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## **Circumscription Theory of the Origins of the State: A Cross-Cultural Re-analysis**

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### **Abstract**

In the paper, we express some doubts about one of the assumptions of Robert Carneiro's model on state (and chiefdom) formation, namely the role of circumscription. In our opinion, the main flaw of Carneiro's original theory of state formation is that it implicitly assumes that every community dreamt to conquer its neighboring communities. We test the presence of various types of warfare (such as conquest warfare, land acquisition warfare, and plunder warfare) in societies with different degrees of political centralization. Quantitative cross-cultural tests reveal a rather strong correlation between political complexity and the presence of conquest warfare suggesting that conquest warfare was virtually absent among independent communities. Newer works by Carneiro propose a model explaining how simple chiefdoms could appear in the absence of conquest warfare. This model also includes circumscription, but our analysis suggests that it is unnecessary.

By now it is hardly possible to find a paper on state (and chiefdom) formation with a higher citation index than the one of "A Theory of the Origins of the State" by Robert L. Carneiro (1970). It is hardly possible to find a student of this subject who has never experienced the charm irradiated by this simple and elegant model which promises to explain so much.

Let us first present a brief summary of Carneiro's research using its lucid description by Sanderson (1990):

Carneiro proposes that the key process leading to the state is an ecological one that he calls *environmental circumscription*. Environmental circumscription exists when societies inhabiting a particular region are confronted with physical barriers to their

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further geographical expansion. The operation of circumscription can best be understood by looking at a situation in which it does not occur. The Amazon Basin of South America is a major area of uncircumscribed land. The horticultural tribes that have occupied this region of the world have generally remained at a level of political evolution well below that of the state. When confronted by population pressure, it was easy for villages to fission and for one group to move into previously unoccupied land. Thus expansion, rather than evolution, has characterized this region of the world. But in circumscribed zones the expansion of peoples has definite limits. After a point, expansion is no longer feasible because of such physical barriers as deserts, mountain ranges, or bodies of water, and thus village movement is not a possible solution to the problem of population growth. What occurs instead is warfare over land, and this warfare leads to the formation of more powerful and militaristic political systems. Villages begin conquering other villages and subordinating the conquered. Chiefdoms eventually form, but further population growth and warfare lead to the conquest of some chiefdoms by others, thus eventually producing states. As this evolutionary process continues, large empires may be formed out of the conquest of some states by others. Carneiro has also added a few wrinkles to this basic argument to give it a broader explanatory scope. He notes that circumscription may sometimes take the form of *social circumscription*. This occurs when the barriers to movement involve the presence of other societies rather than aspects of the physical environment. He also adds the notion of *resource concentration* as an occasional factor in political evolution. An area that is particularly abundant in plant and animal resources tends to attract many people to it and permits substantial population growth. When this growth reaches problematic proportions, movement out of the area may be blocked or at least made difficult by the presence of other groups (i.e., social circumscription is operating) (Sanderson, 1990: 143).

Peter Turchin makes two important additions to the model—first, the power after the warfare would be retained not by a single person, but rather by a group, “most likely a chief together with his military retinue, professional warriors who had little interest in peaceful trades”; second, that thousands of years separated the transition to primary states from the adoption of agriculture because “new cultural methods for legitimating chiefly powers had to evolve, and that took time” (Turchin 2016: 160). The theory appears very convincing—especially when considering these additions.

However, we began to experience certain doubts about the validity of this model. Carneiro did his field work in a rather specific region, Amazonia. This region had been heavily depopulated mainly by the Old World infectious diseases as well as by the colonial wars, etc. (e.g. Feinberg, 1975). In the time of Carneiro's field work a defeated group could easily find a suitable place to move to. But was the same true for the pre-industrial world?

The environmental circumscription was in no way omnipresent. Note, however, that in order to explain a few cases of the chiefdom/state formation in environmentally uncircumscribed regions Carneiro had to introduce one more type of circumscription, the social one.

