What Is Ownership and Why Does It Matter?

In today's cities, our everyday lives are increasingly shaped by digital media technologies, from smart cards and intelligent GPS systems to social media and smartphones. Can digital technologies enable citizens to act on collectively shared issues? Can principles from online culture help to form new collectives around communal resources in an urban context? Can media technologies bring about a sense of place and connection among urbanites, and a feeling of 'ownership' over their environment?

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We use the word ownership when referring to the degree to which city dwellers feel a sense of responsibility for common interests and can take action on them. So just what are these common interests? Who is responsible for them and under what conditions can ownership take place? In order to answer these questions, it is useful to first make a distinction between three forms of ownership, namely *res publica*, *res privata*, and *res communis*, the latter being of most importance in the context of this study.[1]

Res publica (public issue) refers to public services for which responsibility has been passed to a single legitimate authority. In many cases this is the government (*res publica* is also the etymological root of the word 'republic'). Increasingly, public tasks such as security and infrastructure are being outsourced to private organizations. City dwellers neither need nor want to take ownership of each and every aspect of urban life; traffic light management and the laying of underground fiber-optic cables are typical of the sorts of activities we would rather leave to the government.

Res privata relates to exclusive ownership rights. In most cases it is obvious when a possession is private – who wants strangers in their home or back garden, for example? Processes of appropriation also take place in shared public space. This may involve groups of people who temporarily 'colonize' a space for private ends or privatized squares and streets owned by businesses. This process is facilitated by media technologies; examples include the regulation of admission to buildings and infrastructures using RFID chips and interlinked databases, CCTV camera surveillance in public and semi-public spaces, or the holding of private mobile telephone conversations in public space.

Res communis, or the commons, refers to communal resources, which are managed by multiple parties. It is difficult to exclude other people from the use of *res communis* – and in this respect it contrasts with *res privata*. The distinction between *res publica* and *res communis*, however, is more subtle and is often overlooked. One difference lies in the extent to which individual use has an impact on the resource as a whole, affecting how other individuals can make use of it. To return to the example of traffic lights we used when defining *res publica*: it makes no difference how many people use this resource, it must be present – and preferably in the hands of a single institution. In the case of a *res communis* park, however, it does matter how many people use it: overuse is undesirable, as is underuse. How do people make use of this resource? Do they dispose of their rubbish in a bin, play loud music, and have a friendly bearing towards fellow users? The ability to direct people's attitudes to the commons from above is very limited. This requirement for a substantial degree of self-control is another factor that distinguishes *res communis* from *res publica*.[2]

When should we consider something to be a commons issue? Defining the commons in absolute terms is problematic. Shared gardens with limited accessibility and gated communities in which residents withdraw into collective privatized neighborhoods are privately owned (*res privata*), but their management and use is a commons issue (*res communis*). And if an illegal activity were to take place there, it would become matter of public concern (*res publica*). We have therefore taken a pragmatic approach, defining the commons as coming into existence when people form collectives around specific issues they consider important. More often than not this means taking positions that conflict with the interests

of other groups or institutions. An example might be the creation of a communal garden at the cost of parking spaces or a playground.

It is impossible to give a definitive answer to the question of who is responsible for management of the commons. One complicating factor is that commons issues (and controversies surrounding them) take place at various levels. Some issues are global, such as environmental health; water, food and energy supplies; and social equality. Other issues have a specifically local or regional character. At community and street level, people are faced with issues such as litter, accessibility, or loitering youth. In regions outside the Netherlands' only major conurbation, the Randstad,[3] towns and cities are faced with an increasingly ageing population and urban exodus. The authors of the report 'Burgerschap in de doe-democratie' (Citizenship in the Active Democracy) identify four national social issues between macro and micro level: lack of social cohesion between various population groups, consumerist and antisocial behavior, social exclusion, and the gulf between citizens and government.[4]

In general terms, however, we are able to formulate a number of conditions for the creation and management of the urban commons: shared access to collective services; the opportunity, knowledge, and skills to initiate one's own actions; and reciprocity based on mutual trust between fellow users – in the assumption that everyone is dedicated to the common good. But here too, a problem arises. In an influential article in *Science* in 1968, biologist Garrett Hardin describes the problems that arise when several farmers allow their livestock to graze on shared ground. For each farmer involved, the individual economic benefit from allowing more of his cows to graze on the commons outweighs the collectively shared ecological degradation of the field that this causes.[5] In other words, the pros are privatized and the cons are socialized. Hardin's 'tragedy of the commons' opens up the question of what organizational form is needed to manage shared resources in a sustainable way, with the benefits being reaped by the community. Can it best be achieved through regulatory bodies such as the government? Or should it be left to the free market? Or is it perhaps possible to come up with alternative forms of organization – forms in which new media could play a role?

