Quinn and Bull 2019, 5). Given the existing literature and previously conducted studies that have utilized the OSM user ban reports archive, I believe that it serves as a useful and reliable trove of data, both in terms of accessibility and quantity. Building upon and contributing to the aforementioned studies, this thesis will scrutinize the role of the user as an actor, and attempt to identify instances in which such users engaged in malicious or politically motivated tactics with regards to the Crimea dispute, through qualitative content analysis of a selection of relevant user ban reports.

Platform and Data Corpus

The platform of analysis in this thesis will be *OpenStreetMap (OSM)* given its popularity amongst internet users as a crowdsource cartography platform. In addition, previous research on malicious user behaviour on crowdsource cartography platforms have often preferred analyzing OSM as the primary media object, thus providing extensive previous literature and academic approaches for reference. Regarding internet users and map editors, examples of malicious tactics may include malicious editing, carto-vandalism, bot activity and full scale edit wars. In terms of actors, this research will understand map users and self described map editors as the same role, given that OSM does not differentiate between the two forms of platform users with regards to registration and interaction with the cartography. Simply put, any internet user can create an account and edit the vector map on OSM to their pleasure, granted that inaccuracies will eventually be identified and the perpetrating user sanctioned.

Regarding the data employed in this content analysis, I first contacted some of the aforementioned authors who had made use of the data set to possibly acquire the cvs. file or code by which they scraped this data from the web. In this process I ran into limitations related

to outdated codes and API's, as well as the fact that these previously used data sets naturally did not include the ban reports from the years after the relevant paper was published. As the next step, I contacted the OSM Data Working group in order to potentially obtain an exportable .cvs of their ban archive and was ultimately able to obtain a raw data cvs. file of the entire OSM user ban list. This .cvs document was then categorized into relevant columns of ascending date, from 2009 to 2023. The total dataset at this stage comprised of 6889 individual ban reports, however this did not imply that all of the reports would be of relevance to this thesis. As bought up by other academics who have utilized the OSM ban reports as data, a significant portion of reports are of identical repeat incidents. In one case identified by Quinn and Bull, there are 108 identical reports attributed to an internet user who made 108 accounts for mass importing data (Quinn and Bull 2019, 5). For this reason, such repeat bans were removed and understood as a single report. In addition, a significant portion of moderators who issued bans chose not to provide an extensive description and thus these reports were also removed from the data set. The reason for this was primarily because there was simply no way of identifying whether these ban reports had any relevance to the case study at hand, being the Russia Ukraine conflict at large. In instances where ban reports contained minimal details but still clearly implied relation to the conflict, they were retained as part of the sample for analysis. Such ban reports were identifiable by the use of key words and place names relating to the conflict (e.g. Ukraine, Russia, Crimea), or sometimes through moderators referencing the OSM data working resolutions and guidelines with relation to Crimea (Working Group Minutes 2014; 2018). Following from this, ban descriptions in other languages such as French or German, or other alphabets like Cyrillic were machine translated to English using google translate in order to ensure the remaining samples were all in the same language. Finally, a text search was used to identify bans related to three key words; Ukraine, Russia and Crimea. This search was conducted in both Latin and Cyrillic alphabets to once more ensure that no ban reports were missed out on, although all ban reports at this stage were already machine translated to English. In addition, the usernames of the banned users were kept as part of the analysis instead of anonymized, given their potential to provide further insights into the case at hand through content analysis. In terms of ethics, it was decided to be within acceptable bounds, given the fact that all the ban reports, usernames of both offending users and even the moderators are publicly accessible and archived by OSM's own Data Working Group. Thus, the final data set comprised of 49 individual ban reports ranging from 2012 to 2023, citing malicious editing on part of internet users with aims of advancing discursive geopolitical agendas relating to Crimea, and the broader Russian Ukrainian war at large.

