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## HUMANITARIAN MEDIA INTERVENTION: INFRASTRUCTURING IN TIMES OF FORCED MIGRATION

“This is absolutely humanitarian help, I mean if I would imagine myself in the same situation, having internet access would be one of the most important factors for me [...]. I mean, for me the internet is somewhat like radio, electricity and water [...] but since nobody else really takes care of it, somebody has to do it.”<sup>1</sup>

### INTRODUCTION

In 2008, the German constitutional court ruled that all citizens have the right to internet access. Echoing this ascertainment on a global scale, the United Nations (UN) declared in 2016 that access to the internet is a human right.<sup>2</sup> Yet, during what is commonly referred to as the European refugee crisis, non-governmental organisations (NGOs) and activists argued that communication rights and needs of refugees were (and still are) far from being on top of the priority lists of the German government and many other involved humanitarian actors. Issued in November 2015, a collaborative country report by the European Council on Refugees and Exiles highlights important aspects of the debate on ‘proper’ refugee

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- 1 Hauke, member of Freifunk Bremen, about sharing his private internet connection with a nearby local refugee reception centre (participant interview March 2016).
  - 2 Cp. Bundesverfassungsgericht, “Leitsätze zum Urteil des Ersten Senats vom 27. Februar 2008”, *Bundesverfassungsgericht*, 2008. Available at: [https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2008/02/rs20080227\\_1bvr037007.html](https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/DE/2008/02/rs20080227_1bvr037007.html) [accessed December 1, 2016]; Human Rights Council, “The promotion, protection and enjoyment of human rights on the Internet”, *United Nations General Assembly. Oral Revisions of 30 June*, 2016. Available at: [https://www.article19.org/data/files/Internet\\_Statement\\_Adopted.pdf](https://www.article19.org/data/files/Internet_Statement_Adopted.pdf) [accessed December 1, 2016].

reception conditions in Germany.<sup>3</sup> At its core, the report critiques the lack of clear infrastructure standards for the tents, containers, gyms as well as other newly built or repurposed spaces that serve as emergency shelters/reception centres for refugees. All the same, media and communication infrastructures – for example the availability of mobile devices, desktop computers or access to the internet – are not even a factor in the report when it comes to the critical assessment of the conditions under which migrants are accommodated. Interestingly, recent ethnographic research on life in refugee camps in Berlin acknowledges the overall significance of internet access for refugees,<sup>4</sup> but does not go into any depth concerning the actual circumstances.

The “long summer of migration”<sup>5</sup> in 2015 gave rise to protest movements, led by refugees and their supporters,<sup>6</sup> as well as a growing amount of volunteer groups which began to organise clothes, food and language courses, especially in newly opened refugee reception centres. Interestingly, established hacker organisations like the German Chaos Computer Club (CCC) added their own spin to the growing *Willkommenskultur* by driving their vans packed with technical equipment (energy generators, cables, etc.) to refugee camps at Europe’s eastern borders and organised “hackathons” to create helpful apps.<sup>7</sup> Others, like members of the volunteer-based initiative Freifunk, applied their established practice of building wireless mesh networks to facilitate refugee shelters/reception centres with free internet access. Arguing that internet access is a human right and critical for staying in touch with left-behind family members, for education and integration, Freifunkers mostly reconfigure wireless hotspots or redirect internet uplinks from volunteers. As the opening quote indicates, one such way is to share private internet uplinks with reception centres close by, that often offer little or limited internet access for its (temporary) residents.

