© ARQUEOLOGÍA IBEROAMERICANA 45 (2020): 101-104. ISSN 1989-4104. https://laiesken.net/arqueologia/.

REVIEW NOTE

NOMOTHETIC ARCHAEOLOGY: A REVOLUTION IN PROGRESS

Pascual Izquierdo-Egea

Laboratory of Theoretical Archaeology, Spain
(arqueologia@laiesken.net)

ABSTRACT. *This brief contribution shows how the* archaeology of social phenomena *is turning archaeology into a true nomothetic science.*

KEYWORDS. *Nomothetic; archaeology; social phenomena.*

INTRODUCTION[1]

ARCHAEOLOGY IS BECOMING A TRUE NOMOTHETIC SCIENCE. The *archaeology of social phenomena* is making this possible. It is a real scientific revolution based on the quantitative analysis of the mortuary record, the elementary precedents of which come from Lewis R. Binford (1962, 1971) with theoretical contributions from scholars such as Leslie A. White (1943).

In 1990, the *contextual valuation method* was proposed to estimate the objective value of grave goods through their variability. This laid the foundation for an economic archaeology of the mortuary record (2012), which soon became known as the *archaeology of social phenomena* (2014) (see Izquierdo-Egea 2017a).

THE MAIN LAW OF NOMOTHETIC ARCHAEOLOGY

It has long been conclusively demonstrated that many social phenomena are recorded in the material remains of the societies that produced them. This empirical observation has become the fundamental law of nomothetic archaeology: In the absence of premeditated ideological manipulation, *social phenomena are registered in the material remains of a society* (Izquierdo-Egea 2019a). This is the first step. There are more archaeological laws. In 2015 [2012], the equation of social conflict was empirically inferred (Izquierdo-Egea 2015). From this evidence, it was possible to propose a new law: *All complex societies are conflictive* or, in other words, *unequal and poor societies are conflictive* (see below and Izquierdo-Egea 2019b, 2020).

OTHER LAWS IN NOMOTHETIC ARCHAEOLOGY

The social conflict equation (C = I/W) relates two variables: inequality (I) and relative wealth (W). The latter expresses the state of the economy at any given time. Based on it, social conflict (C) is directly proportional to inequality and indirectly proportional to the fluctuation of the economy. There are many ways to express the law derived from this equation. One of them is the following: *Social conflict appears when inequality grows and there is an economic crisis* (wealth decreases). This explains why unequal and poor societies are more conflictive than others.

The social conflict equation can be expressed in two different ways: $I = C \times W$ and $W = I/C$, from which we can deduce two new laws for inequality and wealth (or the state of economy), respectively: *Inequality grows when social conflict and wealth increases*; and, on the

[1] I am not fluent in English, but I write in this language to communicate my scientific discoveries to everyone.

Received: June 16, 2020. Accepted: June 23, 2020. Published: June 26, 2020.
Edited & Published by Pascual Izquierdo-Egea. English editing by Emily Lena Jones.

other side, *the wealth of a society grows when inequality*—understood as economic specialization in this case—*increases and social conflict decreases*. On the contrary, *inequality decreases when social conflict and wealth do the same*; on the other hand, *wealth decreases when inequality does the same and social conflict increases*.

If we take C = I/W and I = (P × W)/R (see Izquierdo-Egea 2015: 14)—where P is the population represented and R the available resources, we can see that very small societies, as hunter-gatherer bands, can minimize social conflict because *the richer and more egalitarian a society is, the less conflictive it will be*; and *the smaller and poorer it is and the more resources it has, the more egalitarian it will be*. The latter represents another statement of the law of social inequality. On the contrary, *the poorer and less egalitarian a society is, the more conflictive it will be*; and *the bigger and richer it is and the fewer resources it has, the less egalitarian it will be*.