In addition, two resolution documents from the OSM Data Working Group were analyzed for further context into user tactics. These resolutions were created as part of OSM's monthly meetings, in which moderators and other team members hold an online meeting to address matters related to the platform. In doing so, certain issues that may arise sometimes require the Data Working Group to make changes to its policy, or explicitly address these issues taking place. As such, these resolutions were passed by the OSM Data Working Group exclusively to take into account the new realities regarding the growing Russia Ukraine conflict (Working Group Minutes 2014; 2018). Both resolution meetings had taken place in 2014 and 2018 respectively, and address the growing trend of malicious behaviour and edit wars on part of internet users and self described map editors. In these resolutions, moderators identify a series of malicious user tactics which have been observed in OSM users and map editors, and thus overarching rules were set on part of the Data Working Group to both penalize and limit such instances. An analysis of these two resolutions in coordination with the original dataset of user bans can provide an in depth contextual understanding to the various methods by which internet users attempt to forward geopolitical agendas through direct intervention with the OSM map interface.

Content Categorization

Through the use of inductive coding, each of the 49 user ban reports in question were read through, then categorized appropriately based on type of user tactic resulting in a ban, and the frequency of occurrence in the data set. This method of content categorization naturally came with its advantages and disadvantages. Most notably, this categorization aided to identify the frequency by which each malicious practice by internet users and self described map editors took place with relation to the conflict case study. As such, it allowed to form a quantitative understanding of what tactical methods internet users are more likely to employ when attempting to advance geopolitical agendas on the OSM mapping interface, a least with regards to this case study at hand. Nevertheless, it became apparent that certain ban descriptions could very well be classified in more than one of the user tactics categories, and in some instances, a single ban description made note of several malicious tactics that one user might have employed. Given this, I decided it would be most appropriate to categorize such ban reports in all of the relevant categories to give the best picture of user tactic frequencies. In addition, this can help further acknowledge the complexity of some user tactical behaviors, and the means by which OSM moderators respond to such behaviour.

In terms of the categories chosen for this content analysis, the thematic divisions by Sterling Quinn were favorably employed as a *foundational* structure to develop categories upon for this thesis (Quinn 2019, 7). Nevertheless, the specific case study at hand as well as a focus on a particular set of user tactics aimed at forwarding geopolitical discursive agendas, meant that not all of Quinn's proposed categorizations were applicable to this thesis in the forms employed by the author. From the categories elaborated on below, those such as toponym and place name changes, administrative border changes, sock-puppetry and general obstinance remain unchanged in terms of their definitions provided by Sterling Quinn. This is because the very *action* of these user tactics remain broadly unchanged whether a user is attempting to advance a geopolitical standpoint or not. For example, categorization of sock-puppet accounts - being accounts attempting to circumvent their previous bans - is based on the *action* of the user, rather than the content they create or modify on OSM. In addition, user tactics such as unauthorized border and toponym changes are actions that are inextricably embedded in political context, thus they remain as appropriate categorizations that can be translated to this study. On the other hand, categories such as cartographic vandalism and spam activity have been modified to better suit the context of the case study and the understanding pursued in this thesis. With regards to *carto-vandalism* as employed in the study by Ballatore, the author advances a broader understanding on account of it being an emergent phenomenon that still lacks clear boundaries of definition (Ballatore 2014, 217). Given this, Ballatore discusses a wide range - albeit expandable - of manifestations of carto-vandalism, of which many remained inapplicable to the study at hand. In addition, Sterling Quinn opted to define the act of vandalism in an equally broad manner, calling it "any action that undermines the accuracy or credibility of the data" (Quinn 2019, 8). As for spam activity, the study by Quinn opts to understand this user tactics as instances when "advertisements and external hyperlinks" (Quinn 2019, 11) are disseminated by users through geotagging or messaging. Given the explicit focus on identifying geopolitical incentives in user tactics, as well as the case study at hand, this definition was unsuitable for this study. For this reason, a more nuanced and contextual understanding of cartographic vandalism and spam activity were employed in this study in order to suit the study at hand. The category definitions, as well as what forms of user tactics qualify under their description are as follows:

Toponym and Place Name Changes

As one of the more obvious forms of advancing geopolitical discursive agendas, toponym and place name changes are when internet users intentionally alter the the names of settlements, historical landmarks, religious sites, even roads, parks and public infrastructure to advance a

notion of ownership or belonging to another entity. This can take place in several ways, such as by changing names to a dialect different that that of the parent country, or by encoding a message in the name that advances a geopolitical claim. In previous research by Sterling Quinn, the author had observed edit wars in Crimea, in which users and map editors saw en masse place name changes from Ukrainian to Russian dialect, and vice versa, as well as observing similar edits through Eastern Europe, with particular frequency in Georgia and Azerbaijan (Quinn 2019, 10). In this thesis, instances of user ban reports that identify intentional changes of toponyms and place names will be categorized as such.