At the core of this article lies the question: How do Freifunk’s

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- 3 Cp. Michael Kalkmann, “Country Report: Germany”, *aida. Asylum Information Database*, 2015. Available at: [http://www.asylumineurope.org/sites/default/files/report-download/aida\\_de\\_update.iv\\_\\_0.pdf](http://www.asylumineurope.org/sites/default/files/report-download/aida_de_update.iv__0.pdf) [accessed December 1, 2016].
  - 4 Miriam Bräu and Mara Erlenmaier, “Conclusion: Recommendations to Improve the Living Conditions of Women\* in Refugee Camps in Berlin”, in Hansjörg Dilger and Kristina Dohrn (eds.), *Living in Refugee Camps in Berlin*, Berlin, Weißensee Verlag, 2016, p. 290.
  - 5 Marc Speer and Bernd Kasperek, “Of Hope. Hungary and the Long Summer of Migration”, *bordermonitoring.eu*, 2015. Available at: <http://bordermonitoring.eu/ungarn/2015/09/of-hope-en/> [accessed December 1, 2016].
  - 6 Cp. Napuli Langa, “About the Refugee Movement in Kreuzberg/Berlin”, *Movements: Journal für kritische Migrations- und Grenzregimeforschung*, 1 (2), 2015. Available at: <http://movements-journal.org/issues/02.kaempfe/08.langa--refugee-movement-kreuzberg-berlin.html> [accessed December 1, 2016].
  - 7 See, for example, Chaosradio Podcast Network, “Flüchtlinge und Hacker. Hilfe zur Selbsthilfe”, *Chaosradio*, 2015. Available at: <http://chaosradio.ccc.de/cr216.html> [accessed December 1, 2016].

sociotechnical practices become embedded within refugee shelters/reception centres? Based on qualitative research, this article approaches ‘Freifunk for Refugees’ as an entanglement of forced migration, humanitarianism and the attempt to spread “sociotechnical imaginaries”<sup>8</sup> of alternative wireless networks. The data set presented here is based on eight months of qualitative intermittent fieldwork between May 2015 and March 2016 in Bremen, Germany. The main method of investigation were face-to-face interviews with actors who were involved in the infrastructuring practices in two refugee shelters/reception centres – Freifunk members, representatives of social service providers, and a local community manager – and ethnographic accounts while visiting these sites (including informal conversations with refugee residents).

Overall, the study aims to contribute to the growing body of critical studies of media infrastructures,<sup>9</sup> the cultural significance of free software<sup>10</sup> and the mundane work of humanitarian infrastructures.<sup>11</sup> These fields are drawn together through a relational, ecological and processual approach that allows for the conceptualising of infrastructures, not as fixed technical entities, but rather as ongoing processes of infrastructuring.<sup>12</sup> By focusing more closely on the often overlooked work of installation and forms of ‘re-entanglement’,<sup>13</sup> we attempt to reveal the ways actors’ practices shape emerging forms of humanitarian media intervention.

Overall, the article carves out three distinct practices of doing ‘Freifunk for Refugees’ that allow for interventions at refugee shelters/reception centres. The first focuses on the shared work of articulating Freifunk practices and expertise as an appropriate response to infrastructural neglect in the shelters/reception centres. The second one highlights the need for negotiating between Freifunk members and humanitarian actors about what the actual intervention should look like. The third set of practices addresses the embodied work of installing and maintaining as key infrastructuring moments. Based on the findings, we

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8 Cp. Sheila Jasanoff and Sang-Hyun Kim (eds.), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago, University of Chicago Press, 2015.

9 Cp. Lisa Parks and Nicole Starosielski (eds.), *Signal Traffic: Critical Studies of Media Infrastructures*, Champaign, University of Illinois Press, 2015.

10 Cp. Christopher Kilty, *Two Bits: The Cultural Significance of Free Software*, Durham, Duke University Press, 2008.

11 Cp. Kevin P. Donovan, “Infrastructuring Aid: Materializing Humanitarianism in Northern Kenya”, *Environment & Planning D: Society & Space*, 33 (4), 2015, pp. 732–748.

12 Cp. Jörg Niewöhner, “Anthropology of infrastructures of society”, in Neil Smelser and Paul Baltes (eds.), *International Encyclopedia of the Social & Behavioral Sciences*, 2015, 2nd ed., Oxford, Elsevier, pp. 119–25.

13 Cp. Ignacio Fariás, “STS and Human Drama”, *European Association for the Study of Science and Technology*, 2016. Available at: <https://casst.net/article/editorial-sts-and-human-drama> [accessed December 6, 2016].

discuss how, despite prominent rhetoric on total exclusion and digital divides, this ‘open’ approach to mesh networking succeeds as it raises awareness for infrastructural inequality and practically interferes with forms of sociotechnical abandonment. Though expertise and technologies are often successfully aligned, ‘Freifunk for Refugees’ should not be understood as a straightforward technological fix but as a political endeavour. Accordingly, we discuss how the ongoing interactions between activists, policymakers and social service providers interlock with humanitarian aid that make interventions possible, but might also change the practices of the initiative in return.

