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Before Elites: The Political Capacities of Big Men

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In directing us "beyond elites", the editors of this volume invite us to consider not only whether we have over-estimated the centralized control that metal working enabled or demanded in prehistoric Europe but also to move beyond standard typologies of political forms and evolutionary concepts (Kienlin, this volume). To move beyond elites, of course, we must understand what constitutes an "elite" and elite society. If we take these concepts to imply some kind of socially reproduced restriction on access to leadership positions and accompanying social stratification, then we are asked to consider whether Bronze or Iron Age European societies operated in the absence of an ascribed hierarchy and significant political complexity.

Such a society would fall into one of three kinds of system: what conventional anthropological lexicons refer to as "egalitarian" systems – ones in which neither leadership nor stratification is detectable; systems characterized by "achieved" leadership – in which access to leadership must be created anew in each generation; or some form of organization as yet unknown to ethnography and history. Regarding the latter, I am mindful of the conceptual tyranny that the ethnographic can exercise over the past (Wobst 1979), but I see no warrant in this argument for simply abandoning the ethnography of societies traditionally designated as "egalitarian" or "achieved" if we are to improve our understandings of hierarchy in the past. I do concur, however, with much of the criticism directed at classic concepts in social and political evolutionism such as "egalitarian" and "achieved" (Kienlin, this volume). The Big Man model, which has played an outsized role in archaeological theorizing about the nature of leadership (Hayden 1995; Roscoe 2000: 80), is a case in point. The very success of Sahlins's model of the Big Man has had the effect of hypostatizing it. It is not just that the model reduces to a single stereotype what is, in reality, an extraordinary variety of leadership forms in small-scale society. It is also that this form, as Sahlins depicted it, is wrong in several important particulars. In essence, the Big Man never existed in Melanesia, let alone in prehistory!

Yet the imperfections in Sahlins's stereotype should not detract from the fact that he captured several important dimensions of a particular kind of New Guinea leadership. Nor should it mean that we simply jettison his model and start again from scratch. What it means is that we need to modify the model while trying to avoid hypostatizing it. In this spirit, I argue in this paper that the Big Man, if so we continue to designate him, was not an invariant "type" but rather a particular "surface" manifestation produced by distinctive social processes, which emerge to ethnographic visibility under specific material and demographic circumstances.

My argument is that the Big Man was not, as the stereotype would have him, an economic entrepreneur, nor were the seeds of elite control inherent in his most visible relationships with his followers. First and foremost, he was a manager, the initiator and principal organizer of large-scale community displays. In some areas, these displays took the form of conspicuous material giveaways with which the Big Man is stereotypically associated. They could also, however, take the form of large-scale exhibitions of singing and dancing. And under yet other circumstances they took the form of monument building, a phenomenon almost entirely overlooked in anthropology but with obvious relevance to archaeology.

In thus retooling the Big Man model, my goal is to erode the highly abstracted – essentialized – status he has assumed and represent him instead as an interested agent, operating within and on a particular set of material, social, and cultural conditions. Absent these conditions, the Big Man either fails to appear or is impeded in reaching full ethnographic visibility. Vary these conditions, and he applies his managerial skills to material displays, the organization of conspicuous performances, or the construction of monumental structures.

A revised model of the Big Man is of value to the second charge of our editors, to rethink the political organization of the European Bronze and Iron Ages. In Old World archaeology, the Big Man has most often been deployed to model leadership in the Neolithic (e. g. Milisauskas 1978; 2002). Given the Neolithic status of New Guinea society, the ethnographic analogy

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is plausible, though it has encountered significant criticism (e. g. Spriggs 2008; cf. Roscoe 2009a; van der Velde 1986). To suggest, as some such as Bloemers (1986) have done, that the Big Man might even provide a model of Old World politics into the Middle Iron Age, is all the more controversial. As a social anthropologist, I have no expertise to evaluate these debates. As a scholar of Melanesian society (e. g. Roscoe 2000; 2009b), however, I am in a position to sketch out some aspects of Big Man systems that may be useful to others more qualified to judge European prehistory.

Using a revised model of the Big Man, along with ethnographic data from contact-era New Guinea, his homeland, I first consider the conditions that facilitate his rise. I find, in summary, that the emergence of Big Men to ethnographic visibility can be predicted with some reliability from a knowledge of the density of the populations in which he operated. In addition, I examine one property of Big Man systems that is important to identifying their presence in European prehistory: their capacity to mobilize labour to advance collective interests. Big Man society, I find, was capable of mustering far more labour than is commonly supposed. Given the hitherto unnoticed status of Big Men as monument builders, therefore, it is plausible to consider them analogical candidates in the production of prehistoric European features such as burial mounds, Megalithic monuments, and fortifications that more often are associated with elite control.

The "true" Big Man

Although Sahlins (1963: 285, fn.) presented his depiction of the Big Man as preliminary, it has stood up remarkably well to the passage of time. Its very success, however, has served to perpetuate several critical deficiencies. In Sahlins's telling, there were four key features to the Big Man: the nature of his leadership; his motivation; the skills that set him apart from others; and how he used those skills to realize his goals. The Big Man represented the quintessential form of "achieved" leadership. Rather than inheriting his position as might a Polynesian chief, he achieved it, though it would be more accurate to say that he created it: it is the "product of his own personal manufacture" (Sahlins 1963: 289). What motivated the Big Man to create his position was "status," a desire to become "some sort of hero," a "prince among men" (Sahlins 1963: 289, 290). To become a Big Man, therefore, he had to be highly ambitious and intensely competitive. "His every public action is designed to make a competitive and invidious comparison with others, to show a standing above the masses" (Sahlins 1963: 289).

All of this is well known and largely accurate, but Sahlin's characterization of just how the Big Man achieved renown was less so. For Sahlins, the Big Man was first and foremost an economic entrepreneur, a man skilled in finessing the system to his financial advantage. By capitalizing on kinship obligations and relations, through "calculated generosities", by establishing "special personal relations of compulsion or reciprocity" with other Big Men (Sahlins 1963: 290–292), and so on, the Big Man triumphed over others in accumulating an economic surplus, most often of pigs, shell wealth, and foods, which he then used to finance the great public giveaways – feasts, gifts of pigs, bridewealth, subsidies and compensations to allies – that brought him renown (Sahlins 1963: 281).

Superficially plausible as this picture might seem, it was deficient in one key respect. It elided the key role of the Big Man as an organizer of people, as a *social* rather than an economic entrepreneur. Focused on the Big Man and how he operated, it is understandable that Sahlins should have bracketed for analytical purposes the local social system within which he operated, treating it as little more than a backdrop to his activities. So, for example, Sahlins took the great public giveaways that were instrumental in constructing the Big Man's renown as a given, with no explanation for why these systems mounted such large-scale events in the first place.