Border Changes

Border changing refers to the act of intentionally altering internationally recognized administrative boundaries of states, or globally acknowledged borders of military control in certain conflicts. The latter is of more value to the OSM Data Working Group when relating to the Russia Ukraine conflict, as is evident from moderator explanations in ban descriptions, as well as two resolutions passed by the OSM data working group. More specifically, the OSM Data Working Group resolution on Crimea in 2014 explained that the administrative boundaries of both Ukraine and Russia with regards to Crimea would "be indicated as disputed" (Working Group Minutes 2014). In a follow up 2018 resolution regarding Crimea, the clause was updated to state that Crimea shall be shown as "part of the Russian administrative relation" rather than internationally recognized Ukrainian territory so long as "Russia has on-the-ground control in Crimea" (Working Group Minutes 2018). The Data Working Group reiterated that their stance is not based on political allegiance, but rather factuality based on the ground realities. In this thesis, instances of user ban reports that identify unapproved changes to these administrative boundaries will be categorized as border changes.

Cartographic Vandalism

Perhaps one of the more difficult categories to define, OSM literature uses vandalism as a term to describe a wide scope of malicious behaviour, not limited to just deleting data, spamming, and copyright violations (Neis, Goetz, and Zipf 2012). Ballatore aptly points out that *carto-vandalism* is still very much an emergent phenomenon, and thus the boundaries of what constitutes such vandalism remains "difficult to delineate precisely" (Ballatore 2014, 217). Broadly speaking, the author defines carto-vandalism as the act of intentionally reducing the "utility of a geospatial artifact for the majority of the users"(Ballatore 2014, 217), which can manifest in several different tactics. Some examples covered by Ballatore are *fantasy carto-*

vandalism, which involves the creation of nonexistent, imaginary features and geolocations that do not exist in real life, *ideological carto-vandalism*, which sees users representing allegiance to political, religious or ethnic stances through vandalism on the map, or even *artistic carto-vandalism*, that sees map editors utilizing OSM drawing tools to create alluring patterns, polygons and drawings that may not be offensive, but still disrupt map functions (Ballatore 2014, 219). Quinn takes a narrower definition to vandalism in his research, referring to as "any action that undermines the accuracy or credibility of the data" as constituting vandalism (Quinn 2019, 8). Nonetheless, given than this thesis focuses on an explicit case study and niche of geopolitically motivated user tactics, vandalism as a term will be understood through the classification of the OSM moderators themselves, as cited in the ban descriptions. Instances in which OSM moderators identify a certain practice as constituting vandalism, shall be categorized as such. These tactics referred to as vandalism by OSM moderators largely constitute malicious map changes, mass unexplained changes or deletions of data, and geopolitically motivated changes to icons, street names and locations. Such edits differ largely from, for example, the toponym and place name changes category as in the latter, map editors tend to advance a geopolitical claim, e.g. by changing place names in Crimea from Ukrainian dialect to Russian dialect. In the former, such place names are often changed to humorous or politically motivated phrases that may insinuate a geopolitical agenda, but rather exist primarily to disrupt map accuracy and function.

Spam Activity and Edit Wars

Spam is defined by Quinn as instances in which accounts may insert advertisements or external hyperlinks to the OSM geotagging and messaging frameworks, most often done as a method of search engine optimization (Quinn 2019, 11). However, given the case study in this thesis and explicit focus on geopolitically motivated user tactics, this definition garners no results in terms of the data set and categorization. For this reason, I will opt for a more nuanced understanding of spam activity, as constituting repetitive mass messaging, edits or geotagging intended to disrupt other users, moderators or the map itself. For this reason, spam activity will also be coupled with edit wars, which constitutes instances of conflicted users repeatedly undoing each others edits back and forth, a practice common on many crowdsource platforms, such as Wikipedia as well (Quinn 2019, 13).

