Transnational issue networks in real and virtual space: the case of women, peace and security

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Abstract *To what extent do online issue networks serve as a proxy for their real-space counterparts in structure and substance? This question is significant because a number of scholars have begun to study transnational advocacy networks through their representations online. We explored whether this assumption is valid by comparing the network composition and agenda composition of the advocacy network around 'women, peace and security', as operationalized through a web-based survey of actual activists, and the network's online representations of itself, as measured through advocacy websites. Two specific concerns drove the study. First, how closely does the structure of issue networks, as represented on the World Wide Web, correspond with actual advocates' understanding of the players within a specific issue domain? Second, to what extent does the online issue agenda correlate with the most prominent issues described by real-space advocates within a transnational network? Our findings yielded a high correlation between the online issue agenda and activists' interpretations of the agenda. However, we found that while hyperlink analysis is an effective tool for identifying the 'hubs' or 'gatekeepers' within a specific issue network, the nature of the World Wide Web makes it is a blunt tool with which to capture the broader network. This suggests that while the web poses important opportunities as a data source, scholars of transnational networks must pay closer attention to the methodological assumptions implicit in their reliance on this and other new media.*

Keywords TRANSNATIONAL NETWORKS, ADVOCACY, AGENDA-SETTING, NEW MEDIA, METHODOLOGY

International relations (IR) scholarship often acknowledges that the ready availability of the World Wide Web has had a dramatic impact on the ability of civil society

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organizations to connect, communicate and disseminate ideas across state borders (Aronson 2004). In some cases, the success of entire transnational campaigns has been attributed to their advocates' ability to leverage online networks to promote their cause.[1]

Because of the importance of the World Wide Web and advocacy websites in connecting activists, framing issues and mobilizing constituencies, scholars of transnational advocacy networks are increasingly studying the networks themselves through reference to their representations online (Bae and Choi 2000; Carpenter 2007b; Halavais and Garrido 2003). This reflects the common practice in professional circles of 'Googling': when a student, citizen or policymaker wishes to know who is 'doing' conflict diamonds or child soldiers, they are likely to type keywords into a search engine and access the resulting organizational websites of advocacy organizations. Researchers who also use representations on the web to 'describe' the network agenda tend to assume that online action can be understood as a proxy for actual network activities, irrespective of whether it reflects or drives transnational advocacy. Because studies such as these do not always corroborate their online data with real world data, their findings reflect an as yet unsubstantiated assumption of close association between online and offline networks.

Our purpose in this article is to explore the empirical validity of this assumption. To what extent do transnational online issue networks serve as a proxy for their real-space counterparts in structure and substance? How valid is online activism as a substantive proxy for transnational action? Epistemologically, what is going on when policymakers, students or citizens form impressions of a transnational network through online representations? Methodologically, can researchers of transnational advocacy networks confidently rely on advocacy websites as a proxy for interviews or surveys with actual transnational activists?

We explored these questions by attempting to measure the gap between the real-space advocacy network around 'women, peace and security' (WPS), as operationalized through a web-based survey of actual activists, and the network's online representations of itself, as measured through advocacy websites. Two specific concerns drove the study. First, how closely does the *structure* of issue networks as represented on the World Wide Web correspond with actual advocates' understanding of the players within a specific issue domain? To capture network structure, we compared hyperlinks among advocacy websites in the WPS network with survey responses from actual participants in that network to determine whether, as a number of studies have suggested, hyperlinks provide a useful proxy for advocates' understandings of who the 'gatekeepers' in a network are.

Second, to what extent does the online *issue agenda* correlate with the most prominent issues described by real-space advocates within a transnational network? To study how closely advocacy websites reflect an actual network's political agenda, we compared the prominence of specific issues online in this network, as determined by a content analysis of advocacy websites, to survey responses regarding the 'most important issue'. This method follows scholars of domestic agenda setting in attempting to capture the 'agenda' in both online and real-space transnational sites and examine the extent to which they correlate or, alternatively, seem disconnected.

Our initial findings suggest that link analysis is an effective tool for identifying the 'hubs' or 'gatekeepers' within a specific issue network (Bob 2005; Carpenter 2011). However, it is a blunt tool for capturing the broader issue network because it produces false positives and can miss peripheral organizations that lack IT understanding but nonetheless real-space activists acknowledge as playing an important role in the network. In addition, survey responses from real-space activists suggest a more nuanced understanding than the websites can provide of what constitutes a network 'actor'. With respect to the issue agenda, our findings yield a high correlation between web-sphere analysis and survey responses regarding the most important issues. Because the online network does not fully reflect the real world network, we find that data about issue networks online can be a useful supplement, but not substitute, for data on real-space networks.

We organize the article as follows. First, we discuss the literature on transnational advocacy networks and approaches for integrating the study of web-based advocacy into the study of transnational agenda setting. Second, we explain the methods used to examine the relationship between online and real-space descriptions of the network and the network agenda. We outline the findings in the final section.