### THE POLITICAL SIGNIFICANCE OF FREE WIRELESS COMMUNITY NETWORKS

The practices of (free) wireless community networks (WCNs) originally emerged as a political response to insufficient (public) internet infrastructures during the late 1990s. Despite – or exactly because of – the rapid growth of monopolistic internet providers, WCNs continue to offer proven examples for exploring the experimental qualities and impact of local alternatives to an increasingly commercial and standardised digital landscape. Accordingly, grassroots collectives that mix free software protocols, affordable devices, do-it-yourself (DIY) tinkering and their cultural differences across international communities, have caught the attention of scholars from computer science, science and technology studies (STS), law and other disciplines.<sup>14</sup>

A number of studies have explored WCNs because of their development independent from “research centres or public institutions”<sup>15</sup>. More recently, researchers have referred to these initiatives as an “expansion of the internet commons”<sup>16</sup> and highlight the political significance of their communities and hacker organisations since they “face the hierarchical governance of the internet and the issues of surveillance and control over digital networks”<sup>17</sup>. Despite calls by scholars that activists should use their practical experience to influence

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14 Cp. Gregers Petersen “Freifunk: When Technology and Politics Assemble into Subversion”, in James Leach and Lee Wilson (eds.), *Subversion, Conversion, Development: Cross-Cultural Knowledge Exchange and the Politics of Design*, Cambridge, MA, MIT Press, 2014, pp. 39–56; Kat Jungnickel, *DiY WiFi: Re-imagining Connectivity*, Basingstoke, Palgrave Macmillan, 2014.

15 Stefano Crabu et al., “A Transdisciplinary Gaze on Wireless Community Networks”, *Tecnoscienza: Italian Journal of Science & Technology Studies*, 6 (2), 2015, p. 115.

16 Primavera De Filippi and Félix Tréguer, “Expanding the Internet Commons: The Subversive Potential of Wireless Community Networks”, *Journal of Peer Production*, 6, 2015. Available at: <http://peerproduction.net/issues/issue-6-disruption-and-the-law/peer-reviewed-articles/expanding-the-internet-commons-the-subversive-potential-of-wireless-community-networks/> [accessed December 1, 2016].

17 Crabu et al., 2015, p. 113.

policy debates on issues like net neutrality, to date, hardly any studies have examined such processes.<sup>18</sup>

As part of the “global movement for free infrastructure and open frequencies” and the “democratization of media”<sup>19</sup>, Freifunk was founded around 2002 in Berlin, Germany, as a citizen-run network in response to sparse internet coverage in former eastern parts of the capital.<sup>20</sup> Providing refugees with internet access has been high on the initiative’s agenda since as early as 2013, when Freifunk members installed equipment to serve a temporary refugee shelter in Hamburg.<sup>21</sup> Similar configurations can now be found in hundreds of shelters/reception centres all over Germany. Focusing on the activities of the case study at hand – the Freifunk Bremen group, founded in 2013 – internal statistics indicate that at the time of research, around 19 out of more than 30 refugee shelters/reception centres offered internet access in one way or another, while 13 of them did so through the active involvement of Freifunk members.<sup>22</sup>

## DOING HUMANITARIAN MEDIA INTERVENTIONS

To further understanding of how free wireless access becomes possible within refugee shelters/reception centres, we extract three sets of practices from the empirical data: *articulation*, *negotiation* and *installation*. This conceptualisation not only echoes ‘abstract’ analytical categories, but was also explicitly encountered in the participants’ narratives, reflections and documentation.<sup>23</sup>

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18 Cp. Christina Haralanova and Evan Light, “Enmeshed lives? Examining the Potentials and the Limits in the Provision of Wireless Networks. The Case of Réseau Libre”, *Journal of Peer Production*, 9, 2016. Available at: <http://peerproduction.net/issues/issue-9-alternative-internets/peer-reviewed-papers/enmeshed-lives/> [accessed December 1, 2016].

19 Freifunk, “What is Freifunk about?”, *freifunk.net*, 2016. Available at: <https://freifunk.net/en/what-is-it-about> [accessed December 1, 2016].

