

Chapter 1: Histories of open

To begin this discussion of *openness* – a term with a variety of meanings and connotations, which will be elaborated below¹ – a natural starting point is free and open source software. The use of the word *open* in later movements (open access, open data, open education² etc.) originates here and the shape and rhetoric of contemporary open movements draws heavily on advocacy for openness of software. It is in the free and open source software movement³ that we first encounter the importance of copyright and licensing to creativity in the digital age; the distinction between free and open, and the sometimes tribal arguments surrounding these terms; and the formulation of strong global communities of advocates connected by the digital technologies that make open possible in the first place. As Kelty argues in *Two Bits*, it is not the software itself that is culturally important but the practices involved – of 'sharing source code, conceptualizing openness, writing copyright (and copyleft) licences, coordinating collaboration, and proselytizing for all of the above' (Kelty 2008: x) – which represent a 'reorientation of power with respect to the creation, dissemination, and authorization of knowledge' (Kelty 2008: 2).

[Overall Kelty's book focuses extensively on the 'modulation' of free software to other domains.]

Openness does not fit neatly into traditional political binaries such as left/right, collectivist/individualist. As Kelty says, "The opposite of an "open system" was not a "closed system" but a "proprietary system" (2008: 149), so this is an issue of ownership and control. A useful way of distinguishing between different uses of the word open is the typology of openness used by Corral and Pinfield (2014) – open content, open process, and open infrastructure. This typology may help to clarify links between different open movements. [Content refers to 'stuff' (whether physical or digital) and its availability. Process includes openness to participation. It may be more difficult to define what counts as infrastructure.]

Free and open source software

The origins of the free and open source software (FOSS) movement can be traced back to the 1980s and the work of Richard Stallman. By then software development was a decades-old enterprise [... UNIX development as earlier instance of sharing etc.] In the early days of computing openness was often assumed, and Stallman's work was a reaction against what he saw as an encroaching enclosure of source code.⁴ Histories of FOSS are often centred around two key facets: firstly, the practice of sharing source code under open licenses (with

1 [I'm not sure yet where I'll go into this (e.g. relationship between liberal democracy and openness; terminological mutation); probably later in this chapter.]

2 By 'later' I mean they were *self-understood as movements* later (e.g. the Open University was founded in the 1960s, but open education came into its own as a movement in the 2000s).

3 [Using the term 'movement' is discussed by Kelty (2008: 98, 113–15) who sees its birth in 1998.]

4 [Disclaimer that Stallman's perspective on most matters is far from typical.]

discussions on the history of copyright and political arguments around intellectual property); and secondly, new decentralized methods of organising labour outside of market incentives or hierarchical organisational structures. For instance, Weber (2004) discusses the interplay of a new intellectual property regime based on permissions rather than exclusion, and the new collaborative organisational structures that both arise out of and create a new mode of governance.

[Free software and open source definitions.]

The Free Software Definition was originally written by Richard Stallman and is maintained by the Free Software Foundation: 'A program is free software if the program's users have the four essential freedoms:

- The freedom to run the program as you wish, for any purpose (freedom 0).
- The freedom to study how the program works, and change it so it does your computing as you wish (freedom 1). Access to the source code is a precondition for this.
- The freedom to redistribute copies so you can help your neighbor (freedom 2).
- The freedom to distribute copies of your modified versions to others (freedom 3). By doing this you can give the whole community a chance to benefit from your changes. Access to the source code is a precondition for this. (Free Software Foundation 2015)

The term *open source* was coined in 1998 by Christine Peterson – president of the Foresight Institute, a nanotechnology non-profit (Moody 2002: 167; Open Source Initiative 2012) – and popularised by libertarian developer Eric Raymond to distance the movement from Stallman's ideological prioritising of freedom and to explicitly make FOSS software more attractive to commercial users (Weber 2004: 114). [The Open Source Definition is published by the Open Source Initiative (2007).]

The first Free Software license was the GNU General Public License (GPL) created by Richard Stallman (Kelty 2008: 15; 189). Perhaps even more so than his considerable work as a coder, Stallman's key innovation was 'hacking' copyright to create copyleft. Stallman created a license – the GPL – which builds on existing copyright law by allowing creators to give extra permissions in the use of their work – permission to use, reuse, and modify the code – so long as the same conditions are maintained in subsequent copies and modifications (Kelty 2008: 182; Moody 2002: 26–27). This inversion of the traditional intellectual property regime has been analysed by Weber in political economic terms [...] (Weber 2004: 4–5 [also 182–83]).

