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**A Promised Cyberland? Palestinian Border-Making in Digital Spaces**

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## **Objective**

Can a state exist on the Web before it is established in the physical world? This has been the case for Palestine for several years now. Whereas the status of a sovereign Palestinian state is pending formal declaration and international recognition, in 2000 it received international acknowledgement on the Web, when the Internet Corporation for Assigned Names and Numbers (ICANN) delegated the dot.ps Country Code Top Level Domain (CcTld) to the Palestinian National Authority (Internet Assigned Numbers Authority, 2000). This was made possible only after the Palestinian Territory was included in the UN list for recognized countries and territories in 1999 (International Organization for Standardization, 1999). Although several dependent territories such as French Polynesia and Martinique have also been delegated a national CcTld, their main Internet activity still operates through the CcTld of their parent country, France. By contrast, the delegation of the .ps CcTld is precedent since it allocated an official and sovereign Webspace to a non-sovereign and occupied national authority, without maintaining dependencies on another country's CcTld. The Palestinian state was thus granted official status on the Web before it was established on the ground.

Although Palestinian sovereignty on the Web may be reduced as merely a “virtual phenomenon” (whereby virtual is perceived as an immaterial representation, detached from the physical world), I claim that the dynamics of the Internet are far from virtual. Instead, I suggest that the Internet and the Web form digital landscapes which are in constant exchange with the physical world, and in which cultural boundaries and territorial borders are delineated by various technologies and practices.

This study concerns the coming together of cyberspace and the Palestinian place, at a particular period of time (1994-2012). Historically, this period covers both the process of Palestinian state-formation from the establishment of the Palestinian National Authority, as well as the introduction and development of the Internet in the Palestinian Territory in the same years.

What was the Web meant to accomplish for the Palestinian people, and especially for the prospects of Palestinian sovereignty? How was an alleged sovereign Web space meant to prepare the ground for a Palestine, in whichever form? After reviewing the history of how notions of cyberspace were implicated in an “imagined Palestinian

cyberland,” and indeed how the Web was meant to perform 'border work,' I turn to empirical undertakings. First, I consider the uptake of the .ps domain as both a solidarity project for the homeland and the diaspora, as well as a more concrete institutional infrastructure. To what degree has the Palestinian institutional establishment, if one may term it as such, embraced the domain name, and thus the sovereign Web-space as a nation-building project? Second, I show divides and boundaries co-produced by Palestinian political and social actors, and the Internet. Is there an overlap between divides in the Palestinian digital space and the Palestinian physical space? Are there divides unique to the digital space? Initial findings show that while some divides in the digital realm, such as separate networks operated by Fatah and Hamas on the Web, are identical to the political and geographical divides in Palestinian physical spaces, other gaps are unique to the digital space. One such gap, mentioned above, is that Palestine is an internationally acknowledged sovereign space on the Web, but the physical Palestinian Territory is not; a second gap considers divides within the digital space, such as the over-representation of Palestine in the official .ps domain, versus its underrepresentation in all other Web-spaces. The empirical work is wrapped with a theory of the border-work enabled and performed by digital spaces. I claim that as with infrastructural technologies that make and shape national boundaries and spaces, the Internet offers new ways of thinking about how space-making is performed digitally, and suggest methods for diagnosing these online divides with new techniques.

### **Theoretical Overview**

The complex ties between the Internet (both as a technology and medium), and the process of Palestinian state-formation draw on theories in Science and Technology Studies (STS) which claim that technological artifacts, scientific knowledge, social and political order as well as political institutions, practices and actors are intertwined in a network of constitutive relationships. According to Jasanoff (2006), science, technology and society co-produce each other. Technological artifacts are thus constituted by politics, society and their accompanying institutions and practices, inasmuch that states, societies, social order and politics are constituted by science and technology. For example, Patrick Carroll (2006) conceptualizes the ties between science and Irish state-formation in the 19<sup>th</sup> century as a science-state plexus, whereby a complex network of relationships between government, science and technology

transform land, people and the built environment into modern forms of ‘techno-territoriality,’ ‘bio-population,’ and ‘infrastructural jurisdiction’. Although ‘biopopulation’ will not be at the focus of this study, Carroll's understanding of the transformation of land into its techno-territorial form and of the built environment into infrastructural jurisdiction forms are highly applicable when studying the Internet as an infrastructural technology and the Palestinian Territory as a techno-territorial space. The referral to a "land", rather than a state, or a territory, opens up a variety of angles through which this plexus can be studied in unstable territories – it enables a wider and more flexible conceptualization of borders, inhabitants, the natural environment, and the technological artifacts that reshape it.

