

## RESEARCH

# What Hope for Open Knowledge? Productive (Armed) vs. Connective (Tribal) Knowledge and Staged Conflict

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The paper distinguishes between two kinds of knowledge, productive or armed knowledge and connective or tribal knowledge, which it traces back to pre-modern antagonisms. It argues that open knowledge depends on a new 'agonistic' synthesis of these types. The aim is partly to show that culture is primary in determining what knowledge means and who gets to share it; and partly to compare formal knowledge institutions (especially universities) with informal knowledge systems (language and social media). Can knowledge ever be open if it is either armed or wild? If so, then how should we model openness? I suggest that situating knowledge in language, performance and play, rather than property and productivity, offers a way forward.

**Keywords:** open knowledge; productive knowledge; connective knowledge; armed; violent; tribal; wild; universities; social media; agonistic performance; staged conflict

## Introduction: from universal-adversarial to performative knowledge

Proponents of open knowledge need to construe knowledge as cultural, that is, meaningful to particular user-groups, rather than as abstract information or data, stripped of identity and belonging. Information (unprocessed data) is inert, without energy; knowledge (meaningful semiosis) is live, energised in use, both within different social groups and as an organised social system across different cultures. Knowledge stands in relation to a given user-group (e.g. a language or speech-community, nation, gender or specialist sub-group) as that which can be trusted, taken for granted, or ascribed to nature (or to some other unarguable entity such as the gods or emperor); and – thence – that which can be used for productive purposes. In contrast to information, knowledge is both *productive* (used to transform something other than itself) and *connective* (linking we-groups). However, any knowledge shared among a given we-group is likely to be seen quite differently by other groups or by outsiders. It may remain untranslated and unknown, be valued as something exotic or, most likely, be doubted as something deceitful, duplicitous, dangerous or daft. As a result, knowledge is simultaneously *universal* (our group's way of understanding can explain whatever we encounter in the world) and *adversarial* (our knowledge is trustworthy and true; theirs is untrustworthy and lies).

In this paper I argue that the long history of universal-adversarial knowledge has left its mark on contemporary knowledge systems, which still tend to divide themselves into armed camps in order to set their knowledge apart from competitors. I distinguish between 'productive' and 'connective' knowledge, arguing that universities and scholarly publishing over-value the one and under-value the other. I go on to compare the social organisation of knowledge with a recent approach to the social organisation of violence, using Siniša Malešević's approach (2017) to show that just as *social organisation, ideology* and what he calls '*micro-solidarity*' are all crucial components of state-directed social violence, so they are equally important in the development of institutionalised productive knowledge. State-sponsored institutions are not enough; the sector needs both ideology and microsolidarity to operate as a we-community and as operational units. Here, Louis Althusser's model of Ideological State Apparatuses (1971) is revived to show the extent to which,

for modern societies, *education* is the overarching apparatus that has displaced pre-modern religious or monarchical ideologies. I discuss the extent to which microsolidarity characterises the internal organisation of universities to such an extent that they bear comparison in this regard to military units (platoons, companies). These ‘knowledge clubs’ (Potts et al., 2017) encourage interpersonal trust (i.e. ‘connective’ knowledge, which is otherwise stigmatised) among small units (departments, disciplines, journals). The loyalties of microsolidarity can override individual resistance towards the overall purposes of the productive knowledge system (just as platoon-level loyalties override individual reluctance to perpetrate violence).

The institutional and cultural arrangements of the productive knowledge system have developed over a long historical timeframe, during which opposition to undisciplined or connective knowledge has been a constant ideological prop, promoting a we/they opposition between the two types. However, connective or tribal knowledge has made a major comeback in the era of social media, entertainment media and populist politics, all of which now share technological platforms with scholarly and productive knowledge. I argue that emergent attempts to deliver an open knowledge system will founder unless the cultural and connective aspects of knowledge are recognised, even as its productive potential is decentralised among new platforms and players.

Thus, the open knowledge movement needs to recognise the partial and partisan codes in any knowledge system. It is not enough to insist that only one type can be trusted. What’s needed is not a fight to the finish but a rhetorical-discursive and playful space in which different and contending knowledge types can meet in ‘agonistic’ (Mouffe, 2014) *staged conflict*; such that new ideas may be sparked in the encounter. Here, rather than being reduced to the individualistic achievement of corporate KPIs, ‘performance’ can include the older, connective idea of *performing* knowledge *as* conflict. Given the extent to which any social science is performative in the sense that it produces what it studies (Herrmann-Pillath, 2018), I conclude that opening up knowledge to connective performance rituals and playful experimentation may also open it up to be shared among diverse groups and larger populations, who have previously been excluded from or played little role in developing knowledge productivity.

## Productive (armed) and connective (tribal) knowledge

I turn first to characterise the two types of knowledge: one, *productive*; the other, *connective*. In the deep history of Western thought systems, in this case going back to the late Ancient/early Medieval world of Eurasia, these two types have coalesced around very different groups, purposes, users and values:

1. Productive knowledge (**Gk. *gnosis*** – ‘special knowledge of mysteries’)<sup>1</sup> is deep, specialist, expert, disciplinary and literate. It is organised into sciences, taught at universities and used for economic growth. If you want to *understand* and *exploit* something, you need this kind of productive knowledge, together with its ‘metadata’ (authorising certification). In its modern industrial-productive mode, it is ‘intellectual property’, owned and controlled at meso/institutional level by the state or private enterprise, the more exclusive and inaccessible to laypeople the better. But in its ancient forms, it is nothing less than *armed knowledge*, necessary for early states and empires to fend off incursions from marauding barbarians.
2. Connective knowledge (**OE *cnāwan*** – ‘to acknowledge, to recognise’)<sup>2</sup> is broad, circulating in everyday language and popular culture, open to everyone and shared orally. This kind of connective knowledge is also circulated in social media. If you want to *enjoy* the *experience* of something, you need to know how to share it (with a good mobile device and lots of apps). This kind of common knowledge is carried in language and can’t be copyrighted. It is that stock of oral-aural wisdom that includes myth, story, music, proverbs, jokes, sayings, folklore etc. The more popular it is, with the greatest network-effect, the better. In its ancient forms, this is the true origin of *tribal knowledge*, needed to cohere and keep big groups of non-kin together (and distinct from adversaries) in uncertain times.

