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He came, he saw, we counted : the historiography and demography of Caesar's gallic numbers

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Abstract

In his account of his Gallic compaigns, Julius Caesar frequently provided numbers for his opponents. These ranged as high as 430,000 and often exceeded 100,000. In modem times, Caesar's figures have been widely used to suggest, and even to calculate, population levels for ancient Gaul. In this paper, I take issue with the notion that it is expedient to treat Caesar's numbers seriously, and even more inappropriate to use them to infer overall population levels. To do this, I use logistical and textual arguments, pointing out, for instance, that Caesar's matter-of-fact discursive style is hardly warrant to take his itherwise uncorroborated numbers at face value. Rather, they should be considered as typical examples of the genre of exaggerated wartime numbers, a genre with a history reaching back as far as Old Kingdom Egypt and as far forward as the Vietnam war and beyond.

Résumé

Dans son récit de la guerre des Gaules, Jules César fournit souvent les effectifs de ses adversaires. Ils dépassent fréquemment 100 000 combattants et peuvent mon¬ ter jusqu'à 430 000. Ces chiffres ont été largement mis à contribution pour imaginer, voire pour calculer, le niveau de population de la Gaule indépendante. Cet article s'interroge sur l'utilité de prendre au sérieux les déclarations de César ; il semble en outre particulièrement inadapté de s'en servir pour en déduire la population totale de la Gaule. La démonstration s'appuie sur des arguments tantôt logistiques, tantôt tirés des documents. Ceci permet notamment de montrer que le réalisme du style narratif de César ne constitue pas une garantie suffisante pour prendre pour argent comptant ces chiffres non confirmés par ailleurs. Les données du général romain doivent plutôt être considérées comme le type même des surestimations auxquelles on a généralement recours en période de guerre, une habitude dont l'histoire remonte aussi loin que l'Egypte de l'Ancien Empire et qui a perduré jusqu'à la guerre du Viet-Nam, voire au-delà.

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HE CAME, HE SAW, WE COUNTED : THE HISTORIOGRAPHY AND DEMOGRAPHY OF CAESAR'S GALLIC NUMBERS

> And we have not seen and we have not heard that any king had ever appointed anybody to count the numbers of those killed in any battle, ... unless the number of slain was one thousand or less. As for those killed in the battles of Hulaku, Ghazan, and Timur, the establishment of their exact numbers is sheer madness, and whoever believes in these numbers is nothing but a madman[1].

par David HENIGE

I

When the youthful Thomas Campbell (Campbell, 1855, 59) wrote in his poem, « The Pleasures of Hope », published in 1799 :

> There shall he pause, with horrent brow, to rate
> What millions died – that Caesar might be great

he was doing more than surrendering himself to normal poetic license ; he was also reporting on the intellectual legacy of his time with respect to the population of the ancient world and the mortality of its warfare[2]. The present paper deals with strikingly similar attitudes about Caesar's military activities and their consequences. Although similar to Campbell's expressed views, these are in no way licensed by the canons of poetry. Many of them have endured and prospered well into the present[3].

II

Caesar's account of his campaigns in Gaul has long been regarded as among the great war reports of all time. Couched in largely matter-of-fact understatement, refreshingly free of the intrusive « I », and unchallenged by rival accounts, *The Gallic Wars* has been quarried for everything from Latin grammar to the ethnography of the Gallic tribes. Until fairly recently its testimony was seldom seriously challenged. Even when Caesar spoke of impos-

sible things, these have been treated as aberrations from an otherwise accurate tale minor lapses that illustrate only that Caesar occasionally found it expedient to subordinate accuracy to effect.

Among the purposes to which Caesar's account has been put is to support various ancient and modern estimates of the population of Gaul on the eve of the Roman conquest. Although they may well be couched in apparently objective arithmetical terms, estimates of population levels are no strangers to controversy – in fact are one of the most suspect forms of historical evidence and argument. Since they are so frequently based on warrior counts, I would like to consider the history of the relationship between the numbers Caesar proffered in *The Gallic Wars* and various modern estimates of Gaul's population at the time. The purpose is hardly to offer another such estimate, but to illustrate ways in which numbers beguile even when they verge on the preposterous[4].

Today, as always, Caesar's work has both critics and defenders, although the balance is now probably closer than ever[5]. Here I look at some of the numbers Caesar mobilized, and the ways he tried to sell them to the Senate and citizens of Rome. Demonstrating that his numbers are likely to be at least roughly correct would serve to legitimate some modern efforts to calculate the population of Gaul at the time. On the other hand, demonstrating that his figures are impossibly high could suggest the expediency of doubting the reliability of other parts of his account. Of course this can never be proved since, *ex hypothesi*, the evidence nearly all disappeared on the field of battle.