Transnational advocacy networks and the World Wide Web

A proliferating literature in IR theory now explores the impact of transnational advocacy networks (TANs) on global public policy making (Burgerman 2001; Florini 2000; Keck and Sikkink 1998; Khagram et al. 2002; Thomas 2002). TANs are transnational networks of activists motivated by shared principled discourse who aim to affect political behaviour through moral argument (Price 2003).

Linking insights from social movement theory, IR constructivism and sociological institutionalism literature on issue networks has documented the role that civil society actors play as agents of change: they set the international agenda, teach actors new norms, monitor compliance with standards and shame norm violators (Price 2003). Examples of such scholarly work include studies on the impact of TANs on the global diffusion of gender mainstreaming (Mintrom and True 2001); Soviet Jewish emigration during the cold war (Hagel and Peretz 2005); as well as the prevention of child labour in Bangladesh and employment discrimination against pregnant workers in Mexico (Hertel 2006).

Here, we refer to TANs as 'issue networks' because they are constituted around specific issues or issue areas. All social networks are 'network[s] of meanings' (White 1992: 67); advocacy networks are networks of principled meanings, which vary by *issue area*. For example, in the area of human rights, the principled meanings have to do with the rights and obligations between political actors and human beings (Hawkins 2002; Joachim 2003; Keck and Sikkink 1998; Risse et al. 1999; Thomas 2002), and the constitutive actors differ from networks around climate change or conflict diamonds.

As much of the literature on TANs has long noted in passing, contemporary transnational advocacy is heavily reliant on global communications networks, including

the internet (Price 2003). Many have said that the World Wide Web has a positive impact on the abilities of non-governmental organizations to coordinate and communicate their activities (Juris 2005; Lebert 2003; Postmes and Brunsting 2002). Deibert (2000: 262) finds the World Wide Web enabled networks to broadcast their interpretation of an issue to a much wider audience than other forms of media. These '"virtual" information booths … seem to confer legitimacy on the information contained in them simply because they are on the Internet'.[2] These studies suggest that the web serves as a quick and inexpensive means for NGOs to function effectively at a global level, yet studies of TANs rarely explore the relationship between technology and TAN activities explicitly.

Yet, this early and salutary emphasis on the World Wide Web as a conduit for transnational political mobilization has led to a trend among IR scholars to treat activist websites as data sources on actual transnational networks. For example, in a study of the online representation of the European Women's Lobby, Pudrovska and Ferree (2004: 118) argue that website analysis offers useful information about an organization's identity and priorities 'because, unlike media representations of the group, it is self-directed and, unlike many structural features of the organization, it is relatively resource-neutral'. When explaining their use of hyperlink analysis, Van Aelst and Walgrave (2004) claim it provides insight into an organization's place in a transnational network. Bennett (2003) concludes that patterns of online communication between NGOs reflect and reproduce the structure of activist networks centred on the global economic regime. Studies of the civilian protection network (Carpenter 2005) and the children and armed conflict network (Carpenter 2007a) draw on datasets of content from advocacy websites as an indicator of advocacy discourse.

All these authors assume that websites, and the linking practices among them, are a useful source of data on advocacy networks themselves, the issues on or off the agenda, and the nature of advocacy discourse.[3] There is, of course, some theoretical support for these assumptions. Nevertheless, more importantly perhaps, important methodological incentives exist for using the visualizations offered by the web as a proxy for transnational space.

First, arguably, web analysis may tell us something about the constituent actors within a transnational network. A common methodological difficulty in studying advocacy networks is identifying a population of constituent organizations. The nebulous nature of advocacy networks presents a challenge when attempting to sample advocacy discourse in a particular issue area or drawing a representative sample of respondents for survey or focus group research. Methodologies such as hyperlink analysis provide a possible solution: they provide a means of identifying the constitutive organizational actors within a network as it exists online (Wasserman and Faust 1994). Hyperlink analysis is a form of network analysis in that it studies the structure of a social system through the shared links among communication partners; the key difference between hyperlink analysis and traditional network analysis is the use of hyperlink data collected from websites (Park 2003). According to Han Woo Park (2003: 49), a hyperlink is the basic structural element of the web, which we can define as a 'technological capability that enables one specific website (or web page)

to link to another'. Park (2003: 50) goes on to state that people 'in a hyperlink system can be linked together, exchange information and maintain cooperative relationships by means of hyperlinks around a common background, interest or project'.

The assumption is that hyperlinks between online organizations are not simply an instrumental means by which to navigate from one cyber-locale to another: they also constitute recognition of organizational membership in a community of understanding (Barabasi 2002: 5; Henzinger 2001: 45).[4] In a sense, one can consider websites as actors and their hyperlinks as conscious relational links (Park et al. 2004). Within advocacy communities, linking practices between organizational websites function much like academic citations in that they provide indicators of whom to consider as a member or a player within a specific community of shared knowledge and practice. Thus, one can use hyperlinking practices as one indicator of the constitutive elements and boundaries of advocacy networks (Adamic and Adar 2001).