The terminological distinction between *free software* and *open source* highlights the ideological difference between the two approaches. Free software is used to highlight the 'freedom' aspect, and Stallman has been perhaps the most vocal and persistent advocate for its use. The forking of free software and open source occurred in 1998 (Kelty 2008: 99) when open source was coined as a 'non-political' alternative term which de-emphasised the freedom aspect. One of the key early proponents of open source, Eric Raymond, 'emphasize[d] the

centrality of the novel forms of coordination over the role of novel copyright licenses or practices of sharing source code' (Kelty 2008: 109). However, the FOSS divide between 'moral and utilitarian logics' is usually blurred (Coleman 2009).

[see Moody (2002: 259) for more on the pragmatist/idealist divide, and p.256 for a conjecture that the tension between the two camps has actually been essential for driving progress.]
[difference between means and ends – Kelty (2008: 148).]

[Libertarianism and the internet social imaginary.]

FOSS collaboration can be viewed as a change in the mode of governance so we can consider whether this is related to neoliberal governance. *Governance* in this sense refers to 'setting parameters for voluntary relationships among autonomous parties' (Weber 2004: 172) – so in a neoliberal mode of governance, the prioritising of market logic means that all social relationships are imagined as *market* relationships [although thinking of these in terms of 'voluntary' relationships might be a bit of a stretch] (see Chapter 2). In FOSS coordination, 'adaptability is privileged over planning' (Kelty 2008: 222), a phrase which echoes the opposition to planning found in the writings of Hayek (see Chapter 2). FOSS ideology values 'what works' over planning and the lack of goals is considered a virtue. If open access, as a forking of FOSS,⁵ is based out of this same social imaginary, then the 'non-political', 'non-ideological' rhetoric is at the forefront. This is what is facilitating the slippage away from the social justice ideals of those more politically engaged open access advocates. However, Kelty argues that free software represents 'an imagination of how to change an *entire market-based governance structure* – not just specific markets in things – to include a form of public sphere, a check on the power of existing authority' (Kelty 2008: 308). Under this mode of governance, the consent of the governed relies on allowing the governed to create and modify the system of governance themselves. Self-governing communities existing within markets is closer to Hayek's theoretical economic ideal than to what neoliberal governance has now become (see Chapter 2 for more on the anti-democratic nature of contemporary neoliberalism).

[Open standards]

The term *openwashing*, a play on greenwashing, was popularised⁶ by Audrey Watters (2012) to describe the process whereby proprietary practices are given an open spin. Kelty (2008: 149) describes the same practice occurring in the software industry with regards to open systems in the 1980s.

[Kelty 2008. Recursive publics. To what extent is open access a recursive public? (see p.113, 302–04, 309–10) Or – is the academic community a public, and through open access it becomes recursive?

Kelty (2008: 54) discusses how the development of the read/write culture of the internet has altered our relations to the public sphere; the gatekeepers of culture have less power to decide

5 [I realise this needs some explanation.]

6 I'm unsure whether Watters first coined the term. David Wiley used it a year earlier (Wiley 2011).

who is able to speak. This points to one of the potential roles of open access.]

[Notes on Weber:

- ensuring no-one has monopoly control over the means of production
- says nothing about how surplus is distributed
- first paragraph p.225
- difference between creating software and research: the end goal of each software project is a single thing which many people contribute to; in research the equivalent end goal of a particular process is the individual article itself without *necessarily* needing to think deeply about its place in the overall system in terms of functionality and compatibility (this does occur but is not as highly prioritised perhaps).
- free riding is not a problem in FOSS, it enhances the product.]

Open access

Open access is the act of making scholarly research freely available online for anyone to read with minimal restrictions on access and reuse (Suber 2012: 4). Elements of what was to become known as open access can be traced back to the earliest days of the web; [open access to research is as old as the internet itself.⁷] The history of the internet is inseparable from its relationship to academia; the original Arpanet (funded by the US Department of Defence) was created to share information between networked computers (Kelty 2008: 139) at a time when computers were so large and expensive that researchers at established research institutions made up a significant proportion of users. Academics used the internet to share data and communicate via digital networks (e.g. by email) long before the web was created.

But the term *open access* itself – the creation of which could also be seen as the birth of open access as a 'movement'⁸ – was originally defined in 2002 by the Budapest Open Access Initiative, which opened with the memorable line: 'An old tradition and a new technology have converged to make possible an unprecedented public good' (Chan et al. 2002). This statement highlights the role of technology as an enabler while simultaneously proclaiming the ethical and social nature of open access. The Budapest Declaration was followed by two further declarations – the Bethesda Statement on Open Access Publishing (Brown et al. 2003), and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (2003). These three declarations – referred to by Peter Suber as the 'BBB definition' (Suber 2012: 7) – helped to define open access as a 'movement' and provide a common touchstone to conceptualise it. [But relying on a static expert definition is problematic.]