Another example to the co-production of science, technology and states is evident Gabrielle Hecht’s historical analysis of the reciprocal ways in which French patriotism contributed to the development of the French nuclear power, and nuclear power had constituted French national identity in the post World War II era (Hecht, 1998).

In the context of Israel/Palestine borders, STS studies have mainly focused on co-productions of Palestinian borders and territories in the context of exclusion practices. That is, studies have shown that in most cases, the Palestinian Territory is defined, delineated and constituted from without. Whether through bordering and surveillance technologies (Zureik, 2001), or through water-management policies (Alatout, 2007), Palestinian borders and landscapes are shaped by external actors.

In this proposed research, however, the concept of co-production will be used to describe the constitutive relationships between technology, politics, and the Palestinian Territory, operating from within. Curiously, and historically, the Palestinian Internet and the Palestinian National Authority were established in the same year, and have been simultaneously evolving ever since. Unlike other approaches that view the Web as merely representing or depicting processes that take place on the ground (Mitra and Schwartz, 2001), the Palestinian case is an example of a Web-phenomenon that precedes the situation on the ground, thereby influencing ‘grounded’ processes before they materialize.

The co-production of a Palestinian state and the Palestinian internet is also evident when the ties between Palestinian geo-political reality and its reliance on information

and communication technologies (ICTs) are taken into account. In the current situation of geographical discontinuation of the Palestinian Territory, a physical and political divide between the Gaza Strip and the West Bank and movement restrictions imposed by Israel, Palestinians are currently reliant on Information and Communication Technologies (ICTs) to maintain normal daily activity. Political exchange between the Gaza strip and the West bank is also reliant on ICTs, for Israel forbids Hamas ministers from Gaza to travel to the West Bank. In fact, the Internet and the Web suggest an alternative form of spatial arrangement, a space that is continuous, sovereign (in parts), and in which the flow of information is unrelated to the physical situation on the ground. In this study I therefore claim that the exchange between the two spatial arrangements (the physical and the digital) is the site of co-production of the Internet and Palestinian state-formation.

As evident by Jasanoff's idiom of co-production (2006), STS theories aim at both conceptualizing the complex relationships between science, technology and society, as well as offering methods for studying them. The dominant approach and methodology for studying such complexities in the field is offered by the Actor-Network Theory (ANT), which maps relations between the network of people and things, concepts and materials, by breaking down ontological divides between nature and society (Latour, 2003) and assigning the same level of agency to both the human and the non-human (Latour, 1987). ANT also breaks divides that assign power to political actors. In "Unscrewing the Big Leviathan", Michel Callon and Bruno Latour (1981) called for the equal treatment of micro and macro actors, whether social or technical, by directing the attention towards the processes by which an actor creates lasting asymmetries. To understand scientific, technological or political processes, thus, one need not assign apriori power relations to macro-actors, but rather to examine the 'black boxes' on top of which various micro-actors sit. The role of the science and technology scientist is to open up these black boxes and understand the processes during which some black boxes are relatively larger in size than others.

'Black boxes' related to ties between artifacts, technologies, politics and space are further elaborated in Latour's introduction to the catalogue of the exhibition "Making Things Public" at the Zentrum für Medienkulturen (ZKM) (Latour and Weibel, 2005). In this text, Latour defines an "object-oriented" democracy, in which objects gather different assemblies of relevant parties around them. By shifting from

“realpolitiek” to “dingpolitiek”, and by mapping together assemblies around objects as well as issues, a public space is created, which is profoundly different from what is usually recognized under the label of “the political”.

Following Latour and Callon, Akrich (1992) suggests a methodology for studying the dynamic interaction between technology, its designers, and eventual uses as a process which necessitates the constant moving back and forth from the technical to the social. Such a process breaks down boundaries between technology and society, as well as the asymmetry of the pure shaping of technology by its designers; instead, it views technologies as grounded in socio-technical environments, comprised of the interaction between designers’ views on how the technology should be used and by whom, between its technical features and the resources and needs of its users, and with their eventual use, which influences in turn the way new technologies emerge.