Second, it is argued that we can learn something about structural relations within those boundaries: hyperlink analysis tells us who the leaders or authorities are within the network, as represented by the relative number of incoming and outgoing links (Park and Thelwall 2003). Of major importance to studying the agenda are identifying the network 'hubs',[5] expected to play a disproportionate role in agenda-setting and therefore of importance in drawing a weighted sample of sites to study. This is because, as Lake and Wong (2005: 2) have demonstrated, in transnational advocacy networks, 'nodes in networks are not equal': that is, some entities have much greater influence, operationalized as relative connectivity to the others. Since it is these 'key' organizations or 'gatekeepers' whose adoption of a specific issue weighs in most in the process of international agenda-setting and advocacy (Bob 2005), it is important to identify these particular actors relative to others in a particular issue network.

Third, websites arguably provide researchers with a rich sample of advocacy network discourse they can convert to text files and, using computer assisted qualitative data analysis techniques, systematically analyse their content. The rhetorical content of websites, the accompanying images, the way content is categorized, and how different themes and frames are connected online are said to affect the construction of advocacy frames in transnational civil society. Such content analysis allows researchers to study the rhetoric of those specific organizations, as exemplified by their advocacy presence online, to determine the salient themes and absences. This combination of hyperlink analysis with systematic qualitative analysis of web content resembles what Foot and Schneider call 'web sphere analysis', namely an analytical strategy for studying 'communicative actions and relations between web producers and users developmentally over time' (Schneider and Foot 2005: 158). This methodology rests on the notion that the World Wide Web is more than a means of enabling network actors to associate and signal membership in a community of meaning; it is also a virtual context in which to *construct* shared meanings. 'In creating an online persona, NGOs engage in framing activities … by shaping the ways that issues are conceptualized and understood' (Warkentin 2001: 36–7).

The common assumption underlying these approaches is that a significant

correlation exists between the structure and content of online advocacy and the structure and content of real-space advocacy networks. Websites are thought both to reflect (Carpenter 2007a; Pudrovska and Ferree 2004; Van Aelst and Walgrave 2004) and to construct (Bennett 2003) organizational actors, their relations and the transnational agenda; they are therefore helpful, if imperfect, proxies for actual transnational networks. Thus, studies that probe how networks utilize the web implicitly assume that online networks reflect their offline counterparts. They do so when they take online information about the transnational agenda or network structure as definitive without validating it with what occurs in real space.

However, there are several reasons to question whether websites accurately reflect actual network relations. First, much of the literature on online 'issue networks' is web specific in focus, treating issue networks as clusters of websites that emerge in the web tissue rather than necessarily reflections of real-space networks (Rogers and Marres 2000). The association between the two needs to be tested rather than automatically assumed.

Some studies have empirically demonstrated that domestic issue networks mimic their online counterparts to a surprisingly high degree (McNutt 2006). However, this may be less true in the transnational sphere, where wide discrepancies exist between the abilities of network members to access the web or the skills required to build and maintain the types of websites likely to attract traffic and reciprocal links.

Moreover, linking practices between websites (or their absence) may or may not be systematic indicators of network membership, as some advocacy sites link to their targets of influence as much as to their counterparts. In addition, since some advocacy organizations are members of multiple issue networks, link analysis may overrepresent or distort the constitutive actors in a specific network. In his comparison of collective identity, a revealing component of network structure, Ayers (2003) found little congruence between online and offline feminist activists. Could the same be true of TAN structure in general?

The extent to which the online issue agenda keeps pace with the agenda within real-space networks is also an open question. For example, one informant from a leading human rights organization told one of the authors that the content of that organization's website was idiosyncratic as much as systematic, and often outdated. She thus cautioned against relying on web content as an indicator of transnational network politics.[6] In short, we should study, not assume, the relationship of advocacy organizations to the World Wide Web.

In this study, we explore the extent to which the World Wide Web is a viable proxy for heavily transnational communities of meaning. We focus on two dimensions of a single transnational advocacy network – the constituent nodes and the issue agenda. How accurately does the analysis of online networks allow us to operationalize both transnational networks themselves and the set of meanings prevalent within their discourse over a particular time, relative to data gathered from actual activists within the network? The answer to this question will tell us something about whether and how well studying advocacy websites can substitute for conventional social science methods of studying transnational communities themselves.