Sock Puppetry

In some instances, when a user is banned for malicious or inappropriate actions, these individuals may attempt to create sock-puppet accounts in an attempt to circumvent their ban and continue with their activities. Across the internet, as well as by Sterling Quinn, this sort of behaviour is commonly referred to as "sock puppetry" (Quinn 2019, 10). In such cases, OSM moderators are able to identify such accounts due to identical iP addresses, or the identical nature of their continuing offenses. Reasons for sock puppet accounts can range significantly to employ all sorts of behaviors and intents, as was also observed when analyzing the selection of OSM user bans.

General Obstinance

Given the open source environment provided by OSM, situations in which user to user disagreements, cases of questionable sources behind edits, and general non-constructive edits and behaviour are commonplace. In some cases, malicious intent by a user is very evident and identifiable, whereas in other cases, user indifference, stubbornness, misinterpretation or simple lack of credentials may not constitute malicious behaviour per se, but can indeed adversely effect the quality of OSM mapping. Sterling Quinn classifies this *middle ground* behaviour as obstinance, in which a user or editor may be attempting to enrich OSM, yet solely through their own prism of understanding, or through demonstrating non-constructive behaviour in general (Quinn 2019, 12). Behaviors and tactics that fall under obstinance can include not replying to fellow users when addressed about problematic edits, making unsubstantiated edits that may not be malicious but certainly misguided, general lack of conformity to OSM guidelines and non-constructive behaviour towards fellow users and moderators (Quinn 2019, 12).

Hate Speech and Offensive Language

Quite straightforward in nature, these offenses are when online users and map editors engage in hate speech, or general intentional offensiveness either through direct communication with other users in the community, or by embedding hate speech into the map itself. For the latter option, the question of whether the use of offensive behaviour is coupled with territorial claims, or a geopolitical agenda may be up for debate given the extent of explanation provided by the OSM moderator responsible for issuing the ban. Nevertheless, instances of offensive language or hate speech will be understood as explicitly so, given that the purpose of such speech is

likely to remain unelaborated by both the offending user and the OSM moderator issuing the ban. Rather, instances of hate speech and offensive language by users in communication, or by embedding such language into the map rather intend to insult or degrade others based on their affiliations.

ANALYSIS AND RESULTS

Given the aforementioned categories and what form of user bans qualify to be represented in them, the following table shows the frequency of user tactic occurrence in the selection of 49 user ban reports. After using a mix of inductive and deductive coding to assign each ban report to a relevant category of user offense, a much clearer picture of internet user malicious tactics and behaviors is apparent. The results are as follows:

USER TACTIC	FREQUENCY
Border Changes	16
Spam Activity and Edit Wars	13
Cartographic Vandalism	10
Toponym / Place Name Changes	7
General Obstinance	5
Hate Speech and Offensive Language	4
Sock-Puppetry	3

Border Changes

Of all forms of offenses, unverified or malicious changes to administrative state borders constituted the most frequent of internet user offenses with regards to Crimea and the broader Russia Ukraine conflict. An overwhelming majority of these administrative boundary changes took place in the peninsula of Crimea, and Ukraine at large, whilst a much smaller sum of boundary changes targeted Russian administrative territory. Interestingly, on two different occasions, the *OpenStreetMap* Data Working Group had discussed matters relating to malicious boundary changes regarding the conflict in Crimea in two resolutions dating to 2014 and 2018. In the resolution of 2014, the DWG highlighted the amassment of boundary edit