This study follows the STS approaches mentioned above. It will attempt to map the assembly of both technological artifacts and social and political processes, institutions and practices gathered around the Internet in the Palestinian Territory, at a particular period in time, to ask which forms of political spaces they co-produce.

However before arguing for the co-production of digital and physical territories by Palestinian social and political processes, actors and institutions and by the Internet, I will first establish concepts based on theories that focus on the shaping of (national) spaces, places, borders and territories in the physical world. After establishing the importance of mapping as both a practice and a technology that creates borders and delineates territories, I will move to reviewing theories on the spatial arrangement of cyberspace, to conceptualize the forms these practices take online.

Traditionally, the delineation of a territory, its borders and the struggle for the right to self-determination in a defined territory is one of the core processes in modern nation-building (Jhonston et al, 1988; Herb, 1999). Through various border-making practices and technologies, national territories are determined and simplified by sovereign powers, such as the state, or a colonizing empire.

Throughout the Twentieth century, mapping has been considered both a technology as well as a social, political and scientific practice of border-making which shaped the modernist state. Map-makers were perceived as actors of power, using the maps to

make claims on a national territory, and, once established, to simplify state-practices such as control of population and land, policing, and other ordering and classification practices (Mitchell, 2002; Anderson, 1991; Gibson, 1999; Zureik, 2001). James Scott (1998) described these practices as making the ruled legible – where the map maker is also the map reader and where the mapped is always subject to reading, but not vice versa. The point of view from which mapping commences, thus, also determines the power relations between the map maker and the mapped (Latour, 1987, pp. 222-227).

However changes in social and political order also entail changes in the perception of space, place and borders, as evident in many social and philosophical theories of the present. Modernity, with its tendency to rely on fixed national borders and defined territories, is gradually replaced by other forms of social and political organization, and therefore by new perceptions of space, and consequently by new practices of border-making. In the following, some of the theories on shift in the perception of space are introduced, followed by the question how such shifts take place in digital spaces.

Baudrillard (1988), for example, claims that the current modernist political organization of the nation-state is replaced by a ‘hyperreal’, global spatiality, comprised of networks of communication between physically remote computers (a point to which I return).

The shift from national to global spaces is further elaborated in Manuel Castells’ concept of ‘spaces of flows’ (Castells, 1989, 1996). Similar to the concept of co-production described above, Castells also claims for the mutual constitution of space and society. He describes the rise of a global and networked information society, organized around hubs of industrial information-production centers, based on time-sharing practices rather than on material and physical proximity. Such spaces of flows privilege processes of information production and communication over physical spaces and territorial contiguities. As a consequence, Castells describes the rise of the informational city (over industrialized urban zones), and the ties between mega-informational cities across the globe spaces of flows. Other places, in which such exchange does not take place, gradually become non-places.

The relationship between urban places and the concept of ‘non-places’ is further elaborated in the work by the French anthropologist Marc Augé (1995). Augé also

criticizes the post World War II era as an era of ‘supermodernity’, characterized by abundance – both of resources, information, and space. The outcome of the Capitalistic arrangement of peoples and spaces is the rise of ‘non-places’ – spaces void of identity, which are defined by their entry and exist points, and have no history, such as airports, supermarkets and hotels. According to Augé, non-places gradually take over notions of historical places, or identity-bound places, and will probably dominate future forms of urban and social spatial arrangements.

The French philosopher Henri Lefebvre (1991) also criticizes Capitalism by claiming that natural spaces no longer exist; instead, all spaces are produced, and are an outcome of a three-phase process of production. Spaces are first perceived by their materiality and physical characteristics, consequently they are conceived, by their planning and reasoning, and eventually they are produced as ‘Lived Spaces’ – encompassing the first two steps through social and material human practices.

Latour (2003) and Beck (2003) put forward a theory of Reflexive Modernity, which claims that fixed borders are gradually replaced by a multiplicity of inclusionary and exclusionary practices. The outcome of this multiplicity is that boundary drawing becomes more likely to be contested.

