Civic Hacking
Redefining Hackers and Civic Participation

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Abstract: Civic hacking movement, born at the times of Obama campaign, promotes trust in programming code as a new tool able to solve a large variety of public problems usually delegated to public services or dedicated private institutions. Based on a four-year STS-inspired ethnography of "civic hackathons" in France and Russia, the paper aims to draw a profile of a "civic hacker" and grasp the transformations of civic participation brought by this phenomenon. Beyond technoscepticism and solutionism, the author suggests to follow the actors in their work of "putting problems into code" and proposes a pragmatist approach to civic hacking. While recent studies have been critical of civic hacking as part of the broader neoliberal transformations of labor, the author argues that, in the context of distrust towards traditional political institutions and repertoires of contention, civic hacking can assist construction of public problems, and can also mean "hacking the civics".

Keywords: civic hacking; hackathons; civic tech; public problems; civic participation

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1. Introduction

The past decade saw a rise of a new hacker figure, the "civic hacker", the one who codes for "social good". An unprecedented wave of events around the world has been launched, promoting code as a ubiquitous means to address and potentially solve a large variety of public problems that were usually the responsibility of public services or dedicated private institutions. These events, called "civic hackathons", are short competitions that put together heterogeneous groups of actors, from developers and designers to political activists and NGO workers, who prototype technical solutions in response to different challenges of contemporary societies.

Civic hackathons do not have a lot in common with the Chaos Communication Congress, SHA or other gatherings well described by ethnographers of hacker culture. "Code 4 America", "Hack for Refugees", "Code for Humanity", "Code for Climate Change", "Hack against corruption", "Hack for Good" - these civic hackathons are often co-organized with the help of governments and private actors. They aim at building bridges between a certain form of civic participation and the art of coding.

The controversial phenomenon of civic hacking demands a (re)definition. Who are these new "hackers" and how does the figure of "civic hacker" challenge existing conceptual and methodological approaches to "hacker cultures"? On the other hand, what's the "civic"? Is there a new form of "citizenship" coined by coders? And how does it redefine social good, commons and political participation?

While technoscepticism (Morozov 2013) and the recent wave of critical hackathon studies, (Gregg, Lodato and Di Salvo 2014; Gregg 2015), suspect civic hacking to be a neoliberal appropriation of hacker cultures, other researchers (Irani 2015; Baraniuk 2013) praise civic hackathons as forging an "entrepreneurial citizenship" and helping countries in crisis: "they manufacture urgency and an optimism that bursts of doing and making can change the world. Participants in hackathons imagine themselves as agents of social progress through software…" (Irani 2015, 2). However, much less attention has been paid to the technical and infrastructural specificities of the software developed at civic hackathons, as well as to documenting the specifics of coding practices as they happen at civic hackathons.

This article, driven by a 4-year STS-inspired ethnographic study of Russian and French civic hacking groups, wants to engage in a dialogue with both "technosceptical" and "solutionist" approaches. It aims to draw a profile of the "civic hacker" and grasp the transformations of both civic participation and hacking practices brought by this phenomenon. I argue that, beyond technoscepticism and solutionism, we must follow the actors in their work of "putting problems into code". Civic hackathons help observe these encounters between activists (or "problem owners") and hackers, as they translate public problems into codeable tasks.

The article suggests, first, to analyze civic hacking by studying various organizational formats and instruments used by civic hacking communities. Analyzing the networks in which civic hackers are inscribing themselves, I suggest to focus on mediators that try to hold "civic" and "hackers" together and replicate the format of civic hackathons around the world. I argue that, even if this international circulation of a format can be interpreted as a form of "imported democracy", civic hackathons can also become an opportunity for countries in crisis where running code could replace broken public institutions. Secondly, I focus on the definitions of the "civic" as they are coined by actors and translated into technical tools – mobile and web applications. Beyond big political narratives,

hackers' "civic" manifests itself in a variety of very precise challenges and local solutions. I argue that, by looking at examples of civic tech, we can grasp some of the novel ideas brought forward by civic hacking, that strongly refer to a more general crisis of trust in political representation and traditional political institutions.

My research shows that, in the context of hybrid regimes, such as the Russian case, with its particularly vibrant IT-community and, at the same time, its centralized style of Internet governance, civic hacking is used as an emergency response to the crisis of democratic institutions. In France as well, when state institutions do not provide a viable solution to a problem, grassroots collectives turn to technology in order to equip their work and find a "workaround". Civic hacking methods are used when public institutions are not capable to properly respond to existing challenges, or when these public institutions are, themselves, the challenge that needs to be addressed. In this sense, civic hacking can also mean "hacking the civics" (Gregg, Lodato and Di Salvo 2014).

2. Grasping Civic Hacking: a Literature Review

The expression "civic hacking" goes back to Barack Obama's presidential campaign. Early enough, the format of civic hackathons has been vividly discussed by the actors themselves through a number of guides, textbooks and "howtos" circulating on the web and in printed form, such as "Civic apps competition hands book" (Eyler-Werve and Carlson 2012). The notion of civic hacking has been progressively institutionalized, with the official National Day of Civic Hacking held by Code for America and a network of governmental partners in 2013. This event, firstly US-only, went world-wide on its second edition in 2014. Code for America played an important role in framing civic hacking from its early days. Under the influence of this organization fostering civic hacking in the US "from the top", the early press interest to civic hacking focuses first of all on the state-driven civic hacking efforts around elections, reforms, public services efficiency, public budget and so on (Sterling 2013; Williams 2013; Lachance Shandrow 2013). In this sense, civic hacking was first seen as a movement of technologists who help improve the government.