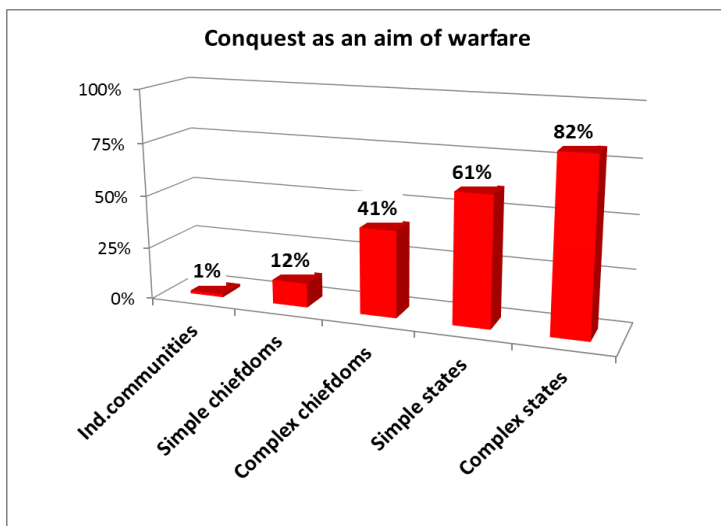
In the "non-depopulated" pre-industrial world it was hardly possible to find a group which was not circumscribed in at least one of these two ways. Under any economic-technological system in a given region within a finite period of time the population reaches the limits of the carrying capacity of land. In a normal situation, there are usually no "free resources". Not every square mile of land is always controlled, but every square mile (or even acre) of *valuable* land is. An attentive observer of territory, which is apparently sparsely populated (but not underpopulated) by hunter-gatherers or nomadic herders soon discovers that there is no valuable land available for potential newcomers.

There is no doubt that within several thousand years of "foraging" history human groups remained under circumscription for long periods of time. Nevertheless, no states arose as a result of this. This is actually a paradox that most saliently appears in the New Guinea Highlands, a densely populated territory with five or six thousand year long history of agricultural occupation (e.g., Golson & Hughes 1980; Powell 1982; Shnirel'man 1989: 143–145). Many groups existed there for long periods in the situation of both environmental and social circumscription, but no chiefdoms, let alone states, seem to have appeared there before 1975 when the state of Papua New Guinea appeared. Carneiro (1987) had to go to great pains to explain this apparent paradox. But is there any paradox here at all? We have very strong doubts about this.

In fact, the main flaw of Carneiro's theory of state formation is that it implicitly assumes that every community dreams to conquer its neighboring communities. Only with this assumption does Carneiro's theory make sense. However, we doubt this assumption very much. All the available data seem to show that the conquest-warfare culture is a rather late phenomenon which does not appear to be found in independent communities. Of course, most simple societies know warfare of some sort (e.g., Otterbein 1970; Ember & Ember 1992; Pershits, Semjonov, & Shnirel'man 1994: I; van der Dennen 1995). But are all types of warfare aimed at conquest? Definitely not. Conquering and subjugating enemies was not the goal in the absolute majority of wars waged by pre-chiefdom societies. Hunter-gatherers' raids, for example, were mainly taken for the sake of

plunder and capturing women (and as we will see below, our cross-cultural tests confirm this point). As some scholars point out even conquest of territories almost never occurred in such cases (Pershits, Semjonov, & Shnirel'man 1994: I, 72–130; van der Dennen 1995: I, 78–101). In independent agricultural communities and even chiefdoms raids were supplemented by wars where victors resettled the conquered territory. They killed men (often including youths and boys) and captured women. Thus, again, neighboring communities were not treated in line with Carneiro's thought. Both ethnography (see Pershits, Semjonov, & Shnirel'man 1994: II; van der Dennen: I, 78–101) and history (*e.g.*, of ancient Indo-Europeans [Pavlenko 2000: 81–82] and Mesopotamia [Masson 1983: 186]) give numerous examples of that. Otterbein, who studied military activities in forty-eight cultures at all stages of the Service's Scale (1971/1962), *i.e.* bands, tribes, chiefdoms, and early states, argued that only for fifteen of them either “subjugation and tribute” or “land – for fields, hunting, or grazing” was “the major reason the military organization goes to war”. For the rest of the cultures in the sample the reasons included “plunder”, “trophies and honors”, “revenge”, and “defense” (Otterbein, 1970: 146, 149; ironically, the Foreword to this book was written by Carneiro).

We use available cross-cultural databases to test the statement that conquest warfare was almost never evidenced among independent communities. To start, we test the correlation between conquest-warfare culture and political centralization. The results look as follows (Table 1 and Figures 1 and 4):



**Figure 1.** Political centralization as a function of the subjugation of territory or of people as an aim of warfare. Bar chart.

**Table 1.** Political centralization as a function of the subjugation of territory or of people as an aim of warfare. Cross-tabulation. Political centralization measured as the number of administrative levels over a community. Subjugation measured as being either absent (0) or present (1). *Sources of data for the tables and figures:* Murdock 1967; 1981; Murdock *et al.* 1986; 1990; 1999–2000; Wheeler [Nammour], 1974; Wheeler [Nammour], 1987; SCCS, 1999, file STDS40.SAV; Divale, Khaltourina, Korotayev 2002.