However according to Shields (2006), the reflexive and multiple practice of border-drawing is not sufficient to describe the role played by borders and border-making in the current era. Instead, Shields suggests that borders should be understood as interfaces, or liminal zones, that have distinct ontology. According to Shields, borders are concrete, in the sense that they are material and infrastructural technologies; they are virtual, in the sense that they entail a potential that can be actualized in the future; borders are abstract, as they consist of a political rhetoric; and, finally, borders are probable, as they are technologies that respond to probabilistic accounts of risk. Shields’ four-part ontology is proposed as a framework for understanding borders as objects, where each ontology is considered a spatio-temporal register and is either oriented to the past or the future. Similar to Akrich’s methodology of moving inside and outside technological objects, the framework put forward by Shields views borders as an interface, an object which constantly demands its examination from both within and without, an object both actual and ideal, both an artifact and a concept, which draws from the past and projects to the future. Shield’s complex

understanding of the border-as-interface will be implemented in this proposed study, which will examine the concept of border-as-interface in digital spaces.

The following part of the theoretical background will review perceptions of space in the digital realm. It will then ask whether the frameworks of space formulated for the physical world also apply in cyberspace.

### **Borders in Digital Spaces**

From its onset, the Internet was perceived as a spatial technology that challenged perceptions of physical spaces and place. The rapid growth of electronic and computer-generated networks through which new forms of human interaction have emerged was perceived as a new public domain which had no territorial boundaries, apparent control or regulation. Also attributed to this public domain, known as cyberspace, was the changing politics of identity characterized by the breakdown of social class, patriarchal and racial models of political organization and their replacement by diverse and decentralized networks (Loader, 1997).

Indeed, in its first years the Internet was perceived as an embodiment of the spaces conceptualized by Baudrillard (1988) and Castells (1989). The cyber-libertarian school, which includes authors such as Barlow (1996), Gibson (2000) and Howard Rheingold (1993) viewed the decentralization of computer-mediated-communications, with its consequent break of global and local structures of social, economic and political organizations, as the decentralization of power, which gives rise to self-governing practices, self-regulation, and weakening the sovereign power of the nation-state.

The perception of the Internet as the locus of the hyperreal took shape in the rise of “virtual communities” (Rheingold, 1993) comprised of people connected by remote electronic communication channels, unrelated to their physical location, their local time, or their national identity (Featherstone and Lash, 1995; Luke, 1995). Similarly, Bolter and Grusin (1999) applied Augé’s concept of ‘non-places’ to describe the identity-less spatial arrangement of the Internet.

However with the exponential growth in Internet use around the globe, cyberlibertarian theories were gradually replaced by constructivist approaches. The Internet was no longer viewed as a hyperreal structure that threatened the nation-state

and transcended national borders and boundaries, but as a technology which is inherent to “realpolitik”. Goldsmith and Wu (2006), for example, demonstrate methods through which governments “strike back” to regain control and regulation of the new medium. Furthermore, Margolis and Resnick (2000) claim that the development of the Internet rather reflects offline physical, social and political processes, a phenomenon they identified as the “normalization of cyberspace”.

From a perception of the Web as a hypertextual space, formed by the links between Websites, and the transmission of packets carrying information across cables, the gradual localization of Web technologies, services and devices and the understanding that the Internet rather reflects offline politics led theorists to speak of the "grounding of cyberspace", the "revenge of geography" and of "national Webs" (Chun, 2006; Rogers, 2008; Weltevrede, 2009). In its current phase, thus, the Web is no longer seen as an egalitarian space, nor as a global space that flattens the national, but rather as a geographical space comprising networks of both hardware and content, organized nationally. Web spaces are thus seen as grounded to real geographical places (Rogers, 2009).

As with other geographical territories, then, the Web has also been subject to mapping. Here, however, the traditional mapping of a territory, populations or objects is replaced by network-mapping of hardware, content, hyperlinks, actors and data (Holmes, 2006). Much in line with the network mapping practice proposed by ANT for understanding complex relationships between science, technology and society, a practice which does not distinguish between actors and objects or between micro- and macro-actors, Web-mapping of networks hosts together both the map maker (actors) and the mapped (objects, territories, users, content, issues) under the same “legibile space” (Marres, 2004; Rogers, 2004, 2004b).

This research therefore proposes Web-mapping as means for studying the interaction between technology, politics and state-formation processes, by juxtaposing the traditional focus on mapping practices and delineation of national territories in the process of nation-building, with new forms of territories, spaces, and mapping practices offered by the Web.