Methodology

We explored this question by gathering data from both the web and real space for the transnational network around 'women, peace and security' (WPS) in spring 2007. 'Women, Peace and Security' is a recently defined issue area within global politics, forged out of a coalition that sought to place women's concerns on the agenda of the United Nations Security Council. This campaign resulted in the adoption of Security Council Resolution 1325 in October 2000, which called for greater representation of women in national and global security institutions, peace negotiations and peace operations, and for a mainstreaming of gender concerns in security sector reform. Women's groups have both lauded the resolution for representing a heightened commitment by international institutions to consider women's concerns a component of 'high politics' and criticized it for essentializing women and gender issues. Since 2000, the same network has focused on lobbying for implementation of the resolution in various policy fora, which has turned out to be more difficult.

This particular issue network is suitable for our purposes insofar as it combines a strong online presence with a well-organized set of email listservs that connect the players in the core network, enabling us to gather data on both the online network and a part of the real-space network. We aimed to measure not the entire transnational network (which, due to the digital divide, would have required a non-web sampling method) but rather those actors most likely to interface regularly with the network on the World Wide Web – in other words, the real-space counterparts for those organizations identifiable online. This allowed us to control to some degree for the effect of the digital divide. Our goal was to determine whether advocates' perceptions of the network in which they were embedded and the issue agenda for that network coincided closely with representations online. If a gap existed between even such central and technologically privileged network players and the online network, it would cast doubt on the empirical value of using the web as a proxy for transnational activism.

We gathered four types of data on the WPS issue network – data on the network itself, as represented on websites and as reported by activists, and on the issue agenda, again online and in survey responses.

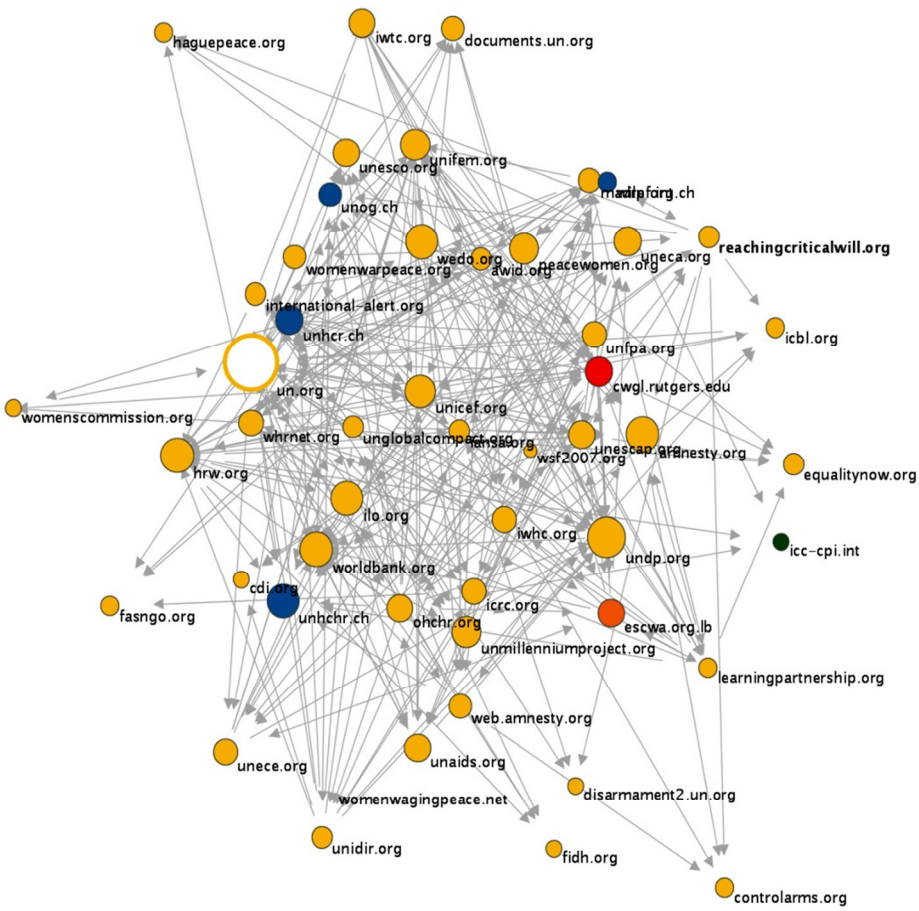
Table 1: Data sources/methods

	Online	**Real-Space**
Actors	Hyperlink analysis	**Surveys:** 'Most Involved Organizations'
Issues	Content analysis of website mission statements	**Surveys:** 'Most Important Issues'

First, we performed co-link analysis to identify the organizations composing the network and to rank them according to their centrality within it. Since centrality often correlates with perceptions of power or influence (Danowski et al. 1987), this

measure would reveal who the 'gatekeepers' or 'hubs' were in terms of network agenda setting. The link analysis was performed using IssueCrawler, an algorithm developed by Govcom.org at the University of Amsterdam.[7] IssueCrawler permits the graphical representation of online issue networks by identifying those websites receiving at least two links within a cluster of sites relative to two or more 'starting points'. It also generates a ranked list of actors based on the number of incoming links (in-links) an actor receives. As starting points for the analysis, we used the organizations listed as members of the NGO Working Group on Women, Peace and Security. As an umbrella organization that coordinated NGO lobbying efforts within the UN Security Council to push for the passage of the aforementioned Resolution 1325, the working group represented a natural starting point. Since the resolution's passage the group has continued to work towards monitoring and ensuring that the provisions are fully implemented.[8] A list of the resulting WPS network web pages, ranked by in-link density, appears in Appendix 1; a visual representation of the network appears in Figure 1.