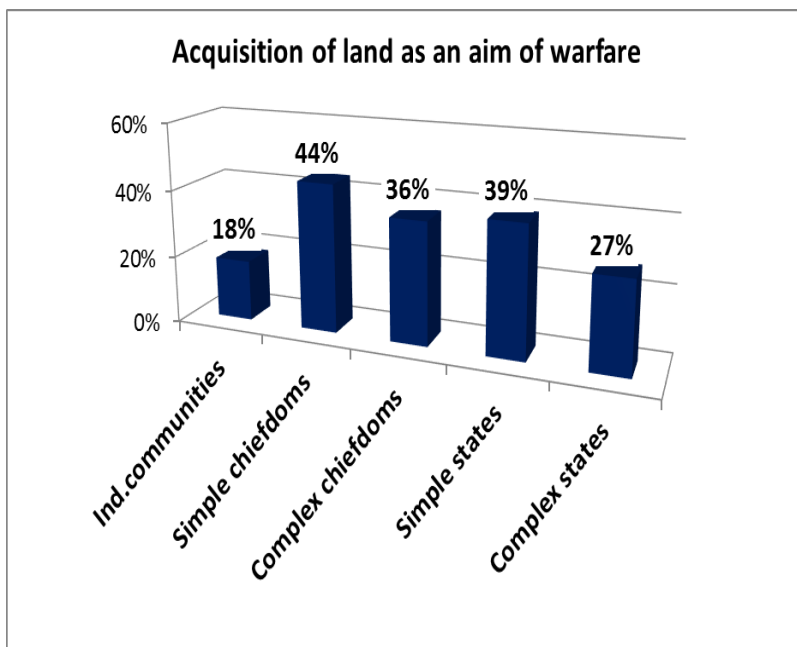
<i>Administrative Levels</i>	<i>Subjugation (People or Territory)</i>		<i>Total</i>
	<b>0 (absent)</b>	<b>1 (present)</b>	
<b>0</b>	71 98,6%	1 1,4%	72 100,0%
<b>1</b>	38 88,4%	5 11,6%	43 100,0%
<b>2</b>	13 59,1%	9 40,9%	22 100,0%
<b>3</b>	7 38,9%	11 61,1%	18 100,0%
<b>4</b>	2 18,2%	9 81,8%	11 100,0%
Total	131 78,9%	35 21,1%	166 100,0%

Note: Rho = 0.58;  $p < 0.0001$ ; Gamma = 0.87;  $p < 0.0001$

We have also tested the correlation between conquest warfare and cultural complexity (see Appendix).

One of the anonymous referees of this article notes that its authors “seem to think that Carneiro is relying on the assumption of a “conquest-warfare culture” present everywhere. Thus, if this were true, then hunter-gatherers would wish to conquer their neighbors, so would small-scale horticulturalists, and so on. And the evidence shows that most often they do not. The problem is that Carneiro is making no such assumption. He would argue the contrary: if hunter-gatherers and small-scale horticulturalists have sufficiently low population densities and

enough land then they are happy to live in peace.” In fact the ethnographic record shows a precisely opposite picture—intensive warfare can well be present among circumscribed hunter-gatherers and small-scale horticulturalists, but it did not lead to the political centralization due to the absence of the warfare for conquest motif (see, e.g., Brown, Podolefsky 1976; Megitt 1977; Pospisil 1978; Feil 1987; Golson, Gardner 1990; Umezaki et al. 2000).



**Figure 2.** Political centralization as a function of the subjugation of land—fields, hunting/fishing territories, or pastures—as an aim of warfare. Bar chart.

As one can see conquest warfare is virtually absent among independent communities. It is entirely absent among simple societies in general.

Conquest warfare appears at the chiefdom level but even for chiefdoms it is not typical at all. It becomes more frequent among complex chiefdoms but is still encountered in a minority of cases. Only at the state level does it become the predominant warfare type, whereas among complex states this becomes virtually absolute. The general impression is that conquest warfare should be regarded not as a cause of chiefdom and state formation, but rather as one of its results.

Let us consider now land acquisition warfare (see Table 2 and Figures 2 and 5):



**Table 2.** Political centralization as a function of the subjugation of land—fields, hunting/fishing territories, or pastures—as an aim of warfare. Cross-tabulation. Political centralization measured as the number of administrative levels over a community. Subjugation measured as being either absent (0) or present (1).