Universities in the Western tradition have descended from and still value (i.e. trade in) productive/armed knowledge, dismissing the other kind as unscholarly. Here they continue a centuries-old practice, where the sciences were conducted in Latin, separating the public world of learning from vernacular and private – which is to say, feminised – domestic life (Ong, 1971: 113–41), making expertise an arcane mystery, beyond

<sup>1</sup> For etymologies of ‘knowledge’, going back to ‘gnosis’ and ‘cnāwan’, see the OED, or <https://www.etymonline.com/>.

<sup>2</sup> This medieval sense of the word survives in the coronation of British monarchs. The first of five rituals is ‘the Recognition’, where the presiding archbishop calls for all present to acknowledge that the person standing in front of them is in fact the sovereign. Peers and commoners ‘recognise’ him or her by acclamation ([https://en.wikipedia.org/wiki/Coronation\\_of\\_the\\_British\\_monarch#Recognition\\_and\\_oath](https://en.wikipedia.org/wiki/Coronation_of_the_British_monarch#Recognition_and_oath)).

the ken of vulgar people (L. *vulgus* = *common people*), avoiding vernacular expression (L. *verna* = *home-born slave*), and separate from private life (L. *privatus* = *withdrawn from public life* – for which the Greek term was *idiot*). Expert, professional and scientific status *required* a prejudicial attitude towards popular knowledge; it is still denigrated as inconsequential, childish, wrongheaded and dangerous.

Universities remain the chief institutionalised form of productive knowledge, each with a strong interest in branding its own system as a tool for effective action in the world, and an equally strong interest in avoiding contamination by purposeless, playful, person-to-person popular knowledge, which has phatic (language) but not scarcity (property) value. Despite the fact that everyone working in a university is as much immersed in it as lay people are, connective knowledge is kept at arm's length.

The value proposition of universities is tied closely to their ability to translate individuals into knowing subjects (here, the output is graduates); and method into a productive tool (the output is productive process). In other words, the market in which they compete is not based on knowledge outputs as such, but on proxies that measure something else: excellence, exclusivity and quality (Veblen, 1918; Moore et al., 2017), or the social standing of alumni (a class-based version of the so-called invisible college). In practice, prestige and branding follow the contours of imperial power, not invention, innovation or discovery. The socio-economic clout of a country, gender, class, or other favoured group is translated into neutral league-tables. Such a system rewards scarcity, not openness. It is designed to convert the republic of letters (where ideas can originate from anywhere in a system) into status hierarchies (Darnton, 1984),<sup>3</sup> where only certain institutions, countries, disciplines and persons count.

The individualist-competitive process of research-funding invokes the general population (individualised as 'the taxpayer') to justify, naturalise and subsidise a knowledge-making system that systematically excludes them. Instead, a complex network of specialist knowledge (as opposed to general knowledge) has emerged, whose 'basic structure' is 'surprisingly robust' (Rafols et al., 2010). The resulting 'map of science' organises knowledge that is *influential*, useful for exploitation at scale (it does not even include the humanities, incidentally). Despite the fact that taxpayers pay for many of the enabling inventions underlying corporate profits (Mazzucato, 2015), often with initial defence (war department) funding, the public are reengaged in the productive knowledge system only as consumers, not as coeval knowing subjects.

On the other side, connective/tribal knowledge has been used by we-groups among the general population for identity, entertainment, sociality and mutual recognition, but not for credentialed or certified authority. Connective knowledge's prestige is measured by the fame, track record, branding and group-identity of celebrities (now, 'influencers') in any endeavour. The very same facts can garner a few likes (if uttered by a scientist) or scale up to a few million likes (if uttered by an actor), depending on who communicates it, and the group within which it is meaningful. This type may include new ideas, inherited wisdom, common knowledge, common sense and know-how, but also fabrication, faking, falsehood, delusion, superstition, supernaturalism, ideology, marketing, self-promotion and stories that may or may not contain reliable nuggets of knowledge, including myth, fairy-tales, old wives' tales, folklore, idioms, quotations and proverbial formulae.

Social media expand untutored knowledge-seeking practices at scale (e.g. folksonomies), resulting in findings that circulate unchecked, in both senses. Institutional (aggregated) forms that emerge from online environments, from Vice and BuzzFeed to Wikipedia, Pinterest to Reddit, are disallowed as sources within most formal systems, although Wikipedia is making inroads (*Nature News*, 2017), despite criticism (Gauthier and Sawchuk, 2017; and see Matei and Britt, 2017).

Social media platforms are seen as secondary to the primary business of knowledge-production by experts. Social media are presumed to be unreliable and contaminated not only by their proximity to celebrity entertainment and fake news but by their very popularity, which defies disciplinary systematisation and allows personality, dreams, mischief, fantasy, fiction, illusion, aspiration, anxiety, fear, desire, posturing, aggression, harassment, abuse – and creative art – to flourish alongside (indeed, as part of) truth-seeking endeavour.

It is easy to see that there is a prestige gap between the two types: that article from Harvard carries more weight than a story from your auntie or something you see on a social-media feed. Being a knowledge worker in a knowledge society, using productive knowledge as an economic resource, is not the same thing as being in the know, using connective knowledge to affirm and practice your cultural identity within your

<sup>3</sup> I cite Darnton (1984) here to acknowledge that one of the first contemporary descriptions of the modern Republic of Letters was produced by *police surveillance*: the reports of Joseph d'Hémery, police inspector of the book trade for Paris (1748–53): See Darnton's chapter 'A Police Inspector Sorts His Files: The Anatomy of the Republic of Letters' (1984: 145–89).

group/s. Despite the organisational yearning for impact, the knowledge produced in university settings is valued for its scarcity, not its popularity.

In the print era it was possible to separate formal and informal knowledge systems physically, into different parts of the library (or, different libraries). Since the emergence of broadcasting, this has not been so easy. Formal knowledge, from journalism to specialist research, has had to coexist with entertainment, fact with fiction, the wonders of science with gameshows. Social media have taken that heterogeneity to new levels. The costs of publication are effectively zero; everyone online is an author, a journalist, a publisher. The marble-clad institutions that for so long acted as filters and gatekeepers can simply be bypassed. The irruption of social-media wildness and of 'the new tribalism'<sup>4</sup> into the domain of politics has begun to destabilise established reputations among legacy forms.

