Heterarchy

Erwin Dekker

Erasmus School of History, Culture and Communication, Rotterdam, Netherlands
e.dekker@eshcc.eur.nl
+31 10 408 2460

Pavel Kuchař

Facultad de Economía-División de Estudios de Posgrado, Universidad Nacional Autónoma de México, Ciudad de México, México
pavel.kuchar@economia.edu.mx
+52 (55) 5624 8977

Abstract: Whenever agents choose A instead of B, B instead of C, and C instead of A, a logical contradiction arises. This contradiction – also known as a value anomaly – characterizes genuine choices. Some organizations and firms, but also legal systems, markets, or even the human brain can be regarded as complex systems that manage the value anomaly by operating with multiple mutually incompatible ordering principles. Such a management – as opposed to a mere elimination – of these mutually incompatible values allows these systems to better cope with uncertainty, and to benefit from the recognition of complexity. One of the central implications of these heterarchical systems is that there is no single scale on which unequals can be compared and, consequently, that commensuration is an active process which involves friction and opportunities for entrepreneurship. We argue that in a world that naturally seems to be characterized by these value anomalies, heterarchical organizations and, in particular, heterarchy as a complex system of valuation might well be a good response.

Definition: Heterarchy is a complex adaptive system of governance, an order with more than one governing principle. Heterarchies include elements of hierarchies and networks, but in a number of important ways, heterarchies are different from both of these systems of governance. The model of heterarchical governance is like plate tectonics: mutually self-contained orders with unclear hierarchies among them.

Origins of the Concept: A Value Anomaly

The concept of heterarchy dates back to 1945 when Warren S. McCulloch, a neurophysiologist, presented a problem defined by a logical contradiction that is characteristic for any system (be it a group of neurons, an individual, or an organization) that chooses A instead of B, B instead of C, and C instead of A. This value anomaly is present in any system that has to make a choice between two or more potential acts that are incompatible (McCulloch 1945, 90; cf. Shackle 1979). Without the logical contradiction – without two or more potential acts that are incompatible – there is no space for a genuine choice based on disparate evaluation criteria. A decision ultimately relying on an algorithm, on an overarching metric, suffices.

Law and economics as a discipline has been defined by such a logical contradiction. The field has forever faced a tension between the internal order of the market and the internal order of the law. One tendency, when faced with such a heterarchy of values, is to attempt to regulate or otherwise clear up the conflict by defining and applying a hierarchy of values. This approach has been adopted by scholars developing the economic analysis of law, which is aimed at demonstrating that law really is about efficiency (Posner 1973).

Hierarchies of Values, Commensuration, and Genuine Choice

Whether we like it or not, conflicting demands and contradicting values form integral parts of complex systems which cannot be reduced to a single ordering principle. What is right may be, sometimes at least, fundamentally at odds with what is efficient, and getting rid of the heterarchy of values might be the wrong approach to begin with. A growing number of social scientists have recognized that heterarchies actually have strengths of their own, which we often fail to appreciate. These scholars suggest that our brain (Bruni and Giorgi 2015), firms and organizations (Hedlund 1986, 1993; Hedlund et al. 1990; Girard and Stark 2003), constitutional legal systems (Joerges et al. 2004; Halberstam 2008), and systems of global governance (Baumann and Dingwerth 2015) are all examples of heterarchies and that the value anomaly which McCulloch identified is a feature that defines these systems, not a bug to be done away with. Heterarchy seems to be the natural state of the world, and heterarchical organizations (including the brain) might well be a response to that world.

In a heterarchy of values, different and often incompatible logics of what is valuable are at play. Yet, the difficult requirement to reconcile incompatible situational logics may be eliminated by transforming qualities into quantities, in other words, through commensuration. When an overarching value like efficiency, equality, or fairness is found, the choice is reduced to figuring out which option scores better on the value metric. Commensuration transforms the system with a heterarchy of values into one with a hierarchy of values. In such a system, a genuine choice between incommensurables is not necessary, it is in fact ruled out. While commensuration seems to be a sine qua non for a rational choice, the acceptance of a hierarchy of values might have performative collateral effects – commensuration may transform the character of one's decision-making effectively turning one's passions from something boundless and elusive to something graspable and orderly (Nussbaum 1986). The danger of such a transformation is that when it happens, we "must see the beauty or value of bodies, souls, laws, institutions, and sciences, as all qualitatively homogeneous and intersubstitutable, differing only in quantity" (Nussbaum 1984, 68; cf. Mill 1863); when such a transformation happens in economics, we become convinced that the relation between any two desired things is always conceived of as a problem of making the right trade-off.

Heterarchy, Incommensurability, and the Exchange of Unequals

Claims about incommensurability are typically made where different modes of valuing overlap and conflict with one another (Espeland and Stevens 1998). This happens at the intersection of diverse systems of worth that sustain disparate mental models and justify conflicting institutions and situational logics. But while some kind of commensuration is necessary for markets to exist, making artifacts commensurable requires effort; no artifacts – be it persons, goods, and organizations – are essentially commensurable on their own (Dekker and Kuchař 2016).