Some sixty times in *The Gallic Wars* Caesar estimated the size of the forces he was fighting, and occasionally of whole populations. Although these figures amount almost to a genre of their own within the larger context of *The Gallic Wars*, they have not been subjected to a great deal of close attention *per se*, being merely accepted or rejected in aid of other pursuits. Thus, while they have sometimes been accepted *in toto*, there have been rejected only on a case-by-case basis.

There is clearly a case though for regarding Caesar's figures as indicating his penchant for the grandiose rather than as the results of accurate estimates on his part. I discuss only a few of the more implausible examples of Caesar's use of numbers, since these obviously best repay attention. Nonetheless, I do not suggest a plausible-implausible dichotomy to determine credibility. While it might be true that plausible numbers resist critical attention longer than implausible ones, it is no less true that all the numbers offered by a given author in a given set of circumstances need to be judged by the company they keep.

III

Two examples can suggest the nature of the problem, even that Caesar was not above being a bit of a hoaxer. Certainly something like this seems to operate in his account of his confrontation with the Helvetii and their allies in 58 B.C. To read him tell it, it seems that as a result of defeating these groups in battle and forcing the surrender of the survivors, certain information fell into his hands[6]. This indicated that there were (or rather had been) 263,000 Helvetii and another 105,000 allies. Of these, 92,000, or exactly one-quarter, were « fit to bear arms. » Some Helvetii decided to remain under Roman rule while others –110,000 by census, Caesar wrote – preferred to return home. The unenumerated remainder apparently died as a result of hostilities.

As unlikely as these numbers are, the way that Caesar purportedly learned them is even more extraordinary. He wrote that « [i]n the camp of the Helvetii were found ... records [*tabulae*] written out in Greek letters, wherein was drawn up a register of names [*tabulis nominatim*] showing what number of them had gone out from their homeland, who were able to bear arms, and also separately children, old men, and women[7] ». It is not completely clear whether the listing of names was confined to those capable of bearing arms or included everyone[8]. Either way, virtually nothing about this peculiar occasion makes much sense[9].

Why record the names of all the members of the tribe, if indeed that was the case[10] ? For that matter, how would it have been possible to do this for so many[11]. And why Greek letters, and by whom[12] ? When had this been done and how were names removed ? Furthermore, if these were actually « tablets », as Caesar's term suggests, where could they have been stored in transit ? Presumably they would have been of wood or stone, and their sheer number and weight would have rendered them virtually untransportable. And how was access to them gained ? And how long would it have taken for them to be prepared – no matter by whom – before the migrants left home ?

Suppose, alternatively, that the « tabulae » contained only the names of those able to bear arms. How were these individuals identified at the time the rolls were made, and how were names added and deleted ? More to the point, what would the purpose of the lists be ? How would they be consulted ? Were they alphabetical ? Was there an index ? How could names be retrieved from the list, and under what circumstances would this be attempted ? For that matter, how exactly did Caesar count the 110,000 who decided to return[13] ? And why bother ? And is it not suspicious – as indeed some have noted – that those of warrior status turned out to be exactly one-quarter of the whole ? This must actually be too low a proportion ; after all, according to Caesar the Helvetii were migrating *en masse*, fleeing enemies and seeking to establish themselves in Gaul. Oridnary prudence would require that the percentage of those willing to bear arms would be high[14].

Several ancient historians provided figures that were lower than Caesar's. Plutarch, closest to Caesar in time, was also closest to him in his estimate –

300,000. Orosius, writing in the fifth century AD, reduced the figure to 157,000. Even though we cannot know how each of these writers arrived at the figures they used (it is thought that Orosius was probably abstracting from now-lost portions of Livy), they must ultimately have derived them from *The Gallic Wars*, and so the differences in each of them must represent the degree of doubt each brought to his own reading of Caesar[15]. Accepting this as natural in one sense, it remains odd that, contrary to many modern students, they disputed the very figures for which Caesar claimed to have the best evidence[16].

Stevens' discussion of the episode epitomizes the dualistic mien of much modern scholarship. He finds much to be sceptical about in the Helvetii tale, including the overall figure of 368,000. But not the possibility that some accurate figure was found, recorded, saved, and transmitted. It is the figures of Livy via Orosius (157,000) that Stevens (1952, 168) finds « are surely much more likely ». Lower, yes ; more plausible because of that, yes again ; but more likely to be accurate ? The answer to this must be no[17].