However, early academic research on civic hacking demarcates itself from the body of work on "government 2.0" and "e-government" as it considers that "technology is integral to government, while [...] solutions to public sector challenges are not technological alone" (Hebert 2013). While first research on civic hacking was centered on the usage of open data provided by the government ("data-oriented hackathons"), the second wave of civic hacking studies is dedicated to what we can call "issue-oriented hackathons", where groups of "problem owners" can bring their challenges to the tech community and work together on prototyping

solutions (Lodato and Di Salvo 2015; Ermoshina 2016). Several ethnographic studies of civic hacking were conducted with a focus on India (Irani 2015), US (Lodato and Di Salvo 2015 and 2016), France and Russia (Ermoshina 2016). This research questions the belief in political and social potential of programming code. It pays more attention to the work of "problem owners", or publics, and the process of "translation" of issues (or challenges) into codeable tasks.

The organizers of the first civic hacking event define "civic hackers" as "technicians, engineers, designers, entrepreneurs, citizens, civil servants… everyone who wishes to collaborate with others in order to create, build, innovate and address challenges that concern our neighborhoods, cities, states and countries. For us a hacker is someone who uses the minimum of their resources and maximum of their brainpower and ingenuity, in order to create, repair or improve something" (Code for America 2013).

These actors' definition of civic hacking can find its academic echo in the branch of STS research interested in user-driven innovation and practices of "bricolage" (or tinkering). Within this interpretation, "hacking" is understood as an epistemological position, a method to solve problems using instruments that are "at hand", as George Dafermos and Johan Soderberg frame it: "In our use of the term hacking, we mean the act of taking a preexisting system and bending it to serve a different end from that for which it was originally intended » (Dafermos and Soderberg 2009, 55). In this sense hackers can be also perceived as "users" / "re-users" of certain instruments, standards, programs, who take part in innovation by *detournement* and *bricolage* (Akrich 1998).

This understanding of hackers also implies questioning institutional borders and the notion of expertise, as "bricolage" describes a specific way of sociotechnical and creative work that can be accessible not only to tech experts but embraces amateur and non-technical actors. Civic hacking thus can be interpreted as part of a broader process of "democratization of technology". Indeed, one of the important characteristics of civic hackathons, as compared to technical hackathons, is the heterogeneous expertise of the participants involved. The hackathons I have observed included representatives of groups of neighbors, nursing mothers, patients with rare diseases or handicaps, environmental or feminist activists, teachers' trade unions, NGO activists and so on. These populations were referred to by the organizers as "problem owners", as they were the ones proposing a social or political issue to be translated into codable set of tasks, for which a software could be then produced. Problem owners are defined as "political entrepreneurs who play central role in construction of public problems, inscribing them in the agenda and fostering social mobilization […] sometimes at the cost of operations of "translation" and "transcoding" within hybrid forums" (Boussaguet et al. 2014). In this sense, Harry Collins' and Robert Evans' research on "experience-based expertise", as well as Peter Galison's concept of "trading zones" (Galison 1997), are interesting to grasp the processes of translation happening at

civic hackathons, where heterogeneous communities meet.

Civic hackathons bring together "non-technical" and "technical" communities to propose solutions for a range of problems of public concern, and in this sense they can be analyzed alongside other forms of participatory and technical democracy, such as "hybrid forum" or "citizen conference" studied by Michel Callon et al. (2001) and Loïc Blondiaux (2008). However, while the literature studying various formats of events that foster participatory democracy can indeed help us to conceptualize organizational formats of hackathons, the enrolment of participants and the specifics of "translation" occurring at these events, it is important to understand the specifics of civic hackathons that are not part of a defined democratic process of decision-making or political representation, unlike citizen conferences.

While some civic hackathons are co-organized with the help of state actors or public institutions, the relations of hackathons with institutionalized politics are yet to be studied. There have been a vivid debate in the literature as for the democratic or political potential of civic hacking. The very idea to use programming code for social good was criticized by Auray and Ouardi (2014) as having a double narrative. One one hand, it can be interpreted as part of a liberal program - "provide a better service to the user" - but it can also be part of an emancipatory narrative as a means to help emerging or marginalized communities.

As Nicolas Auray describes it, the world of FLOSS is marked by a "brutal and massive rejection of the marketization of social relations, as the movement against proprietary software shows it. For these hackers the organizational principle in life is not money, nor work, but passion and desire to create together something socially meaningful" (Auray 2002). However, the values of "sharing", "open innovation", "collaboration" and "solidarity" are also vindicated by the newborn sharing economy culture, where civic hackathons are institutionally inscribed.

The recent wave of critical research on civic hackathons argues that they must be analyzed as a form of speculative labor, as a form of unpaid work, and thus, as part of the neoliberal restructuring of the high-tech market. Gregg argues that hackathons "reflect the difficulties, opportunities and compromises young workers face in the wake of the Global Financial Crisis. They are a symptom of a broader transformation affecting career preparation and training as stable paths for recruitment give way to the velocity of dynamic networks" (Gregg 2015). The study conducted by Cardullo et al. (2018) on Irish civic hacking events also describes civic hacking within the "living labs" as a form of "civic paternalism" disconnected from communities: "While presented as horizontal, open, and participative, LL [*living labs*] and civic hacking are rooted often in pragmatic and paternalistic discourses and practices related to the production of a creative economy and a technocratic version of SC [*smart cities*]".

This controversial character of civic hacking can relate to the critique of the formats for participatory democracy in general, as described by Lo-

ïc Blondiaux (2008). In his foundational work on the models of participatory democracy, he argues that these formats can lead to a "descendant", or "managerial" model where citizens become "users of public services", and participation becomes "an instrument of depoliticization in service of a neoliberal project" (Blondiaux 2008, 19), or, on the contrary, of an "ascendant" autonomous model that aims at a process of empowerment. While the autonomous model aspires to technically equip the process of civic empowerment and use technology to "hack the civics", the "managerial" model can use code to optimize and improve existing bureaucratic and administrative processes without questioning the status quo. By solving hyperlocal and material problems, it redefines citizens as "users of public services" (or "citizens without qualities"), and civic participation risks to be depoliticized.