Already, it is important to be able to recognise how much of productive, formal, specialist knowledge is merely a certificated and branded version of the very same stories, prejudices and delusions that infect popular knowledge; and, conversely, how much connective, informal, popular knowledge strives to attain insight, certainty or explanatory power, albeit as an 'adocracy' (Matei and Britt, 2017: Ch9), un-propped by disciplinary scaffold. Neither side has a monopoly on truth-values, or even on reflexive, critical mechanisms for self-correction over time. The rules of the game are changing: mediation can no longer be seen as a secondary report (more or less accurate) of primary actions taken elsewhere, in science, politics etc.; but as the *performance* of knowledge within culture, identity and meaningfulness, as a primary action in itself.

### Ancient origins for knowledge prejudice

The asymmetry of repute is a looming problem for universities. More knowledge is circulated among more people, faster and with more communicative appeal, using digital connectivity rather than institutional productivity. By excluding connective popular knowledge and its oral/cultural modes, the possibilities for *open knowledge* are both reduced and skewed from the start. Eventually, the accessibility of (admittedly uncertain and often proprietary) knowledge among the myriad digital platforms, apps, media and protocols of the open market may undermine the case for universities as taxpayer-funded institutions altogether, thereby ending a goal of education going back more than 2000 years to Aristotle, whose *Politics* established the need for public education, equally for all, in any self-governing community:

*And inasmuch as the end for the whole state is one, it is manifest that education also must necessarily be one and the same for all and that the superintendence of this must be public, and not on private lines. ... matters of public interest ought to be under public supervision.*<sup>5</sup>

I want to consider further the differences between productive and connective knowledge, because neither one of them is open in the way that Karl Popper (1945) saw as 'civilised': that is, in a way that 'sets free the critical powers of *humanity*', taken as a global species. Indeed, my argument is that the 'open society' depends on the two being integrated at system level, even as they remain polarised at institutional or agent level: integrated in mutually generative tension, if you like.

In order to make clear that the hard-won prestige of top-rated knowledge comes at a cost (e.g. masking brutal methods and imperial purposes), and that treating any outsider as a barbarian is mere prejudice (risking lethal consequences by ignoring innovation at the margins), I want to characterise each type of knowledge in terms of its historical origins (i.e. following path-dependency). Thus, to understand productive knowledge, we must talk about warfare. And if we want to understand connective knowledge, we must think again about tribes.

The difference between the two kinds of knowledge goes back to Ancient times, and yet persists. Productive knowledge is still *fortressed*, answerable to the central organisational, administrative, defensive and economic apparatus of states, and increasingly to those of business; dedicated not only to the advancement of our group but also the defeat of rivals, but very far from open to all. Connective knowledge is still *wild* (unfenced; shunned; unpredictable), where knowledge includes fantasy and fiction and the knowing look of mutual recognition, and where the line of trust between groups is marked by what each takes to be true; i.e. where *troth* (our faithfulness to a cause or leader) trumps *truth* (abstract output of experts).

<sup>4</sup> Robert Reich (2014) Blog post: <http://robertreich.org/post/80522686347>.

<sup>5</sup> Aristotle, *Politics*, Book 8, section 1337a: <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0058%3ABook%3D8%3Asection%3D1337a>. Aristotle's 'state' was the city-state, and 'citizens' were free adult men, not slaves, women, children and visitors, so its democratic egalitarian potential remained latent until modernity; and is not fully achieved yet.

According to those watching from the fearful fortress, wildness means anything goes (chaos). Wildlings' beliefs are said to be driven by superstition and undisciplined notions are expressed in so-called barbarous tongues. The required response is not dialogue but control, administered by state-agencies that are affronted by ungoverned sociality (Scott, 2017). Wild populations have not been accepted as knowing subjects at all unless they were *schooled* (into Latinate learning). Over a long history, this stricture has applied not only to exogenous neighbouring tribes but also to endogenous groups, from slaves, servants and the labouring classes, through women and children, to colonised subjects and (most recently) robots, AI and aliens. In each case, what such groups know for themselves is discounted because it evades or refuses organised control; and those involved are not emancipated by knowledge but subject to it.

### Armed Knowledge: knowledge as violence

Productive knowledge emerged with administrative literacy in the rise of early states and empires. To understand what it was for, it is instructive to compare its career with that of violence. The historical sociologist Siniša Malešević's study of *The Rise of Organised Brutality* (2017) opens this line of thought for us. His study offers a typology that, I argue, may be applied to organised knowledge.

Malešević begins by taking issue with recent claims, headlined by Steven Pinker (2011: xxi), that 'today we may be living in the most peaceable era in our species' existence'; that violence within and between societies – both murder and warfare – has declined over the *longue durée*, from prehistory to today. In *The Better Angels of our Nature* (2011), Pinker uses historical statistics to argue that people are much less likely to be killed by another human than ever before. Pinker derives his approach from social theorist Norbert Elias, whose *Civilizing Process* (1939) is still used to authorise the idea that *H. sapiens* has achieved a measure of self-control and social restraint (via a complex network of social connections) over the extreme long term and across many cultures, such that the purportedly 'natural' propensity of individual humans towards cave-man violence was gradually transformed into so-called civilisation, without which humans will inevitably regress, *Lord of the Flies* style, to primitivism.<sup>6</sup>

Pinker has picked up on the individual (behavioural) rather than social (power) aspect of this supposed process, to argue that person-to-person violence, as measured by its most extreme indicator, P2P homicide, has declined over the past couple of generations and, more slowly, over the past several centuries. Looked at through the lens of murder, even the USA, last bastion of an armed citizenry (in the name of freedom), is a haven of safety compared with medieval Switzerland (Malešević, 2017: 135). But that kind of calculus ignores other *forms* of violence, e.g. suicide; sexual and domestic violence; coercive power; conscription; exposure to infection; starvation; and, more fundamentally, it ignores the *social* aspect of violence. If violence is not restricted to individual physical/verbal aggression (individual behaviour), but is instead understood, first and foremost, as a social phenomenon (organised power), then the picture changes radically.<sup>7</sup>

Studying violence as socially produced does not take individual action out of the picture, but it does change the theory of causation (Pierson, 2004), and it foregrounds the importance of change, since societies wax and wane, unlike 'human nature'. In a social approach, the causes of violence are sought in social organisation, in cultural meanings and ideologies, and in the perceived relations within and among groups, often very small units. Instead of violence being seen as a universal, trans-historical and transcultural constant, underpinned by a moral philosophy that casts 'Man' (used advisedly) as a fallen angel (not a 'better angel'), apt to lash out in blind rage, it can be analysed through changes in these organisational arrangements, ideologies, and group relations. Malešević (2017) proposes a threefold key to understanding violence:

- (i) Large-scale social *organisation*, including effective *bureaucracy*, a centrally-directed apparatus for coordinating and mobilising collective action (Ostrom, 2000; see also Ostrom, 1990);
- (ii) An *ideology* that unites an otherwise heterogeneous group into an abstract we identity, often opposed to one or more conflicting they groups;
- (iii) A further characteristic that he calls *microsolidarity*, typically the intense mutual loyalty among platoon-sized groups, enabling warfare to be conducted (under hierarchical direction) by individuals who have little natural propensity to kill.