Earlier Kloevekorn had taken a similarly ambivalent position[18]. He scoffed at Caesar's numbers and pointed out that if the Helvetii were carryng with them a three-month supply of flour, they would have required more than 8,000 waggons to transport it over difficult terrain. He pointed out that Caesar's account of the reasons for the migration made little sense, and added that Caesar had reasons for exaggerating the number of Helvetii : it would magnify his victory ; justify fighting in the first place ; allow him to meddle in the internal affairs of other Gallic tribes ; and justify his acting without the formal approval of the Roman Senate. Still, Kloevekorn (1889) felt obliged to offer his own estimate of the Helvetians and their allies – he thought that 160,000 (Orosius again!) represented a reasonable compromise of the several numbers later writers offered, without considering that these themselves must have represented similar compromises made earlier[19]. Despite all the incongruities, qualified or unqualified belief in each of these numbers lives on in several recent discussions of the occasion[20].

IV

Three years after defeating the Helvetii, Caesar encountered the Usipetes and the Tencteri. He attacked them unexpectedly, catching them unprepared. Many were killed at once, while others fled to the nearby confluence of the Rhine and Moselle rivers. Here, or so says Caesar (1958, 196 [iv. 14-15]), « they gave up hope of escaping further [and] a large number were already slain, and the rest hurled themselves into the river, there to perish overcome by terror, by exhaustion, by the force of the stream ».

Extraordinary as these mass suicidal tendencies might seem, even more extraordinary is Caesar's following comment – hat not a single Roman soldier died – not even from exhaustion ! – and only a few were wounded, even though

(Caesar 1958, 196 [iv. 14-15]) they had faced « an enemy whose numbers had been 430,000 », or roughly the population of present-day Lyon or Valladolid or Zürich[21]. By the details that Caesar provides, this carnage cum pursuit must have occurred between midday and darkness on an early spring day. Well might Fuller (1965, 120) label it as « one of the most complete victories in history[22] ». In terms of respective casualties it could hardly have known any peer[23].

Here then is another large number, in fact, the largest number deployed in *The Gallic Wars*. This time Caesar offered no hint as to how he knew how many Usipetes and Tencteri there were. His narrative of the occasion and of the preceding events does not suggest that the Romans had the leisure to count their adversaries, and doing so was clearly impossible in the chaos of the battle and its aftermath as described. In short, there is no reason whatever to suspect in the least that Caesar's number reflected the actual numbers of Usipetes and Tencteri.

In this case Caesar has met with more modern scepticism, if not always on entirely sensible grounds[24]. Desjardins (1876-93, 2 : 652) sought the explanation in an unlikely transcriptional error, « CCCCXXX » for « XXXXIII », creating a tenfold increase[25]. Ferdinand Lot (1947, 97) suggested that « it is absolutely certain that they were infinitely less numerous » than Caesar propounded. For his part, Fuller (1965, 118) seems slightly less dubious of this figure than of that for the Helvetii, mentioning only that it was Caesar's. Bloch and Carcopino (1935, 2 : 749) merely speak of this as an example of Caesar's « customary complaisance » with numbers, while Gelzer spoke of a force, « supposedly 430,000 » strong[26].

Still, this body of opinion remains a minority one. Even though in the same passages in which he adverted to 430,000 Usipetes and Tencteri, Caesar admitted to misrepresentation, his patently nonsensical statement regarding the numbers of the enemy that day have gone largely unchallenged. In accounts of his campaigns and in editions of *The Gallic Wars*, Caesar's claim generally merits no particular attention at all, receiving instead the approbation of silence[27]. No wonder that in his study of the psychology of warfare, John Keegan (1976, 62-69) wondered about modern historians' credulity respecting Caesar's account of his battles.

V

In search of the population of ancient Gaul, others have been more enthusiastic than silent about the numbers that deface *The Gallic Wars*. Robert Wallace (1753, 314-325) incorporated several of Caesar's numbers – and challenged none of the others – in order to posit a population for Gaul of not less than 48 million[28]. Wallace's was only the first of many modern attempts[29]. While not all these relied primarily on Caesar's testimony of Gallic numbers, they only occasionally rejected them, or even considered them critically.

At the end of the nineteenth century Julius Beloch turned to the question (Lo Cascio, 1994 ; Gallo, 1990 ; Goldsmith, 1984, 263-272). At first he estimated the Gallic population at 3,390,000, but this aroused such criticism that he later raised it to 4,500,000 (Beloch, 1886, 448-460 ; Beloch, 1899). Despite arraying Caesar's figures, Beloch's principal criterion was density per square kilometer, and he tailored his other premises to ensure that the population of Gaul represented a lower density than that for other regions of the Mediterranean world (e.g., Drinkwater, 1983, 169-170). This preordained methodology derived from Beloch's belief that « higher civilization » correlated well with high population densities because it allowed and encouraged the development of industry and commerce. Thus Gaul could not have been densely populated at the Roman conquest, but only as a result of it (Beloch, 1886, 454-457; Lo Cascio 1994)[30].

