

CREATING THE INFORMATION COMMONS FOR e-SCIENCE

INTRODUCTORY REMARKS TO THE WORKSHOP

By

Paul A. David

The Oxford Internet Institute & Stanford University

First draft: 25 August 2005

This draft: 29 September 2005

References to the “digital commons” and the “information commons” now abound, evoking in allusive, metaphoric terms the idea of a sphere of common use rights. To what does “the common” refer? Most simply, we understand a “common” to constitute a collectively held and managed resource to which access by cooperating parties is open (though perhaps limited as to extent or use), and subject to minimal transactions costs.

I believe that in introducing the Workshop program I should try, however briefly to unpack some of the special connotations that this term holds in the present context. Doing so will serve to make it apparent that the challenge of “creating the information commons” is to be understood to call for the building of new social and legal structures that are especially well-suited for the fruitful conduct of e-Science on a global scale. Plainly, this challenge should not be misconstrued and confused with the pursuit of a utopian dream of returning to some imagined golden age when property rights did not exist.

Obviously, the familiar contrast drawn between things and thoughts that are held in common, and those that are kept private is a useful one, for some purposes. But, the frequent juxtaposition of “commons” with “private property” becomes unhelpfully misleading when it suggests that the two conditions are incompatible and antithetical; or that holding resources “in common” inevitably ends in “the tragedy” of their overuse and exhaustion.

The metaphoric allusion to “the common” is entirely appropriate when the resources in question take the generic form of “information”. Information (and equally data) are not like ordinary tangible commodities. Instead, they possess inherent properties that economists associate with the so-called “public goods.” Information exemplifies the defining characteristics of public goods: it is not exhausted by use, or even by infinitely repeated re-use, and it can be employed concurrently by many independent users. Further, significant additional resource expenditure typically is required to prevent information from becoming universally and ubiquitously accessible. That is to say, someone seeking to exclude third parties from using information usually will find this is difficult, or at least costly to do.

The latter property reflects a general condition that the progress of digital information technologies has now rendered manifest: the incremental costs of

reproducing and distributing information today are negligibly small, both absolutely and in relation to costs of creating “the first copy.”

Most ordinary commodities, being tangible goods, are unlike information in these respects. Yet, because much of our institutional experience has been shaped by concerns with tangible property in the form of land and other natural resources, it is important to understand correctly the nature of “the common” from the perspective of conventional resource-rights management.

Historically, the “common lands” of medieval and early modern Europe’s agrarian communes were neither wilderness nor unregulated parts of the settled domain; non-villagers did not enjoy free access to common fields and meadows; the practice referred to as “stinting” in England restricted the rights of households in the village to graze their cattle on common pastures, and on the stubble of arable fields after the harvest; collective possession did not translate into a chaotic struggle for possession among neighbors, any more than it led to the egalitarian distribution of use-rights. For knowledge of this we do not have to rely upon the researches of historians alone: an increasing number of contemporary empirical studies, in the developing *and* the developed world, show that common pool resources can be managed successfully under a variety of common property regimes. Indeed, today even in western Europe such arrangements, based upon *de jure* common use rights (*res communes*) dating back to the Middle Ages, survive in the Swiss Alps and Northern Italy, where they still govern the use of tens of thousands of hectares of alpine forests, pasture and meadow land.

Moreover, regulated common use can be effectively constructed anew. Individuals can voluntarily coordinate the selective exercise of their private property rights to make a “common” which members of an extensive community can then draw upon (and to whose growth they can contribute). The modern success of free and open source software – *libre software*, as one should say in Paris-- has strikingly exposed one way in which the intellectual property statutes place in the hands of individual (copyright) owners the power to collectively construct a ‘codified knowledge space’ in which the public domain’s key functional attributes are preserved.

The “public domain” is usually treated as *unowned* in the sense of being the residuum of that which is not held by legal persons as private property, and therefore is open to exploitation by anyone without restrictions as to purpose, or duties to other users. By contrast with the “public domain,” a “common” does not lack owners. Quite the opposite, it may have many, many owners. But no matter how large the common’s ownership-roster, that in itself does not render the resource open for unlimited appropriation, because the co-owners can impose and accept responsibility; they are legally entitled to place conditions on the extent of what is extracted, and the uses to which it may be put. The commons can be built according to the commoners’ choice, within the constraints imposed by the nature of the resource in question.

What I have said, then, amounts to an argument resting on three sets of propositions that can now be quickly recapitulated in summary fashion. Firstly, information and data have special, public goods properties that make them very different from ordinary resources like land. Hence the economic case for private

ownership of intellectual property rights cannot be based on analogical reasoning from the case of land and other deplete-able resources that are subject to being degraded or destroyed by "over-use."

Secondly, even tangible resources such as land, when they are not privately owned, may be, and historically have been, managed well under systems of common-use rights. Because they can be regulated by non-market mechanisms constructed historically as systems of customary rights and restraints, 'enclosure' rather than the imagined "tragedy" over-grazing spelled the end of the agrarian commons.

Thirdly, the medieval common was not legally "owned" by those commune members who enjoyed customary use-rights, and so their rights could be extinguished by the exercise of the landlord's authority, or by the statutory powers eventually given to England's Commissioners of Enclosure in the eighteenth century. Today, however, the law makes it possible for the owners of a tangible resource held in common to protect their collective use-rights, and manage their contactually constructed common-pool so as to sustain, and augment the benefits that it yields.

In consequence, because it is not necessary to protect "information" from the tragedy of overuse, individuals having private ownership rights in intellectual property may voluntarily use contracts to construct a common use-rights area that is all inclusive, in granting access to those wishing to use the contents. Furthermore, and because the common in this case is owned – and not part of the public domain, the benefits that all users can enjoy from such an arrangement may be preserved and enhanced, by reserving the legal right to exclude certain useage-practices that might otherwise undermine the willingness of others to similiarly pool the information that they have created.

Constructive efforts of this kind, and others that our plenary speakers will describe, and whose specific practical problems and achievements will be detailed by the case-study presentations in the parallel sessions of the program, are truly "creative." They make innovative use of of existing and novel technical and institutional mechanisms in combinations that are potent and vitally important for the research communities they have been designed serve. In many respects, they may be more even promising for the future of collaborative open science than simply halting encroachments upon the public domain by statutes and enforcement measures that would further strengthen legal protections for the rights of intellectual property owners.

The title selected for our Workshop therefore signals that in choosing the theme and structuring the program, the intention has been to focus attention and impart greater coherence to the wonderful and varied array of activities that can contribute to "create," that is to say, to *construct* the information commons for the global scientific research community in the 21st century.