20 Cp. Petersen 2014, p. 43.

21 Cp. Freifunk, “Freifunk-Freedom-Fighter-Box gegen Störerhaftung und Abmahnwahn”, *Freifunkblog*, 2012. Available at: <https://blog.freifunk.net/2012/06/15/freifunkfreedomfighterbox-gegen-storerhaftung-und-abmahnwahn/> [accessed December 1, 2016].

22 Cp. Freifunk Bremen, “Freifunk Für Geflüchtete”, *Freifunk Bremen*, 2016. <https://web.archive.org/web/20160410185451/https://bremen.freifunk.net/refugees.html> [accessed December 1, 2016].

23 For example on public wiki pages by Freifunk Berlin; cp. Freifunk Berlin, “Berlin: Unterkunft verfreifunken”, *freifunk.net*, 2016. Available at: [https://wiki.freifunk.net/Berlin:Unterkunft\\_verfreifunken](https://wiki.freifunk.net/Berlin:Unterkunft_verfreifunken) [accessed December 1, 2016].

*Articulation: Communicating Freifunk's Expertise*

The first set of practices focuses on how Freifunk members communicate their vision of free internet access for refugees to the representatives of the shelters/reception centres, highlighting the need to give legitimacy to their 'hacker' practices. This can be read as a strong hint towards the relevance of "non-technological" practices as "minds must be persuaded and hearts won over, in addition to expertise and infrastructure being built"<sup>24</sup>. Technical know-how and communicative practices often go hand in hand when it comes to interactions with different publics and audiences as well as traditional centres of political power.<sup>25</sup> As our research shows, members need to demonstrate an understanding of the issues that both social service providers and refugees face in relation to internet access. At the same time, Freifunk aims to highlight the infrastructural neglect that they witness. The first step towards translating the imaginary of free wireless technologies depends on forming alliances with organisers and employees in the refugee shelters/reception centres as well as with other relevant political actors, like the senate for social affairs.

To explicate the relevance of the communication that took place between the accommodation management and Freifunk members before the intervention, it was instructive to talk to Markus. The software developer in his late twenties was among the five members actively engaged in 'Freifunk for Refugees' in Bremen. Interestingly, his central concern was not so much the technological side of Freifunk, but rather the fact that most employees at the accommodation were very busy, had most likely never heard of the project before and would be hesitant to engage with anything that carries the transgressive hacking label on it. This initial concern was confirmed during an interview with Ms. E, the manager of Accommodation A, who would later allow a Freifunk installation. At one point, both a Freifunk member and a refugee resident who had learned about the community at his transitional work place, approached Ms. E independently of each another. Yet, since she was already working overtime and the idea seemed "overly complicated"<sup>26</sup>, she postponed her decision until she was approached again by the Senate for Social Affairs and two other Freifunk members named Johann and Hauke. When they felt unsure about whom to approach at the emergency shelter regarding their planned installations, they contacted the Senate of

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24 Sheila Jasanoff, "Imagined and Invented Worlds", in Sheila Jasanoff and Sang-Hyun Kim (eds.), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago, University of Chicago Press, 2015, p. 332.

25 Cp. Sebastian Kubitschko, "Hackers' Media Practices: Demonstrating and Articulating Expertise as Interlocking Arrangements", *Convergence*, 21 (3), 2015, pp. 388–408.

26 Participant interview, March 2016.

Social Affairs who was already familiar with Freifunk and provided them with the contact details of the manager of Accommodation A.

Especially in the beginning, there was a recurring frustration at the Freifunk meetings whenever emails went unnoticed or responses from the institutions were very slow. Successful installations revealed the necessity for Freifunk members to foster relations with key actors within and outside the shelters/reception centres. In the case of Markus' first installation, for example, his partner Larissa, who happened to be a social worker at the accommodation, frequently brought up the issue of internet access during meetings with her colleagues. Likewise, she gave important insights to Markus about the internal organisation (actually a consortium of four different social service providers) and helped to arrange an official meeting with the main manager.