When people trade they exchange artifacts which they value less for other ones they value more. Trade is thus an exchange of unequals but possibly also of competing principles or notions of worth (think, e.g., about the legal differences between goods and persons). If one artifact is to be traded for another in a market, conflicting principles of valuation have to be reconciled through commensuration. Legal scholars often treat this question as a formal matter, what is necessary is a system that turns possession into property. It seems to be the case, however, that equally necessary, perhaps even a prerequisite for trade to happen in markets, is a social process that by way of commensuration legitimates trade. And indeed, market interactions are embedded in frameworks that make comparisons of unequals possible and that legitimate these comparisons. These institutional frameworks enable agents to negotiate between different modes of valuing that make up the heterarchy of values.

Entrepreneurship and Legitimation of Markets

The social process of commensuration requires entrepreneurial action because trade is not naturally legitimate. We highlight three points why this is so: First, as we have demonstrated elsewhere, some broader agreement on what an artifact is good for greatly facilitates trade and is required for its legitimacy (Dekker and Kuchař 2017). Such an agreement may emerge when the meaning of exchange is contested. Second, by introducing a good, a price tag is put on the object which makes it comparable with many other artifacts (within a circuit of commerce, cf. Kopytoff 1988). In some cases, this might be considered illegitimate, allowing us to explain the existence of separate circuits of commerce, rather than unified markets (or one big market). This happens when commensuration with (some subset of) other goods is contested. Third, the entire idea of monetary valuation might be resisted, because it devalues the "sacred." How much does a seat in parliament cost? On the margin, how much freedom should we give up to make our markets "more competitive"? Artifacts like voting rights or justice may under some circumstances be considered as unique. When this happens, commensuration with money is contested. In such cases, a unified metric is lacking, and we face a genuine choice.

None of the abovementioned examples rely on strict commensuration in that the artifacts in question are 3 ft long or 5 ft high. But they rely on a commensuration in terms of moral categories. Within these different moral categories and hence within different circuits of commerce, we will find different norms of ownership and different norms of exchange and redistribution that will lead to different forms of property and contract law on which well-functioning markets rest.

Applications of the Concept Across Disciplines

The idea of heterarchy has been applied in fields such as anthropology, political science and institutional economics, international political economy, organization theory, or sociology. For example, Carole Crumley, an anthropologist, defined heterarchy as "the relation of elements to one another when they are unranked or when they possess the potential for being ranked in a number of different ways" (Crumley 1995, 3). She found hierarchical theories to be inadequate in explaining the emergence of modern states. In her seminal paper, Crumley criticized the idea that order in human society must rest on hierarchical systems of governance mechanisms pointing toward a "conflation of hierarchy with order [that] makes it difficult to imagine, much less recognize and study, patterns of relations that are complex but not hierarchical" (Crumley 1995, 3).

That order and hierarchy do not necessarily come together is a prominent message throughout the work of Elinor Ostrom who suggested that a heterarchical organization of water supply in California (Ostrom 1965) or polycentric organizational structure of public safety provision (Ostrom and Parks 1973) may, in fact, be a good idea for public policy: "not a single case was found where a large centralized police department outperformed smaller departments serving similar neighborhoods" (Ostrom 2010, 644).

The concept of heterarchy has also influenced the study of international relations and sociology of law through the idea of legal pluralism. Legal pluralism may lead to conflicts, tensions, and boundary disputes which often result from collisions between plural discourses of contradictory legal regimes. These tensions present international actors with paradoxical demands. Paradoxical double-bind situations typically arise when the social environment makes ambivalent or contradictory demands to which organizations must respond. The organizational response to these paradoxical situations tends to be neither contract nor hierarchy but hybrid networks (Hutter and Teubner 1993) that may allow for the transformation of external incompatibilities into internally manageable contradictions.

Heterarchies as Complex Systems of Valuation

Inconsistency and contradiction between institutional frameworks can bring about opportunities for innovation and change. On the other hand, the overlap between institutional orders that sustain different modes of valuation are also sites of fierce struggle between different situational logics that give rise to different standards of proper and permissible behavior. When institutional frameworks that sustain conflicting modes of valuation overlap, uncertainty arises. This uncertainty creates opportunities for proponents of alternative modes of valuation that legitimate certain applications of novel artifacts. In such a perspective, entrepreneurship is not seen as a property of individual proponents of particular modes of valuation. Rather, entrepreneurship is a property of a group that may or may not allow for a heterarchy of values (Stark 2009).

Heterarchies are complex adaptive systems precisely because they interweave a multiplicity of criteria according to which performance may be evaluated, esteemed, or appraised. These heterarchies of worth are organizational structures in which a given element may simultaneously be expressed in multiple overlapping networks that maintain separate situational logics and that constitute separate orders of worth (Stark 2017; cf. Boltanski and Thévenot 2006). Contending frameworks can themselves be a valuable organizational resource that fosters entrepreneurship by bringing about uncertainty. Consequently, entrepreneurship as a feature of an organizational structure consists in the ability to keep multiple evaluative principles in play and to exploit the resulting friction that arises as a result of their interplay. Entrepreneurship exploits indeterminacy by keeping open diverse performance criteria rather than by fostering consensus about one set of rules that would apply to every element in the whole system.

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