As I have argued elsewhere (Roscoe 2009b), however, large-scale material distributions, like other conspicuous forms of display, were crucial to the functioning of small-scale systems like those in New Guinea. They constituted a form of "social signaling", a low cost means of managing conflicts of interest within and among allied political communities by faithfully communicating individual and collective fighting strength. In such a system, individuals and sub-groups within a political community, and political communities within an alliance of such communities, were able to establish through these displays of fighting capacity who would win a fight to the death over mates, resources, or other interests without resorting to a lethal violence that would endanger lives and threaten community and alliance integrity. Those individuals, sub-groups, and political communities that prevailed in these competitive displays achieved dominant status and the ability to advance their interests against others; those who mounted inferior displays were obliged to yield.

As Sahlins's pointed out, these great public giveaways were vehicles by which Big Men augmented their reputations. What he overlooked was the central role that Big Men also played in initiating and organizing these and other conspicuous displays of fighting capacity. As several Melanesianists were quick to point out, the Big Man was more than an economic entrepreneur: he was, as Burridge (1975) and Meggitt (1973: 193) put it, the "manager" of his local group's activities. The talents that marked him out from other men – his gift for oratory or "public verbal sua-

sion" (Sahlins 1963: 290); his skills in mediation and conflict resolution; his charisma, diplomacy, ability to plan, industriousness, and intelligence; his abilities in political manipulation (Burridge 1975: 100–102; Lawrence 1973: 17) – brought him renown not simply because they allowed him to outdo others in mustering contributions for material distributions and other displays but because, and more importantly, *they qualified him for the central role in bringing these displays about*. His "basic skill," as Westermann (1968: 113) put it of the Raiapu Enga Big Man, was "his ability to pull together the disperate [sic] interests of the group and gain from them concerted action." For the Big Man, the point of conspicuous material distributions and other collective displays was that they objectified this managerial ability for all to see (Burridge 1975: 92). They made visible in concrete and comparable terms his organizational and manipulative talents, allowing them to be calibrated against those of other Big Men in the perpetual competition for pre-eminent status.

The emergence of Big Men

As Godelier (1986) made clear some time ago, Big Men societies were the exception rather than the rule in New Guinea. Most leaders were not Big Men but Great Men, men who gained status not as managers or economic entrepreneurs but as warriors, hunters, or ritual experts.[1] In a minority of further communities, most of them heavily dependent on hunting and gathering, leadership was even weaker or nonexistent (e. g. Townsend 1969: 8). Under what circumstances, then, did a society become a Big Man society as opposed to a Great Man or an acephalous one?

If we accept that the Big Man was first and foremost a manager, then the question all but answers itself. Regardless of whether he directed his organizational talents to material distributions or any other form of collective project, a Big Man could only become ethnographically visible if he was able to display his organizational talents – in other words, if people were available whose collective labour he could manage. It is probable, after all, that every New Guinea community contained some individuals possessed of the ambition to rise above their fellows and of superior managerial talents. But not every community in New Guinea provided the expansive, organizational arenas that could raise these would-be "managers" to ethnographic visibility.

Consider, for example, a social regime of small, scattered communities. Under such conditions, the political arena amounts to just a handful of adult men. With so few contenders for renown and nothing but the smallest of audiences to grant it, only minimal gradations of status can develop, and what status rivalry exists is easy to overlook or misrepresent as "sibling" or "family" rather than "political" rivalry. With so few people to be organized, moreover, the scale of their material distributions is necessarily limited, and the opportunities for an embryonic Big Man to display his managerial skills are therefore attenuated.

The small-scale hunter-gatherer communities of the Upper Tor River in West Papua provide a case in point. The tribes of the Upper Tor competed as fiercely as any Big Man community to outdo one another in feasting. "For months before such a festival occurs, men and women are occupied with procuring the greatest amounts of food possible. The more one has to eat, the more people one can invite and the longer can the festival last. Both the duration of the festival and the number of guests are decisive for the power and prestige of the tribe" (Oosterwal 1963: 85, my translation). But these communities were so small and scattered – the majority of tribes numbered 50 to 100 people (Roscoe 2005: Appendix), i. e. 10 to 20 politically active male members, scattered among several dispersed settlements – that neither their ethnographer nor any other analyst for that matter ever thought to dub them Big Man societies.

Compare this situation to the opposite, a social regime in which communities are large and densely packed. In this context, the political arena expands dramatically. With many men competing for renown, marked gradations in status can develop, and status rivalry becomes difficult to miss. With large numbers of people on hand to be organized, moreover, the scale of material distributions expands, along with the opportunities for embryonic Big Men to display their managerial skills. In these communities, it is far harder for an ethnographer to overlook the activities of a Big Man and the status he accrues. Among the larger tribes of the highlands, for example, clans embraced hundreds of members, including well over a hundred politically active males, and material distributions could involve hundreds of pigs killed or exchanged. It is no surprise, therefore, that the central and western highlands were the classic homeland of the Big Man (tab. 1).

Big Men and population distributions

It follows from the foregoing that, if we are to understand the circumstances that produce the Big Man – or, to be more precise, that elevate him to ethnographic visibility – we must consider what processes and conditions affect community scale and settlement distribution. Under what circumstances do we encounter small-scale, scattered communities on the

1 Sahlins (1963: 291) made a similar observation but confused the matter by representing these traits as further characteristics of the Big Man.

Tab. 1: Subsistence, population distribution, and Big-Men societies.