In introducing a general account of French population history, Emile Levasseur (1889, 1 : 99-101) tried his own hand at determining the number of people living in Gaul in Caesar's day. He conceded that « [i]t is impossible to determine the number of inhabitants of Gaul before the conquest », but thought that the country was not very densely populated. He also believed that the « numbers of combatants » cited by Caesar were « suspect » for the usual reasons – although hardly usual in the context of guessing the population of Gaul. They emanated from « an ambitious general interested in boosting the prestige of his victories by exaggerating the numbers of the enemy ».

Despite these handicaps he felt it was useful to persist, « despite the small number and doubtful value of the documents that history disposes »[31]. He suspected that it might be useful, of all things, to rely on the unreferenced testimony of Diodorus Siculus (1933-67, 3, 163 [v.25.1]) that « Gaul is inhabited by many tribes of different size ; for the largest number some two hundred thousand men, and the smallest fifty thousand ». Levasseur transformed his source's clear use of « many » into « the sixty peoples of long-haired Gaul » of later times, allowing him to proceed by substituting one source's numbers for another source's word[32].

Adopting an average of one hundred thousand « inhabitants per tribe », which, he thought, seemed to accord not only with Diodorus Siculus but with statements of Caesar and Strabo about the Belgae, and tacking on Gallia Narbonnensis, Levasseur (1889, 1, 100-101) concluded that there were « about eight million inhabitants for all of Gaul », or about 12 people per square kilometer. He modestly concluded (Levasseur, 1889, 101) that « we do not present this [figure] as a certain fact, nor even as a probable fact supported by ample proofs, but as a simple hypothesis expressed in numerical form ». Later references (e.g., Sée, 1924) to Levasseur's work demonstrate what is in any case intuitive – that his number endured while his caveats died a quick death.

About the same time, Gustave Bloch tried a novel approach. Using Caesar's Helvetian numbers, Bloch suggested that the men under arms constituted between 1/13 and 1/14 of the general population. Bloch (1900, 34-35) conceded that Caesar's numbers were « suspect », but not all of them – not the

Helvetian and not that for the relief force at Alesia. Multiplying the latter by 13 and 14 allowed him to suggest an overall population for the tribes involved of 3,380,000 or 3,752,000. To this figure he added other groups not represented (according to Caesar) in this levy and arrived at a total population of « more than five million ». In this exercise Bloch symbolizes well the conflict between the inclination to disbelieve and the need to quantify, with the latter, as usual, emerging victorious.

One of the earliest, most resolute, and most influential such calculation was that of Camille Jullian (1908-26, 2 : 4-8)[33]. In his massive history of Roman Gaul, Jullian prefaced his discussion of Gallic population figures by addressing the credibility of the sources.

> Let us not tax the ancient writers who have preserved these numbers for us with error or exaggeration. They had them from the natives, and the peoples of the past, moreso than the Christians, loved statistics and enumerations. Their religion demanded these one-by-one censuses [*sic*], all these scrupulous additions of men or of soldiers ; the national gods wanted there to be made an exact accounting of the citizens who belonged to them. (Jullian, 1908-26, 2 : 7)

Despite the eccentric tenor of this argument, Jullian put his finger on one of the issues of the numerous estimates in *The Gallic Wars* : whose numbers are they[34] ?

VI

In the immediate aftermath of the Nazi occupation of France, two works on the ancient Gauls appeared, works designed specifically to fortify the historical self-image of postwar France[35]. Both dealt with, among other things, the vexed issue of population. The first of these was *Les Gaulois* of Albert Grenier, who took umbrage at « a modern German » estimate that the population of Gaul was only five or six million (Grenier, 1945, 225)[36]. Addressing the Helvetian count, he argued (Grenier, 1945, 227) that « [if] there is one number [in the sources] that appears to present exceptional guarantees of exactitude, it is that of the Helvetians »[37]. Like Jullian, Grenier was disposed to raise this number on the assumption that it excluded large numbers of slaves who accompanied the free Helvetians. Going on to cite Plutarch and Diodorus Siculus at their most grandiloquent, he concluded (Grenier, 1945, 229) with some calculations of his own : « about fifteen million inhabitants is a minimum which must certainly have been exceeded ».

The second work was written by Ferdinand Lot, then near the end of a long and distinguished career. In contrast to Grenier, Lot (1947, 67-68) not only rejected the tale of the Helvetian tablets, but found it « astonishing that there are any historians who accept it »[38]. He declined (Lot, 1947, 120) as well to believe that there could have been 430,000 Usipetes and Tencteri. Despite his doubts, however, Lot felt obliged (Lot, 1947, 68-69) to render an opinion as to

the probable population of Gaul at the time. Harking back to the method – if hardly the conclusions – of Beloch, he reckoned that, on the basis of a « very weak [low] » estimate of thirty people per hectare, it « would have been some twenty million ». Thus Lot's doubt produced a higher number than Grenier's credulity.