Last but not least, practices of articulation also include engaging with the refugees themselves as the future users of the network. Hauke, for example, first learned about the fact that there was an accommodation next to his house, as young migrants frequently met in front of his apartment to use the open Freifunk node. At the Freifunk meetings, there were also frequent attempts to gather statistics about the local shelters/reception centres and whether internet was available there in any form; which was later mapped on the Freifunk website.

Overall, an analysis of these mundane organisational practices points to the contested circumstances under which individual practices and expertise of Freifunk members first enter into a dialogue with the refugee accommodation management. On the one hand, it is a first chance to harness the critical potential of Freifunk, for example, by showing a sensitivity for the concerns of both social workers and refugees, while making a strong case that denying access is a form of actively sustained sociotechnical neglect that could be easily circumvented. Yet, this early infrastructuring work might demand relationships to other legitimate representatives such as social workers and policymakers who know, support or trust Freifunk's intervention practices.

At the beginning of the fieldwork, only a handful of people had ever heard about the Freifunk initiative itself or the hackerspace in Bremen where they met regularly. As the research progressed, social workers and other volunteers began to approach Freifunk members, joined their mailing list or their bi-weekly meetings. This development was, on the one hand, due to Freifunk's increasing activities across refugee shelters/reception centres. On the other hand, positive media representations of their interventions also raised awareness of and trust in the grassroots initiative. Similarities to other German hacker collectives like the CCC became visible, who also rely on interactions

with media outlets and institutionalised politics to explicate the legitimacy and political relevance of their engagement.<sup>27</sup>

#### *Negotiation: From Local Assessment to Infrastructural Solutions*

The second set of practices focuses on the negotiations that take place between Freifunk members and the employees of the accommodation. In this process, the main goal is to develop trustful relationships and arrive at an appropriate infrastructural solution based on local needs and constraints. This includes an assessment of the legal liability, financing the setup, locations of the routing equipment as well as the performance and sustainability of the new network connections.

As Freifunk members often met with accommodation employees in person, questions arose concerning the legal implications of the installation and its future use by the refugee residents. Echoing the experiences of other WCNs,<sup>28</sup> the interviews showed that legal liability law was a major concern and reason for social workers not to offer wireless internet access. The fear was that the network could be used for distributing or downloading illegal or intellectual property right-protected content, resulting in costly financial penalties. In one case, Hauke and Johann offered a verbal agreement that they would take care of any legal issues that would arise in the name of the initiative. Yet, the management of Accommodation B demanded written proof that Freifunk was indeed a legally sound project. In this case, Markus researched a lawyer with a special focus on internet law who penned a document that guaranteed the legality of Freifunk. While the management of Accommodation B paid for this service, the paper was circulated among all social service providers involved in the refugee accommodation and offered for future usage during Freifunk meetings.

These practices of negotiation point to the shared responsibilities between Freifunk members as well as the thorny question of financing the installations. In keeping with Freifunk's values of "cooperation, sharing, and mutuality"<sup>29</sup>, it was common sense that any costs should be paid for by the accommodation/shelter, given the work of most Freifunk members was voluntary. While the management of Accommodation B readily offered the calculated costs of 500 EUR for the equipment, the Ms. E's/Accommodation A's budget did not include any funding for

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27 Cp. Kubitschko 2015.

28 Cp. Federica Giovanella, "Alternative rules for alternative networks? Tort law meets wireless community networks", *First Monday*, 21 (12), 2016. Available at: <http://firstmonday.org/ojs/index.php/fm/article/view/7119/5660> [accessed December 6, 2016].

29 Petersen 2014, p. 48.

digital infrastructures. Consequently, Johann and Hauke relied on shared equipment from the Freifunk group and used money generated by a Freifunk charity campaign. Interestingly, Freifunk members brought up other potential solutions to facilitate internet access for refugees, including commercial alternatives. Markus, for example, presented the management with the option that they could simply pay for a monthly subscription of a Virtual Private Network (VPN) connection service. In the interview with Johann, it became clear that besides his engagement with Freifunk and a software development company, he was operating exactly such a business. Among his main customers, he argued, were hotels that wanted to offer protected hotspots to their customers. The paid service would differ from Freifunk's mesh network in relation to privacy – since it did not publicly disclose how many people are connected to the network or demand increased attention to secure connections – but would guarantee more reliable maintenance and repair work.<sup>30</sup>