In the years following the Budapest Open Access Initiative, open access has gradually become a mainstream part of the global scholarly communication system, with open access options available from all major academic publishers. This growth has been driven to a large extent by

⁷ [I'll replace this statement with something more measured (and more accurate!).]

⁸ See Kelty (2008: 98, 113–15).

top-down policies and mandates from governments, research funders, and higher education institutions (Laakso 2014: 26–28). [add figures on the growth of open access archives and journals from e.g. ROAR, DOAJ.]

There are a number of different arguments which supporters of open access use to advocate for it and these often focus on transparency and accountability of spending public money on research (Davis 2009; Suber 2012). For many advocates, one of the primary reasons for supporting open access is that of social justice, to help overcome the strong North to South bias in the flow of academic information (Adcock and Fottrell 2008) and create a more equitable global system of participation in the scholarly conversation (Veletsianos and Kimmons 2012: 172).

Open access can also be seen as part of a broader move towards openness within academia, linked to activities referred to as open science or open scholarship.

Open source and open access: isomorphism

There are parallels between arguments around *free vs open* in FOSS, and free vs open access to research (i.e. free-to-view vs openly licensed). This is especially true with regards to whether advocates use ethical and/or utilitarian logics in their arguments; but, as with FOSS, use of these differing logics does not always fall neatly in opposing camps. The Free Software movement emphasises freedom and open source proponents emphasise software development models (Kelty 2008: 109); similarly, some open access advocates focus on social justice issues, whereas others are more concerned with doing 'better science' [citation needed].

The question of whether it matters that we use either instrumental or ethical arguments to achieve open access if the practices are the same, is also seen in similar arguments within FOSS (disparate political positions result in identical practices in terms of software creation [re. Stallman, 'Why free software is better than open source']) (Kelty 2008: Ch.1).

If two radically opposed ideologies can support people engaged in identical practices, then it seems obvious that the real space of politics and contestation is at the level of these practices and their emergence. These practices emerge as a response to a reorientation of power and knowledge, a reorientation somewhat impervious to conventional narratives of freedom and liberty, or to pragmatic claims of methodological necessity or market-driven innovation. Were these conventional narratives sufficient, the practices would be merely bureaucratic affairs, rather than the radical transformations they are. (Kelty 2008: 117)

The open access social imaginary is similarly heterogeneous as that of FOSS. [The talk of 'layers' in Kelty (2008: 235) is related to Bilder/Lin/Neylon's infrastructure position. If there is freedom within one layer, but it is reliant on a non-free layer below, then is

the freedom compromised? Within scholarly publishing, the freedom to publish any *ideas* (academic freedom) is reliant on a communication layer (journals) which is not entirely free. That communication layer itself rests upon deeper levels of infrastructure with varying degrees of freedom.]

The progress of open access has been consistent but slow (1% a year for gold [citation needed]), and despite decades of progress (mandates etc.) there is little chance of a 100% open access scholarly communication system in the near future [Austria's 2015 announcement that they are aiming for 100% gold by 2025 is aspirational: possible, but not inevitable]. Lessons to be drawn from the FOSS world: after 30 years, Linux servers dominate the web infrastructure and Linux-based Android dominates mobile, but there is still a mixed economy of open and proprietary software with both simultaneously existing and prospering (Weber 2004: 37). There is no 'natural' best way of creating software because it depends on your priorities; it is possible for open source communities to prioritise important features better than a proprietary product, and vice versa (Tamary and Feitelson 2015).

[Weber (2004: Ch.5 [esp. 153–56]) has a discussion about individual motivations for participation in FOSS that is relevant for thinking about motivation/collective action w/r/t open access.]

Other open movements/practices

The commonalities between open source and open access show that openness, in this sense, has a coherent meaning which can transcend cultural boundaries. A brief discussion of other contemporary open movements can illustrate this point by drawing out common features in theory and practice.

Open data

- open government data, open research data, corporate data, open health data
- Open Definition was created by Open Knowledge, formerly known as Open Knowledge Foundation (OKFN).

Another category of open data is open government data, which is part of a broader open government movement working on issues including access to law, Freedom of Information, and increasing levels of democratic participation. The umbrella term *open government* includes both open content (e.g. data government data) and open process (open policy-making).

Relation between open government data and neoliberalism: Bates (2013).

Open education encompasses a variety of practices broadly centred around open content (e.g. OER, open textbooks) and open process (e.g. open pedagogy), although these divisions are often blurred. For instance, MOOCs (Massively Open Online Courses) are distance-learning

courses delivered online with no formal barriers to participation which use open course materials.

[Weller (2014) - Silicon Valley narrative.]

[Peter & Diemann]

Ties between movements:

- all rely on open licensing for legal grounding.
- use of open source software in government, research, and open data tools
- open government relies on open data
- open access should be followed by open research data

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