It might seem that these two efforts, presumably achieved independently – at least in terms of overt method – would lend credence to a population figure of about fifteen to twenty million, if only each of them had not adopted fatally flawed methodologies. For Lot is was the assumption that population was distributed in ancient Gaul uniformly enough to infer and apply an « average » population density. Of course in arriving at such a density already armed with knowledge of the number of hectares involved, it became merely a matter of applying a density that, when multiplied by this number, would result in a middle-range population figure.

Like Levasseur, Grenier was especially attracted to Diodorus Siculus' statement quoted above. Of course, « many » does not work well as a multiplier, so Grenier (pace Levasseur) turned it (Grenier, 1945, 226) into two numbers : there were « some twenty great peoples and about forty small ones ». For Grenier it was also necessary to change « men » into « people » by multiplying by four ; indeed, « such a coefficient surely provides only a minimum ». And, *voilà*, twenty-four million inhabitants of Gaul step forward after the equal sign (Grenier, 1945, 226). The fatuities of this are painfully obvious ; the assumption that every Gallic people mimimally numbered either 200,000 or 800,000 is only the most palpable, since Diodorus Siculus likely intended – although we do not know why – only to suggest a continuum that ran from 50,000 to 200,000. Nonetheless, by itself it allowed Grenier to present the figure of twenty-four million as a reasonable one, even though in the end he provisionally advanced a lower figure of 12 to 15 million as his own estimate[39].

Raymond Schmittlein (1970, 65-67) has carried the high-counting banner forward, believing that Strabo's figures, among the highest of all, are « not exaggerated ». He suggests, incredibly, that the number of « warriors » who took part in the battle and siege of Alesia in 52 B.C. would be « on the order of two and a half million men », even with several groups missing. To this he adds another million men of fighting age and multiplies this number by about 5.7 to arrive at a total of « twenty-one million inhabitants » in ancient Gaul.

Even more recently Drinkwater (1983, 170) has criticized Beloch's average of seven to eight people per square kilometer and substituted for it his own belief that Gaul was as densely populated as Italy, and so about fifteen people lived on the typical square kilometer. As a result, he estimates a population of about eight million. In short, Drinkwater's figure is as much tied to his estimates for other parts of the Roman empire as Beloch's were. Only the exact relationship differs[40].

In writing on the population history of France, two historians have recently found kind things to say about the utilty of Caesar's numbers for their pur-

poses. Biraben (1988, 44-46) thought them « of acceptable magnitude » and he proceeded to use them to help him reach an estimate of 6,800,000±500,000 for Gaul at the time. Writing in the same compendium, Robert Etienne (1988, 66-69) was slightly more sceptical, pointing out the manifold purposes to which false numbers could be put. Still, he liked the numbers that Caesar had portrayed for the Gallic relief army at Alesia and suggested that they could be used to infer a total population of around 4 to 4.5 million[41]. Both these estimates are among the lowest ever offered for Gaul on the eve of the Roman conquest, but even they feel the need to turn to Caesar for authority.

One of Biraben's arguments is worth some discussion. He affirms (Biraben, 1988, 44) that Caesar's numbers « were not criticized at the time, even by [his] detractors ». Biraben here states explicitly what others often seem only to imply. In fact though, the argument is vulnerable on several grounds. The most significant is simply that is is incorrect. According to Suetonius (1951, 1 : 77-79 [i, 56]), C. Asinius Pollio, who had served under Caesar and was a close adherent, charged that Caesar's reports « were put together somewhat carelessly and without strict regard for truth ». Asinius Pollio charitably attributed this to misinformation from his lieutenants and from « forgetfulness » and, even more charitably, thought that Caesar « intended to rewrite and revise them »[42].

Barry Cunliffe has undertaken one of the more accommodating modern reading of Caesar's numbers. Alluding to the Helvetian episode, Cunliffe elusively refers to « documents », and concludes that « Caesar's figures may be exaggerated but there is no reason why he should have falsified them and the way in which he presents them has a ring of authenticity ». Going on, he discusses (Cunliffe, 1988, 115-24) without comment several more of Caesar's numbers and in the end concludes that during Caesar's campaigns « hundreds of thousands [of Gauls] were killed, hundreds of thousands were carried away to be sold in[to] slavery and incalculable numbers were maimed ».

Finally, there is the interesting case of Christian Goudineau's extensive and archeologically-based work on Caesar's campaigns (Goudineau 1990). Goudineau presents Caesar's numbers virtually without comment. At one point, though, he addresses (Goudineau, 1990, 262) the issue explicitly, observing, aptly enough, that « the problem is to know whether these numbers are credible or not ». He concludes that « in my opinion, they are – approximately ». Thus he believes that the Helvetian losses were 220,000 and imputes losses of « several tens of thousands » on several other occasions, enabling him to conclude that Plutarch's claim that Caesar killed one million Gauls in battle is « acceptable »[43]. All this leads Goudineau to conclude (Goudineau, 1990, 259-260, 308-315) that « various demographic estimates are not only reasonable but rather insufficient [*i.e.*, understated] ».

