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DOI:

[10.1007/978-1-4614-7883-6_640-2](https://doi.org/10.1007/978-1-4614-7883-6_640-2)

Document Version

Peer reviewed version

[Link to publication record in King's Research Portal](#)

Citation for published version (APA):

Dekker, E., & Kuchar, P. (2021). Heterarchy. In A. Marciano, & G. B. Ramello (Eds.), *Encyclopedia of Law and Economics* Springer New York. https://doi.org/10.1007/978-1-4614-7883-6_640-2

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Heterarchy

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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 and Relevance of the Concept

The concept of heterarchy is most frequently employed in the field of political economy to refer to political structures which consist of co-existing systems of governance without a clear hierarchy between them. While it is typically assumed that a governance structure is well-ordered when there is a clear hierarchy between the different elements in the system, heterarchical systems may also be orderly even though the hierarchy between the different elements is often not unambiguously defined.

The concept of heterarchy dates back to 1945 when Warren S. McCulloch, a pioneer systems theorist, 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. McCulloch used the value anomaly to describe the functioning of the human brain which consists of interacting orderly sub-systems without a clear hierarchy between them (McCulloch 1945, 90). This value anomaly, which is known among economists as a violation of transitivity, results from the fact that there is not one unifying ordering principle within a system. If we somehow manage to remove the logical contradiction and get rid of two or more potential acts that are incompatible then the space for a genuine choice based on disparate evaluation criteria closes down. A decision ultimately relying on an algorithm, on an overarching metric, suffices (Shackle 1972).

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

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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 some scholars developing the economic analysis of law, which is aimed at demonstrating that law really is about efficiency (Posner 1973). Additionally, students of international law sometimes assume a clear normative hierarchy between different legal principles or systems (Shelton 2006).

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), societies with weak or absent centralized state power (Stephenson 2016), constitutional legal systems (Joerges et al. 2004; Halberstam 2009), and systems of global governance (Baumann and Dingwerth 2015) are all examples of heterarchies. 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. The concept of heterarchy has clear links with the notion of polycentricity as developed by Vincent and Elinor Ostrom (E. Ostrom 2010). Their empirical studies of the organization of public services, such as policing, demonstrated that decentralized partially overlapping departments systematically outperformed large centralized departments (E. Ostrom et al. 1978). The next section explains the origins of heterarchy in rival evaluative principles. That discussion is followed by an overview of the use of heterarchy in three different fields: political economy, legal theory, and organizational theory.

Valuation, Commensuration and the Origins of Heterarchies

In a plural society there will competing notions of value. What is right or just may conflict with what is efficient, and what is beautiful may conflict with what is true. In a hierarchical value system there will be a search for a unifying scale which allows for the clear ranking of alternative options. In economics, utility often serves this supreme role. In heterarchies such a supreme value is absent, yet this does not mean that the resulting system lacks order or is chaotic.

Instead, in a heterarchical value system we can find co-existing value systems with their own internal order (Aligica and Tarko 2013). Based on individual values a clear ranking is, at least theoretically, possible. But it is impossible to aggregate these rankings into a consistent multi-value system. Underneath such a system we find the difficult process of commensuration in which heterogeneous elements of a (social) system have to be ranked. In the process of commensuration different orders emerge, and in a completely commensurable system there is one clear hierarchy. 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).

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 orders of worth (Boltanski and Thévenot 2006) that sustain disparate mental models and justify conflicting situational logics (Thornton, Ocasio, and Lounsbury 2012). 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 (Beckert 2011; Dekker and Kuchař 2017). And indeed, market interactions are embedded in frameworks that make comparisons of unequals possible and that legitimate these comparisons (Roth 2013). The existence of competing values in a pluralistic society gives rise to modes of organization which attempt to deal with the underlying value heterarchy, organizations impose order and hierarchies (Williamson, 1976), but as is clear from the studies we discuss below organizations and governance systems might also (partly) embody the underlying value heterarchies.

Political Economy

The usage of the notion of heterarchy in the field political economy originates with Carole Crumley who 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; for a more recent treatment see Ray and Fernández-Götz 2019).

That order and hierarchy do not necessarily come together is a prominent message throughout the work of Vincent and Elinor Ostrom who suggested that a heterarchical organization of water supply in

California (V. Ostrom 1962; E. Ostrom 1965) or polycentric organizational structure of public safety provision (V. Ostrom, Tiebout, and Warren 1961) may be good ideas for public policy. Studying law enforcement, “not a single case was found where a large centralized police department outperformed smaller departments serving similar neighborhoods” (E. Ostrom 2010, 644).

In bringing the concept of heterarchy into political theory, Jack Donnelly’s analysis of international political structures was similarly based on rival ordering principles (Donnelly 2009; Fichera 2019). More recent studies have used the concept of heterarchy to study situations in which states are weak, or where rival groups are in control of partially overlapping jurisdictions (Santini and Moro 2019; Chirikure et al. 2018). Others have suggested that while the traditional state plays an important focal role, states themselves are generally supported by many other governance organizations which lack a clear hierarchy (Mohan and Parthasarathy 2016). This complex interplay between rival ordering principles, and the possible cooperation between complementary governance structures is a general characteristic of polycentric systems, but there is no consensus yet how the dynamic between conflict and cooperation is best analyzed (Jessop 1998).

Legal Theory

The concept of heterarchy has also influenced the study of international relations and sociology of law. For instance, several studies of legal pluralism went on to set straight the idea that the state is the sole or most important source of law (Santos 1987; Teubner 1991; Dupret 2007; Black 2008). Most of the empirical application of the concept has taken place in the context of international law (Krisch 2010; Teubner 2019), or international organizations such as the European Union (Halberstam 2009; Huomo-Kettunen 2013). But the concept would be equally relevant to the project of constitutional political economy. In this approach the firm (Gifford 1991), and civil society organizations (Streeck and Schmitter 1985; Vanberg 1994) have been analyzed as sources of law. The resulting system would clearly possess many of the key characteristics of a heterarchy.

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 come about neither by way of contracts nor hierarchies but rather through 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 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).

As Birkinshaw and Morrison (1995) suggested, a key feature of heterarchical organizations is that there are many centers with a mix of organizing principles which are themselves controlled in a hierarchical manner. The polycentric governance of heterarchical business organizations characterized by dispersed decision-making and lateral interactions is due to the (partially) incompatible demands, and (partially) incompatible goals that business corporations face and pursue (Ball and Junemann 2012). Stark and others have pointed out that heterarchy might be the superior form of organization under such circumstances, because it does not allow one ordering principle to permanently dominate an organization, but instead seeks to manage the tensions between different ordering principles. While the heterarchical form of governance creates a degree of redundancy within the organization, a feature also evident in overlapping legal systems, organizations with a certain degree of redundancy might be better able to cope with competing demands, and rival logics of valuation.

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 (Taylor, King, and Smith 2019). Entrepreneurship as a feature of heterarchical organizations 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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