Group	Subsistence[1]	Contact density (/km^2)	2-km radius population (density)	Big-Man Society[2]	LAC[3] Size
Aekyom	Sago planting, horticulture Hunting, fishing	0.5-0.8	26-31 (2.1-2.5)	N	Longhouse (26-31)
Sanio	Sago gathering Hunting/fishing	1.6	56 (4.5)	NL	Hamlet 25
Onabasulu	Sago gathering, horticulture Hunting/pig-rearing	1.7	60 (4.8)	N	Longhouse 60
Kaluli	Sago gathering, horticulture Hunting, pig-rearing	2.2	60 (4.8)	N	Longhouse 60
Gebusi	Horticulture, sago Hunting, pig-rearing	3.6	68 (5.4)	N	Longhouse 27
Etoro	Horticulture, sago Hunting, pig-rearing	3.7	70 (5.6)	N	Longhouse 36
Wovan	Horticulture, foraging Hunting	ca. 4.6	77 (6.1)	N	Homestead 15
Umeda	Sago planting, horticulture Hunting	4.8	238 (18.9)	N	Village 205
Amanab	Horticulture, sago planting Hunting	5.2	95 (7.6)	N	Village 85
Namie/Lujer	Sago Hunting, fishing	5.9	354 (28.2)	N	Village (100)
Binumarien	Agriculture/horticulture? Pig-rearing	7.2	125 (9.9)	L	Village group 110
Baruya	Horticulture Hunting, pig-rearing	10.5	292 (23.2)	L	?
Asabano	Horticulture Hunting/pig-rearing	11.4	180 (14.3)	N	Longhouse 70
Telefolmin	Agriculture/horticulture? Hunting/pig-rearing	11.5	299 (23.8)	N	Village 133
Gnau	Sago planting, horticulture Hunting	13.4	300 (23.9)	N	Village 270
Olo (Wape)	Sago planting, horticulture Hunting/pig-rearing	13.6	206 (16.4)	N	Village 190
Kopon (Lower)	Agriculture Pig-rearing, Hunting	13.7	160 (12.7)	N	?
Tauade	Horticulture, pandanus Pig-rearing	15.2	341 (27.1)	N	Clan 27
Fore (South)	Horticulture Hunting, pig-rearing	19.9	232 (18.5)	L	Hamlet 19
Au	Sago planting, horticulture Pig-rearing, hunting	26.9	565 (45.0)	N	Village 202
Enga (Raiapu - Saka)	Agriculture Pig-rearing	28.4	1365 (108.6)	Y	Clan c.350
Wahgi (North)	Agriculture Pig-rearing	29.6	772 (61.4)	Y	Clan 151
Wahgi (South)	Agriculture Pig-rearing	33.6	533 (42.4)	Y	Clan 450
Enga (Raiapu – Lai)	Agriculture Pig-rearing	43.8	550 (43.8)	Y	Clan 225
Melpa (North)	Agriculture Pig-rearing	55.9	1208 (96.1)	Y	Clan 264
Melpa (Central)	Agriculture Pig-rearing	59.5	748 (59.5)	Y	Clan 500-1,000

Chimbu (Upper)	Agriculture, silviculture Pig-rearing	61.3	1588 (126.4)	Y	Clan 459
Enga (Kyaka)	Agriculture Pig-rearing	70.1	881 (70.1)	Y	Clan 330
Chimbu (Central)	Agriculture Pig-rearing	76.8	965 (76.8)	Y	Clan 645
Mendi	Agriculture, Pig-rearing	78.1	1155 (91.9)	L	?
Enga (Mae)	Agriculture Pig-rearing	111.7	1936 (154.1)	Y	Clan 350

Notes:
1) Subsistence: Plant and faunal sources in order of importance; vertical bar = order of importance unknown.
Agriculture = Main crop cultivated for more than two years on the same plot, or for one to two years on the same plot followed by less than 10 years' fallow; Horticulture = Main crop cultivated for one to two years on the same plot, followed by a minimum of 10 years' fallow; Sago gathering = collection and processing of wild sago; Sago planting = collection and processing of planted sago.
2) Big-man society?: Y= Explicitly acknowledged or referred to as present; L = Explicitly acknowledged to be present but less developed than in "classic" highland big-man societies; said to be present, but qualifications made in reference to classic model of (highland) big-men; NL= Said to have no or weakly developed leadership; N = Big Men explicitly stated to be absent.
3) LAC size: LAC = Largest autonomous community

Sources:
Aekyom – Depew 1986: 22, 34, 47–59, 63–71; Amanab – Amanab census registers; GR 3-56/57: 10–11; Juillerat 1996: xx-xxii; Asabano – Lohman 2000: 29, 54–55; 2009: pers. comm.; Oksapmin census registers; OKS 1-70/71: 3; Au – Fountain 1966: 10, 53, 86, 97–98, 118; Lumi census registers; Philsooph 1980: 64, 69, 73, 89; Baruya – Godelier 1986: 162–188; WON 8-62/63: 10–11; Big-Men societies – Allen 1984: 22; Feil 1987: 6–7, 38, 94, 98, 111–113; Godelier 1986: 162–188; Lederman 1990: 3; Treide 1985: 169; Binumarien – Kainantu census registers; KTU 4-47/48: 3–4; Hawkes 1978: 161,183; Boiken (Yangoru) – Roscoe fieldnotes; Chimbu (Central) – Brookfield/Brown 1963: 21, 43–46, 52–53, 57, 73, table 3; Brown/Brookfield 1959: 44; Kundiawa census registers; Chimbu (Upper) – Brookfield/Brown 1963: 122, table 10; Criper 1967: 12, 15, 17, figs. 1–3 following pp. 27–29, 63–64; Enga (Kyaka) – Bulmer 1960: 45, 53, 81, 469–473; 1971: 241; Enga (Mae) – Meggitt 1965: 3–4, 9; Wabag census registers; Enga (Raiapu – Lai) – Waddell 1972: 16, 39, 44, 61, 123; Wapanamanda census registers; Westermann 1968: 69, 137–139, 144, 153; Enga (Raiapu – Saka) – Feachem 1974: 10–11; 1977:142; Wapanamanda census registers; Etoro – Kelly 1977: 28, fn.20, 32–33, 132, 138–139; Schieffelin 1991: 60; Fore (South) – Glasse/Lindenbaum 1973: 376; Kainantu census registers; Sorenson 1976: 30, 43, 54, 57, 71; Gebusi – Kelly 1993: 35; Knauft 1985: 2, 17–18; Gnau – Lewis 1975: 3, 28–29, 48–51, 344, 357; Lumi census registers Kaluli – Kelly 1993: 35; Schieffelin 1976: 31–32, 38; 1991: 61; Kopon (Lower) – Jackson 1975:17, 39, 43, 47, 63, 186,193,286; Melpa (Central) – Burton 1988a: 2.8–2.25; Powell et al. 1975: 4–12; Strathern 1971: 230; Vicedom/Tischner n.d.: 8–9, 49, 57; 1943: 181–184, 193, 199; Melpa (North) – Strathern 1971: 9; 1972: 58–59; Mendi – Lederman 1990: 3, 8; Ryan 1961: 9–12; Namie – Feldpausch/Feldpausch 1988: 2, 27; Lumi census registers; Mitchell 1975: 417; 1977: 183; 1978: 6; Olo (Wape) – Lumi census registers; Mitchell 1978: 6, 8; Onabasulu – Kelly 1993: 35; Schieffelin 1981: 2; 1991: 60–61; Sanio – Ambunti census registers; Townsend 1969: 5, 8, 59, 65; 2002: pers. comm.; Tauade – Hallpike 1977: 2, 54, 61–75, 86, 139–143, 154; Telefomin – Brumbaugh 1980: 50–56, 65–68; Jorgensen 1981a: 471; 1981b: 52–53, 66; Umeda – Gell 1975: 13, 15, 17–18; Imonda census registers; Wahgi (North) – Burton 1988b; Minj census registers; MNJ 1952: 9–10; O'Hanlon 1989: 27; Wahgi (South) – Burton 1988c; Minj census registers; Reay 1959: 5–6, 10, 28–33; Wovan – Flanagan 1983: 23, 25, 38, 62, 100.