In support of his argument Goudineau refers vaguely (Goudineau, 1990, 308) to « psychological and administrative limits that oppose any hyperbolic exaggerations », although just what these might have been is nowhere specified[44]. Oddly for an archeologist, Goudineau engages none of the logistical

cruxes implicit in his belief. Less surprisingly, he fails as well to engage in any serious textual criticism or rhetorical analysis, nor does he employ any of the literature touching these issues.

VII

In ending this discussion, it might be worthwhile to look at the way that the figures rendered by Diodorus Siculus, a contemporary of the Gallic campaigns, have been put to modern use. As we have seen, Diodorus Siculus failed to provide a multiplicand with actual numerical value. His testimony is seriously complicated by the fact it is partly qualitative (« many »), and even the quantitative matter is ambiguous (50,000 to/and 200,000). None of this, however, has diminished the ardor of those who feel obliged to use these data as points of departure.

The first of these, as already noticed, was Robert Wallace, whose *modus operandi* has decidedly modern overtones. To begin with, he replaced Diodorus' « many » with Appian's « 400 nations or tribes ». Combining these disparate data, he suddenly turned modest. Even though they seemed to suggest a very high figure indeed, he did not feel « obliged to compute all the inhabitants of Gaul at much above 80 millions [!] ». Maybe there were many more small nations than larger ones. Instead, he decided on « a more moderate computation... only about 40 millions ». (Wallace, 1753, 319-320)[45].

In this particular exercise Wallace acted almost as a archetype, both by combining incommensurate and dubious evidence and, especially, by then in a fit of seemly diffidence backing off the ineluctable results of his procedure and producing a figure that he could then call modest but which has ever since remained nearly twice as large as any other estimate. Wallace could thereby convince both himself and his readers that he was operating at a minimal level and that further research or rumination might actually raise the figure considerably, for by his own premises the actual figure could be as high as 400 x 125,000 x 4, or 200 million.

No later student of the matter has been quite as cavalier as Wallace in blending sources, but those who have used Diodorus Siculus have routinely transformed his « many » into « 60 », the number of civitates awarded Gaul by Augustus, on the assumption that there was a straightforward correlation between these and the individual tribes in existence in the 50s B.C[46]. Again, equal parts of Caesar, Augustus, and Diodorus Siculus are emulsified to create a composite figure. In all these cases assumptions are necessarily made about Diodorus' meaning : did he intend to suggest that all polities had either about 50,000 or about 200,000 warriors/people, or was he merely indicating the minimum and maximum ? No one seems to be sure ; nor can they be[47].

VIII

Does it matter though ? How plausible – indeed, how possible – are Diodorus' figures ? The numbers of the contingents that, Caesar mentioned, were gathered together to relieve the siege of Alesia seem to argue strongly against accepting them[48]. Harmand (1967b, 266) argued that this number (which he gives as 248,000 or 258,000, but see below) « is thus far from finding itself contradicting Gallic demographic possibilities »[49]. But indeed it does. According to Caesar these forces resulted from a partial levy of numerous tribes, but the total of about 280,000, large as it might seem, would represent only about six percent of the lowest estimate, that of Beloch, and less than two percent of those estimates in the 15 to 20 million range. That is, the figure would be only from a maximum of 25 percent of the potential arms-bearing strength (in turn, one-quarter of the total population), if Beloch's figures are used, to as little as 1/18 of that strength, using Jullian's estimate.

Playing arithmetical games with Diodorus' information would only reduce that proportion still further. On the face of it, given that the occasion could only have been viewed as a last-ditch effort to expel the Romans, this seems much too small to be even remotely likely. For that matter, if the potential strength of the Gallic armies was in the millions, as is implied in population estimates of about 20 million, then why did they not manage in seven years' of fighting to combine forces to achieve a superiority that would have overwhelmed even Caesar ? If nothing else, combining Caesar's figures with modern estimates of Gaul's population in his time paradoxically suggests that the Gauls were not very serious about maintaining their independence after all.

We need to look at the figures for the siege of Alesia in *The Gallic Wars* for another reason. There are varying manuscript traditions for this text, and these numbers, not surprisingly, have suffered in the process of multiple transmissions. First, though, the particulars of this information need to be detailed. Caesar first listed a number of tribes and the levies which were to be raised in order to relieve Alesia, noting that one group, the Bellovaci, which had been alloted 10,000 men, agreed only to send 2,000. Several sentences later he stated what he thought was the actual number of troops that had been raised. Three numbers then present themselves : the aggregate of those levied ; that aggregate minus 8,000 ; and the totals that, according to Caesar, eventuated from the process by appearing in the field.