In order to ask whether the Web, (and digital spaces, more generally), offer new ways of thinking about border-making, this proposed research follows an approach to Web

studies advanced by Richard Rogers and the Digital Methods Initiative<sup>1</sup> at the University of Amsterdam, that distinguishes between ‘digitized’ and ‘natively digital’ objects (Rogers, 2009).

Natively digital objects are devices and phenomena that are created by Web-based technologies which do not have parallels in the physical world: For example, the Web’s ranking, recommendation, linkage and circulation of information through devices such as search-engines, hyperlink networks, and code. In this research, I ask whether border-making practices on the Web are simply digitized border-making technologies, imported from the physical world, or whether, through the study of Palestinian border-making online, the Web proposes ‘natively digital’ forms of border drawing and divide-making practices. The distinction between ‘digitized’ and ‘natively digital’ border making requires methodological innovations, which will be further elaborated on the methodological part of this proposed research.

Thus far I reviewed the theoretical background that will serve this proposed research. I now move to describing the body of research that has so far been dedicated to the Internet and the Palestinian state and discuss the contribution of the proposed research to the current state of knowledge.

### **The Current State of Knowledge**

Recent studies of the national on the Web are diverse, and range from investigations on the broad implications of the localization and nationalization of the Web on its general structure and dynamics (Halavais 2000; Weltevrede 2009), to micro-studies that focus on the political, social, technological and legal implications of the Web in a specific country or region (e.g. Rohozinski 1999; Deibert, 2002; Kluver and Yang, 2005; Digital Methods Initiative, 2008). Referring to the Internet in general, studies of relationships between the Internet and the state include analyses of the relationships between governance, policy and the Internet (Goldsmith and Wu, 2006), the relationships between Information and Communication Technologies (ICTs) and development, the monitoring of state Internet censorship practices (Deibert et. al, 2008 ), the comparison of local Websites and Web services to offline national and

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<sup>1</sup> The Digital Methods Initiative. <http://digitalmethods.net>.

local media, and ethnographic accounts of ways in which national identity and communities are constructed through the Web.

In a narrower regional context, studies of the Internet in the Middle East have focused on the effects of the information revolution in the Arab World (Rohozinski, 2004), the effects of the newly introduced technology on democratization in authoritarian regimes (Kalathil and Boas, 2003), and on state internet-censorship practices (OpenNet Initiative, 2009). Only recently more attention has been given to the study of the unique characteristics of the Arab Web, as expressed in a recent study by the Berkman Center for Internet and Democracy, Harvard University, on the Arabic blogosphere (Etling et al., 2009).

The Palestinian-Israeli conflict and its reflections on the Web have been the topic of many studies, with a strong emphasis on media framing and coverage of the conflict on the Web, and whether or not it is inclined to favor one of the conflicting sides, (Wolfsfeld, 1997; Abunimah and Ibish, 2001; Philo and Berry, 2004; Rogers and Ben-David, 2010; Zamir-Nitzan, n.d.), on propaganda on the part of Israeli and Palestinian official and unofficial Websites, (Hancock, 2000; Kalb and Saivet, 2007) and on "cyberwars" waged by Palestinian militant groups, Israeli and Palestinian Hackers, and the Israeli military (Denning, 2001; Rohozinski, 2003; Zanini and Edwards, 2005).

While relationships between Palestinian nationality and the Internet are mostly studied in their wider regional context (either compared to other Arab countries or under the context of the Palestinian-Israeli conflict), fewer studies are dedicated to its analysis in its national context as a topic unto itself.

Interestingly, the Internet was introduced in the Palestinian Territory in 1994, parallel to the establishment of the Palestinian National Authority (Hanieh, 1999)<sup>2</sup>. The newly introduced technology and its development are thus closely tied to the process of Palestinian state-formation from its onset as an internationally acknowledged national entity. Studies dedicated to the introduction of the Internet, as well as to other ICTs in the Palestinian Territories focus on the potential these technologies have in improving the quality of life of Palestinians (Zureik et al., 2006), and the role they play in

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<sup>2</sup> Also of interest, as Hanieh points out, is that the Palestinian Internet was established at Bir Zeit university, thereby demonstrating the close ties between science, technology and state-formation.

representing and facilitating Palestinian national aspirations and struggle for sovereignty to the international community (Aouragh, 2008)<sup>3</sup>. Here, special attention has been given to the formation of Palestinian identity online through virtual communities of Palestinian residents as well as Palestinians living in the diaspora (Schultz and Hammer, 2003). Accordingly the concept of a virtual homeland has emerged – stressing the gap between the virtual representation of a Palestinian state-facilitated by ICTs, compared to the situation on the ground, in which the process of Palestinian state-formation has been complicated by various political factors as well as by the ongoing Palestinian-Israeli conflict (Stamatopoulou-Robbins, 2005).