one hand and large-scale, closely packed communities on the other? In the last several decades, geographers and sociologists have drawn attention to the crucial role that "time-space compression" (or "distanciation") plays in social scale. "Time-space" compression refers to processes that accelerate the experience of time and reduce the significance of distance during a given historical moment. Technological and organizational innovations that increase the velocity of human mobility and communication are the most obvious instruments of time-space compression, because they radically reduce the costs of bringing about human interactions while often vastly increasing their scalability – i. e. the degree to which they can be proliferated with little or no additional cost.

The capacity of technological and organizational innovations to reduce the cost of interactions and increase their scalability has had two momentous consequences for social evolution. First, it has enabled a vast expansion in the scale of those social groups whose functions profit from increased size. Defensive organization is a case in point. Fighting capacity increases with the size of the army that a political community can field and the scale of logistical support it can muster. By extending the circle of people who can interact and cooperate in defensive activities, therefore, innovations in communication and mechanical transportation allow defensive organizations to expand in size. Second, these innovations facilitate the extension of centralized political control. Using campaign bus tours or barnstorming rallies at airports, for example, political leaders can nowadays interact with tens of thousands of people spread over vast distances. Via electronic and print media – through TV political ads, telephone push-polls, and the like – they can interact with millions remotely (Roscoe n. d. a.).

Things were very different, however, in communities like those of contact-era New Guinea where communication was exclusively oral and face-to-face and human mobility was by foot alone. Under these circumstances, as I have argued elsewhere (Roscoe n. d. a; 1993), the crucial influence on the scale and frequency of human interaction is the distribution of population across a landscape – that is, its density, degree of nucleation, and extent. Where densities are low, the scale and frequency of interaction is tightly constrained by the time that agents must invest to bring interactions about in the first place. These con-

straints have consequences both for social scale and political control. First, they limit the size of social groups. A local group that serves as a mutual defense organization, for example, is necessarily limited in its scale because, under attack, the sparsity of the population circumscribes the number of people who can reach one another in time to render effective military aid. With a population scattered across the landscape at densities of between just 0.3 and 0.6/sq km (Roscoe 2005), for example, it is no surprise that local groups in the Upper Tor were so small. Second, the activities of political entrepreneurs are also severely limited. In order to organize and extend his influence over others, for instance, a would-be Big Man had to be able to interact with them. But in a small, low density, dispersed population, he would have to spend so much time traveling between interactions that his ability to build a following would be severely limited. With densities so low, for example, would-be leaders in the Upper Tor were faced with enormous travel costs if they were to organize and influence even a small following. The effort was hardly worthwhile, and it is no surprise that their political systems were so egalitarian.

Where populations are larger, denser, and/or more nucleated, by contrast, both social groups and political control can expand. Because the circle of individuals who can render one another mutual assistance in the event of an attack increases with density, clans that function as mutual defense units can expand in size. Under high density conditions, moreover, people live on a would-be Big Man's doorstep, so to speak, facilitating the extent and degree to which he can interact with, organize, and manipulate them. Among the Central Melpa, political entrepreneurs were surrounded by potential followers living at densities approaching 60 people/sq km (tab. 1). As we would expect, Big Men were as prominent here as anywhere in New Guinea, heading up clans of 500 or more people.

These theoretical expectations find strong support in the empirical evidence. Table 1 provides demographic data on a selection of Big Man and non-Big Man societies from contact-era New Guinea. It is not as straightforward as one might think to identify a Big Man society. For one thing, vernacular designations are unreliable. In most Melanesian societies, elder males, whatever their political status, were usually addressed with honorific terms that translate as "big" (or "great") "man". To distinguish the "true" Big Man – i. e. Sahlins's manager-transactor – therefore, it is necessary to rely on anthropological identifications. But this only marginally eases the task because the effect of Sahlins' Big Man article was to stereotype all New Guinea leaders as Big Men. In consequence, many ethnographers felt compelled to identify leaders in the societies they studied as "Big Men", even though they then ended up "wasting a great deal of time trying to explain that these big men are not like the ones found in the great societies of the Western Highlands who genuinely appear to be 'true' big men" (Godelier 1986).

To circumvent these difficulties table 1 tracks the emergence of Big Men using three sets of New Guinea society (column 5). The first set (represented as "Y") includes those societies of the western and central highlands whose leaders are widely if not universally considered classic Big Men.[2] The second set of societies are those for which their ethnographer has explicitly denied the presence of Big Men (represented as "N") or, alternatively, explicitly denies the presence of leaders ("NL"). The final social type (represented as "L") represents societies where the ethnographer refers to leaders as "Big Men" but explicitly distinguishes them as less prominent or powerful than the classic Big Men of the western and central highlands (e. g. designating them as "little big-men").

Table 1 demonstrates three things. First, as Bogucki (1988: 122) has pointed out, Big Men societies enjoyed a "stable [...] tremendously productive" environment. All of the classic Big Men societies in the sample were subject to minimal seasonal variations, and the introduction of the sweet potato had enabled them to farm their lands intensively and support high densities of pigs (columns 2 and 5). Only one society based on agriculture and pig-rearing had not become a Big Man society: Mendi was a "qualified" Big Man society. By contrast, Big Men failed to appear under less intensive regimes based on sago, hunting, and/or horticulture.

It is less clear whether we can credit Bogucki's further claim, that the Big Man model is ecologically inappropriate to early neolithic Europe because its environment was vulnerable to "marked seasonal and annual variability" (Bogucki 1988: 122). If the argument advanced above has merit, then the more telling issue is not the stability or productivity of the environment itself but rather the level of population that it could support on an ongoing basis.

As table 1 indicates, there is a broad correlation between subsistence intensity (column 2) and crude population density at contact (column 3). Where subsistence depended principally on hunting and sago or hunting and horticulture, densities did not rise above 7 people/sq km or so. By contrast, subsistence regimes based on agriculture and pig-rearing almost all supported populations of 30/sq km or more. Regimes transitional between these two forms supported densities above 7/sq km and below 30/sq km.