<sup>6</sup> But see Goudsblom (1994) on Elias; Dekker (2016) on 'civilisation'; and Lewis and Lewis (2018) on Pinker.

<sup>7</sup> Elias himself may have been arguing along these lines from the start: 'the crux of the theory lies in the observed relationship between changes in individual discipline ("behaviour") and changes in social organization ("power")' (Goudsblom, 1994: 1).

Supportive of Malešević's approach is the work of cultural-evolutionary historian Peter Turchin and his colleagues (2013), who argues that it was increasing organisational complexity and scale that allowed successive Ancient empires to withstand attack and incursion by external enemies wielding new kinds of technology of ever-increasing lethal capability (horses, chariots, weapons of bronze and iron, crossbows). Small, autonomous bands were no match for Rameses II or Genghis Khan, but what Turchin calls *ultrasociality* worked, where:

*Centralized, hierarchical chiefdoms ... scaled up into early states and empires, and eventually into modern nation-states. At every step, greater size was an advantage in the military competition against other societies.* (Turchin, 2016: 38–9)

In short, the driver of civilisation since Neolithic times has been *organisation*, honed by sporadic but increasingly damaging cross-border warfare among ever larger, complex, militarised states and marauding (unorganised) barbarians. Personal self-control over a supposed cave-man propensity to wield a club doesn't explain anything about historical change: it is not a dynamic, organisational attribute.

Malešević concludes:

*Modern polities have at their disposal enormous coercive organisational capacity, intertwined with deep ideological penetration, that tap into grassroots microsolidarities, all of which allow for the unprecedented use of violence.* (2017: 310)

So far has the militarisation of everyday life proceeded that coercion can still work by indirect means:

*When one is in possession of highly advanced military technology, worldwide organisational reach and a great deal of popular justification at home ... such modern coercive organisational machines might kill less but displace, injure, deprive, torment, agonise and ultimately control more people.* (2017: 310)

Is it possible to apply Malešević's criteria for 'organised brutality' across from violence to knowledge? Yes, I argue. First, knowledge is not simply a natural aptitude of individuals to know things on the basis of cranial capacity. On the contrary, like violence, knowledge must be understood socially, as an evolutionary process of increasing complexity in the organisation, bureaucratisation, ideological underpinning and learned microsolidarity of knowing subjects, coordinated over the past 6000 years or so by states, themselves of ever-increasing complexity as a *longue durée* arms-race has upped the technological ante for those who wanted to survive. Both violence (e.g. slavery) and knowledge-technologies based on writing took off with state-formation (monarchy). Historically, both knowledge and knowledge-technologies (writing, libraries, archives, academies) are an effect of states, not individuals.

Organised knowledge requires:

- (i) Large-scale social *organisation* (typically, state-funded universities and private research institutes), including effective *bureaucracy* (internal to the university and at system level); a centrally-directed apparatus for coordinating and mobilising collective action. Knowledge is more loosely coordinated than violence (although enforcement regimes and coercion are available to the authorities). Also needed:
- (ii) An *ideology* that unites otherwise heterogeneous groups into an abstract we identity, typically opposed to one or more conflicting they groups. Ideology can take more than left/right or progressive/reactionary political form; it can be any one of, or a mix of, *gender* (Beck, 2017), *religion* (this was the *sine qua non* of early universities), allegiance to *science* (rationalism), *patriotism* (nationalism) etc. Also needed:
- (iii) The further characteristic of *microsolidarity*, typically intense mutual loyalty within departments and disciplines, enabling research to be conducted (under hierarchical direction) by individuals who as individuals may have little natural propensity to reproduce power asymmetries, but who operate in overlapping small-world networks (Ormerod, 2012) that reward solidarity and punish defection.

Historian Yuval Harari (2014) argues that the barrier between small groups (microsolidarity) and large ones (ideology) is the so-called Dunbar number, calculated by anthropologist Robin Dunbar to be the number of persons with whom any one individual can maintain stable relations. That number is 150. Below it, and

knowledge of other people is connective *cnāwan*; over 150 and knowledge is abstract *gnosis*, shared among a culturally coherent group of cooperating strangers, held together in ideology for larger competitive purposes. Harari writes:

*Below this threshold [150 persons], communities, businesses, social networks and military units can maintain themselves based mainly on intimate acquaintance and rumour-mongering. There is no need for formal ranks, titles and law books to keep order. A platoon of thirty soldiers or even a company of a hundred soldiers can function well on the basis of intimate relations, with a minimum of formal discipline. ... But once the threshold of 150 individuals is crossed, things can no longer work that way.*

He resolves the scalar question:

*How did Homo sapiens manage to cross this critical threshold, eventually founding cities comprising tens of thousands of inhabitants and empires ruling hundreds of millions? The secret was probably the appearance of fiction. Large numbers of strangers can cooperate successfully by believing in common myths (2014: Ch1).*

Universities – and knowledge beyond the scale of personal recognition (*cnāwan*) – are such *myths*.

As far as smaller groups go, converting the crucial concept of microsolidarity into the language of economics, Potts et al. (2017) and Hartley et al. (2017) have proposed the notion of ‘*knowledge clubs*’, following James Buchanan’s and Elinor Ostrom’s treatment of club goods and common goods (in addition to the more familiar private and public goods), which allows for purposeful clubs and identity-sharing commons (or ‘thought collectives’)<sup>8</sup> to cooperate in the creation and sharing of knowledge.