<i>Administrative Levels</i>	<i>Subjugation (land)</i>		<i>Total</i>
	<b>0 (absent)</b>	<b>1 (present)</b>	
<b>0</b>	59 81,9%	13 18,1%	72 100,0%
<b>1</b>	24 55,8%	19 44,2%	43 100,0%
<b>2</b>	14 63,6%	8 36,4%	22 100,0%
<b>3</b>	11 61,1%	7 38,9%	18 100,0%
<b>4</b>	8 72,7%	3 27,3%	11 100,0%
<b>Total</b>	116 69,9%	50 30,1%	166 100,0%

Note: Rho = 0.175; p = 0.024; Gamma = 0.278; p = 0.018

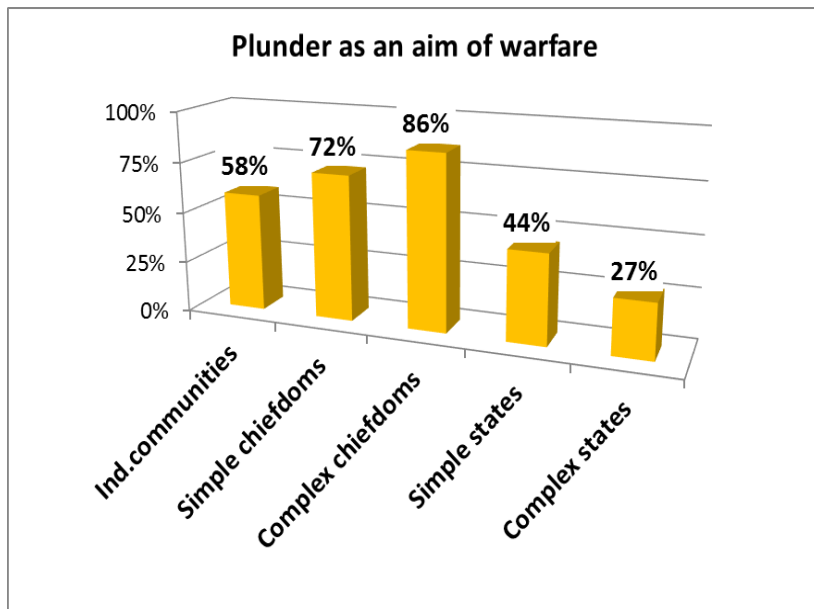
Land acquisition warfare appears to be a considerably more ancient phenomenon than conquest warfare. Note, however that this phenomenon also occurs only in a small minority of the independent community cases. This type of warfare turns out to be most typical for simple chiefdoms where it is attested three times more frequently than conquest warfare. Our cross-cultural tests have confirmed once more that the type of warfare typical for independent communities is warfare for the sake of plunder. Note that warfare of this type is even more typical for both simple and complex chiefdoms gradually declining only among states (see Table 3 and Figures 3 and 6).

**Table 3.** Political centralization as a function of plunder as an aim of warfare. Cross-tabulation. Political centralization measured as the number of administrative levels over a community. Plunder measured as being either absent (0) or present (1).

<i>Administrative Levels</i>	<i>Plunder</i>		<i>Total</i>
	<b>0 (absent)</b>	<b>1 (present)</b>	
<b>0</b>	30 41,7%	42 58,3%	72 100,0%
<b>1</b>	12 27,9%	31 72,1%	43 100,0%
<b>2</b>	3 13,6%	19 86,4%	22 100,0%
<b>3</b>	10 55,6%	8 44,4%	18 100,0%
<b>4</b>	8 72,7%	3 27,3%	11 100,0%
Total	63 38,0%	103 62,0%	166 100,0%

Note: Rho = -0.026; p = 0.740; Gamma = -0.040; p = 0.752

Hence, our analysis suggests that the most frequent motif for war among simple independent communities is plunder; acquisition of land (without the subjugation of its population) is found among them much less frequently, but still in a substantial number of cases, whereas the conquest as the main motif is hardly found among them at all.



**Figure 3.** Political centralization as a function of plunder as an aim of warfare. Bar chart.

## Conclusion

To sum up, conquest warfare is a meaningful factor for the spread of statehood and, to some extent, of chiefdoms. However, it turns out to be much less important in the process of state formation than it is assumed by Carneiro. Whereas the adduced data raise very strong doubts that conquest warfare played a significant role in the formation of simple chiefdoms.