Thus mediated by subsistence regime, the emergence of Big Men correlated strongly with population densities. Below crude densities of about 20 people/sq km, Big Men were never sufficiently visible to be

2 Feil (1987: 96–97, 113–114) lists South Wahgi and Chimbu as "transitional" rather than "classic" Big Men societies. This contrasts with other sources, including the leading ethnographer of the Chimbu (Brown 1990).

noted in the ethnographic record. If there were leaders in these societies, they were presumably either Great Men or "little" Big Men. Above about 30 people/sq km, however, Big Men become clearly visible. The crucial transition between egalitarian, Great Men, or "little Big Men" societies on the one hand and classic Big Men societies on the other thus occurs at densities between about 20 and 30/sq km (columns 3 and 5). The point-biserial correlation coefficient between crude density and the presence or absence of the classic Big Man is 0.74 ($p<0.001$), assuming 'little Big Men' ("L") represents the absence of Big Men.

Crude density measures are, of course, poor representations of the distribution of population across a landscape. They take no account of the extent of a population belt, its "patchiness" at a large scale, the degree to which it is nucleated or dispersed at a finer scale, and of whether it is distributed symmetrically (as across a uniform plain) or asymmetrically (as along a river or coast). Towards redress, therefore, column 4 uses qualitative and quantitative information about contact-era settlement distributions to estimate for each society in the sample the number of people living within a 2 km radius of the ethnographer's field location (figures in parentheses represent this number as a density figure). Where the number of people within this 2 km radius falls below about 350 (corresponding to a local density of 27.8/sq km), ethnographers fail to record the presence of Big Men. Conversely, when the number of people within this radius rises above about 550 (or a local density of 43.8/sq km), the presence of Big Men is recorded. The crucial transitional regime falls between 400 and 500 people (corresponding to local densities of about 30.0–40.0/sq km). Using this measure, the point-biserial coefficient of correlation against presence or absence of Big Men increases to 0.77 ($p<0.001$).

There is some evidence that, as density rises, Big Manship takes on a degree of *de facto* ascription – though not the *de jure* ascription normally associated with hereditary succession. "Sons of influential men", among the Central Chimbu (76.8/sq km), Bergmann (1971 [vol. 4]: 86) observed, "have a better prospect of becoming leading men than sons of mere common men." In the 1960s, the sons of Northern Melpa (55.9/sq km) Big Men had a 3:1 chance of themselves being Big Men (Strathern 1971: 208–212). And a similar situation may have prevailed among the Central Melpa (59.5/sq km), although the evidence is less clear cut (Vicedom/Tischner n. d.: 4; cf. Ross 1990: 137–138).

Finally, the table documents an increase of social scale with rising density. Column 6 estimates the contact-era size of the largest autonomous local polity, defined as the largest local group that acted in mutual defense in the event of an attack (see Roscoe 2009b: 80–88). In the lowlands, this was usually a longhouse community or village group, in the highlands more commonly a clan. It is sometimes difficult to distinguish this polity ethnographically from local alliances of such polities. In the highlands, for example, the tribe, which comprised several clans, is sometimes described as acting very much like a clan in the event of an attack (Roscoe 2009b: 87). To err towards the conservative, however, clans rather than tribes have been taken as the largest autonomous local polity. The Pearson correlation coefficient between local polity size and crude, contact-era density is 0.74 ($p < 0.001$), while that between polity size and population within 2 km of the ethnographer's field location is 0.73 ($p < 0.001$).

The political dynamics of Big Man society

One of Sahlins's graver errors was to characterize the Big Man's status and power as rooted in and limited by a "Melanesian contradiction", a divergence of interests between the Big Man and his followers. In Sahlins's view, the Big Man's rise is financed by his faction or social group, but the fruits of their subsidy accrue not to them but to him. The more he strives to increase his eminence, therefore, the more he must exploit their labour until, disenchanted with the cold comfort of 'eating his renown,' they eventually desert him (Sahlins 1963: 292–294).

The problem with this argument is the idea that the Big Man *extracted* labour from his followers, that his ability lay in convincing others to produce over and above their own subsistence needs in his name (e. g. Bogucki 1988: 122). In a narrow sense, Sahlins was correct. In some highland societies, perhaps 5 % of the population laboured in a Big Man's personal service, with a larger stratum of "poorer people" and refugees from elsewhere also partly dependent on him for their wellbeing.[3] On these individuals at least, a Big Man could likely prevail to provide labour that advanced his interests to the detriment of their own. But this was *not* the case in a broader sense, and it was certainly not the case where massive material distributions were concerned. For Sahlins, these were the crucial points that exposed the contradiction between leader and follower. As a number of Melanesianists subsequently pointed out (Chowning 1979: 72–73; Meggitt 1973: 193; Strathern 1971: 2, 223–224), however, they were nothing of the sort: followers benefited as much from the activities of their leader as he did from theirs.

3 In the Melpa tribe of Ndika, there were 181 people in the most menial group ("slaves") alone – some 5 % of the total population of "3395 souls" (Vicedom/Tischner n. d.: 46). Among the Chimbu, there were "several dozen" of the equivalent stratum in each tribe, some 3–5 % of adult men in the Kamenuku tribe (assuming "several dozen" to mean 30–50). It was Bergmann's impression that this stratum was even larger among the denser tribes further east (Bergmann 1971 [vol. 1]: 41; [vol. 4]: 91; Chimbu census registers for 1952–53).

Recall that the Big Man's ultimate interest was not economic but social, the pursuit of renown. It was not that he wanted to be wealthy; rather, he desired the status that came from giving wealth away. As Sahlins noted in passing but failed to incorporate into his analysis, however, it was not just the Big Man who had an interest in status: so too did his local group – his "faction", "his people", "other groups of the society at large" (Sahlins 1963: 291–293). Thus, we learn incidentally, tribal "rank and renown are developed by great public giveaways sponsored by the rising big-man, *often on behalf of his faction* as well as himself" (Sahlins 1963: 291, emphasis added). It is "*not merely his own status, but the standing* and perhaps the military security *of his people* [that] depend on the big-man's achievements in public distributions" (Sahlins 1963: 293, emphasis added).

This is precisely as we should expect from the social signaling model referred to earlier. Conspicuous material distributions serve as a faithful signal of the fighting strength not just of the Big Men who inspire and manage them but, more important yet, of the social group they organize. However that may be, the important point, as Lawrence (1973: 14) summarized it, is that the Big Man "sets in motion culturally prescribed activities so important to his followers that their co-operation is automatic". Big Men used their managerial abilities to advance their own interests in renown, but they did so in the service of material displays that simultaneously raised the status of their groups. The relationship between leader and group, therefore, was not a zero sum game based on opposition and the exploitation of labour; it was a win-win situation in which the efforts of leaders contributed to the prestige of followers and vice-versa. As ethnographers of the Central Melpa observed at a very early moment in the contact history of the highlands, public deployments of "valuables and sacrificial animals" meant "prestige" for a leader, whose name became known "as far as the horizons", and "*at the same time for his group and all its members*, the 'small and the big, the poor and the rich, the good and the bad people'" (Strauss 1990: 138, emphasis added). The ideal leader was supposed to "lead his people wisely and look after them like a father" (Strauss 1990: 140). Much of the work that clan members did for him was really "repayment" for "guarding their welfare, *looking after their prestige* and representing them" (Vicedom/Tischner n. d.: 96, emphasis added).