### **Universities and violence: organisation + ideology + microsolidarity**

Centralising forces set the rules-of-the-game, which coordinate disparate knowledge systems, without the need for single controller.<sup>9</sup> Louis Althusser, long out of fashion as a political theorist, nevertheless was onto something with his concept of ‘ideological state apparatuses’ or ISAs. He uses a broad brush to encompass their society-wide scope. He lists the ISAs as follows:

- Religious,
- Educational,
- Family,
- Legal,
- Political,
- Trade-union,
- Communications and Cultural.

Each is understood as a social system or cultural complex, not just one organisation, and not under centralised control. The array is not a conspiracy, but an *uncertain order*. That is why, as he put it, ‘the unity that constitutes this plurality of ISAs as a body is not immediately visible’. There’s a dynamic tension among various forces and systems that are by no means unified in purpose or method. Knowledge clubs, for instance, may operate under a general ideological and bureaucratic order, but nurture quite other purposes (critical, scientific, communitarian or commercial) at the club level. That is why knowledge cannot be socially organised by administrative (state) means alone. It needs appeal and allegiance, not regimentation. Here is where Malešević’s model is compelling, because it shows that organisation alone is not enough. Both ideology and microsolidarity are also needed.

However, where once *religion* provided a population-scale unifying story, in modernity, ‘the educational apparatus is in fact the dominant Ideological State Apparatus in capitalist social formations’ (Althusser, 1971). Thus, education (from K-12 schooling to Higher Education), rather than gods or monarchs, provides the macro-scale ideological function for complexly organised societies; loose enough to accommodate different allegiances and ambitions among those involved, but coherent enough to win assent from otherwise antagonistic social groups.

<sup>8</sup> ‘Thought collective’ is a term Ludwik Fleck developed in the mid-1930s. See: <https://plato.stanford.edu/entries/fleck/#3>.

<sup>9</sup> See also: <http://ghostprof.org/wp-content/uploads/2013/09/Althusser-on-ISA-and-RSA.pdf>.

Universities serve a double function in the social organisation of knowledge: they *produce* knowledge for state development and defence; they *teach* populations the ideology of education. This explains why research and teaching remain yoked together, when they could have specialised out into separate industries. It is because their functionality is strategic, not industrial or market-based.<sup>10</sup> Universities are not really (or not only) about making competitive-individual knowing subjects; they are about making a productive-knowledge *culture*, which needs to be transmitted through time, to *the youth of the day*, in order to sustain a polity as an adaptive system.

Inside the university, teachers, researchers and the increasing army of part-time, short-contract adjuncts are encouraged to develop microsolidarity, despite the reduction of academics to the 'precariat'.<sup>11</sup> What generates social cohesion and authorises collective action in these contexts is learned loyalty to one's immediate colleagues and students, not necessarily to the stated purposes of the university hierarchy or desires of the funding agency. Just as individuals are 'reluctant killers' (Malešević: 302), requiring organisational scale, bureaucracy, ideology, and well-honed microsolidarity to ensure military effectiveness (capacity and willingness to kill on command), so individual academics are routinely reluctant to pursue knowledge in the interests of power (to which they may wish to speak truth). Nevertheless, in the collective, they remain effective agents of centralised purposes (or, at least, functions). Knowledge is routinely produced by small, intensely self-loyal groups (labs, colleagues, clubs), organised into larger units over which their members do not exercise control. Dissemination (teaching) is part of the control structure, not in the gift of knowledge-makers directly. Thus, making knowledge must be explained by reference to the organisation of groups, the imperatives of ideology and the trust-loyalty of microsolidarity.

Universities should be seen as integrated into the organisational systems of states, in this case being the tool they have evolved to become or remain organisationally and technologically competitive. Knowledge is made productive by interconnecting its strategic purpose, institutional form, coercive (disciplinary) power, and individual identity-formation. Whether it is needed for strategic (security) or economic (enterprise) purposes, universities have proven over the last 1000 years to be an efficient and adaptable institutional form for gathering, clarifying, concentrating and mobilising knowledge for social action by others. This explains the division of knowledge into disciplines, the division of labour into specialisms, and the bureaucratisation of both research and teaching around external scrutiny, audit and funding decisions based on 'impact' beyond academia.

The need to renew and acculturate a professional-specialist class, to have youth join the groups that will take productive knowledge into the next generation (and into new problems), explains why research and teaching remain yoked together in comprehensive universities, rather than themselves following the logic of specialisation by dividing research, teaching and popularisation into different industries (as some have certainly tried to do at the outer margins of the university system). In short, universities are not really making individual knowing subjects, they are making socialised knowledge and knowledge cultures; the 'demes' (i.e. inter-knowing subpopulations, defined by language, codes and conduct: Hartley and Potts, 2014) or thought collectives (Fleck) that can operate as complex, elaborate and state-directed systems, unified by internal ideology and local microsolidarity. Academics are encouraged to share ideological abstractions about what their work is for (and what against), who it serves (and who it opposes), and why it remains a worthy calling, despite the fact that many of them earn less than janitors, pet-sitters and other lowly service positions.<sup>12</sup>

An approach to culture that captures causation at scale is 'cultural science' (Hartley and Potts, 2014), which summarises the process thus: *culture makes groups* (at both macro- and micro-scale); *groups make knowledge*; and knowledge in turn enables the reproduction and extension of groups, their interactions and resilience against incursion. The lesson of this model of knowledge is that the deeper and more specialised it is, the more likely that it is designed for exclusive use by a power group (a firm, nation, or discipline) to the exclusion of other groups, in an adversarial-competitive system that is the very opposite of open.

At the same time, the group in whose name such partial-but-universal knowledge is created and deployed is in every case a *fiction* – an entity that is imagined by humans, not found in nature but constructed in discourse (so, cultural in the broadest sense). According to the historian Yuval Harari (2014), such 'fictions' include gods, nations, money, corporations, human rights ... and universities, we might add. All of these

<sup>10</sup> See also: <https://theconversation.com/civilisation-as-we-dont-know-it-teaching-only-universities-28505>; and: <https://theconversation.com/teaching-only-roles-could-mark-the-end-of-your-academic-career-74826>.

<sup>11</sup> Janitors: <http://gawker.com/the-academics-who-are-treated-as-less-than-janitors-1775518734>; pet-sitters: <https://www.theguardian.com/commentisfree/2015/jun/22/adjunct-professor-earn-less-than-pet-sitter>.