The equation I = (P × W)/R was deduced from C = I/W and C = P/R—this one also was published in Izquierdo-Egea (2015). Both equations allow us to state the archaeological laws of population and resources, respectively. In the first case, *population grows when resources and social conflict increase* (P = R × C), or *when resources and inequality increase and wealth decreases*: P = (R × I)/W. On the contrary, *population decreases when resources and social conflict decrease*, or *when resources and inequality decrease and wealth increases*. In the second case, *resources grow when population increases and social conflict decreases* (R = P/C), or when *population and wealth increase and inequality decreases* as expressed by R = (P × W)/I. On the contrary, *resources decrease when population decreases and social conflict increases*, or *when population and wealth decrease and inequality increases*.

The law of wealth (or the state of economy), based on the equation W = (R × I)/P, can also be expressed as follows: *Wealth (or the economy) grows when resources and inequality (economic specialization) increase and population decreases*. The latter means that the smaller the size of a society, the greater its relative wealth. In other words, *small societies with abundant resources and high economic specialization will be richer*. On the contrary, wealth decreases when resources and inequality do the same and population increases. That is to say, the greater the size of a society, the smaller its relative wealth; *big societies with few resources and low economic specialization will be poorer*.

In addition to what was said above about the law of inequality, there is another expression of this universal social law implicit in the equation $I = W_a/R$, where W_a is absolute wealth, which is obtained by combining C = I/W, C = P/R and $W = W_a/P$: *The poorer the society and the more resources it has, the more egalitarian it will be*; on the contrary, *the richer the society and the less resources it has, the less egalitarian it will be*.

THE ARCHAEOLOGICAL LAW OF COLLAPSE

Another important law comes from the hand of the risk of collapse (K) of a civilization or society, defined by the equation K = iC/iW (Izquierdo-Egea 2018), where $iC = C/C_0$ and $iW = W/W_0$: *The risk of collapse grows when social conflict increases and wealth decreases (or poverty grows)*; on the contrary, *the risk of collapse is reduced when social conflict decreases and wealth increases*.

This law has many others statements. For example, if we combine that equation with those set out above—C = I/W, W =I/C, C = P/R, $W = W_a/P$ and W = (R × I)/P—by using index numbers for variables ($iI = I/I_0$, $iP = P/P_0$, $iR = R/R_0$, etc.), we can deduce new mathematical expressions for the risk of collapse: $K = iI/iW^2$, $K = iC^2/iI$, K = iP/(iR × iW), $K = (iP \times iC)/iW_a$ and K = (iP × iC)/(iR × iI).

From these equations, the law of collapse takes various forms: *The risk of collapse grows when inequality increases and wealth decreases* ($K = iI/iW^2$); on the contrary, *the risk of collapse decreases when inequality does the same and wealth increases*. On the other hand, *the risk of collapse grows when social conflict increases and inequality decreases* ($K = iC^2/iI$). In this case, it seems inequality works like an escape valve because *the risk of collapse decreases when social conflict does the same and inequality increases*.

The remaining equations include more variables and make the law of collapse more complex. In this way, *the risk of collapse grows when population increases and resources and wealth decrease*, as indicated by the equation K = iP/(iR × iW); on the contrary, *the risk of collapse decreases when population does the same and resources and wealth increase*.

The equation $K = (iP \times iC)/iW_a$ offers a new statement of the law of collapse: *The risk of collapse grows when population and social conflict increase and wealth decreases*; on the contrary, *the risk of collapse decreases when population and social conflict do the same and wealth increases*.

Finally, the last equation, K = (iP × iC)/(iR × iI), shows how *the risk of collapse grows when population and social conflict increase and resources and inequality decrease*; on the contrary, *the risk of collapse decreases when population and social conflict do the same and resources and inequality increase*. Of course, there are more archaeological laws pending publication. Some of them already have been stated from equations inferred through empirical evidence. They will see the light as soon as possible.