In some cases, Johan actually ended up installing such a setup through his company, as the shelters/reception centres would prefer or only accept a commercial provider for the faster, more reliable and legally-protected service. Questions of whether Freifunk members should endorse such commercial services or even get paid for doing Freifunk installations, remained a controversial matter amongst active members throughout the research. This, to a certain extent, is characteristic of the often conflicting and blurring boundaries between the emancipating and empowering imaginary of free software and the more corporate versions of open source development.<sup>31</sup> While this ongoing friction can be seen as a threat to the “recursive public”<sup>32</sup> of free software/wireless development, the choices made about commercial or community-run networks are critical for the negotiation work with the shelters/reception centres. The interviews showed that the main goal for most Freifunk members was to achieve a consensus that ultimately resulted in the installation of more accessible and secure internet uplinks in the shelters/reception centres. In practice, this meant offering as many opportunities to enable internet access as possible during the negotiations, while always highlighting what would make the Freifunk

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30 The Freifunk initiative frequently highlights that open networks are naturally more prone to unwanted surveillance than closed networks which in turn demands more awareness and security measures on the users' side. Cp. Freifunk, “Sicherheit”, *freifunk.net*, 2017. Available at: <https://wiki.freifunk.net/Sicherheit> [accessed December 1, 2016].

31 Cp. Christopher Kelty, “There is no Free Software”, *Journal of Peer Production*, 3, 2013. Available at: <http://peerproduction.net/issues/issue-3-free-software-epistemics/debate/there-is-no-free-software/> [accessed December 1, 2016].

32 Cp. Kelty 2008.

installation stand out in comparison to commercial solutions. In this light, the negotiation practices establish the social, technical and political ground for emerging collaborations between volunteer-based organisations, social service providers and state institutions.

Going back to the technical infrastructure itself, a final crucial question during the negotiations concerned the actual reach of the wireless network. In Accommodation B, for example, it was decided that wireless internet should be accessible in the living rooms where stationary computers were already in place. An extra router was added to the front yard of the accommodation. With its metal structure, the signal would only sometimes reach the private rooms of the residents. In clear contrast to these technical limits, Ms. E at Accommodation A argued that the wireless connection should only be available in the main entrance of the building. Aside from being “too much work” and the financial effort needed to cover other spaces, she argued against availability in the private rooms as it might make the accommodation “too comfortable” and “may increase the likelihood that people watch or circulate content that is not wanted here”.<sup>33</sup>

This closer look at the negotiation practices shows that the installation process is where many important decisions about the formation of internet access are made. Besides the management’s concerns regarding liability, it is also a possibility for Freifunk members to show what kind of opportunities their approach can provide in contrast to commercial services. Responsibilities such as funding, legal liability, media pedagogies and technical maintenance are carefully negotiated according to the context specific demands of the shelters/reception centres. Infrastructuring, in addition to required “soft skills”<sup>34</sup> also means engaging with what is already there and, perhaps even more importantly, assessing what the management imagines to be an appropriate solution.

#### *Installation: Enrolling and Maintaining Infrastructural Arrangements*

The third and last set of practices refers to a more common sense understanding of how Freifunk installations actually take place within the shelters/reception centres. Installation practices rest on a careful dealing with the sociomaterial make up of the shelters/reception centres, aiming at aligning them with the affordances of different wireless devices and

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33 Participant interview, March 2016.

34 Cp. Joshua Barker, “Guerilla Engineers: The Internet and the Politics of Freedom in Indonesia”, in Sheila Jasanoff and Sang-Hyun Kim (eds.), *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, Chicago, University of Chicago Press, 2015, pp. 199–218.

the agreement from the preceding negotiations. Overall, it includes organising the necessary hardware, bringing together members according to individual expertise and increased interaction with the social workers and refugee residents on site.