<sup>12</sup> Pet-sitters: <https://www.theguardian.com/commentisfree/2015/jun/22/adjunct-professor-earn-less-than-pet-sitter>.

fictional (not found in nature) but powerful organisational units (institutions of discourse) impede any tendency for knowledge to be free – global, open and available to all. Fictionalisation is institutionalised, using costly rhetorical signals of power and prestige that range from marble halls and ivory towers to prizes for high-cites, disproportional celebrity for the winners (e.g. Nobel laureates) and ranking contests for top universities, held together internally by common languages and cultures that promote trust for insiders (those in the deep knowledge game, wherever they are located) and distrust of outsiders (external competitors and internal denizens of wild knowledge systems).

We still treat formal knowledge as a strategic weapon with which to defeat outsiders, not as a public good, open to all. Knowledge in its productive, specialist guise remains tied to state and corporate purposes, still founded on defence industries, resource exploitation, coercion of populations (by regulation, administration and property rights, if not the sword), and fear of incursion. Knowledge is not like information that ‘wants to be free’.<sup>13</sup> In practice, corporate-state investment in knowledge wants it to *prevail* (e.g. Edgerton, 2006). From this perspective, popular culture is downgraded and denigrated; it’s a market for commercial exploitation and regulation but not a resource for lifting the levels of general understanding. Regrettably, that sort of approach also contributes to the spread of *knowledge poverty* (Bielenia-Grajewska, 2015) among the general population, confining their function to consumption instead of participation as users in the productive creation of new knowledge, which, if achieved, would massively expand and diversify the overall knowledge system.

### **Tribal Knowledge: recognition in the wild**

What of the wilder side of knowledge? Actually, being ungoverned by strong-state apparatuses does not mean living in the wilderness. In fact, it is a good place to look for self-organised groups, for ‘autopoiesis’ or self-creation (Luhmann, 2013, 2000) – where the self that is created is the group, not the individual. It is the group that survives, along with its knowledge and technology, even though every individual, even the most heroic, comes and goes. As I’ve mentioned, connective or cultural-communicative knowledge is the means for creating cohesive and resilient groups in the first place, using the oral-aural resources of language and other semiotic systems and technologies to create, store and deploy accumulated, collective, anonymous wisdom by means of anonymously generated and regulated meaningfulness (and to defend the same against incursion, theft and duplicity). This process is not reserved to elites, but extends across (and so constitutes) *interknowing subpopulations*, or demes (Hartley and Potts, 2014). Connective knowledge is demic – constitutive of groups such as clans, tribes, communities, nations, language-groups etc. (Evans, 2009).<sup>14</sup> Demes are held together by Harari-scale fictions, which range from imaginative but instructive stories all the way through to the foundation stories of polities (‘these truths’ that ‘we hold ... to be self-evident’, as the US Declaration of Independence has it). We-groups are also held together by informal but formulaic micro-scale talk, jokes etc., designed not so much to impart information as to keep open the communication channel. Linguists call this the phatic function of language; it is one that has transferred readily to social media (Li, 2015).

For most of what James Scott calls ‘species history’, humans were “‘unadministered’ peoples assembled in what historians might call tribes, chiefdoms, and bands’ (2017: 15). For ‘ninety-five percent of the human experience on earth, we lived in small, mobile, dispersed, relatively egalitarian, hunting-and-gathering bands’ (Scott, 2017: 5). It is during this long period that culture was established and evolved – along with technologies – as the prime mechanism for the production and transmission of knowledge: internally among band members; externally between groups; and temporally across generations.

However, in the relatively short period since states and then writing first emerged, prejudice *against* tribal (or barbarian) knowledge systems has become almost compulsory among those who pursue productive knowledge. Writing and literacy lost their association with tax-collection, slavery and monarchical-imperial coercion, becoming the only trusted medium for expert knowledge, especially after printing with moveable type was established. Scholars still privilege the print form for ‘papers’ even though they have migrated decisively to digital forms.

<sup>13</sup> See: [https://en.wikipedia.org/wiki/Information\\_wants\\_to\\_be\\_free](https://en.wikipedia.org/wiki/Information_wants_to_be_free).

<sup>14</sup> The term ‘deme’ does not carry the ideological baggage associated with a term like ‘tribe’. It encompasses various types of self-identifying group, so it can equally describe a nation or ‘scientists’. It follows that any one individual will identify with multiple demes; indeed, the ‘growth of knowledge’ may be measured by long-run increases in the number of ‘demes per person’ across heterogeneous populations (Hartley and Potts, 2014: 214–22).

Meanwhile, folklore, myth, song, story, formulaic genres, ritual, together with their stores of culture-coded knowledge, were discursively denigrated and downgraded to the point of dismissal, even though these were the tools for one of humanity's 'most creative periods', as Claude Lévi-Strauss pointed out long ago:

*This stage [the Neolithic Revolution] could only have been reached if, for thousands of years, small communities had been observing, experimenting and handing on their findings. This great development was carried out with an accuracy and a continuity which are proved by its success, although writing was still unknown at the time. (1955: 391–3)*

Connective knowledge developed over millennia for the cohesion, survival and reproduction of limited-scale, self-organising groups, and was dispersed in trade and conflict with others. It is endowed with various coding tricks to keep it memorable for insiders but hidden from competitors, and it can be reduced to formulae that allow it to be applied in unpredictable or uncertain circumstances, according to the needs of the moment. It has been shaped by continuous evolutionary forces and accidents over the extreme *longue durée*. It is produced anonymously, in flux of active use. It *belongs* to no state or property regime but to the whole population who share its language and, at macro-scale, to the species whose history it both records and performs.

## Medieval ISAs

It is by exactly these means that medieval monks across Europe were able to cast the Vikings as marauding barbarians, bent on rape, murder and pillage, the very epitome of wild, tribal, natural aggression in action. It was the monks who wrote the histories, not the Vikings:

*Monks and clerics well-nigh monopolized early medieval literacy, so preserved chronicles and other literary works preserve their perspective, which understandably was utterly hostile to their attackers. The Vikings thus earned an unfavourable reputation as “a most vile people” and “a filthy race.” In contrast, I argue that their violence, seen in broad historical context, was no worse than that of others in a savage time, when heroes like Charlemagne (d. 814) killed and plundered on a much greater scale than the northern raiders (Winroth, 2014: 12).<sup>15</sup>*

Anders Winroth (2014), in fact, allows us to glimpse a contrary reality: that the Vikings were doing post-Roman Europe a favour, because their particular version of Schumpeterian 'creative destruction' literally liquidated otherwise sunk capital (melting down ecclesiastical silver), and opened up the continent to trade (not least in monkish and civilian slaves). In short, against the rigid and defensive 'fortress' knowledge of the early Medieval states, wild or tribal knowledge favoured trade, internationalism and expansive liquidity.