The relations between civic hacking and political participation are peculiar. Civic hackathons are often framed as "not political" but rather suggesting "concrete solutions". The events I've observed were framed as focused on "improving the everyday life of citizens" or "solving concrete problems", often on a hyperlocal scale. My interviews have shown that civic hackers were seeing problems that they were treating as "very practical" and "small-scale" as opposed to "political" or "radical". The belief in the capacity of code to be a ubiquitous problem-solving tool producing tangible results is coupled here with a certain mistrust in public institutions. In this sense, the study of civic hackathons can shed light on "depoliticization" processes and on the relations between the tech community and traditional political representation and participation.

The tendency towards "avoiding politics" was analyzed by sociologist Nina Eliasoph in her book on the apathy in the American public sphere. Some of the insights of this work may be relevant to understanding the peculiar relation between hackathons and political participation. Observing volunteer social workers, Eliasoph found that they managed to avoid political problems and concomitant long debates by focusing on limited and concrete tasks, at the same time thinking that they can "really change the things" and that everyone can make a difference (Eliasoph 1998, 37). While sharing a common idea of civic participation, they had to paradoxically cut short all political discussions in order to keep "faith and hope" (Eliasoph 1998, 38).

Confronted to questions such as gender inequality, poverty, education, ethnic discrimination, these groups tended to define their action as being non-political. Their meetings were focused on pragmatic activities, technical and organizational questions. In the interviews, as Eliasoph describes it, these respondents stated they were solving issues that were close to them, that concerned their children and relatives, and that is "practically possible and not political". These activists shared a common "apolitical" culture: they focused on a limited, almost private, sphere in order to feel themselves capable to "influence the state of the things". They wanted to feel their influence on the society and their activism of

"small deeds" made it possible for them to reconstruct a "democracy" in the spheres of life where citizens were usually alienated of political decisions.

Another research group working on this "distrust" towards politics studied 7 groups of American volunteers (Bennett et al. 2013), and argues that local activism in US has been inspired precisely by this feeling of "disavowing politics". Researchers found that volunteers refused to describe their activities as being "political" while being engaged in struggles against environmental pollution, against corruption in municipal administrations, protection of architectural heritage and so on. The disavowing of politics is related to the connotation of politics in American society as being associated with "dirty" and "corrupted" activities. Politics is thus stigmatized while local activism, centered on precise issues to be solved, becomes a new ideal of collective action capable to produce a public sphere free from "dirty" politicians (Aronowitz 2006). This opposition between local activism and institutionalized politics is, according to Bennett and colleagues, a strategy that aims at legitimizing political activism as such: "a civic action can become a "good", when it's opposed to a political action perceived as "bad" (Bennett et al. 2013).

I argue that, in case of civic hacking, the activism of "small deeds" finds another meaning, as hackathon also implies "small codes". The format of civic hackathons, with its urgency (48 hours!) and competitive elements, imposes a very particular way of coding: sometimes no or very little code is produced from scratch. Instead, it is about reusing and tinkering with other people's code, APIs, existing tools and software development kits. This actually results in producing small pieces of software that address precise challenges and promise rapid or "immediate" result. However, these very precise challenges, sometimes as local as a pothole on the road, can have political or critical framing when they are brought up by "problem owners" coming from a grassroots organization, such as trade-union, an NGO or a local activist group.

In this sense, I argue that the sociology of public problems and the pragmatist approach (Cefai and Terzi 2012; Cefai 2013; Emerson and Messinger 1977) can be relevant to analyze community-based hacking as opposed to, or complimentary to, the state-driven hacking events. When civic hacking engages the public united around a precise experience of a "trouble" (Emerson and Messinger 1977), hackathons can be observed as a collaborative process of "translating a number of notions and principles into matter" (Simondon 2016). In this sense, the tools built at the hackathons can also be interpreted in a pragmatist sense "not merely as means to reach a goal with given resources, but a creative form of mediation between problematic situations and solutions, where the two sides are transformed" (Dorstewitz and Kremer 2016, 6). Indeed, I argue that hackathons transform both the definition of a particular problem and the coding practices.

In the case of community-driven hackathons with pre-constituted publics that are able to "bring" the resulted tools back to the community and actually inscribe the tools in an existing agenda, these pieces of software can actually be used within a bigger political perspective. This was the case, for instance, for the civic app "Opensalary"[1]: the challenge brought by a teachers' trade union – corruption in schools in Russia and unequal salary rates across the country – was actually turned into a working webapp and used after the hackathon by the teachers movement as part of a broader repertoire of action. On the contrary, when the issues are imposed by organizers and inscribed within a broader "civic paternalist" discourse (Cardullo et al. 2017), civic hacking efforts would rather be focused on optimizing existing systems, especially if organizers include representatives of authorities or public services. The software produced at these state-driven hackathons is less likely to survive after the event, as no existing user publics are ready to implement that.

Different hackathon formats have been developed since the rise of civic hacking. The galaxy of institutionalized mediators has appeared that inscribes civic hacking in an interesting transnational network, that lies in the intersection of start-up, grassroots hacking groups, activists, entrepreneurs. In what follows I will first sketch out the geopolitics of civic hacking and its circulation around the world, and also explain the role of mediators in standardizing this format and coining a particular vision of what is considered as "civic". I will then try to define the "civic" as it manifests itself in civic hacking, and the critics of representative democracy brought up by the civic hackers.