Figure 1: Cluster map: women, peace and security network



Second, between February and April 2007 we compared these data with results from surveys conducted with real people self-identified as within the WPS network. We constructed a web-based survey using SurveyMonkey software and disseminated it through several listservs identified as specific to the issue of 'women, peace and security' or 'gender and security'.[9] We asked respondents to name the three organizations that came to mind when they thought about the network. We then asked them to rank a set of organizations drawn from the co-link analysis results to see how accurately link analysis predicted the perceptions of actual network advocates about how central different organizations in the network are. We collected 47 surveys between February and April 2007, after which we compared responses with the analysis of the same network as represented online.

Third, we sought data from both online and survey sources about the issue agenda. We asked survey respondents similar questions about the agenda as about the network *per se* – what issues came to mind and then which issues among a list were more or less prominent in the network. We converted the open-ended questions to .txt files for analysis. We compared this text with a content analysis of mission statements and issues/advocacy programmes from organizational websites appearing in the IssueCrawler output.

We constructed a code list by using a grounded theory analysis of the raw data to draw on the 'issues' listed by the organizations appearing among the first ten hits on Google for a search of the terms 'Women, Peace and Security'.[10] The grounded theory returned a variety of concepts and themes that had emerged from the text, but the ultimate code list was more refined and combined these concepts and themes to reflect issues related to WPS. We examined how frequently these 'issues' appeared in both the open-ended survey responses about 'the most prominent issues' and the mission statement and issues/advocacy programme web-pages of a sample of the organizations returned by IssueCrawler.[11] Codes were applied at the document level using Atlas.ti software if wording or phrases approximating the meaning of a code appeared in the web data or in a single respondent's survey answer.[12] For example, references to refugees or IDP issues were coded 'Displacement'; references to women's participation in diplomacy to resolve conflicts were coded 'Peace Processes' and 'Participation' concurrently. Two graduate student coders coded each primary document independently and then we gauged inter-rater reliability using the F-measure metric.[13] Codes with lower than .6 inter-rater reliability were discarded after two pre-tests. The average inter-rater reliability for the web-data set was .83. We then selected one set of these codes at random to yield a single frequency list indicating the relative salience of specific issues within the Women, Peace and Security online and real-space issue spheres. For a comparison, see Table 2.

Findings

The key finding of this study is that online issue networks provide a more accurate view of their real-space counterparts on some dimensions than on others. Co-link analysis accurately depicts (and perhaps constructs) activists' understanding of who

the key network 'hubs' or 'gatekeepers' are. Of the organizations, the United Nations Development Fund for Women (UNIFEM) and Women's International League for Peace and Freedom (WILPF) are by far the most often cited in unprompted open-ended questions, as well as most prominent in ranked responses. These two organizations, as well as their key subsidiary websites concerning this issue (UNIFEM's WomenWarPeace.org and WILPF's Peacewomen.org and ReachingCriticalWill.org websites), are also among the top hits in IssueCrawler's in-link density rankings. In other words, in no case did IssueCrawler *miss* any organizations that survey results would suggest are central to the network.

Figure 2: Screenshot of UNIFEM women, war and peace web portal homepage and issue links

However, hyperlink analysis also yields false hub *positives:* organizations that real-space activists would deny are part of a network may end up appearing as highly central organizations in a hyperlinked network. For example, survey respondents felt strongly that the World Bank and World Trade Organization are 'not very involved' in the network, yet both these organizations appear high on the in-link density list produced by IssueCrawler (see Appendix 1).

One reason for the appearance of these false positives in the co-link density list is that the list fails to differentiate between positive and negative links. Using the above examples, UNIFEM will link positively to WILPF as another organization within the network that pursues similar objectives and goals; these organizations might link to

the WTO to criticize its policies and their impact on WPS issues. This suggests that researchers might still be required to employ traditional research methods and use discretion and insight gained from further research into the network issue area to understand which organizations might be considered false positives. There is a feature within IssueCrawler that can allow for reciprocal link analysis. This may allow us to differentiate between negative links and aspirational links, but, in all probability, it would still require some analysis by the researcher and not a total reliance on the technology.

In general, however, IssueCrawler's results also map onto the survey respondents' characterizations of the network periphery: 78 per cent of low-prominence organizations appearing in the open-ended questions (but ranked as 'not very involved' by a majority of survey respondents) also fail to appear as central to the online network. These findings suggest that co-link analysis provides a helpful indicator of both the most and least prominent organizations in an issue area.