The gap between the digital representation and the physical situation is also discussed in studies that show the unique differences between online representations of Palestinian politics on the Web and their parallel manifestations in the offline world (Hanieh, 2007), as well as studies that stress the potential of e-services in enabling education and health services, where movement restrictions and closures prevent Palestinian residents from physically accessing schools and clinics (Othman and Al-Atili, 2007).

The perception of the potential ICTs have in representing Palestinian virtual statehood, different from the situation on the ground, were augmented after the delegation of the .ps CcTld<sup>4</sup>. The official recognition of a sovereign Palestinian Web-space was seen as a parallel space in which the geographical reality on the ground – that of checkpoints, territorial discontinuity, settlements, the status of Jerusalem as the capital of Israel and Palestinian refugees – can be circumvented and represented differently<sup>5</sup>. The potential of the .ps Web-domain as representing virtual Palestinian sovereign statehood was at the heart of an ongoing research conducted by the University of Cambridge in collaboration with the Govcom.org foundation between 2005 and 2007 (to which I contributed as a researcher and from which this proposal stems) (Govcom.org, 2008). The research aimed at capturing and mapping all Palestinian Websites as defined by their .ps domain name and examined various

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<sup>3</sup> Comparable, perhaps, is a study of the arrival of the Internet in Israel (John, 2006).

<sup>4</sup> The Palestinian National Authority's request for the delegation of the .ps CcTld was rejected twice by IANA before it was eventually delegated. The history of the process which led to the delegation of the .ps CcTld shall be further studied in the proposed research.

<sup>5</sup> At the launching ceremony of the .ps domain, the Palestinian Prime Minister Ahmed Queri called to the migration of all Palestinian Websites to the .ps domain, and for others to register their Websites under a .ps domain name extension as an act of solidarity with Palestine (see Palestinian National Naming Authority, 2005).

dynamics of the Palestinian Web-space and its relevance to Palestinian politics and society. We found that despite the gap between the status of the Palestinian Authority on the ground and its official status on the Web, the depiction of the Palestinian networks in cyberspace is not divorced from the situation on the ground and that the same obstacles and power-relations that are characteristic of Palestinian politics and society on the ground are evident in Palestinian networks in cyberspace. Findings from this research will serve as starting points to the proposed PhD dissertation, both methodologically as well as conceptually and will be described in detail below, at the chapter outline section of this proposal.

The relationships between the media and Palestinian state-formation are pioneered by the work of Amal Jamal (2003). Jamal's analysis focuses on content analysis of traditional media and various official and unofficial interest groups in the Palestinian Authority under a media studies approach. It shows the domination of the Palestinian media space by the social elite and its underrepresentation of other social groups, a phenomenon also hypothesized for the role the Internet plays in Palestinian state-formation. While the Web is also viewed as a media-space, this proposed research wishes to broaden the scope of analysis and treat the Internet not just as a content-conveying medium, but also as an infrastructural technology, which, as other technologies such as railways, the telegraph or electricity grids, shape technological landscapes that delineate territorial borders and cultural boundaries.

## **Method**

This proposed research studies the complex relationships between the Internet and Palestinian State formation by applying methods and tools developed by the Digital Methods Initiative, University of Amsterdam (DMI). The approach undertaken by DMI relies on the understanding of the political and technological agency of the Web, and thus claims that unique Web dynamics, phenomena and characteristics should be studied by the Web's own devices and not by applying social sciences methods to study the Internet (Stevenson and Rogers, 2009).

Automated DMI tools dedicated to hyperlink network analysis, mining and visualization of search engine results and to extracting of geographical data of Websites and content have been used in the past to study various aspects of the Palestinian-Israeli conflict (Rogers and Ben-David, 2008, 2010) and for the mapping

of the Palestinian Web-space (Govcom.org, 2008). This study wishes to expand the preliminary findings from the latter study.