Using the concept of ownership, we can choose to approach urban issues as commons issues.[6] Although this is by no means the only possible approach, its advantage is that it allows us to define specific kinds of urban problems, while also offering a possible course of action. In contrast to the *res privata-res publica* paradigm and the exclusive/passive rights to ownership it assumes, *res communis* is all about inclusive and active ownership. Furthermore, issues concerning urban commons consistently involve complex networks of actors. In the first place there are the citizens themselves, but these networks also include local authorities and policymakers, housing corporations, a wide array of social organizations and knowledge institutes involved in urbanist affairs, as well as local and other businesses. We believe that e-culture producers and institutes can play an active role in such networks by contributing to research and identifying opportunities and obstacles when it comes to urban problems – and to the development of solutions. Media makers can stake a claim for this active role because new media are themselves bringing about shifts in urban commons issues.

New media and shifting ownership

The emergence of new media in the urban landscape is bringing about change in ownership. These changes comprise (A) new forms of commons; (B) new forms of shared management; and (C) new stakeholders or 'publics'.

(A) The city as a platform for the data commons

One current development is that of the 'city as platform', which involves the city being viewed as an information generating system. A wide range of technologies collect an enormous amount and variety of data. These are then exchanged, reacted upon, visualized, and interpreted. Examples include: the speed and concentration of cars on ring roads; points saved on loyalty cards by consumers; observations using GSM transmitters of user distribution; measurement of air quality or sound pollution; and details of city dwellers' everyday lives through social networks. Consciously or unconsciously, citizens contribute to the accumulation of data on the use of all manner of products and services. These collections of data are a new resource containing valuable information for urban planners.[7] We can describe these combined collections as a 'data commons'. Scarcity takes on another meaning in this context because what we are concerned with here are not finite physical goods and services (such as Hardin's common land), but infinitely replicable digital data. Conditions for the creation of the data commons include the availability of, and access to, open data and the skills citizens have to use the data in a meaningful way.[8] This raises issues of ownership: does the data commons strengthen possession rights of a limited number of players (particularly governmental authorities and private companies), or is it possible for it to foster ownership by citizens? The data commons offers potential opportunities for the design of interventions involving individual use that improves the commons rather than depleting it. In the field of biology this principle is known as mutualism. In contrast to Hardin's farmer who is 'parasitizing' on shared resources by introducing an extra cow to the meadow, mutualism requires that all parties involved benefit from collaboration.[9] These conditions are demonstrated by the example of users calling up local traffic information services, thereby contributing information about the density and flow of traffic; using the service improves the service.

(B) Collective action, co-creation and self-organization

Digital media have created new mechanisms for managing the commons and coordinating collective action. Traditional commons suffer from a lack of information leading to less than optimal decision-making. Using mobile and location-based media, people can share more information more quickly and base adaptive decisions on it. One example is the exchange – in real-time – of information about air quality using portable sensors and mobile networks. Online communities have been managing collective activities successfully for some time now. The terms 'co-creation' and 'crowd-sourcing' are applied to processes characterized by common issues being tackled and managed collaboratively – with new participants having an active role. This concept lies behind

the development of open source software and the online encyclopedia Wikipedia as a knowledge commons. It would be an illusion to view these phenomena as exclusively bottom-up processes, because these commons also require their own sets of rules, ones that are often based on alternative forms of supervision and sanctions enforced not by top-down institutions, but by distributed means organized by the users themselves.[10] What can we learn from online forms of commons management such as these? Is it possible to take the principles of self-organization and collective action found in e-culture and apply them to urban commons issues?

(C) New stakeholders and publics

The drawing of citizenry into the process of urban development has been taking place for several decades. Town planners, for example, operate according to the 'place-making' principle, characterized by local people having their say within a community-driven process.[11] And policy-makers, housing corporations, politicians, and knowledge institutes have also been engaging with the subject of citizen participation and control for some time now. Developments emanating from digital media technologies and the hybrid city have led to a reshuffling of opportunities and responsibilities. One of the first internet initiatives in the Netherlands was 'The Digital City' (*De Digitale Stad*), set up in 1994. This online network of Amsterdam residents had a distinctly bottom-up approach.[12] Five years later, local authorities started to take over the role of city-related IT developments.[13] These experiments with 'knowledge districts' were often top-down in nature. At the same time, national and local government funds were being used to set up 'digital playgrounds', community centers where occupants learned to work with computer technology, gained new skills, and got to know each other better, thus boosting the social capital of the local area.[14] At a national level there were governmental initiatives aimed at fostering 'e-participation'. The 'Citizen Link' (*Burgerlink*) program, for example, was set up to, "use information and communication technology to more closely involve citizens in the improvement of public services, civil administration, and social cohesion."[15] Meanwhile, citizens themselves were setting up websites and local WiFi networks for their local communities, creating new methods of maintaining contact with present and future neighbors.[16] This was the emergence of 'networked publics', groups that were no longer organized according to predetermined locations, times, or social categories. Instead, they used new media to gather around specific shared interests.[17] One consequence was that the design of the urban living environment was no longer reserved for professionals in design disciplines such as architecture and urban planning, or for institutions such as established power structures and housing corporations. The field of influence shifted, and technically minded amateurs found themselves able to intervene in the urban living environment.[18]