But the monkish myth continues to hold sway, 1200 years later. Although many Roman cities were abandoned and modern European states and towns emerged directly from barbarian settlement and trading patterns, a centuries-long and still-continuing tension persists between Classical (control, proportion, precision) and Gothic (savageness, changefulness, artisanship),<sup>16</sup> expressed in art, literature and architecture – as well as on Netflix. Along with other barbarians who swept through Europe after the fall of the Roman Empire, Vikings were cast in mythical roles that still resonate today (Linder, 1982). You can't use words like Viking, Goth, Vandal, Hun – or Dothraki – without a frisson of monkish fear or Latin enmity. In pursuit of connective affect, fantasy fiction puts the 'marauding barbarians' in attractive costumes, from *Vikings* to *Game of Thrones*. They retain the charisma of the wild, especially when safely abstracted into the imperial story.

This formula became the *algorithm* (Finn, 2017) for any uncivilised threat, including from virtual groups in popular culture (subcultures) and, lately, from the new tribes of populist politics. The stories used to sustain

<sup>15</sup> As did the supposedly 'civilised' Romans. Julius Caesar's conquest of Gaul was reckoned by Plutarch to have resulted in the death of one million Gauls and another million enslaved (*Life of Caesar*, XV.5; *Life of Pompey*, LXVII.10).

<sup>16</sup> An unusually direct statement of this tension can be found by Mark Bernstein, an editor of *The Victorian Web*: 'Classical architecture is a universal architecture of precision, planning, and control. Each element has its proper place and size, and each is subordinated to the greater plan. In antiquity, classicism was the architectural language of empire; in the nineteenth century it was the language of manifest destiny and of a Republic taming the wilderness; in the twentieth century, it became the language of fascism. Ruskin expounded an (admittedly ahistorical) vision of the Gothic in opposition to the Classical, emphasizing savageness and changefulness as the touchstones of the Gothic. Changefulness refers to continuous change, as the vaulted rib has no single radius of curvature but changes continuously as it flies. Savageness refers to clean breaks, to asymmetry, to unique work expressed by different hands where structural constraints allow such variation.' <http://www.victorianweb.org/art/architecture/classical/bernstein.html>.

one side in those conflicts, and to belittle or insult the other (to the point of annihilation by conquest), are coded in our narrative forms, from movies and science-fiction to fake news and the conflict between science and populism. The formula remains readily to hand for application to any group: our side is civilised (so mass control by killing/subjugation is OK); theirs is barbarian (so small-scale attacks are sensationalised).

But the narrative is toxic. Crushing 'nations of free barbarians' in the name of modernity has not delivered 'industry, order, and ... enlightenment' as modernising radicals hoped (Engels, 1848);<sup>17</sup> only more violence and slavery, on a scale few tribal groups could imagine (Daesh excepted, perhaps). In such circumstances, knowledge is not free, it is not open. It is constituted in adversarial conflict and divided by boundaries that we have preserved in stories, games, codes and rules that last for generations and millennia, using them to authorise atrocities.

The digital era has ushered in further polarised conflict. After Trump, a commitment to truth has had to vie with medieval troth: remaining true to a cause, where 'recognition' and 'acknowledgement' (*cnāwan*) are the currency, trumping Enlightenment reason (*gnosis*). The walls of this civilisation are going up against tribal outsiders again. One camp's 'reason' is another's 'mental disorder', at least according to a placard brandished by alt-right activist Milo Yiannopoulos during a 2017 staged invasion of the UC Berkeley campus.<sup>18</sup> Migrants, refugees – and cosmopolitan scientists – are cast as wild and dangerous. States act to stop ideas crossing their borders. Internal difference is recast as treachery. Hate-speech and trolls dog the heels of free expression. Knowledge is used to defend borders, not to cross them.

### Openness across adversarial borders

Here in fact is the space – *between two systems*, not choosing one or the other – where open knowledge can prove to be of crucial importance, providing a new inter-cultural space where each group can learn from others. Open knowledge is a means to integrate productive and connective capabilities. If we want to synthesise productive knowledge and connective technologies, then we need to understand culture. *Tribe* is just another word for a culture-made group. Groups (demes) are essential to human survival. They make, preserve and transmit knowledge to succeeding times, not only about the world and how to act in it, but also about personal meaning, identity, social relationships and trust. This locates knowledge firmly inside culture. A worthwhile cultural science needs to understand that process. Knowledge that binds a group together and sets it apart from outsiders is following ancient rules, using oral and ceremonial codes, carried in language, story, song, spectacle and ritual. Tribal knowledge is coded to trust insiders but to distrust outsiders. Scientific society is not exempt from this history. Universities too depend on internal tribal markers of group-identity, to facilitate trust and connectivity. Unlike data, such knowledge cannot simply flow across cultural boundaries.

The reason for taking time to elaborate these two modes of knowledge is not the usual one of separating out our civilisation from primitive pre-moderns, who may be judged "barbaric", "cruel", "impetuous", "uninhibited" and "childlike" by moderns like Pinker (Malešević, 2017: 310; see also Lewis and Lewis, 2018). Rather, it is because the connective variety of knowledge is making a big come-back in the age of social media and global connectivity. In turn, that has caused a rethink of species history, with attempts to bring *cooperation* back into the explanatory framework after several decades of selfish genes, behavioural individualism and greed-is-good economics. However, with cooperation comes contamination. Social media are re-establishing oral-aural modes of thought in public discourse (Ong, 2012), including restoring the primacy of groups and borders (for good and ill).