Against this background we were very glad to read Carneiro's article "What Happened at the Flashpoint?" (Carneiro 1998; see also Carneiro 2012; Grinin, Korotayev 2009, 2012). In this paper Carneiro suggests a model explaining how simple chiefdoms could appear in the absence of conquest warfare. In his monograph *The Muse of History and the Science of Culture* Carneiro (2000a) himself renders the gist of his new model in the following words:

As fighting in circumscribed areas intensified, autonomous villages formed alliances with each other as they thought to protect themselves from any attacks. To lead the fighting force of allied villages, war leaders were either chosen or imposed themselves. These war leaders were often village chiefs who, elevated to carry out a more urgent functions, found their powers greatly augmented.

However, once the fighting ceased and villages returned to their normal condition of autonomy, a war chief's power reverted back to what it had previously been. Nonetheless, with each successive war, military leaders tended to enlarge their powers and entrench their position. Moreover, they became increasingly reluctant to surrender these powers when the fighting had stopped. Finally, either through a chief's peremptory refusal to relinquish his once-delegated war powers, or (less likely perhaps) through the outright conquest of neighboring villages by the chief of the strongest one, the first permanent chiefdoms were established (Carneiro 2000a: 184).

It is important to stress that in his works Carneiro (1998, 2012) provides a considerable amount of evidence supporting the validity of this model. It also finds support in Peter Turchin's monograph *Ultrasociety* (2015).

Note that what remains from the old model is the assumption of the importance of warfare in the process of the chiefdom formation, as well as the word "circumscribed" at the very beginning. However, the omission of this word would not change anything. Environmental or social circumscription would seemingly not play an important role for this model that seems, indeed, to be one of the possible models of chiefdom formation.

Did the environmental and social circumscription play any role in the chiefdom and state formation? Judging by the data discussed above, Carneiro's initial model of chiefdom formation (formation of chiefdoms through the conquest by one community of a few others in a circumscribed area) could hardly be regarded as justified. However, in some cases the process of the complex chiefdom formation might have really followed this model. As we could see above, the conquest warfare, though not typical for simple chiefdoms, still occurs in some cases. In such cases a very tight environmental or social circumscription could indeed facilitate the formation of complex chiefdoms. This factor might have been more relevant with respect to state formation, though not necessarily for the emergence of analogues and alternatives of complex chiefdoms and early states (see, e.g., Grinin et al. 2004; Grinin and Korotayev 2009, 2012; Bondarenko and Korotayev 1999, 2000, 2003; Korotayev and Bondarenko 2000; Korotayev 1993, 1995, 1996, 1997, 1998; 2000a, 2000b).

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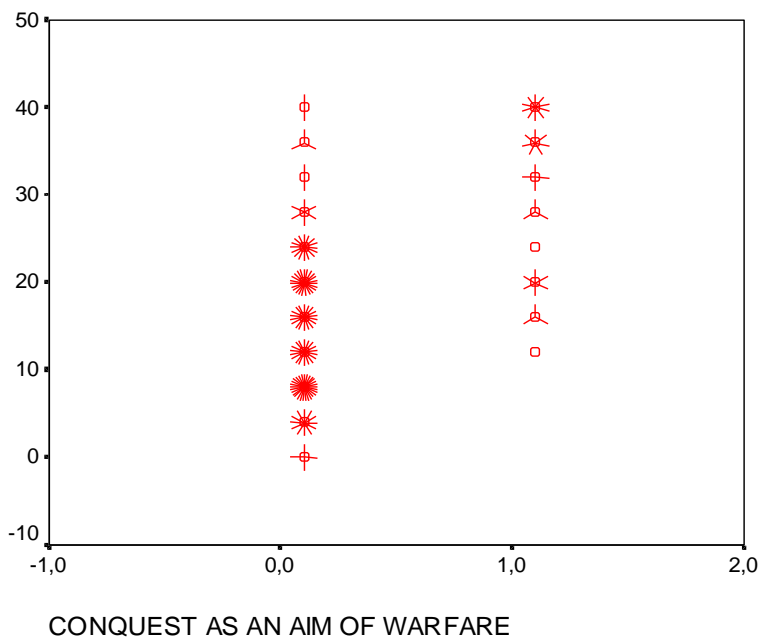
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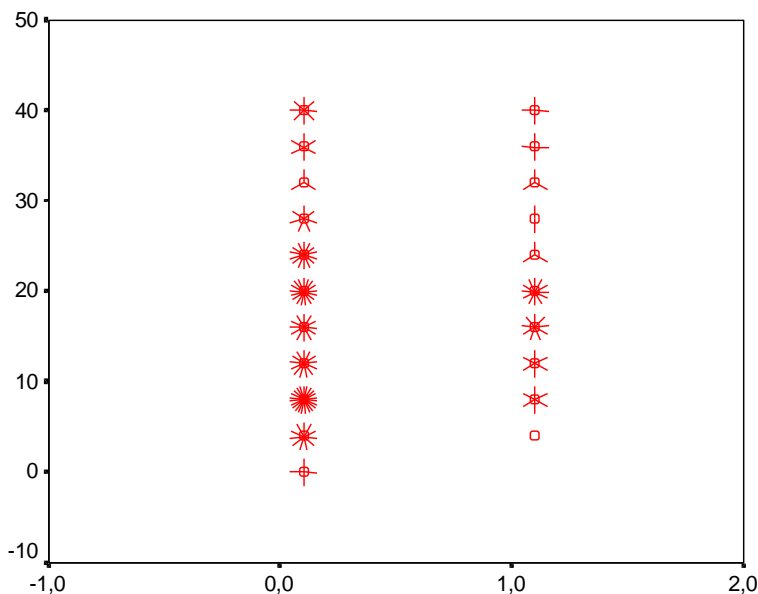
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## Appendix