3. Civic Hacking: Transnational Movement or "Imported Democracy"?

The analysis of a "movement" was never a starting point for my research. Instead, my curiosity for civic hacking was driven by very concrete and material products of their activity, precisely, pieces of software named "civic apps". Civic apps are applications for web and mobile that tend to respond to, and sometimes solve, a wide scale of political, social, civic challenges – from corruption, police violence and electoral fraud, to optimization of urban infrastructures and improvement of life quality in big cities.

However, during years of fieldwork I analyzed 11 hackathons in Russia and France and unveiled the motivations of organizers of civic hackathons and developers to inscribe their events and activities in an international, almost global, framework. Analyzing funding and organizational resources behind these events, one can identify an international network of institutions and communities, that participates in a transnational circulation of the format of hackathon. The hackathon itself, just like "hybrid

forums", "citizen conferences", or other forms of participatory democracy, can be deployed anywhere, as a festival camp or a fair, reaching a balance, in a peculiar fashion, between hyperlocal problems and globalized grammars of programming languages and related tools.

Observations of different events related to civic hacking – hackathons, barcamps, conferences on social innovation - have shown a common referential or even a mythology behind the movement. Thus, French and Russians refer to this movement as being born in the United States. Just like in the field of participatory democracy where France was inspired by Danish experiments, French actors of the social innovation scene refer to international techniques. The event such as "Code 4 Paris", for example, was directly inspired by "Code 4 America"[2], as organizers say. According to them, France is "far behind" the US in terms of digital economy and collaboration between coders and the government:

> In the United States it is easier to articulate connections between governments, citizens and innovation while in France we are still in search for a way to make possible fructuous collaborations between coders and civil society, to give coders a voice. I think we need to take formats that already function, and inspire from Code4America. The beauty of the digital and opensource is precisely its ability to be reproduced and bootstrapped. (Field recording, workshop *Au code, citoyens*, 13.06.2013, Le 104, Paris)

Just like in free software where the code is openly available on the repositories, so the recipes for organizing these events are available online. They have been progressively standardized and circulated in form of guides and handbooks like the *Civic apps competition handbook* (Eyler-Werve and Carlsson 2012) and the Open Government Guide.[3]

Russian organizers of civic hackathons also refer to the American experience. Alexey Sidorenko, CEO of the most important Russian NGO specialized in social innovations, "Greenhouse for Social Technologies"[4], notes it:

> We have initially based ourselves on an existent experience. Hackathons have begun in early 2000s, isn't it? And I think when the Greenhouse was created, in 2012, there have already been years of international experience in the area. (Interview with Alexey Sidorenko, CEO, Greenhouse for Social Technologies)

The first civic hackathon in Russia was a bi-national one, co-organized by the State Department of United States of America and Russian tech giant Yandex in 2012, under the name "Code for Country". As one of the organizers, Emily Parker, says in the interview, this hackathon was "part of the digital diplomacy initiative". In this sense, civic hackathons can be seen as yet another tool for the "export of democracy", and thus, an interesting tool of technical and social governance. However, civic hackathons can also become places where coders and activists question the status quo, discuss on most urgent social and political challenges, and proto-

type not only apps but also "possible worlds", by sketching out possible ways to translate public problems into code, find novel approaches to address issues that are not solved by existing political actors. The outputs of these events depend on their organizers, but also on participants, context and country where they take place. In Russia for instance, with public institutions in crisis, civic hackathons can forge real solutions for local challenges and even become "public spaces" that foster empowerment and build connections between technical actors and civil society.

Civic hacking is therefore happening somewhere between the realm of start-up, and the Free Libre Open Source Software movement, between modern coworking spaces equipped with "hype" high-tech objects, and underground hackerspaces where meetings of coders and activists take place off the record. This ambiguity was already well captured by Nicolas Auray and Samira Ouardi (2014) who underline the "double effect" of this new belief in "revolutionary potential of the code". On the one hand, the apology of code as instrument of social change has given birth to the start-up culture that promotes social innovation while searching for ways to monetize the "social good". On the other hand, a galaxy of libertarian, anarchist, grassroots projects pops up and seeks to mobilize digital technologies as tools for social critique.

The operation of translation of public problems into code, in the case of civic hackathons, demands mediation, an "entrepreneurial" activity. A galaxy of mediators, not strictly coders neither activists, try to regulate the vibrant civic hackers communities in-the-making and foster collaboration between the technical world and the world of social work or civic participation. They are developing a form of expertise that I would call, using Harry Collins' notion, "interactional expertise", the main function of which is to facilitate "translation" between two languages (Collins and Evans 2002). These organizations help organize events such as hackathons or barcamps, workshops and seminars, but also engage in longer-term projects. In my fieldwork I have come across two organizations of that kind, that can serve as case-studies or illustrations of the governance of civic hacking ecosystems.

The Greenhouse of Social Technologies (*Teplitsa Socialnih Tehnologiy*) is a non-governmental organization that was financed, until 31 May 2013 by the US AID program. However, after the adoption of "Law on foreign agents"[5], Teplitsa's source of funding has changed to "private western institutions". Teplitsa organizes both online and offline events – webinars, online courses, tutorials, hackathons, meetups) with a mission to "create innovative applications and solutions for civic participation, improve technical competences of NGO workers, improve quality and efficiency of services, facilitate creation of community of tech specialists sensitive to civic problems".