While the negotiation practices already include an estimation of the scope and costs for suitable equipment, there are different ways of actually bringing it together. In cases where the accommodation is not able to pay, Freifunk members either relied on individuals within the community who contributed spare equipment. In another case, members like Johann already had a good stack of routers he found online and sometimes hardware companies directly offer equipment to Freifunk communities. Yet, assembling suitable hardware already goes hand in hand with gathering specific expertise for the installation. How to set up a Freifunk router to an internet uplink in a regular home is well documented across communities, websites and forums. In contrast, Markus, who was himself fairly new to the Freifunk group, requested Johann to accompany him during the installation of the routers at Accommodation B. Likewise, it was Johann who brought a box full of test equipment as well as his co-worker in order to assist Hauke at Accommodation A. What is interesting to note for both cases is the ad-hoc character of the relationships, as the members did not know each other prior to the installation. Instead, they first got in touch through Freifunk meetings or an individual request for assistance on the group's Internet Relay Chat (IRC) channel.

Besides this organisational work among Freifunk members, the installations also demanded an engagement with those who are already in a caring relationship with the existing infrastructures. At Accommodation B, Markus and Johann were joined by the local information technology (IT) support during the installation, while a janitor and local security staff attended the installation at Accommodation A. In the first case the routers were simply attached to the existing internet uplinks at the desktop computers, with the IT worker assisting the installation and later even deciding to equip other shelters/reception centres with a similar solution. The security and management of Accommodation A instead demanded the routing equipment to be placed behind closed doors, away from any possibility of manipulation. While being on site, Freifunk members used the opportunity to get in touch with refugees – some of them were following the installation and eager to see the network go online. Johann and Markus tried to strike up conversations about their Freifunk activities, motivated by the vision to find people willing to adapt some of the maintenance practices or become interested in the initiative. Although

this did not really work out, other kinds of relationships emerged around media technologies. Johann, for example, befriended and later donated a second-hand laptop to a refugee who had formerly worked in IT himself. Yet, overall, in contrast to initiatives like Refugees Emancipation who advocate for autonomous handling of media infrastructures by refugees,<sup>35</sup> no opportunities emerged for the refugees to actively engage with the newly installed equipment at the shelters/reception centres.<sup>36</sup>

As a consequence Freifunk members were often involved in subsequent maintenance work. Hauke, for example, would frequently check on the network connection to see whether there were any problems. One day he received a call from Ms. E who wanted him to relocate some of the routers, since she did not want the security team to be distracted by surfing online with the new connection. Markus also returned to Accommodation B to deal with connectivity issues reported by the staff. When talking to Freifunk members about running around to test and maintain devices in different setups one could frequently feel the passion that was driving their activities. Gabriella Coleman has fittingly referred to this kind of commitment as the “poetics of hacking”<sup>37</sup>; that is, the pleasures, aesthetics, joy, humour and cleverness that hackers seek in tinkering with technology. The hands-on installation practices that are based on enrolling and maintaining the media infrastructure to make its continued use possible<sup>38</sup> always happens in relation to the expertise of different actors, the utilised hardware and the spatio-material conditions of the accommodation. Accordingly, the installation practices also point towards infrastructuring as a heterogeneous, context-specific delegation of tasks amongst people and things<sup>39</sup> to achieve, sustain and maintain wireless internet access in the refugee shelters/reception centres.

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35 Cp. Saskia Witteborn, “Becoming (Im)perceptible: Forced migrants and virtual practice”, *Journal of Refugee Studies*, 28 (3), 2015: pp. 350–367.

36 The CCC, Freifunk Berlin and the Förderverein freie Netze support the initiative. Cp. support Refugees Emancipation, “Internet for Refugees by Refugees”, *Official Website*, n.y. Available at: <http://support.refugeesemancipation.com/en/> [accessed December 1, 2016].

37 Gabriella Coleman, *Coding Freedom: The Ethics and Aesthetics of Hacking*, Princeton, Princeton University Press, 2013, p. 95.

38 Cp. Steven J. Jackson, “Rethinking Repair”, in Tarleton Gillespie, Pablo J. Boczkowski and Kirsten A. Foot (eds.), *Media Technologies: Essays on Communication, Materiality, and Society*, Cambridge, MA, MIT Press, 2014, pp. 221–240; Sigrid Kannengießer, “Repair Cafés as Communicative Figurations: Consumer-critical Media Practices for Cultural Transformation”, in Andreas Hepp et al. (eds.), *Communicative Figurations. Rethinking Mediatized Transformations*, Basingstoke: Palgrave Macmillan, 2017 (in print).