In sum, we may assume that limits did exist on the degree to which followers were willing to contribute their labour to displays that brought renown to their Big Men, but these limits had nothing to do with any contradiction of interest. Rather, they were set by the scale of the social groupings and the willingness of members to invest their labour in return for elevating their status as a group.

So just how much labour could Big Men communities mobilize? In assessing this question, it is useful to consider, on the one hand, the number of followers that Big Men could organize and, on the other, the amount of their labour followers were willing to contribute to large-scale display activities. Neither of these parameters is at all easy to gauge for contact-era New Guinea, but it is easy enough to place a minimum size on the number of followers a Big Man could organize. It was simply the size of his political community, and in the central and western highlands, this was the clan to which he belonged and whose activities he managed. As column 6 in table 1 shows, these communities ranged from about 150 to 750 or so, with the average falling at about 400. In terms of able bodied adults, crudely defined as individuals between the ages of 20 and 59, this translates into a labour pool that averaged roughly 200 adults, ranging in some communities as high as 375 or so (assuming a ratio of able-bodied adults to total population of 0.5).[4]

The local political community, however, did not define the boundaries of those upon whom it could draw in the service of mounting large-scale displays. Typically, these communities were exogamous, and in mounting their displays they routinely called on the assistance of affines in other local communities (Burridge 1975: 93). The scale of this wider network and of the labour contributions it made is impossible to gauge from the available evidence, but we can derive some order-of-magnitude estimates. Suppose that the average completed family comprised two parents and either two or three children (mean family size – i. e., family size prior to completion – varied between four and five [Meggitt 1965: 20; Waddell 1972: 21]). Then an average Big-Man community of 100 men (with 100 wives) would on average be linked to a total of between 250 and 600 adult sisters and affines who could be called on for help (50–100 sisters + 50–100 sisters' husbands + 50–200 sisters' husbands' siblings + 100–200 wives' siblings). At the outside, the largest Big Man communities, with as many as 375 adults, would be affinally linked to 470–1130 adult sisters and affines whom they could call on for help.

In aiding the displays of kinfolk in other communities, these kin and affines almost certainly contributed considerably less of their labour than they would to displays sponsored by their own community. If we assume that this ratio was a quarter – in other words, that adults contributed to displays sponsored by the communities of their kin and affines only a quarter of the labour they would contribute to displays by their

4 If we take working adults to be those between 20 and 59, then in 1971, according to the Papua New Guinea census, the ratio of adults to total population was 0.45 (Agyei 1979: 25); in the late 1960's, Waddell (1972: 24–25) found a ratio of 0.54 among the Raiapu Enga; and among the Kyaka Enga, the figure around the same time was 0.53 (Becroft et al. 1969: 54). Let us therefore take the ratio of adults to total population to be about 0.5.

own – then the average Big-Man community could muster the labour equivalent of about 260–350 adults. At the outside, the largest Big Man communities might muster the labour equivalent of about 490–660 adults.

If it is difficult to estimate the scale of the labour force on which a Big-Man community could draw, it is even more challenging to gauge the total amount of labour they invested. Some idea of the magnitude of person hours involved, however, can be derived from Hide's (2003) valuable compilation of data on New Guinea pig production. In Big Men communities – indeed, in most New Guinea societies – pigs were raised not for domestic consumption but for ceremonial purposes: marriage ceremonies, war compensation payments, pig exchanges, pig kills, and so on. The labour invested in pig production, therefore, can be roughly equated to the labour invested in the deployment of pigs in conspicuous material distributions.

Pigs made heavy demands on highland tuber production. Figures for the Raiapu Enga and Sina Sina suggest, in fact, that 2.3 to 3.9 adult hours were required per week to fodder a pig (Hide 2003: 63–70).[5] Other quantifiable pig-rearing tasks added another 0.5 to 1.67 hours/pig, for a total of about 3.8 to 5.6 adult hours/week (Hide 2003: 95–96). In the 1950's – the earliest years for which we have reliable figures – the Chimbu and Enga raised 1.0 to 1.6 pigs/head of population or 2.0 to 3.2 pigs/adult, assuming a ratio of able-bodied adults to total population of 0.5 (see above). These figures indicate that in round numbers adults invested, somewhere between 8 and 18 hours/week in pig production.

A pig kill mounted by the three or so clans of the Mokei Melpa tribe around 1935 provides some indication of the scale of display that these kinds of labour investment could produce. According to Father William Ross, who witnessed the event, some 700 pigs were killed in the space of a single day, producing a weight of pork in excess of 20 tons. These ceremonies were held, he noted, about once every five or six years (Ross 1937a: 85, 98; 1937b: 133). If we assume that the interval between pig kills was taken up with production of a new pig herd for slaughter, then such a ceremony represented a labour investment by a tribal community of some 4,400 people of somewhere between 4,576,000 and 11,880,000 adult hours, depending on whether we assume an investment/adult/week of 8 or 18 hours, respectively.[6]

The Big Man as monument builder

As Lindstrom (1981: 903) has pointed, Sahlins's model of the Big Man took hold in an era when it was analytically popular to reduce politics to economics: in the case of New Guinea, this perspective translated into "the exchange of pigs for authority, when most simply put." If this is so, then it helps account for Sahlins's reduction of Melanesian politics to economic transaction and his representation of the Big Man as someone whose renown derives from his skills in finessing flows of material wealth. As I have tried to make clear, however, the Big Man was more than an economic entrepreneur. He was an organizer. It is certainly the case that, in the central and western highlands, he applied his managerial skills to the economic realm and the organization of conspicuous material distributions. But, as Meggitt pointed out, he tended "to take the lead not only in purely economic affairs but also in the whole range of activities that the group considers to be important [...]. In short, leadership in these societies generally is multiplex as well as achieved" (Meggitt 1973: 193). Among other activities, according to Meggitt, Big Men dominated military planning and the negotiation of truces, they organized trading voyages and commissioned performances of magic and sorcery. In the highlands, we might add, Big Men also applied their managerial skills to the organization and management of what I have elsewhere called (Roscoe 2009b: 95–96) conspicuous performances: large, elaborately choreographed exhibitions of singing, dancing, and music, frequently mounted by spectacularly decorated performers, that commonly accompanied conspicuous material distributions in these societies (O'Hanlon 1989).