The co-link analysis seems to do a less perfect job of capturing 'core' organizations in a network than it does in capturing 'hubs' or 'peripheral' organizations. We considered organizations to be in the real-space network 'core' if, unprompted, between two and five survey respondents identified them in open-ended questions.[14] Only three of these fourteen 'core' organizations appear in the IssueCrawler results, in comparison with the network 'hubs'. In other words, a gap exists between the organizations IssueCrawler identifies as constituting the core network and those that activists identify as 'very/somewhat involved' in it.

Regarding the issue agenda, with only a few interesting exceptions (see Table 2), web analysis correlates very well with the survey respondents' ranking of the 'most prominent issues'. Of the issues activists were asked to rank, 'gender-mainstreaming' tops the list in both the real-space and online networks, followed by 'HIV-AIDS' among survey respondents and 'health' in the coded web data; 'girls' and 'physical violence' follow closely in frequency in both lists. Moreover, online web content also maps onto activists' understandings of the least prominent issues: 'nuclear weapons', 'militarization of space', and 'cluster munitions' were at the bottom of the list in both networks; 'landmines', 'small arms' and 'disarmament' also scored low both in code frequency and number of respondents listing them as prominent issues. Interestingly, however, 'environment' appeared more prominently on websites than in survey responses, and survey responses ranked 'trafficking' more prominently than did the websites.

Some additional patterns in the data bear mentioning. While one of the goals of this study was to examine synonymity between the representations of advocates and online network actors, the advocates' understanding of who constitutes an 'actor' mapped unevenly onto the structure of the World Wide Web. We find evidence in favour of this position in the number of respondents who mentioned *web pages* within organizations as actors rather than the organizations themselves. For example, in open-ended questions, respondents often listed 'PeaceWomen' as an actor, though it is actually a website run by a separate organization, Women's International League for Peace and Freedom. This suggests that the web sphere helps to construct activists' understanding of the players and information 'hubs' within a network.

Table 2: Code frequency: ranked survey answers versus web analysis

Ranked survey answers*		Ranked web content frequencies†	
Gender-Mainstreaming	63.9%	Gender-Mainstreaming	12
HIV-AIDS	63.8%	Health	11
Trafficking	63.8%	Physical Violence	10
Girls	62.9%	Justice	10
Physical Violence	61.2%	Girls	9
Peace Processes	61.1%	Reconstruction	9
Justice	58.3%	Environment	7
Displacement	51.5%	HIV-AIDS	6
Health	48.6%	Reproductive Health	6
Demobilization/Reintegration	44.4%	Peace Processes	5
Reconstruction	38.9%	Displacement	5
Reproductive Health	38.8%	Trafficking	4
Small Arms	25.0%	Small Arms	2
Landmines	27.0%	Landmines	2
Disarmament	22.2%	Disarmament	2
Nuclear Weapons	22.2%	Demobilization/Reintegration	1
Environment	11.4%	Nuclear Weapons	1
Cluster Munitions	5.8%	Cluster Munitions	0
Militarization of Space	5.7%	Militarization of Space	0

*Ranked by percentage of respondents answering issue is 'extremely' or 'very' prominent.
†Ranked by frequency of codes applied to web content dataset.

However, some respondents did the opposite. They listed umbrella actors such as the 'United Nations' rather than referring to the specific UN agency actively involved in the network, in this case UNIFEM or INSTRAW, much less a specific issue web page, which in UNIFEM's case would be the 'WomenWarandPeace' project. In fact, some respondents referred to both, making responses non-comparable. Many survey respondents also listed publications as 'actors', such as the *Women Waging Peace Digest*, or specific web *pages* within organizational websites, rather than either organizations or websites. Some 'actors' listed in open-ended questions were actually sub-networks of actors, such as the NGO Working Group on Women, Peace and Security. All this suggests a complicated understanding on the part of advocates of what exactly constitutes an institutional 'player' in an advocacy network; and the emphasis on subnational players among the survey responses, such as the UK PeaceWomen chapter rather than PeaceWomen broadly, complicates our understanding of advocacy networks as primarily transnational.

The data suggest that actual advocacy networks, like online networks, follow a

power law: a few major hubs dominate them, with a larger number of organizations occupying mid-range but by comparison much more marginal 'core' network space, and numerous interested organizations only peripherally connected to the network. The broad comparability of evidence from the surveys and the web analysis here stands counter to the view promulgated by earlier literature on advocacy networks that these were essentially distributed networks, with multiple points of access and leverage, in which civil society actors operated cooperatively and on an equal footing with one another *vis-à-vis* the sovereign state's system. This might also lend credence to the so-called 'digital-divide' discussed above. The evidence here, drawn from a network concerned with women's issues, would also lend scepticism to the view that women's transnational mobilization is different in kind from that of other social movements. Informal conversations with activists in this network suggest that fundamental hierarchies exist within the network that, in important ways, have an impact both on the access of Southern or minority women in the North and on the advocacy agenda itself.[15] One needs traditional research methods, such as focus groups, to explore these broader issues.