At the first and last of these stages transmission problems enter the picture. It would be best to present the situation algebraically, with the first figure the number of tribes and the second the number of men in thousands. The « standard » manuscript tradition is :

(2x35) + (6x12) + (2x10) + (4x8) + (8x5) + (1x4) + (3x3) + (2x2) + (1x30) - 8 = 273(,000)

A lesser, but still used, tradition shows the following state of affairs :

(2x35) + (6x12) + (2x10) + (11x8) + (3x5) + (3x4) + (1x3) + (2x2) + (1x10) - 8 = 286(,000)

In addition, there are two separate manuscript traditions for Caesar's last set of figures : one shows 8,000 cavalry and 240,000 infantry, the other, 8,000 cavalry and 250,000 infantry.

Thus, in referring to the numbers of this relief force, modern scholars find themselves offering at least six legitimate (*i.e.*, authorized by manuscripts) numbers : 248,000, 258,000, 273,000, 281,000, 286,000, and 294,000, or a range of 18.5% bottom to top. A particular choice will be grounded on whether the author uses the levied figures, the levied figures minus the shortfall of the Bellovaci, or the « final » assimilated figures offered by Caesar, the last probably being the most defensible approach, without of course assuming that any of the figures are reliable[50].

A fourth reason for modern variation is contextually perhaps the most important, certainly cause for some alarm. Ominously, the differences in the two lists shown above lie almost entirely in scribal choices for that frequently overlooked variable, punctuation – in particular, different decisions regarding commas and semi-colons. Clearly lists are peculiarly vulnerable to this type of « error », and numbers themselves, even (or especially ?) Roman numerals, to *lapsus calami*[51].

The earliest extant manuscripts of *The Gallic Wars* date from the ninth to the twelfth centuries[52]. Would it not be reckless to assume that all the previous but now lost versions maintained Caesar's figures, right or wrong, unscathed for century after century ? The circumstances add luster to the notion that the figures cannot be treated literally, even while it is not possible to replace them with anything that can be regarded as more pristine, let alone more accurate.

Despite these anomalies and contradictions, Caesar's recorded muster of the relieving army has been widely used to establish population limits, at least to suggest the distribution among the various peoples of Gaul[53]. In one of the most formula-driven discussions of the issue, Eugène Cavaignac proposed that ancient Gaul probably had a population of about one-third of the rural population of France of his own time (as suitably reshaped to cover the same geographical limits), or from nine to twelve million. In doing so he accepted most of the numbers in *The Gallic Wars* as accurately transmitted as numbers, but occasionally saw fit to interpret them differently than Caesar had[54]. In turn, though he asserted otherwise, this argument was buttressed by another – that the figures for Alesia represented roughly one-third the available troops for the tribes represented[55]. Even Beloch, denounced as a hypercritic by those who preferred higher estimates than his, thought it prudent (Beloch, 1886, 450-460 ; Beloch, 1899) to accept these figure at face value, even though he drew a different set of conclusions from them.

Again we can explain this reliance on the fact that the figures seem plausible even if rounded. Like the so-called census of the Helvetii, they seem to imply documentary authority rather than eyeball estimates. They vary from tribe to tribe, presumably to represent, at least roughly, the relative population levels of these groups as the Romans came to know them later. Few have dis-

cussed explicitly how Caesar came to know the details of this levy, but Jullian, who seemed to have an explanation for most things, thought « such precision » could leave « no doubt that [Caesar] had before his eyes a public document, transmitted to him by some deserter from the assembly of [Gallic] chiefs ». (Jullian, 1908-26, 3 : 516n)[56]. He does not suggest why the Gallic « chiefs » would have preserved such a « document » after the defeat and then passed it along to Caesar for possible reprisals.

Caesar's figures for the contingents in the relieving force at Alesia point up some of the complexities in using his figures as a point of departure for overall population estimates. Taken as is, they necessarily suggest a population of only a few million, probably fewer even than Beloch suggested, since at least one-quarter of a population might be expected to comprise its fighting forces in such an emergency. As already noted, even Beloch's lowest estimate would imply that only one of every fifteen or twenty Gauls participated on this occasion, much lower if Caesar's estimates are too high. Such a proportion has the look of a smallish cadre of professional soldiers – a state of affairs not otherwise implied in Caesar's account of his Gallic campaigns[57].