Teplitsa proposes to help developing new tools where no technical solution exists. One of the formats that serve this purpose is the civic hackathon. Daria, ex-manager at Teplitsa, describes the idea of hackathons in this way:

Sometimes NGOs or activists have fresh and exciting projects but no existing technical means. For that we organize hackathons, or "test camps", it is sort of a laboratory I would say where people meet and develop ideas together, it means that in two days we have prototypes of the apps, and after it Teplitsa finances selected projects to have a finalized working product. (Interview, Daria)

Teplitsa not only finances and frames hackathons but also helps find interested developers. However, organizers speak of a certain "reluctance" of the coding community, of the lack of engagement of developers in civic projects, and of a "mutual misunderstanding". Alexey Sidorenko, CEO, describes problematic relationship between the two communities as a problem of language that needs framing and translation:

We do a lot of work in this direction because these two groups are so far one from another that, in order for them to understand each other, there needs to be a long-term engagement because they speak different languages. It is a complex question, as it's about different languages and visions of the world. (Interview, Sidorenko)

Teplitsa, in this sense, can be perceived as a social entrepreneur, defined by Madeleine Akrich, Bruno Latour and Michel Callon as a "mediator, a translator in its pure sense, the one who puts two worlds in relation, worlds with different logics and horizons, two separate worlds who could not live without one another". (Akrich, Callon and Latour 2002). This "bridge-building" between developers and activists is happening with the help of several instruments, including the website of Teplitsa[6]. Their website is also a tool for enrolment, as it publishes calls for participation for different events organized by Teplitsa. On the other side, their website acts as a media that publishes articles on various civic apps cases around the world. With the help of this website and offline events, Teplitsa aims at "creating a community of civic coders":

People who build things in their free time and are not afraid to do that… these people, we need to look for them. And as soon as we find them, we try to contact them, to invite them at our hackathons or ask them to consult NGOs […] Because there's a problem – a lot of hackers are introverts, they can not come by themselves at an event… That's why it is important for us to reach out to them and show them – guys, you're great, we should do things together. (Interview, Sidorenko)

Teplitsa is involved with the international civic hacking organization Random Hack of Kindness[7], that operates in more than 30 countries and counts 5500 developers and 300 partners, from small start-ups to Net giants such as Google, Microsoft or Yahoo. They've organized 7 international hackathons under the "Hack for Humanity" label and supported hackathons organized by Transparency International and World Bank,

concerning a wide spectrum of social challenges, from water crisis in Africa to equal access to politics for women in Asia. With the help of RhoK and Transparency International, Teplitsa co-organized an international hackathon "Hack Against Corruption", that took place in 2012 in 6 countries around the world including Russia.

The "scene" of civic hackers, therefore, does not function by itself. Mediators, facilitators, are engaged in the process of "interessement" (Callon 1986) to create more stabilized networks and a more stabilized definition of a civic hacker. They also introduce new parameters of evaluation of coders by including the "social importance" of a software as a factor that determines success or failure of a project. These actors have enough resources and influence to coin and maintain a certain vision of "civic" that impacts both civic hackers and activists.

4. The Superheroes of Code: Hackers and Civic Duty

In 2013, Teplitsa launched a project aimed at facilitating the "encounter" between developers and activists under the code name "IT-volunteer"[8]. IT volunteer is a quasi-institutionalized response to the growing demand for technical help from Russian NGOs in crisis. In the context of openly authoritarian tendencies within Russian inner politics after 2012, existing institutions could not provide necessary support for non-governmental organizations seeking for assistance with websites, mobile applications, hosting and other technical tasks. IT-volunteer has become a platform that matches the needs of NGOs with the skills of developers:

> It is a marketplace of social ideas… Say, a person asks help to build a website for an NGO that cares for deaf children, they can open up a ticket on this plaftorm and describe their project. The goal is to help them find a developer who can realize this project, and then they work directly with each other. (Interview with A., developer of IT-volunteer, CEO Progress engine)

This form of civic hacking should be understood not as a promise of "disintermediation", but as an attempt of re-intermediation, where "failing" public institutions are partly or fully replaced by digital platforms that help to match or "translate" needs of the civil society in a set of microtasks. This echoes with the technical optimism behind early blockchain-based social projects that share the idea of "crisis of traditional institutions" and propose to redistribute responsibilities and resources by the means of code.

In order to engage coders in this form of collaboration, Teplitsa introduces elements of gamification such as rating of IT-volunteers, with the most active members being "starred" in a dedicated article praising their work and contributions. Teplitsa promotes a specific vision of a civic hacker as a "superhero". The following images were produced by Teplitsa for promotion of IT-volunteers:

Fig. 1 – "Discover which great deed can you commit today?" Source: https://te-st.ru/2015/04/24/it-volunteer-results-of-week-24/

Fig. 2 – "Superhero, we need a superhero!" Source: https://te-st.ru/2014/12/12/it-volunteer-results-of-week-9/

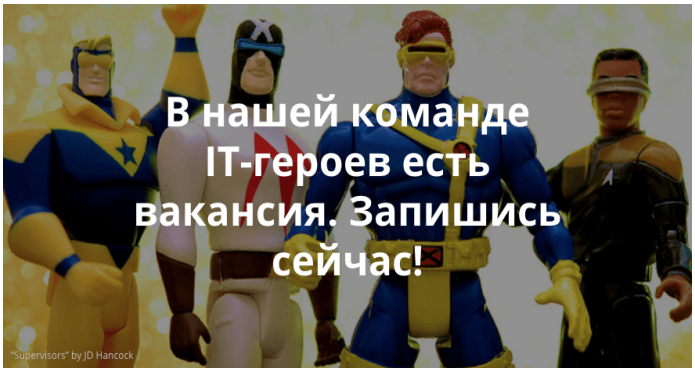

Fig. 3 – "Our team of IT-heroes has a task to do: volunteer right now!" Source: https://te-st.ru/2015/03/06/it-volunteer-results-of-week-18/

The reference to the "geek culture" helps build the image of a coder as an "ordinary hero". Usually invisible behind their computers, coders get a chance to "do social good" and become known for their social contributions. Civic hacking therefore introduces new parameters for the evaluation of coding work that go beyond peer recognition (usual in technical communities) and strictly technical "beauty" or efficiency of code. Coding obtains a "social" meaning, or "usefulness".