wars that had taken place on the Crimean peninsula, and that in an effort to reflect on ground realities, Crimea would remain highlighted as part of both the Ukrainian and Russian administrative boundaries, and would be indicated as "disputed" (Working Group Minutes, 2014). The DWG also expressed that they were aware this decision was not a good long term solution, however that they presumed the Crimean peninsula would be a subject of military dispute for time to come. Later in the resolution of 2018, the DWG more clearly expressed their intention to follow understandings of "on the ground control" (Working Group Minutes, 2018), and thus had decided to represent administrative boundaries based on state control rather than international law. As such, the Crimean peninsula since 2018 is displayed as part of the administrative boundaries of Russian control with a "disputed" status, excluding water-based boundaries in the Black Sea or the Sea of Azov where no dispute was taking place (Working Group Minutes, 2018). Given the context of OSM's approach to understanding the conflict in Crimea, and between Ukraine and Russia at large, it becomes more difficult to identify whether majority of such malicious boundary edits were done with intention to advance the geopolitical interests of Russia or Ukraine. The reason for this being is because naturally, many of these edits by internet users and self described map editors expressed their discontent with the DWG's boundary decisions by reverting Crimea back to its internationally recognized status as part of the territorial integrity of Ukraine. Taking this into context, it seems likely that majority of unapproved boundary changes to Crimea by internet users were done to oppose the stance taken by OSM to represent on ground realities instead of internationally recognized boundaries. As discussed earlier in the paper, when comparing depictions of Crimea on commercial cartography platforms - for example Google Maps - there is a much clearer focus on representing territory as understood and governed by international laws. As such, it is much less obvious fro a visual perspective where territorial control lies, whereas on OSM the priority lies in representing the on ground realities as they are.

Spam Activity and Edit Wars

Overlapping with boundary changes as well, spam activity and edit wars constituted some of the most frequently employed user tactics. As previously mentioned, a significant portion of boundary changes had also been categorized as part of broader edit wars as based on descriptions provided by OSM DWG moderators who issued the bans. An example is a ban issued to the OSM user "velmyshanovnyi" in which the moderator described the reason of the ban as being "blocked for repeatedly participating in edit wars about the Ukraine boundary" (List of user blocks, 2023). As such, instances of such descriptions were categorized as both border changes and edit wars. On the other hand, spam activity was understood in this thesis

as repetitive mass messaging, edits or geotagging with the sole intention to disrupt other users, moderators or the map itself. Such spam activity appeared commonly through the selection of ban reports. An example of one particularly disruptive one was documented by a moderator in a 2020 ban report issued to the user "andergrin":

"Hello, you have sent over 8,000 user-to-user messages in the last couple of weeks. Some of the recipients have complained to Data Working Group because they objected to receiving mass mailings about the Ukraine community; many of the recipients are not in Ukraine and have only done a little armchair mapping there. Many don't even speak the language. What you are doing is an abuse of the OSM messaging system, and you have to stop it immediately."
(List of user blocks, 2023).

In other cases, OSM moderators had banned users for intentionally disruptive tactics such as "generic unhelpful changeset comments" to map elements, or continuous reverting of official edits conducted by the Data Working Group themselves. In most cases, it was interesting to observe that internet users were not explicitly advancing particular geopolitical agendas with their actions per se, but very intentionally disrupting the norms of operation in general. As such, it can be deduced that these users are clearly demonstrating disagreement with the status quo of understanding forwarded by OSM regarding this conflict, or disrupting the works conducted by other users and OSM moderators on the platform. Although such behaviour was not explicitly cited in the OSM DWG resolutions, the 2018 resolution does note that the Data Working Group had observed general user behaviour to have become more "peaceful and mature" (Working Group Minutes, 2018) and that they had hoped the community retains this spirit of cooperation and respect.

Carto-Vandalism

Cartographic vandalism was observed frequently throughout the data set of user ban reports and were manifested in various forms of disruptive and malicious user behaviors. As aforementioned, cartographic vandalism was by far the most ambitious and difficult category to define, given that most of the other user tactics mentioned could very well be justified as vandalism. In addition, various scholars in their own rights have opted for differing understandings of what constitutes cartographic vandalism, as well as highlighting its lack of boundary clarity given its very recent history as an emergent phenomenon. Given this conundrum, this thesis understands cartographic vandalism - if not instances of obvious vandalism e.g. mass deletions, fake data - as the instances in which OSM moderators state so

as the reason of a user ban. Interestingly, advancing with this approach garnered a surprising range of interesting ban reports and user tactics. In two cases, OSM users were banned for conducting a series of unexpected "mass deletions" (List of user blocks, 2023) of map data in Ukraine and elsewhere as a means to disrupt and vandalize the map appearance. In five other cases, users with the names "RussiansMustBeInformed", "F**kPutin", "Slava Ukraine", "K UU" and "RiveRimbasi" were identified and banned by a moderator for engaging in identical tactics of vandalism of OSM's map of Moscow:

"Hello RussiansMustBeInformed. Whilst everyone can understand your revulsion at the illegal invasion of Ukraine by Russia and the ongoing humanitarian crisis there, vandalism of OpenStreetMap in Moscow is extremely unlike to influence the regime in the Kremlin."
(List of user blocks, 2023).