### Agonistic knowledge: Let's go clubbing!

Open knowledge doesn't mean that everything is accessible to everyone. Rather, it should mean knowledge that integrates the learned and the popular, productive and connective, disciplined and wild, such that 'open' signifies a cultural tendency to *value the loss of control* as knowledge is shared across 'demic' boundaries (Hartley and Potts, 2014), and an openness to accepting back the product of what happens after the translation across that boundary (Lotman, 1990) has happened. So open is not an access key but a cultural orientation towards creating and benefitting from productive inter-demic conflict over shared knowledge-

<sup>17</sup> Quoted in the blog of René Merle: <http://merlerene.canalblog.com/archives/2014/08/27/31964882.html>. Engels was reporting on the defeat of Bedouin tribes in the French invasion of Algeria, 1848.

<sup>18</sup> The placard read: 'Liberalism is a mental disorder. Our borders language culture make America great!' Source: [https://www.buzzfeed.com/josephbernstein/heres-how-breitbart-and-milo-smuggled-white-nationalism?utm\\_term=.byBRn7jyG#.xt8JMqbNZ](https://www.buzzfeed.com/josephbernstein/heres-how-breitbart-and-milo-smuggled-white-nationalism?utm_term=.byBRn7jyG#.xt8JMqbNZ), September 24, 2017.

boundary objects. It means that instead of using knowledge to 'club' opponents (cave-man style), we can find new ways to 'club together' for experimentation, innovation, and integration of difference across a global, technology-supported 'knowledge commons' (Potts et al., 2017).

Setting free the critical powers of humanity, as recommended by Popper, requires open knowledge to be developed within and among groups, using translation between cultural codes, such that innovation based on the clash of difference can emerge. Such clashes, however, can slide too easily into *antagonism* (making an enemy out of the opponent) rather than maintaining what Chantal Mouffe (2014) has called *agonism*, (staged or performed conflict) where the opponent is treated as an adversary, as in parliamentary party politics or legal disputation, but not an enemy at daggers drawn. She writes:

*Pluralist democracy is characterised by the introduction of a distinction between the categories of enemy and adversary. This means that within the 'we' that constitutes the political community, the opponent is not considered an enemy to be destroyed but an adversary whose existence is legitimate. ... agonistic confrontation, far from representing a danger for democracy, is in reality the very condition of its existence. ... Democracy ... must enable the expression of conflict, which requires that citizens genuinely have the possibility of choosing between real alternatives. (Mouffe, 2014)*

The ability to distinguish enemy from adversary seems to have been severely eroded in recent democratic politics, suggesting what Stuart Hall (1982) once called a 'return of the repressed' in democratic discourse: that is, a return of *cultural* (tribal) categories over *universalistic* (rational) ones. But this does not necessarily mean a return to whatever is feared from civilisation's opposite (primitivism; chaos). Instead, it is to recognise that the cultural differentiation of we/they categories runs deep; it cannot be universalised into neutral abstraction. On the contrary, it drives adversarial clash and contest in ways that may produce new knowledge.

Thus, we must find ways to value diversity. There are biological as well as ideological reasons for doing just that. Integration does not mean consolidation into an overall uniformity. Language doesn't work like corporate mergers and acquisitions. As evolutionary linguistics has shown, there are no 'linguistic universals' but only a human-made 'communication system which is fundamentally variable at all levels':

*Recognising the true extent of structural diversity in human language opens up exciting new research directions ... with new opportunities for dialogue with biological paradigms concerned with change and diversity, and confronting us with the extraordinary plasticity of the highest human skills (Evans and Levinson, 2009).*

Cultures are different from each other (externally), despite the biological uniformity of the species. At the same time, 'intra-cultural uniformity' can be observed (internally), despite the variability of neural machinery:

*But that is the human cognitive specialty that makes language and culture possible – to produce diversity out of biological similarity, and uniformity out of biological diversity (Evans and Levinson, 2009).*

These are matters of *scale*: diversity and uniformity do not contradict one another because they occupy different systemic *levels*: at the level of the individual we find diversity; at the level of the group we find uniformity, which is itself an evolved cultural artefact, constantly remade through the application of organisation, ideology and microsolidarity.

## Play's the thing

In a diverse system, it is *staged conflict* and the *performance* of knowledge (Herrmann-Pillath, 2018) that binds and separates groups. There is no need for the analyst to take sides when trying to understand knowledge as a communicative phenomenon: more useful would be attention to dialogue and dynamics, diversity and discursive path-dependency at all scales. In short, knowledge must become openly reflexive.

Unproductive but connective activities (such as play) are culturally evolved mechanisms for remaining open to radical change. Universities and open knowledge systems need to be players, performers and theatres of openness; semiotic spaces that can both value diversity of knowledge and recognise their own cultural, linguistic and ideological provenance, even as their internal knowledge clubs strive to find universal laws, truth-tested conjectures and viable interpretations.

Instead of dismissing social media, popular culture and informal knowledge as tribal, we need to ask why that form of knowledge organisation worked so well for so long. Instead of insisting that only centrally organised knowledge is the mark of civilisation, we need to ask more about how it might be used, how its results include slavery and violence (for them) as well as freedom and enlightenment (for us). Such a re-conceptualisation would apply to cross-border dialogue of all kinds: international relations and trade between countries; academic and popular discourse; science/technology and magic/alchemy (whose origins are shared: Finn, 2017); all the way out to the worlds of myth and fiction, where humans meet and rehearse their possible interactions with new kinds of other – aliens, robots, fantasy beasts and monsters. Should we try to defeat them, or learn from them?

Digital globalisation is an outcome of the most ancient cultural heritage (Hartley, 2018), where language, custom, ritual and staging were all used to create distinctions between insiders and outsiders, allies and opponents. But groups also provided intermediate grounds to meet, talk and dance (whether tribal corroboree or diplomatic ball), thereby avoiding active hostility (warfare) even among adversarial neighbours. An open society that sets free the critical powers of humanity can work at global/species scale if:

- ‘Others’ are understood as independent sources of knowledge,
- Borders are recognised as translation zones,
- Difference is negotiated (agonistic) and valued as a source of newness,
- Purposeless play is accepted as a means for creating new groups and thence adaptive knowledge,
- Open knowledge is recognised as reflexive (self-correcting), diverse (productive) and demic (connective).

Recognising that culture makes groups and groups make knowledge that is always marked with adversarial exclusions, a remaining question for universities is this: Can they share both productive and connective knowledge systems openly and globally, using playful ideas and performance to turn knowledge culture away from its violent past, not towards the next imperial power but towards an open future for user-populations, across a multiplicity of contested but productive borders?

## Competing Interests

The author is Editor of *Cultural Science Journal*.

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