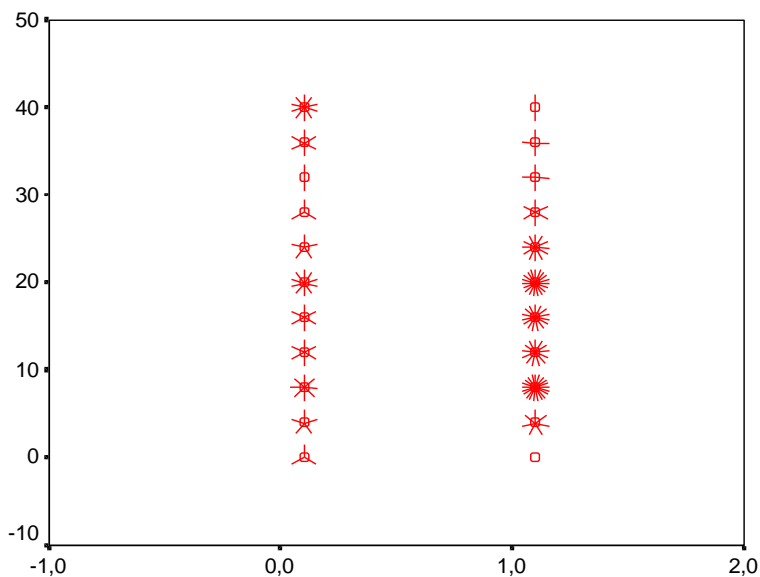


**Figure 4.** Conquest as an aim of warfare as a function of cultural complexity. Sunflower scatterplot. Note: 0 = absent; 1 = present.  $t = 9,23$ ,  $p < 0,0001$ . Thus, the  $t$ -test suggests that conquest warfare was significantly much more typical for more complex societies. Note this diagram employs a “sunflower scatterplot” technique. In such diagrams, a circle without strokes means that there is just one case with the respective combination of values, a circle with two strokes denotes two cases, a circle with three strokes denotes that there are three cases with such a combination of characteristics, and so on.



#### ACQUISITION OF LAND AS AN AIM OF WARFARE

**Figure 5.** Subjugation of land— fields, hunting/fishing territories, or pastures— as an aim of warfare as a function of cultural complexity. Sunflower scatterplot. Note: 0 = absent; 1 = present.  $t = 1,89$ ,  $p = 0,061$ . Thus, the  $t$ -test suggests that the acquisition of land as an aim of warfare was still more typical for more complex societies, but this difference turns out to be only marginally significant. In fact, Table 2 and Appendix Figure 4 suggest that we are dealing with a curvilinear relationship with the acquisition of land as an aim of warfare more typical for societies in medium ranges of cultural-political complexity.



#### PLUNDER AS AN AIM OF WARFARE

**Figure 6.** Plunder as an aim of warfare as a function of cultural complexity. Sunflower scatterplot. Note: 0 = absent; 1 = present.  $t = -2,28$ ,  $p = 0,024$ . Thus, the  $t$ -test suggests that plunder as an aim of warfare was significantly more typical for less complex societies.