In the other four reports, two cases of vandalism were conducted in Moscow, and two in Helsinki, Finland. In the latter case regarding Helsinki, an internet user had vandalized the street leading to the Russian embassy, naming it the "Troll Factory Street" (List of user blocks, 2023) presumably with intent to highlight the frequent engagement of Russian state institutions in propaganda dissemination. The ban report is as follows:

"Hello "K UU", Whilst everyone can understand your revulsion at the illegal invasion of Ukraine by Russia and the ongoing humanitarian crisis there, vandalism of OpenStreetMap in Helsinki ("Troll Factory Street" leading into the Russian Embassy) is extremely unlikely to influence the regime in the Kremlin." (List of user blocks, 2023).

Given the proximity of each incident ranging from March to May of 2022, as well as their identical nature, one may also assume the possibility of user coordination in such vandalism, or perhaps the creation of sock puppet accounts to continue with the vandalism at hand. In all five cases it is quite apparent that the user(s) in question intend to advance the geopolitical interests that align with Ukraine and its supporting narratives, given that elements in Moscow, or belonging to Russia abroad were targeted. In addition, a focus on Helsinki (Finland) may correspond to Finlands waning neutrality with regards to Russia. Prior to Russias illegal invasion of Ukraine in 2022, Finnish public opinion strongly opposed their country's accession to the North Atlantic Treaty Organization (NATO), with hopes of keeping historic conflict with Russia at bay (Cafiero 2023). With Russias brazen full scale invasion of Ukraine, experts had forecasted that Russia proximity states would be left with little room to maintain neutrality, as

was the case with Finland. On the 4th of April, Finland became the 31st member of NATO, an intergovernmental military alliance established after WWII with the aim of maintaining the collective security of its members against attacks by third parties. The news was met with great discontent and threats of countermeasures from official Moscow (Kauranen and Gray, 2023).

Toponym and Place Name Changes

Less frequent than the aforementioned user tactics, yet a lot more explicit with regards to geopolitical standing and agenda, changes to topography and place names were identified in the user ban reports that were sampled. Interestingly, amongst the seven ban reports with the use of this user tactic, there seems to be a more even playing field with users conducting changes to both Russian and Ukrainian dialects. Nonetheless, all seven of these edits take place exclusively in Crimea, or other parts of Ukraine rather than on territorial Russia. Given the very contextual nature of such edits, OSM moderators ultimately remained in the position of having to enforce the status quo as highlighted in their Data Working Group resolutions. In the 2014 resolution regarding Crimea, the DWG highlighted the pressing issue of place name changes as "the most serious portion of the dispute" on the platform (Working Group Minutes, 2014). As was the case with administrative boundaries, the DWG reiterated that the on ground reality remains the status quo of such conflicting decisions. Given that the conflict in 2014 meant frequent changes in territorial status, the DWG highlighted that name tags would only be changed in response to significant on ground changes on signage, or based on what the current inhabitants of the place call the area by. As Russia had succeeded in its occupation of Crimea, the DWG ultimately opted for representing place names in the Russian dialect despite Ukrainian remaining the official internationally recognized language of the peninsula. In the 2018 resolution, this point was once again highlighted in an explicit clause, with the addition that name changes that contained supporting evidence such as a "photo of changed signs similar" (Working Group Minutes, 2018) evidence would be welcomed.

Taking this into context, it is safe to presume that majority of these edits changing OSM's opted Russian names back to the Ukrainian dialect were conducted to advance the geopolitical interests of Ukraine and supporting parties in a bid to uphold Crimea's internationally recognized status as part of Ukraines territorial integrity, as well as maintaining the status of the Ukrainian language as the officially recognized language of the peninsula. In a 2022 user ban report, one case saw a user conducting mass name changes within other territories of Ukraine from Ukrainian dialect to Russian. In another case from 2019, a user with the name "luiswoo" was accused by a moderator for intentionally deleting the "Ukrainian

relation" to its territories without appropriate evidence, perhaps implying the individuals advancement of Russian geopolitical interests on the belonging of Ukrainian territory, a stark occurrence prior to Russias full scale invasion in early 2022 (List of user blocks, 2023).