Conclusion

We embarked on this research to determine if advocacy websites are a reliable proxy for interviews or surveys with actual activists. This question arose because of the practical difficulties of employing more traditional social science methods to carry out research on transnational advocacy networks, an agenda with expanding appeal. We strove to answer this question by measuring the gap between the real world network, via web-based surveys of actual activists, and the online networks as represented by advocacy websites. In measuring the gap, we specifically examined how closely online structure and substance resembled its offline equivalent.

Our findings reveal interesting patterns in the relationship between online and real space networks. On the issue of structure, hyperlink analysis correlates well with activists' understandings of 'gatekeepers' or 'hubs' and of peripheral organizations. This implies that hierarchies exist both in the web and in women's movements. However, it is less accurate in mapping the broader network because it yields false positives as well as excludes certain organizations perceived by activists to be part of the 'core'. Furthermore, activists possess a more complex understanding of what constitutes an actor in the network than hyperlink analysis would suggest. In terms of substance, web-sphere analysis can accurately establish the most prominent and least prominent issues in actual advocacy networks.

These findings suggest that those studying TANs can reliably use the web to pursue certain research questions but not others. For instance, an unstable environment and expensive travel may force researchers interested in the causes of political unrest to turn to the web to study, for example, the 'Arab Spring'.[16] Even if a researcher is able to find the funds, secure leave of absence to travel to, say, Egypt, and arrange protective measures on the ground, because of the rapid pace in which events there unfolded he or she may miss important data while travelling and

settling in. However, because of the heavy use of the web during the political unrest there, researchers could use this medium to pursue certain research questions without leaving their desks. For example, they could use the web to determine the gatekeepers in the network during the political event in question. They may also be able to use it to establish the most and least important issues underpinning the anti-government movement. However, to capture the intermediate, yet still important, issues, as well as establish the identities of the peripheral members of the network, researchers would need to supplement this data with more traditional social science methods.

In addition to conducting focus groups with activists, using other methodological techniques would broaden our understanding of the relationship between online and real space networks. For example, in compiling a list of the most important issues or NGOs within a particular network, one could incorporate other sources along with Google in the research design. Furthermore, while we analysed the mission statements of NGOs to determine their issue agenda, an examination of other web pages updated more frequently than mission statements may offer a more current picture of the subjects on which an NGO is focusing.

Adaptation of our research design can also probe some of the questions the data raised. For instance, one could utilize alternative measures besides an in-link count to designate a 'gatekeeper' or 'hub' to see if 'core' organizations would be included. Relatedly, use of IssueCrawler's 'snowball' feature to keep track of reciprocal links would allow researchers to differentiate between critical links (those to targets of influence like the World Bank) and cordial or aspirational links (links to network members). Furthermore, one could distribute surveys via alternative avenues besides listservs, which may provide a higher response rate or reach a wider audience. Finally, survey questions could elicit more information from respondents such as their workplace, the nature of their work and their position in the organization.

The overall analysis suggests that web analysis is a helpful way of identifying the hubs or 'gatekeepers' within specific issue networks, as well as the most and least prominent issues within a network, but may be a blunter tool for capturing the larger networks around these hubs or the dynamic and evolving issue agenda within transnational advocacy space. Students of advocacy networks who aim to operationalize and track changes in network composition should combine web analysis with conventional methodologies for gauging real-space understandings of the network and the issues. This would enable them to arrive at a comprehensive picture of how transnational advocacy networks connect and construct the global agenda.