A similar operation of "enrolment" has been deployed by a French organization, MakeSense, created to promote "encounters and collaboration between social entrepreneurs and developers, designers, all these people who have superpowers necessary to build great projects", as Christian, the founder of MakeSense, explains it. According to him the technical "superpowers" of developers, applied to a social or political cause, can help "make sense" and create value, both social and economic. These "superpowerful" tech workers are called "gangsters" - this terms helps build and maintain an international community, different from both traditional social entrepreneurship and the tech world:

> We want to engage with people who are proactive, who do not ask permission to do something and that's why we need to create a universe different from a traditional social entrepreneur world. That's why we call them gangsters, gangsters of social innovation. It is also a provocation: in the social innovation world everything is nice and beautiful, but social innovation gangsters are intriguing. (Interview, Christian)

Just like the word "hackers", the word "gangsters" is inserted in a new context and associated with "social good". The enrolment of new "gangsters" happens at a particular event called "hold-up". These events are brainstorms, proto-hackathons, where ideas are suggested but nothing is really coded. "We have mobilized 10 000 people in 44 cities around the world around 200 projects in 2013, just with this community of gangsters, and this feeling of "belonging" (*appartenance*) that they have for the community" [Christian]. MakeSense co-organized and participated in a number of civic hackathons such as Hack The Future Now, Code4Paris, Hackathon Futures en Seine and others.

For the organizers of Hack4Good, one of the civic hackathons that I observed, it is important to change the connotations of the word "hacker", and "redirect" public opinion towards another definition of it:

> Another reason why we wanted to call it Hack4Good is because so many people see the concept of a hacker as such a negative thing, there are so many groups causing harm using their skills. But it does not mean that anyone who does it causes harm. So I think that we want to redefine the vision of hacker. And for me to hack things means to rapidly put something together any way you can. Hack 4Good and the idea of a hacker for us is that they try to solve a problem any way they can do it... hacking is more about utilizing whatever resources you have to make things work and solve the problems. And in our case the problems are so-

cial problems. (Interview with Reuben Katz, CEO of GeekList[9], organizer of Hack4Good hackathon)

Hack4Good and GeekList launched, in 2013, a project that aims at institutionalizing and maintaining the ephemeral community of civic hackers involved in building social technologies. The project called "GeekList Corps of Developers" is a database of coders who can be mobilized in case of a humanitarian or political emergency where their skills could be needed. The word "corps" refers to "army corps", "marine corps" or administrative "corps" of highly ranked civil servants, with an idea being a member of an elitist community of peers. This membership implies not only privilege, but also a duty.

While the National Day of Civic Hacking takes its inspiration from American patriotism, international networks, such as Geeklist Corps of Developers, are mobilizing the "citizen of the world" cosmopolitan and global vision. In his introductory speech at the Hack4Good opening ceremony, Reuben Katz, the CEO of GeekList, presented the Geeklist Corps of Developers as an important tool to maintain the global civic hacking community:

The goal of GeekList is to develop a social network to keep together social-minded developers. We are a distributed team and we've formed the Geeklist Corps of Developers, to promote technology-focused civic action organization. You are not hacking for a prize or presenting your start-up, you wanna spend this time of your week-end doing something good for the world and that's awesome. So, we know that when you do that you become part of the Corps of Developers... a group of people that we can call at any time when there's an emergency, a humanitarian need, other events that occur around the world that need some sort of a relief, we can count on you to help […] If there's another catastrophe like in Japan... you need help and people to get around very quickly, from all over the world. (Field recording, Hack4Good, October 4, 2013)

Apart from the announced humanitarian and social mission, Hack4Good hackathons become an efficient and quite innovative instrument to promote GeekList and its services, as all the Hack4Good events rely on GeekList infrastructure (code repository and event management platform that coders have to use in order to participate). By its organizational design, Hack4Good means hundreds of new users for the GeekList platform.

The link between "civic hackers" and "civic duty" or "civil service" was drafted already at the first "National Day of Civic Hackers": "The 'Rosie the Riveter' image advertising the National Day of Civic Hacking in 2013 is a clear instance of recruitment strategies drawing on ideals of civic service, patriotism and duty. The title's red, white and blue etching positions hackers as inheritors of a tradition of patriotic service required in times of war" (Gregg 2015).

5. Civic Beyond Political: a Specific Vision of "Social Good"

At civic hackathons, civics are too-often seen as untapped markets for opportunistic entrepreneurs. These projects sate the neoliberal status quo, and push evermore toward private, profit-driven public life.
(http://thomaslodato.info/writing/three-positions-on-civic-hacking/)

What is the sense of "civic" in "civic hacking"? What do the actors themselves understand by "civic duty", "social good" or "common good" in the name of which they code? Is there a definition of this "good" common for all civic hackers? Based on my ethnographic observations of hackathons, and on interviews with organizers and participants, I will try to sketch the main lines that define the contours of this "good":

All the interviews show that civic hackers tend to separate themselves from a traditional "repertoire of contention" (McAdam et al. 2001) such as street actions strikes or demonstrations. They criticize the very idea of a rally as being inefficient compared to what they call "concrete solutions". It's an extension of a popular critique that opposes politicians as "people of speech" and declarations, to the "people of action" that are focused on meticulous work. Political representation and associated forms of action, such as demonstrations, strikes, elections, are questioned, and substituted by an idea of "direct participation", production of meaning and objects that could help create a better world, or improve life conditions of people in the nearest future. Many interviewed developers oppose the apps that they build to the traditional repertoire of contention.