Hate Speech and Offensive Language

Instances of recorded offensive language or hate speech occurred on four occasions in the selection of user ban reports. In one instance, a user by the username "slayzex" was apprehended by a moderator for using phrases with derogatory connotations. The user uploaded the text "vata-burning-man" to their profile (List of user blocks, 2023), "vata" being a derivative of the term Vatnik/Vatnyk (вватник) in Russian. Originating from a 2011 meme in domestic Russian online spheres, the term is used to describe unintelligent, blindly patriotic individuals who jingoistically follow propaganda from the Russian state (Walker, 2016). A culturally contextual equivalent in todays English can be the urban term "sheeple", a combination of sheep and people intended to insult those perceived as unintelligent, docile, and easily controllable by powers (Merriam-Webster, 2023). Prior to the full scale invasion of Ukraine by Russia in early 2022, the term was relatively unknown beyond Russia, Ukraine and the post-Soviet region, however as a result of global backlash and awareness related to the renewed conflict, the term has become popularized even amongst English and other languages, primarily through online interactions (Propastop, 2023).

In another instance, an OSM user was banned for their frequent use of offensive Russian language in their disagreements with other users. The user under the name "olehz" would frequently make use of insulting terms such as "йолоп" or "дурні" in their arguments with other users (List of user blocks, 2023), which ultimately led to their ban. Whilst not demonstrating a case of apparent hate speech, the users language was most definitely targeted insults of other users and thus constitutes offensive language as per the moderators understanding.

General Obstinance and Sock-Puppetry

With regards to the remaining two categories, low frequencies of occurrence in the collected sample, as well as vague OSM moderator reports leave little room for additional interpretations and comments. In majority of the cases with users demonstrating behaviors of obstinance, OSM moderators issued respective bans containing explanations such as "generic unhelpful changeset comments", "nationalist bigotry", and "petty" behaviour as reasons for bans (List of user blocks, 2023). As for the latter, sock-puppetry is a user tactic that is very straightforward

in practice and is an offense *regardless* of the contents uploaded by the user. Therefore, all three instances of identified sock-puppet accounts were not provided with much of an explanation into the nature of their content by the OSM moderators issuing the bans.

<u>OSM Usernames</u>

Whilst not suitable to the categorization opted for in this thesis, it was mentioned prior in the methodology that the usernames of the banned individuals were not to be anonymized in order to utilize them in the broader content analysis, which ultimately yielded very interesting results that contextually contribute to the broader research question. As seen in the analysis above, certain users had indeed utilized their usernames as means of advancing their geopolitical interests and agendas. Most interestingly, majority of such usernames seemed to identify an anti-Russian stance, with examples in the data set such as the usernames "RussiansMustBeInformed", "F**kPutin", and "Slava Ukraine" (List of user blocks, 2023). In one other case, a user expressed their repeated bans by creating an account with the username "F**kOSM", which may not directly insinuate any geopolitical allegiance, but certainly demonstrates the users disagreement with the rules governing OSM's editing and content policies. Such actions by users identify another potential avenue of user agency in expressing their geopolitical discourses which was not initially taken into much account in this thesis, or other similar literature.

REFLECTIONS

Through employing qualitative content analysis on a selection of user ban reports from the OSM Data Working Group, this thesis has attempted to broaden academic literature relating to the various tactical means by which internet users and self described map editors attempt to advance their respective geopolitical discourses on crowdsource cartography platforms, in this case being on *OpenStreetMap*. The selection of user ban reports pertaining to the conflict over Crimea, and the broader Russia Ukraine war as a case study, gave a crucial insight into the various tactical means by which internet users advance their discursive geopolitical interests on such platforms. As observed in the results of the content analysis and broader contextual discussion, a wide array of tactics were employed by internet users in order to influence the discursive realities represented on the OSM interface regarding Crimea, and the broader Russia Ukraine conflict. Some of these tactics - such as border or place name changes - were inherently *malicious* and direct with intentions of advancing a discursive geopolitical agenda,

whilst others - such as spam or general obstinance - were more *disruptive* in nature and sometimes unclear regarding a users geopolitical affiliations. The use of content analysis as a methodological approach in this thesis further allowed to identify crucial contextual themes, narratives and relationships in the selection of user ban reports, thus providing a substantial understanding of the case study bound context in relation with user tactics on OSM.