The one form of display that highland Big Men societies did not pursue, however, was the third form found in New Guinea – conspicuous construction. This is unfortunate because it has diverted attention away from the instrumental role that Big Men played in the construction of monuments, precisely

5 Hide (2003: 95) notes that, in 1972–73, adult men and women in Sinasina spent an average of 12 and 20 hours/week respectively on food production. Among the Raiapu Enga, the equivalent figures were 15 hours/week for adult men and 26 hours/week for adult women. In 1971, the ratio of adult males to adult females in PNG was 561,292/536,583 (Agyei 1979: 25). If we suppose the same ratio held among the Sinasina and Raiapu Enga, then the average number of hours/adult/week put into food production was 15.9 hours/adult/week among the Sinasina and 20.4 hours/adult/week among the Raiapu Enga. Among the Sinasina, pigs consumed 53 % of total sweet potato production; among the Raiapu Enga, 64 % (Hide 2003: 65–66). Of the hours/week each adult put into food production, therefore, the amount that went to support pigs would be roughly 15.9 x 0.53 = 8.4 hours in Sinasina and 20.4 x 0.64 = 13.1 hours among the Raiapu Enga. There were 1.8 pigs/person among in Sinasina and 1.7/person among the Raiapu Enga (Hide 2003: 95). Assuming the ratio of adults to total population was about 0.5 (see above), this means there were about 3.6 pigs/adult worker in Sinasina, and 3.4/adult worker among the Raiapu Enga. These figures indicate, therefore, that in Sinasina adult workers devoted about 8.4/3.6 = 2.33 hours/pig/week to producing pig food; among the Raiapu Enga, the equivalent figure was about 13.1/3.4 = 3.85.

6 Assuming a working adult to total population ratio of 0.5 (see above), then the Mokei tribe comprised some 2,200 adults. If these adults were investing 8–18 hours of work/week in pig production, it follows that over five to six years (260–300 weeks) their total labour investment in pigs was somewhere between 4,476,000 and 11,880,000 hours.

Table 2: The Big Men communities of the Maprik region, Sepik Basin.

Group	Subsistence	Contact density (/km²)	2km radius population (density)	LAC Size
Abelam (Eastern)				Village
– Wingei	Horticulture, sago planting	28.6	914 (72.7)	231
– Bengaragum/Sagisak	Pig-rearing	13.5	724 (57.6)	295
Arapesh (Ilahita)	Horticulture, sago planting Pig-rearing	44.2	1292 (102.8)	Village 1292
Abelam (Central)	Horticulture, sago planting Pig-rearing	61.5	814 (64.8)	Village 348
Abelam (North Wosera)	Agriculture, sago planting Pig-rearing	64.6	890 (70.8)	Village 246
Boiken (Yangoru)	Horticulture, sago planting Pig-rearing	73.3	646 (51.4)	Village 152

Notes:
As for Table 1.

Sources:
Subsistence: Abelam (Central) – Kaberry 1941/42: 81, 83; 1973: 40; Maprik census registers; Abelam (Eastern) – Forge 1970b: 269–270; Maprik and Yangoru census registers; Abelam (North Wosera) – Lea 1965: 197–205; Maprik census registers; Schroeder 1992: 68–69; Arapesh (Ilahita) – Tuzin 1976: 7; Maprik census registers; Boiken (Yangoru) – Roscoe n. d. b; Yangoru census registers.

the kind of conspicuous display most likely to survive in the archaeological record. Monument building was widespread in New Guinea, but it was found in the lowlands rather than the highlands, reaching its grandest scale along the coast and estuaries of the Papuan Gulf, the Middle and Lower Sepik River, and the Maprik area of the Sepik Basin. These are areas seldom associated with Big Men, and yet on closer examination we find leaders whose managerial skills and prominent role in organizing the collective activities of their local communities were similar in every respect to highland Big Men save for the particular range of collective activities involved.

Consider, for example, the Maprik region of the Sepik Basin, running from Yangoru in the east to Ilahita in the west. Unlike highland Big Men societies, the Boiken, Abelam, and Arapesh peoples of this region were horticulturalists rather than agriculturalists. Nonetheless, their subsistence regimes supported population densities that rivaled those of the central and western highlands (tab. 2). As we might expect under these demographic regimes, the leaders of these communities boasted the same suite of managerial skills associated with the Big Man. They were noted for their generosity, their ability to speak eloquently and to mediate conflict, their "cool and calculating disposition", and their capacities as "social entrepreneurs" or organizers.[7] They were men, in Forge's (1970a: 271) words, possessed of "a broader vision and a better understanding of the political system than the ordinary villager," and it was they who led "in the formulation of public policy governing secular matters" and who loudly took "the fore in mobilizing factions at times of crisis or opportunity" (Tuzin 1991).

As in the highlands, Maprik leaders were instrumental in managing the economic production of their communities: they transacted shell valuables and organized the production and competitive presentation of commodities such as pigs, giant yams, and other foods (e. g. Roscoe 1989; Kaberry 1941: 356; Tuzin 1976: 244–248). They were also noted for their "knowledge of ceremonial" (Forge 1970: 270) and for their sponsorship and organization of performances of song and dance that attended these ceremonies (Roscoe n. d. b). In contrast to their highland counterparts, however, these Big Men were also instrumental in the competitive construction of enormous spirit houses that characterized much of the Maprik region.

These spirit houses were large tetrahedral structures that showcased enormous triangular façades that were cantilevred, richly painted, and elaborately adorned with plastic art (e. g. Hauser-Schäublin 1989: 487–522; Roscoe 1995; Tuzin 1980). A typical structure near Maprik station was about 100 feet high and 30 feet across its base, the painted façade beginning 20 feet above the ground. "Then there was a row of round, carved and brightly painted wooden faces right across. Above that, and all the way to the peak, were flat sewn-together sheets of smooth sago-palm bark, and these were painted in the way that makes the native art of the Sepik region the most dramatic and dynamic in the whole South Seas" (Simpson 1955: 35).