This opposition phrased by actors themselves is important because it gives us crucial elements of a possible definition of this "citizenship" forged by coding. Applications, and even prototypes, are valued as something "concrete" capable of producing "tangible" or "visible" results. A. P., developer of several civic applications, explains:

I do not believe in demonstrations and rallies that much. I go there rarely, however I try to support the movement by doing concrete actions. For example when we started having first massive rallies [winter 2011 – K. E.], we made this project, "HelpWall"… I made a webpage with a widget, a hotline number and a hashtag on twitter. So when you send an SMS to this number or you post on Twitter saying "Help me, I am arrested" and you use this hashtag… we can monitor everything, and we had 80 people with us – lawyers, people with cars, doctors, nurses and so on... (Interview A. P.)

In the case of Russia, civic hacking projects heavily rely on law that becomes somewhat a continuation of programming code. Russian civic hacking scene has produced several popular apps that use legal documents as part of the apps initial design. They are developed based on Administrative, Technical and Penal code, and all exploit a vulnerability of Russian administration itself, namely, its extreme hierarchical, vertical structure and the coercive functions of specific institutions. Among these

civic applications that count hundreds of thousands of users: RosYama[10], the app that helps document and map potholes on the roads and send complaints to the main Road Inspection of the region; RosZKH[11], the app that helps generate complaints on a wide range of problems related to the utilities, the house and the closest neighborhood; WebNabludatel, the app that helps document cases of electoral falsifications and facilitates the work of electoral observers; Zalivaet,[12] the app that helps victims of inundations caused by leaking roofs to write a complaint to the City Hall; Krasiviy Peterburg,[13] the app that helps document cases of urban infrastructure degradation and file complaints to the City Hall.

In Russian context the civic hacking movement is not a "revolution": civic apps are acting within the legal field and do not aim at challenging l'*état de droit*. On the contrary, civic apps are technical means to optimize and facilitate the application of the rule of law for everyone in the context where, because of corruption and deep structural crisis, the legitimacy of existing public institutions is undermined. In a technical metaphor, the "engineering mindset" (*inzhenerniy um*) becomes the last hope to "fix" the broken mechanism of legitimacy, by introducing technical – and thus, "objective" - elements in a corrupted administrative machine:

> First of all, we can not call it a "revolution". I would rather call it an attempt to bring all forces in balance. Programmers try to fix the whole system, to repair it, to restore or even to clean, because now administrative resources… actually, all resources… are not distributed in a legitimate way. (A. P., CEO Progress Engine, developer of the civic app "WebNabludatel" for observation of elections)

Restraining from radical or revolutionary vision of "civic participation", civic hackers focus on building solutions for very precise, and sometimes tiny, problems related to ordinary life, such as potholes or leaking roofs. In the context of distrust, civic engagement is shifted (or refocused) towards "little things", material objects from the immediate urban or natural environment. The "crack", the failure, the breakdown of urban infrastructure, even as tiny as a pothole, can solicit citizens' attention (Bidet et al. 2015) and create a "public" (Dewey 1927) – even if somewhat ephemeral or elusive – better than any ideology or a political party.

The Russian case is particularly valid here, as recent studies show that civic participation in Russia is shifting towards local and urban groups organized around challenges of particular neighborhoods, districts, towns, and are related to urban planning (Alyukov et al. 2014; Zhuravlev et al. 2014). Thus, in the context of authoritarian or hybrid regimes where civil society and public institutions fail to respond to basic civic needs, civic hacking is not merely a neoliberal trend, but has a potential to become a tool of social critique or counter-democracy (Rosanvallon 2006).

The "social good" that hackers work for is rather vague: while it is certainly not situated in the scope of contentious activism, it is neither a mere improvement of the quality of everyday life.

Good means social good... but I think people understand what means "4 good"… It means helping humanity in the ways to make people's and animals' lives better. Solving first world problems for first world people is less interesting for me... I think the correct problems to be solved are those that really make a change for people's lives. Not necessarily how do I get to the bus faster or is it going to rain today? People can argue, no if I know if it is going to rain than I will not get wet and it will make my life better because I will not get wet ; but... ah... that's not really the idea. It's not making lives of people that have what they need more confortable, it's about making lives of people that don't have what they need, better. And animals that don't have resources, people who might be defenseless, situations with famine, food, refugees, disabilities... (Reuben Katz, CEO GeekList, organizer of Hack4Good)

The "good" seems to be clear, even if in a tacit way, for hackathon organizers ("people understand what means 'for good'") and they put it aside from radical politics on the one hand and from "first world problems" on the other. Target groups as defined by Reuben are "humans in need" who can not respond to their problems by themselves, or animals and nature, also incapable, according to him, to solve their problems. Civic hackers intervene to invent solutions where no institutional actors are efficient, or to improve the work of existing institutions (as in case of apps that should assist the work of emergency brigades during natural disasters).

In the manifesto of the IT volunteer project we find another definition of "social good" that is constructed somewhere in the junction between code and social work: "We believe that citizens have a big potential to create the collective good (*kollektivnoye blago*). We know that, equipped with proper tools, citizens can realize their potential and benefit from it mutually". This definition of "collective good" places the "proper tools" at the center: it is based on a technocentric idea that it is possible to "translate" human will to "do good" into an adequate technological solution. The "good" of civic hackers is a "good" that is properly equipped.