A revealing finding from the analysis was that administrative border changes constituted the highest frequency of malicious user tactics, a trend that prompted OSM's Data Working Group to acknowledge the issue and reassess its stance on cartographic conflict representation in two different resolutions (Working Group Minutes 2014; 2018). What was interesting, particularly relating to differences between commercial and crowdsource cartography platforms, was OSM's decision to prioritize cartographic representations based on understandings of on-ground changing realities, as opposed to boundaries set by international law. This in turn reaffirms the understanding that crowdsource cartography platforms such as OSM, are more likely to shape representations of contested geographies through understandings bound by time and context, not just spatiality. Perhaps this further highlights the unique nature of such crowdsource platforms, in which the map creator and self described editors both play a key role in shaping the discourse behind cartographic representations, and in doing so inevitably embedding viewpoints and value judgements to its surface in the process. Nonetheless, OSM's Data Working Group remained steadfast in upholding its policy of representing reality in the Crimean peninsula in a way that accommodates its changing nature, including in cases of toponym and place name changes. Calling the rising malicious edits to place names as "the most serious portion of the dispute" on the platform (Working Group Minutes, 2014), one may question the cost of such radical openness to user contributions, and to what degree this compromises a platforms ability to maintain information integrity (Yang and Colavizza 2022, 2).

In addition, the scope of agency internet users have as actors that can exert influence on the discursive agendas behind cartographic realities reaffirms J.B. Harleys approach rooted in critical cartography and Foucaldian discourse, namely that maps cannot be understood as ontologically stable scientific representations, but rather as tools that are intrinsically bound to power and discourse. In short, maps and the knowledge they both *produce* and represent cannot be understood appropriately without taking into account the complex web of actors with capacity to influence the cartographic representations as we see them (Harley 1989, 4); in this case including the role of the internet users as an actor with agency. As is also seen in the constantly shifting nature of map representation - whether through direct malicious intervention

or discursive decisions by map makers and editors - digital cartography indeed does serve as a mediator of "ongoing stories" (Gekker, Hind, Lammes, Perkins and Wilmott 2018, 1) that are not simply constrained to space, but also time and discursive context, forever bound to constant reinvention. As such, an internet users capacity to bring forth discursive changes to the map surface reaffirm that maps cannot be understood as salient representations of *reality*, but rather tools by which actors may exert authority (Wood and Fels 2008, 190). One may also find some truth in the more radical assertions by scholars such as Kitchin and Dodge, that opt to understand maps as more of a *process* rather than an *object.* In their understanding, maps simply cannot avoid becoming an ontologically unstable and co-creative process embedded with webs of context and interpretations, endlessly shaped by both the map maker and map viewer (Kitchin and Dodge 2007, 21).

It is equally important to address possible limitations and shortcomings of the thesis, which in turn can prompt further research avenues in the future. Research for this thesis was conducted using a single, albeit very popular crowdsource cartography platform, being *OpenStreetMap*. However, OSM is far from being the only crowdsource cartography platform on the web, with common alternatives such as *Geoserver* or *MapBox*, that in turn may bring forth findings that deviate from those associated to OSM in this thesis. As such, a wider scope of analysis into user tactics on various crowdsource cartography platforms may garner more encompassing results into the means by which internet users advance their discursive agendas in conflict zones. In addition, this thesis conducted analysis based on a salient case study of a conflict zone, being Crimea and the broader Russia Ukraine conflict. Given this, the findings in this thesis are contextually bound to the conflict that was researched, and thus studying alternate geopolitical zones of conflict and contestation may gather differing results. Therefore, future research could perhaps accommodate alternative, or a wider selection of crowdsource platforms or case studies in similar research, thus furthering academic contributions to understanding the agency and means of internet users in advancing geopolitical discourses through crowdsource cartography platforms. It is inevitable that cartography has changed irreversibly since the era of digitization, bringing with it a plethora of emergent phenomena yet to be thoroughly analyzed from an academic stance.

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