Construction of these structures demanded an enormous investment of labor, a complex organization of tasks, and a developed architectural knowledge and expertise. Rough estimates suggest that their construction involved somewhere between 3,500 and 10,000 person days of work, not counting

7 Forge 1970a: 270–271; Kaberry 1941/42: 355; Roscoe n. d. b; Scaglion 1985: 81; Schroeder 1992: 94–95; Tuzin 1978: 62.

the labor invested in the numerous, free-standing masks and carvings that adorned their interiors and exteriors (Hauser-Schäublin 2002: pers. com.; Tuzin 1980: 166, fn. 45).[8] What evidence we have indicates that a Northern Abelam village with 520 people would have six to eight cult houses at any one time, representing a total labour investment of somewhere between 168,000 and 800,000 hours. Order-of-magnitude calculations suggest that this investment corresponds to about 0.8–5.9 hours/week by each adult worker.[9] This figure is less than the 8–18 hours of labour invested per week in pig production by the average adult Mokei worker (see earlier), but it should be noted that, among the Northern Abelam, communal modes of display were more diverse than in the central highlands. In addition to cult house construction, the Northern Abelam also produced a wealth of freestanding artwork to adorn these structures, along with pigs and long yams for ceremonial exchange. It is impossible to estimate the labour involved in these further activities, but, if they could be taken into account, it is plausible that an Abelam adult's labour investment in ceremonial activities would approximate a highland adult's investment in pig production, the main ceremonial activity there.

Like highland pig festivals, these spirit houses were a means by which a Big Man could "show a standing above the masses." In the Maprik region, artistic ability was a common distinguishing attribute of leadership (Forge 1970a: 270; Tuzin 1978: 62), but these structures were important in the emergence of a Big Man because they demonstrated his managerial skills in organizing their construction, which depended on a relatively complex organization of labor. It was necessary to synchronize the sequential arrival of many different types of building material, to manage their incorporation into the structure, and to coordinate the activities of the artistic specialists who painted and carved their façades and ornamentation. The most difficult tasks, the emplacement of the massive ridgepoles and the façades, demanded especially large and well coordinated teams of workers. Finally, a refined knowledge of structural mechanics – of foundationing, support, and cross-bracing – was required to ensure that the structures could withstand the effects of gravity and cross winds. The great cantilevered façades were a particular engineering triumph for the ingenious manner in which their weight was supported on counter-sprung beams hidden beneath the roof (Hauser-Schäublin 1989: 95–147; Tuzin 1980: 116–166).

Like the great material distributions characteristic of the highlands, cult house construction permitted leaders and followers objectively to demonstrate their "strength", their capacity to get things done. With their peaks towering among the tree tops, the sheer size and quantity of materials they embodied were an incontrovertible demonstration of the labour the sponsoring group could muster and of their capacity to function as a group. Simultaneously, they objectified in a concrete and comparative form the managerial capacity of the leaders who inspired and organized their construction (Kaberry 1941/42: 355; Roscoe 1995: 6–7; Tuzin 1991). "The names of men who built them were greatly raised," one old Yangoru Boiken man told me. "Whoever did not make them, their names were not elevated" (Roscoe 1995: 7).

Conclusion

In the absence of elites and elite control, social systems can take many forms. Big Man society is one such form, and in this chapter I have attempted to make three points that may be of use to Old World archaeologists. First, the Big Man is foremost a manager, an organizational entrepreneur, and only secondarily a transactor of material goods. Second, under the uncircumscribed conditions that obtained in New Guinea, he does not become ethnographically visible until crude population densities rise above 30/sq km or so. The maximum crude densities under which he is known to have operated were around 110 people/sq km, at which point elements of *de facto* ascription may be apparent in his rise to prominence. Given the uncircumscribed status of most European prehistoric environments, Big Man systems are thus plausible analogical candidates for political society wherever similar demographic regimes prevailed in the Neolithic and metal ages.

Third, I have attempted to estimate the capacity of Big-Man communities to mobilize collective labour for certain types of political task. In contrast to Sahlins's assertion that a contradiction existed between the Big Man and his followers, major collective projects such as material distributions, performances of singing and dancing, and monument building involved them in a symbiotic relationship based on their common interests in communicating fighting capacity to other individuals and groups. It is a graphic instance of Kienlin's suggestion (this volume) that there are subtle forms of power that build up from "below", often with a much stronger impact on the individual's life than "political" authority. It also documents Kienlin's further assertion that

8 These may be under-estimates. On the Sepik River, Ruff et al. (1981: 30–32) estimated that it would require about 30,000 person days to replace a Iatmul cult house in Kanganam village that was destroyed in a 1980 earthquake.

9 Prior to World War 2, Neligum, a village of about 550 residents, and Kalabu, a village of about 490 people, had approximately six and eight cult houses at any one time (Kaberry 1971: map 2,48; Scaglion 1976: 70–75). Assuming that a structure required 3,500 to 10,000 person days of labour to construct, that it was replaced every 10–15 years, and that a person day of labour represented between 8 and 10 hours, then the average adult worker in Neligum and Kalabu, with an average population of 520 residents, or 260 working adults, invested between 0.8 and 5.9 hours of labour/week to produce the six to eight cult houses on display in each village.

small-scale societies are capable of mounting major political undertakings in the absence of elite control. Big Men systems in New Guinea, I find, were capable of mustering labour pools on the order of 260 to 350 adults or their equivalent. And though it is difficult to gauge the total amount of labour they could muster, evidence suggests that such a system could routinely produce collective displays embodying millions of hours of adult labour.

It must be stressed that these projects were of a very specific type: displays capable of reliably signaling both individual and collective fighting capacity. As such, they are potential analogies for the political processes that generated prehistoric enterprises such as fortification and mound building. Fortification had practical implications, of course, for fighting capacity (Roscoe 2008): the more impregnable a community, the more it could endure attack, and hence the stronger its fighting capacity. Because these properties would be apparent to observers, though, fortification also served to communicate this capacity. Mound-building had few if any practical implications for fighting capacity, but by demonstrating in indexical form a community's capacity to mobilize large-scale labour and focus it on a single, collective purpose, it was a reliable signal of critical elements of that community's fighting capacity (Roscoe 2009b: 96, 98).

The aspects of Big Man society that I have examined here do not, of course, exhaust the relevancies that Big Man society may have for European prehistory. There may also be signatures that speak to the personal power of Big Men rather than to their capacity to mobilize labour for collective goals. Big Men, it will be recalled, commanded a personal retinue of wives, dependents, and refugees greater than that of ordinary men. Modest though this retinue perhaps was, its European counterparts may still have left archaeological signatures. By virtue of its greater size and the labour pool it represented, for example, the scale of a Big Man's retinue was likely manifest in homesteads that were larger than the average. Where personal decoration was concerned, moreover, the New Guinea equivalent of metal working was an exquisite artistry based on shell, feathers, and basketwork, and Big Men appear to have possessed more elaborate and intricate versions of these adornments than ordinary men. Finally, further research is merited to see whether the differential treatment of Big Men in mortuary rites can be used to distinguish their presence from that of elites in the archaeological record.

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