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Notes

1. For example, see Drohan (1998).
2. However, some studies have found that the internet is less helpful to NGOs (see van der Laan et al. 2009; Zhang et al. 2002).
3. This is not to say that all studies of online issue networks make this assumption. Some authors focus solely on the internet as a site of research and a source of data about society (Hine 2000; Rogers 2009; Rogers and Marres 2000). For instance, Rogers and Marres (2000) explore the climate change debate on the World Wide Web. They do not compare these online representations with offline representations. Rogers (2009) explores the 'groundedness' of online content. He explores what internet information can reveal about the offline world. This contrasts with our study, which examines how accurately the offline world, in this case, transnational networks, is depicted online.
4. Bae and Choi (2000) suggest that this type of linking practice is particularly relevant to the transnational human rights sector.
5. Hubs are critical nodes that are well connected and 'direct users to various authorities embedded within that network' (McNutt 2006).
6. Personal conversation, Oslo Norway, June 2006.
7. See http://www.issuecrawler.net.
8. See http://www.peacewomen.org/un/ngo/wg.html, as well as their new website http://www.womenpeacesecurity.org/.
9. These included Women-Peace-and-Security@list.web.net, run by the Gender and Peacebuilding Working Group of the Canadian Peacebuilding Coordinating Committee; and genderssr@un-instraw.org, the Gender and Security Sector Reform listserv of the United Nations International Research and Training Institute for the Advancement of Women.
10. See http://www.womenwarpeace.org/index.htm. For an example of web content, see Figure 2.
11. To qualify for our initial dataset, an organization had to appear both in the IssueCrawler output and in the survey responses. For a list of the websites analysed see Appendix 2.
12. Atlas.ti is a qualitative data analysis software package that allows coders to apply codes to segments of text within documents as well as allowing for a variety of analysis tools to assess various trends in the coded text. For more information, see http:\\www.atlasti.com.
13. The F-Measure metric rates the overlap between two coders' annotations on a scale between –1 and 1, where 1.00 represents 100 per cent synonymity between two coders' independent annotations; see van Rijsbergen (1979).
14. This compares with 'hubs' that often had more than 20 responses and peripheral organizations that only one respondent mentioned.
15. In an interview with one of the authors, one activist stated that 'I don't know too many American women of colour who were involved in the 1325 work – I don't get invited to very many of these conferences. The group of frankly white American women who are creating these agendas and running things are excluding many voices … there is too little focus on domestic issues in this movement, people always want to look at what is going on in other societies.'
16. It should be noted that the widespread term 'Arab Spring' is misleading since not all the populations involved would consider themselves Arab. A better way to phrase might be Middle East and North African (MENA) Spring.

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APPENDIX 1

Actor Rankings, core and periphery by page, WPS PeaceWomen NGO Working Group (Ranked according to number of incoming hyperlinks)

1 - un.org - 1582
2 - awid.org - 307
3 - undp.org - 284
4 - ohchr.org - 273
5 - wilpf.int.ch - 262
6 - ilo.org - 251
7 - amnesty.org - 226
8 - whrnet.org - 196
9 - unifem.org - 170
10 - womenscommission.org - 157
11 - peacewomen.org - 120
12 - reachingcriticalwill.org - 85
13 - womenwarpeace.org - 84
14 - wedo.org - 75
15 - documents.un.org - 63
16 - iwtc.org - 59
17 - unhchr.ch - 57
18 - hrw.org - 55
19 - international-alert.org - 45
20 - fasngo.org - 44
21 - haguepeace.org - 42
22 - cwgl.rutgers.edu - 41
23 - unaids.org - 36
24 - iansa.org - 34
25 - unicef.org - 31
26 - worldbank.org - 31
27 - unhcr.ch - 29
28 - uneca.org - 28
29 - unescap.org - 25
30 - controlarms.org - 24
31 - icrc.org - 22
32 - unfpa.org - 22
33 - unmillenniumproject.org - 22
34 - escwa.org.lb - 22
35 - icc-cpi.int - 21
36 - unesco.org - 21
37 - web.amnesty.org - 20
38 - madre.org - 20
39 - unece.org - 19
40 - unog.ch - 17
41 - learningpartnership.org - 16
42 - cdi.org - 15
43 - iwhc.org - 14
44 - forumsocialmundial.org.br - 13
45 - apwld.org - 13
46 - womensnet.org.za - 13
47 - fidh.org - 12
48 - equalitynow.org - 12
49 - unglobalcompact.org - 12
50 - omct.org - 12
51 - femnet.or.ke - 12
52 - ifrc.org - 11
53 - wilpf.org - 11
54 - wto.org - 11
55 - icbl.org - 10
56 - wsf2007.org - 10
57 - unidir.org - 9
58 - isiswomen.org - 9
59 - iccwomen.org - 9
60 - beijingandbeyond.org - 8
61 - womenwagingpeace.net - 8
62 - womenbuildingpeace.org - 8
63 - imow.org - 8
64 - rhrc.org - 7
65 - ieer.org - 7
66 - child-soldiers.org - 7
67 - icftu.org - 7
68 - isis.or.ug - 7
69 - ncrw.org - 7
70 - batshalom.org - 7
71 - worldpolicy.org - 6
72 - 1000peacewomen.org - 6
73 - reformtheun.org - 6
74 - womankind.org.uk - 6
75 - disarmament2.un.org - 3
76 - wunrn.com - 3
77 - generoyambiente.org - 3

APPENDIX 2

Organizational websites analysed

Women's International League for Peace and Freedom
PeaceWomen
Building Critical Will
UN Development Fund for Women
NGO Working Group on Women, Peace and Security
Women Waging Peace
Women's Human Rights Net
Global Fund for Women
Amnesty International
Women's Environment & Development Organization
International Committee of the Red Cross
Women's Commission for Refugee Women and Children
International Women's Tribune Centre
Femmes Africa Solidarité
UN High Commissioner for Refugees
UN Children's Emergency Fund
Human Rights Watch
International Alert
UN Population Fund
UNAIDS
World Bank
Isis International
Madre
Femnet
International Action Network on Small Arms