It seems that, one of the conditions of success of the civic hacking movement is to have no common definition for what the "good" is, but rather illustrate it by defining precise challenges. The idea of the collective good becomes much more concrete if we look at the list of the 41 topics that are accepted by the project "IT-benevole"[14]. The projects that can be supported by the platform must focus on one or more following topics:

- help to the citizens without social care or people in difficult situation;
- improvement of life quality of people with disabilities, or suffering from rare, severe or incurable diseases, or elderly people;
- improvement of the urban space, protection of nature and animals;
- adoption, education and socialization of orphans;
- promotion and development of charity and volunteer social work;

The social good as framed by IT-volunteer is a "good" that can be re-

duced to specific issues. Analyzing projects proposed by IT-volunteer one can see very precise tasks that already contain a certain technical task in order to be "translatable" in code: "develop a chat and a mobile app for psychological consultation for teenagers and children", "help to implement a Wordpress plug-in for an NGO specialized in child adoption in Moscow", "help automatize geolocation for an ecological project to promote recycling in Novosibirsk", and so on.

Even working on challenges related to global political problems (inequality, corruption, unemployment, crisis of representative democracy, natural disasters, ecological controversies…), civic hackers tend to take their distance from the institutionalized politics (Lodato and Di Salvo 2016). The manifesto of "IT-volunteer" clearly states that no project proposed by a political organization or a political party is accepted.[15]

Civic hackers, while they tend to distinguish their activities from politics, are not hostile but rather complementary to the work of NGOs or public institutions. They insist they do not want to assimilate their activities with political sphere but they are however collaborating with actors embedded in institutionalized politics, by developing civic applications. Moreover, as we see it on Russian example, they are relying a lot on the inner functioning of pre-existent administrative institutions and are actually reusing their weak points or flaws, as they would exploit a vulnerability in a computer network.

Civic applications are located in this grey area beyond traditional political activism, and related to this "ordinary citizenship", to the life of a community, but cannot be simply resumed to an activity of "making everyday activities simpler". As Emily Shaw (2014) says, the "social good" that is produced by the civic tech does not respond to "civic wants" but rather to "civic needs".

6. Conclusions

Civic hacking has nothing of a "natural" phenomenon: the meeting between the world of NGOs and the world of coders demands number of adjustments and compromises, difficult and not always efficient, that are realized by mediators, facilitator, entrepreneurs who create spaces and tools to facilitate collaboration between these two universes. Online and offline instruments, such as the web platform for Geeklist Corps of Developers, or meet-ups, hackathons, hold-ups, are used to try to create long-term connections between developers and activists. These mediators define and maintain criteria for evaluation of civic hackers' work, that go beyond merely technical efficiency but include a new dimension – the "civic" usefulness of a piece of software, its capacity to solve a problem of a public concern.

This "social good" is multiple and is defined *ad hoc* via precise pro-

jects and tools that are used to realize them. However, the question stays whether the "civic hacking" can actually have a counter-democratic potential? While civic hackers tend to apply novel technical solutions within a political status quo, could there be a form of civic hacking that would question the power relations within the field of technology, and largely, in politics, and challenge the ways our institutions are organized? As Lodato puts it: "These hacked civics rethink the state; they cobble together various citizenries; they break and reassemble civic life; they don't agree that the answer is technology; and, most of all, they don't agree on civics. At civic hackathons, I want to see this civic hacking. I want to see civic hacking that hacks civics"[16].

A grounded answer to that question requires a more thorough analysis of technologies and practices used and produced at civic hackathons: the usage of free software by coders themselves as opposed to proprietary programs, the choice of centralized or decentralized architectures, the choice of hosting providers, and even the choice of standards and libraries to build on. We need to look at the framing of problems and the related infrastructural choices: who are the problem owners? What are the tech solutions proposed by the actors? How is the public involved in framing the issue and developing the solution? Who owns the data produced by civic applications?

Civic hacking can have both critical and reformist potential, and this will depend strongly on the way publics or problem owners are involved in the process of framing, design and development of the software. It will depend on the organizers of the event as well, and their engagement with public institutions. It will depend, finally, on the political context of the country hosting civic hackathons: in countries like Russia, where civic participation is weak or inefficient, and the trust in political representation is especially eroded, civic hacking can represent, indeed, a solution for the civil society to construct public problems and engage with communities.

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[1] https://opensalary.ru/ - Open Salary was developed during a civic hackathon in Moscow in 2012.

[2] Code for America is an organization found in 2009 to "help governments deliver better services to the public by using tools and practices from the digital sphere" (https://www.codeforamerica.org/)

[3] http://www.opengovguide.com/

[4] The Greenhouse for Social Technologies is a Russian non-governmental organization created in 2012. Its mission is, as defined on their website, "to build bridges between NGOs and experts in programming". (https://te-st.ru)

[5] Federal law of Russian Federation 121FZ obliges all NGOs that receive funding from abroad and exercise political activities, to declare as being "foreign agents".

[6] http://te-st.ru

[7] http://www.rhok.org/about

[8] https://itv.te-st.ru/

[9] Geek List is a social network for developers. Geek List was the organizer of the series of international civic hackathons Hack4Good https://geekli.st/home

[10] https://rosyama.ru/ - mobile and web application built by the team of Russian opposition leader Alexey Navalny between 2010 and 2012. It counts more than 117000 potholes declared since the creation of the app.

[11] https://roszkh.ru/ - web application built by the team of Alexey Navalny in 2012. Counts more than 500 000 complaints sent through the app.

[12] http://zalivaet.spb.ru/ - web application built by Fedor Gorozhanko in 2010. Counts more than 5000 complaints and around 2500 users.

[13] http://www.красивыйпетербург.рф - web and mobile application built by the network of "Observers of Saint-Petersburg" in 2012 that counts 54000 users and more than 120000 complaints sent through the app.

[14] https://itv.te-st.ru/about/.

[15] https://itv.te-st.ru/about/

[16] http://thomaslodato.info/writing/three-positions-on-civic-hacking/