## **Research Tools**

The *IssueCrawler*<sup>6</sup>, Web-based software for mapping hyperlink networks around social and political issues on the Web<sup>7</sup>, will be used to analyze relationships between various actors participating in the process of Palestinian state-formation, such as Palestinian governmental Websites (either affiliated with the Fatah institutions and their parallel Hamas de-facto government in Gaza), Palestinian civil society, academy, and the ICT commercial sector. Hyperlink analysis will also be used to map relationships between foreign donors and investments for the development of Palestinian ICTs, and the Palestinian Websites and actors which benefit from these donations.

Web-based geographical tools, such as the *IssueGeographer*<sup>8</sup>, which extracts geographical data of Websites (such as their physical location and registration address) and plots them on a world-map will be used to define and delineate the Palestinian territorial space on the Web. It will also be used to determine relationships between Websites operating from within the Palestinian Territory, and the Palestinian Diaspora.

Various scrapers will be used to mine Web content relevant to the process of Palestinian state-formation over time. These scrapers will be used especially on top the recently launched Palestinian localized search engine Google.ps<sup>9</sup>, to monitor the continuous growth of the Palestinian Web and its prominent content and actors. It will also be used to compare the resonance of content relevant to Palestinian state-formation on local search engines, compared to the Israeli and international versions of Google's search-engine.

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<sup>6</sup> IssueCrawler URL <http://Issuecrawler.net>.

<sup>7</sup> See also Rogers, 2009.

<sup>8</sup> Digital Methods Initiative. The Issue Geographer. URL <http://wiki.digitalmethods.net/Dmi/ToolIssueGeographer>.

<sup>9</sup> Ma'an News Agency (13 August 2009). Google Launched Specific Palestinian Web Domain. URL <http://www.maannews.net/eng/ViewDetails.aspx?ID=218836> (Consulted 23 September 2009).

Data scraped and mined will be stored, analyzed and visualized using ResauLu<sup>10</sup>, software for relational analysis. ResauLu-generated maps can visualize relationships between various types of data, such as the identity or location of Websites, and their prominent content.

### **Data Sources**

A coded database of all Palestinian Websites for the year 2007 has been created for the Mapping project of the Palestinian Internet (Govcom.org, 2008). The dataset, comprised of 1230 Websites registered under the .ps CcTld, shall serve as a base of expanding the depository of Palestinian Websites on which this study will be based.

In addition, data on state-censorship practices collected by the Open Net Initiative<sup>11</sup> in 2009 will be used to demonstrate differential Internet censorship practices on the part of Hamas and Fatah in Gaza Strip and the West bank.

The Internet Archive's 'wayback machine'<sup>12</sup>, which collects snapshots of Websites overtime, will be used for historical analysis of the development of the Palestinian Internet from its establishment in 1993 until 2011. The historical analysis will also be aided by the directory of Palestinian Websites between 1993 and 2002, compiled by the Beir-Zeit University.

Finally, official documents and primary sources (such as policy papers, civil-society reports on the Palestinian ICTs and Palestinian-Israeli accords signed so far, and, when necessary, interviews with relevant actors) will be used for the study and analysis of the development of Palestinian Internet as a national infrastructure and its comparison to other Palestinian technological infrastructures (such as the establishment of the Palestinian landlines telecommunication network, post services and international dialing code).

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<sup>10</sup> ReseauLu, by Aguidel. [Http://Aguidel.fr](http://Aguidel.fr) (Consulted 23 September 2009).

<sup>11</sup> Open Net Initiative. URL <http://opennet.net> (Consulted 23 September 2009).

<sup>12</sup> The Internet Archive. URL <http://archive.org> (Consulted 23 September 2009).

## **Proposed Table of Contents**

### Chapter 1: Introduction. The coming-together of the Palestinian Cyberspace and the Palestinian place, 1994-2010.

This chapter will introduce the research question and theoretical framework of the proposed research. It will open by reviewing the intertwining history of Palestinian state-formation and the Palestinian Internet, since their establishment in 1994, until the present day, and by introducing the sovereign Palestinian Web-space, as delineated by the .ps CcTld, and contrasting it with Palestinian physical reality. It will then introduce theoretical concepts that view the Internet as a spatial technology, similar to other infrastructural technologies, and the concept of co-production of science, technology, social order and states. It will overview examples of the ways in which infrastructural technologies, such as fences and tunnels, foreclose socio-political spaces and borders, and introduce the question whether the Internet suggests new forms of border-making practices by focusing on the study of Palestinian borders in digital Spaces.