CONCLUSIONS

1. All of these archaeological laws are confirmed, in all known chronological cases, by the mortuary record of numerous ancient societies from Eurasia—Argaric, Phoenician, Greek, Tartessian, Iberian, Celtiberian, Gaul, Roman—and ancient Mesoamerica—Teotihuacan, Maya civilization, Zapotec, Toltec (see Izquierdo-Egea 2017a, 2017b).
2. By enunciating laws based on empirical evidence, the *archaeology of social phenomena* is turning archaeology into a true nomothetic science. This revolution is being carried out firmly.
3. These equations have been successfully applied to contemporary civilizations (United States, European states), showing that archaeological laws have a broad scope (see e.g. Izquierdo-Egea 2019b, 2020).
4. It is high time that the scientific community stops looking the other way and leaves idiographic archaeology behind, thus turning academic archaeology into a real nomothetic science.
5. Some researchers see two complementary ways of doing science: idiographic and nomothetic (see e.g. Schiffer 1975; Lyman & O'Brien 2004; Ingold 2007, 2017). However, only nomothetic science can be predictive, even with social phenomena fossilized in the archaeological record that accurate quantitative analysis can decipher.

REFERENCES

Binford, L. R. 1962. Archaeology as Anthropology. *American Antiquity* 28(2): 217-225.

Binford, L. R. 1971. Mortuary Practices: Their Study and Their potential. *Memoirs of the Society for American Archaeology* 25 = *Approaches to the Social Dimensions of Mortuary Practices*, pp. 6-29.

Ingold, T. 2007. Anthropology is not ethnography. *Proceedings of the British Academy* 154: 69-92.

Ingold, T. 2017. Anthropology contra ethnography. *HAU: Journal of Ethnographic Theory* 7(1): 21-26.

Izquierdo-Egea, P. 2015. Una técnica estadística para medir la conflictividad social a través del registro arqueológico [A Statistical Technique to Measure Social Conflict through the Archaeological Record]. *Arqueología Iberoamericana* 25: 5-18. https://purl.org/aia/251. https://doi.org/10.5281/zenodo.1311918.

Izquierdo-Egea, P. 2017a. *Fundamentos de la arqueología de los fenómenos sociales I*. Advances in Archaeology 3. Graus. https://purl.org/aa/03.

Izquierdo-Egea, P. 2017b. Corinto y las fluctuaciones de la economía griega durante el siglo V antes de nuestra era [Corinth and the Fluctuations of Greek Economy during the 5th Century BC]. *Arqueología Iberoamericana* 36: 87-96. https://purl.org/aia/3612. https://doi.org/10.5281/zenodo.1478444.

Izquierdo-Egea, P. 2018. Implementando una ecuación estadística para medir el colapso en la antigua Mesoamérica [Implementing a Statistical Equation to Measure Collapse in Ancient Mesoamerica]. *Arqueología Iberoamericana* S2: 23-26. https://purl.org/aia/S205. https://doi.org/10.5281/zenodo.3474257.

Izquierdo-Egea, P. 2019a. Sobre la ley fundamental de la arqueología de los fenómenos sociales [On the Fundamental Law of the Archaeology of Social Phenomena]. *Arqueología Iberoamericana* 43: 67-70. https://purl.org/aia/4308. https://doi.org/10.5281/zenodo.3478440.

Izquierdo-Egea, P. 2019b. Termodinámica y arqueología de los fenómenos sociales [Thermodynamics and the Archaeology of Social Phenomena]. *Arqueología Iberoamericana* 44: 80-87. https://purl.org/aia/4410. https://doi.org/10.5281/zenodo.3595658.

Izquierdo-Egea, P. 2020. Sobre la ley de la conflictividad en la arqueología de los fenómenos sociales [On the Law of Conflict in the Archaeology of Social Phenomena]. *Arqueología Iberoamericana* 45: 29-34. https://purl.org/aia/4504. https://doi.org/10.5281/zenodo.3733819.

Lyman, R. L. & M. J. O'Brien. 2004. Nomothetic science and idiographic history in twentieth-century Americanist anthropology. *Journal of the History of the Behavioral Sciences* 40(1): 77-96.

Schiffer, M. B. 1975. Archaeology as Behavioral Science. *American Anthropologist* 77(4): 836-848.

White, L. A. 1943. Energy and the Evolution of Culture. *American Anthropologist* 45(3): 335-356.