39 Cp. Tomás Sánchez Criado and Israel Rodríguez-Giralt, “Caring through Design? En torno a la silla and the ‘Joint Problem-Making’ of Technical Aids”, in Charlotte Bates et al. (eds.) *Care and Design: Bodies, Buildings, Cities*, London, Wiley, 2017, pp. 198–218.

## CONCLUSION AND REFLECTIONS

Throughout the above sections the article has explicated a set of practices – *articulating*, *negotiating* and *installing* (and *maintaining*). The argument was that, taken together, these practices characterise Freifunk’s infrastructuring project. To go one step further one can also depict these practices as a manifestation of ‘acting on media’, which denotes actors’ efforts to take an active part in the moulding of the media technologies and infrastructures that have become part of the fabric of everyday life.<sup>40</sup> It is relevant to note here that in the above-discussed cases refugees are not involved as autonomous actors in the making of the media infrastructures they rely on.<sup>41</sup> Accordingly, acting on media in the case of ‘Freifunk for Refugees’ is manifested as a form of humanitarian media intervention driven by political concerns. This, in turn, invites a closer look at Freifunk members’ practices. To start with, Freifunk members frame access to media technologies and infrastructures as a basic digital human right for refugees. At the same time, as this study indicates, the intervention to offer free internet to refugees goes hand in hand with framing infrastructuring as a political matter. Stimulating exchange amongst different actors about the societal significance of free and open networks is a political project that situates specific sociotechnical imaginaries within the day-to-day decision-making of the involved actors.

From this perspective, ‘Freifunk for Refugees’ is best understood as a discursive and infrastructural critique. Freifunk brings refugees’ digital rights (especially in terms of access) to the agenda of relevant actors like social service providers, policymakers as well as media outlets. The members pave the way to reconfigure the standards, practices and other existing infrastructural layers to enable alternative ways that face the “processes of disassembling and disentangling humans from the sociotechnical assemblages they [refugees] live by” guided by an implicit “universal right to be sociomaterially entangled, sociotechnically equipped, heterogeneously assembled”<sup>42</sup>. In that sense, Freifunk’s humanitarian media intervention can be seen as a lived “disruption in the creation, circulation, distribution and control of knowledge and how those things are remaking the landscape of power”<sup>43</sup>.

Yet, as has been addressed earlier, the environment of refugee shelters/reception centres differs in many respects to the private homes,

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40 Cp. Sebastian Kubitschko, “Acting on Media Technologies and Infrastructures: Expanding the Media as Practice Approach”, *Media, Culture & Society*, 2017 (in print).

41 Cp. Nicos Trimikliniotis, Dimitris Parsanoglou, and Vassilis Tsianos, “Theorizing Migration, Praxis and the Crisis of Migration Crisis”, in Nicos Trimikliniotis, Dimitris Parsanoglou, and Vassilis Tsianos (eds.) *Mobile Commons, Migrant Digitalities and the Right to the City*, Basingstoke, Palgrave Macmillan, 2015, pp. 26–46.

42 Fariás 2016.

43 Keltly 2013.

cafés, festivals, companies and town halls that Freifunk usually engages with. One can therefore identify a number of challenges that Freifunk has to cope with now and in the future. Besides facing heated political decision-making, arbitrary bureaucracy and strict infrastructural standards, it might be the underlying procedures of humanitarian media intervention that poses the main challenge. In fact, for internet access to become a matter of “joint problem making”<sup>44</sup> in the shelters/reception centres, requires an increased interaction with and involvement of other legitimate or institutionalised actors. The main question that arises in this regard is whether Freifunk manages to convince others about their political engagement and to actively include them in their infrastructuring projects. In other words, Freifunk runs the risk that those most affected by their infrastructuring practices are also those least considered. After all, much of the decision-making analysed above, takes place without the direct participation of the residents of the shelters/reception centres.

What has been presented in this article relates to a context-specific case study. Practices related to humanitarian media interventions often vary across different local, regional and national scenarios. As such, it is of great importance for future research to further substantiate the ways different collectives act on media in times of forced migration as well as to investigate what media technologies and infrastructures look like in the hands of refugees.

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44 Cp. Sánchez Criado and Rodríguez-Giralt 2017.