### Chapter 2: Theoretical and historical accounts of the co-production of spaces and borders in the 20th century, and their specific history in the Palestinian Territory.

After reviewing STS theories on infrastructures and their related border-work, this chapter will provide a historical account of Palestinian state-formation processes in the 20th-21st centuries and their accompanying technologies: (in particular: water management, landline telephony, electricity, etc.). The analysis of two case studies in particular, that of the history of Palestinian cartography, and of the construction of the fence/wall between Israel and the Palestinian Territory, will serve as examples to the intertwining history and co-production of Palestinian technology, social order, national borders, and sovereign and non-sovereign social and political spaces.

### Chapter 3. Cyberinfrastructures and Palestinian State Formation

This chapter will provide a theoretical overview of the spatiality of the Internet, the Web and Cyber-infrastructures. It will then apply these notions to the case study, by providing a historical account of the Palestinian Internet and Web in a specific time and place (1994-2010). More specifically, in this chapter I will compare the process that led to the delegation of the .ps domain with the process that led to the delegation

of the Palestinian international dialing code +970, in order to ask whether or not the delegation of a sovereign Web-space can be considered a unique phenomenon in the history of Palestinian national technologies.

In this chapter I will also ask how the peculiar expectations on forming a Palestinian cyber-state were derived on an understanding of the Web, and attempt to answer the question by providing a historical account of the horizon of expectations, as evident in official documents, policy, and by mapping of the actors and institutions involved in the process, as well as by analyzing modern representations of sovereignty in other parts of the Middle East at that time. Based on these analyses, this chapter will conclude by asking whether or not the Internet was perceived by the 'Palestinian national establishment' as a sovereign border-making technology?

Answers to this question will be provided in the following empirical chapters.

#### Chapter 4. The promise and lack of uptake of the .ps domain

This chapter will present empirical findings, based on a previous study that mapped the .ps domain in 2007 (Govcom.org, 2008). It will show that there is a lack of uptake of the .ps project by Palestinian national institutions / academia/ private sector, and that the .ps domain forms a loose, weak network, and that the majority of Palestinian Websites which existed prior to the delegation of the .ps CcTld did not migrate to the national Web space. By adding new findings which will build on top of the 2007 study, as well as by mapping networks of Palestinian diaspora on the Web, it will attempt to explain the lack of uptake of the .ps domain as a nation-building, institutional project.

#### Chapter 5. Gaps and divides in online and offline representations of the Palestinian state.

This chapter will be dedicated to the politics of the Internet, and to Palestinian political Web-spaces. It will then present a two-fold analysis of findings on gaps between Palestinian online and offline worlds. The first part will focus on online divides that are parallel to physical divides in the Palestinian Territory. It will show, for example, that Hamas and Fatah-related websites form separate networks on the Web and that Hamas and Fatah employ differential Internet filtering practices from Gaza and the West Bank, both overlap with the geo-political internal divide in the

physical and political reality. The second part will focus on differences in online and offline spaces, as well as on differences within online spaces. Such differences are instanced by the over-representation of a Palestinian state as a sovereign territory on the Web, compared both to its unsettled situation on the ground, as well as its under-representation in unofficial Web spaces, (such as Web 2.0 spaces, digital maps and social networking software). It will conclude by asking to which extent does the Web propose different boundary work than the one offered by other technological and political processes, and what methodologies are required to diagnose them? The answers to these questions will be provided in the following chapter.

#### Chapter 6. Lessons learned from border-work online.

Based on findings from the empirical chapters, in this chapter I will claim that like the infrastructural, the digital makes divides and borders. I will attempt to show, and conceptualize, the ways in which new practices of space-making are performed digitally – and diagnose these online divides with new techniques. In particular, this chapter will aim at diagnosing the specific mechanisms through which borders are drawn on the Web and at answering questions on the marginality of the national demarcation of Web-spaces vs. global or commercially determined Web spaces, on their relations to regulation, legislation and censorship, and on the rise of the diaspora in allegedly national and non-national Web-spaces.

#### Chapter 7. Implications of the research.

This chapter will conclude the analysis and claim that although the Web may stand in well to the ground in various and many aspects, it also suggests unique border-making practices that are evident in the Palestinian case, but may also have implications on how digital border-work is performed in other forming territories, as well as in settled territories and stable regimes.

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