It is impossible to draw a sharp distinction between top-down participation approaches initiated by institutionalized parties, on the one hand, and citizen-run, bottom-up community initiatives, on the other. Policy organizations, knowledge institutes, housing corporations and so on are also made up of 'ordinary citizens'. And the reverse is also true, because through institutions, citizens can engage in debates about the design of their city. Moreover, as mentioned earlier, it is an illusion to think that bottom-up participation can run by itself, without the support of institutions. The question is whether – and if so, how – new media can feed the creativity and ideas of non-institutional citizens into existing stakeholder structures. 'The city as platform' is a new playground for four emergent models of social organization that do not acknowledge any distinction between bottom-up and top-down approaches. Terms such as 'wisdom of the crowds', 'crowd-sourcing', 'collective intelligence', and 'swarm intelligence' are used to demonstrate that the sum of individual actions can give rise to more or less coherent forms of knowledge, understanding, and behavior. Trade and industry is also increasingly taking upon itself an ownership role with respect to issues of the commons when it comes to corporate social responsibility and sustainability. And major technology companies are active in the area of 'smart cities'.[19] The opportunity therefore seems to exist for collaborations to take place between governmental authorities, trade and industry, citizens, and media makers, that will unite socially responsible enterprise and new business.

1 See David Berry, 'The Commons as an Idea—Ideas as a Commons', At: http://fsmsh.com/1092 (February 2005).

2 Alternative terms are *non-exclusiveness*, *subtractability*, and *self-governance*. See Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge/New York: Cambridge University Press, 1990).

3 The Randstad consists of the four largest Dutch cities: Amsterdam, Rotterdam, The Hague and Utrecht.

4 See Ted van de Wijdeven and Frank Hendriks, 'Burgerschap in de doe-democratie', 2010, p. 11. At: http://www.nicis.nl/dsresource?objectid=161879.

5 See Garrett Hardin, 'The Tragedy of the Commons', in *Science*, vol. 162, no. 3859 (1968), pp. 1243–8. At: http://www.sciencemag.org/content/162/3859/1243.full.

6 The idea of viewing the urban environment as a resource is certainly not a new one. The concept was suggested by early twentieth-century urban sociologists of the Chicago School as well as by more recent thinkers, including Adam Greenfield. http://urbanomnibus.net/2010/07/frameworks-for-citizen-responsiveness-towards-a-readwrite-urbanism.

7 We use the broad term 'urban developer' here to describe anyone engaged in urban design and organization, including architects, planners, local policymakers, housing corporations, as well as media makers working in an urban context.

8 One important point here is the non-exclusiveness of the data commons. To what extent does everyone have access to the data concerned and also have the knowledge to exploit this resource?

9 Examples from nature include cleaner fish who feed off the skin of larger fish, and plants whose root systems offer a safe environment to bacteria, which in turn supply nutrients to the plant.

10 Examples from the internet include reputation management, moderation by fellow users, and sanctions ranging from reprimands by respected members to permanent IP bans.

11 See Wayne Beyea, Christine Geith and Charles McKeown, 'Place Making Through Participatory Planning', in Marcus Foth (ed.), *Handbook of Research on Urban Informatics: the Practice and Promise of the Real-Time City* (Hershey, PA: Information Science Reference, 2009), pp. 55–67; Bernard Hunt, 'Sustainable Placemaking', 2001. At: http://www.sustainable-placemaking.org/about.htm.

12 See Manuel Castells, *The Internet Galaxy: Reflections on the Internet, Business, and Society* (Oxford: Oxford University Press, 2001); Reinder Rustema, *The Rise and Fall of DDS: Evaluating*

the Ambitions of Amsterdam's Digital City (Unpublished Masters thesis, University of Amsterdam, Amsterdam, 2001).

13 One example of just such an urban IT initiative is the Cyburg project, in which the inhabitants of Amsterdam's Zeeburg neighborhood were encouraged to acquaint themselves with the technology and each other. See http://www.digitalegemeente.nl/kenniswijk.

14 See Joeri van den Steenhoven, Michiel de Lange, Steven Lenos, *Toekomst van de trapvelden: een digitale injectie voor sociale kwaliteit in de wijk* (The Hague: SQM/KCGS, 2003). At: http://www.media4me.org/9353225/d/digitale_injectie_sociale_kwaliteit.pdf.

15 See http://www.burgerlink.nl/Documenten/eparticipatie/eParticipatie.html.

16 See Minouche Besters, *Internetgemeenschappen in de buurt: een zoektocht naar succesfactoren* (Amsterdam: Stichting Nederland Kennisland, 2003).

17 See Kazys Varnelis (ed.), *Networked Publics* (Cambridge, Mass.: MIT Press, 2008).

18 Examples include Wireless Leiden, which saw local residents setting up their own wireless network in Leiden (see http://www.wirelessleiden.nl), and the Geluidsnet (Soundnet) project (www.geluidsnet.nl), which involved people living around Schiphol airport carrying out sound measurements using cheap technologies because they did not trust the official figures.

19 IBM, for example, provides 'city management services' that they claim increase transparency and, by extension, public confidence. See: http://www.ibm.com/smarterplanet/us/en/smarter_cities/solutions/index.html. The jury is still out, however, on whether top-down approaches such as these truly lead to increased citizen engagement. Critics also point to potential 'greenwashing': profiteering by presenting a green image.