IX

Viewed conspectively then, we find a range of opinion that the population of Gaul at the imposition of Roman rule was anywhere from about four million to forty-eight million. Most of the proposed figures along this spectrum base themselves on Caesar's figures plus the odd piece of unprovenanced information in other sources like Plutarch, Strabo, and Diodorus Siculus, each of whom « improved » on Caesar, and modern opinion as to sustainable density. The range itself then is peculiarly the result of modern suppositions regarding the means by which to extrapolate. By accepting most figures at face value, by preferring larger or smaller numbers when there is a choice, by varying the proportion of fighting men to overall population, by varying the degree of density of Gauls per square measure, and by introducing whole « uncounted » segments of society such as slaves, modern scholarship has imposed itself on evidence that is helpless to resist.

To sum up, most modern estimates of the population of ancient Gaul derive ultimately, and most often directly, from the figures for Gallic aggregations found in Caesar's *The Gallic Wars*. True, some estimates bring into play the concept of inhabitants per square kilometer by assuming some kind of relationship between ancient and modern density, but this approach is almost always checked by reference to Caesar's figures. Deciding which of these to accept, how to extend them to the population at large, and how to relate the results both to the contemporary Roman empire and to modern France in whole or part, has allowed for limitless opportunities to manipulate the raw

data to suit particular purposes[58]. In the circumstances it is a wonder that the range of modern estimates of total population is no more than twelvefold. The fact that most opinion clusters in the more restricted range of 10 to 20 million can hardly be taken as any assurance of greater probability, only of a greater propensity toward verisimilitude and a regression to the mean[59].

X

Caesar's commentaries exemplify and exploit a *topos* that Rolena Adorno has addressed for the Americas and Michael Murrin for the Renaissance more generally (Adorno, 1989; Murrin 1994). This is what Murrin calls « the heroic few », in which warfare is envisaged at the triumph of godliness and civilization, as represented by the few, over godlessness and barbarism, represented by numberless and faceless masses. In this scenario the odds become so great that victory can be nothing less than the implacable verdict of fortune. And the greater the odds, the more sure the sign[60].

A related theme is that, even when the size of the contending forces might be roughly equal, the casualties are not. We see this in several of Caesar's accounts of the defeat of various Gallic groups, and he carried on the work in the accounts attributed to him of the ensuing civil war with Pompey[61]. As it happens, Caesar had an able mentor in all this, his predecessor as dictator, L. Cornelius Sulla, who was constantly at war at home and abroad in the 90s and 80s. By his own account, Sulla was one of the most efficient field commanders in history. During these wars he managed to kill 70,000 opponents in a battle near Capua in 83 BC at a cost only 70 (or 124) of his own troops (Plutarch, 1914-26, 4 : 413-415 [Sulla, XXVII-XXVIII]; Orosius, 1964, 216 [v.20]). The next year saw a like success–at the battle of Sacriportis the enemy's losses were 20,000 or 25,000 dead and another 8,000 captured, while Sulla lost only 23 of his own men (Plutarch, 1914-26, 4 : 417 [Sulla, XXVIII.8]; Orosius, 1964, 216 [v.20].

Despite these fortunate occasions, Sulla's crowning achievement was his defeat of Pontic forces at Chaeronea in 86 BC. The sources, based on his own, now lost, memoirs record that the Pontic force was either 100,000 or 110,000 strong, and that all but 10,000 of these were killed, even though the Romans numbered fewer than 20,000. The Romans' losses ? According to Plutarch Sulla at first thought that he had lost fourteen men but, nice touch, two of these turned up before the day was out! (Plutarch, 1914-26, 4 : 389-391 [Sulla, X.1-6)[62]. Small wonder that Brunt observed (1971, 697) that « Sulla evidently had a penchant for keeping his own losses within two figures ». And even smaller wonder that Delbrück referred (1920, 1 : 460) to ancient accounts of these battle as « fantasies »[63].

What is of concern is that what Murrin (1994, 163) calls « epic » is removed in content and attitude only slightly from the work of Caesar – not to mention countless others. In surveying the battle accounts in several epics or epic-like productions, Murrin concludes that « [e]pic statistics correspond to what the chroniclers relate, and the battles the poets narrate are typical ». A difference is that, while the epicists wrote only occasionally in hopes of personal advancement, virtually every word in Caesar was calculated to evoke first exculpation, then edification and admiration, and finally gratification and elevation.

The estrangement of battle descriptions from any necessary reality is starkly illustrated by the so-called Battle Scroll, one of the Qumran documents, or Dead Sea Scrolls. Here a battle is described in the most minute detail : preliminary strategies, size and deployment of contingents, battlefield tactics, and outcome. The numbers are normative, but not more so than in any number of other battle accounts. The battlefield maneuvers are inherently plausible, no doubt based on descriptions of real battles. But the battle itself happened only in the mind of the author(s) of the Scroll–it was Armageddon, anxiously awaited and thought imminent by some, but otherwise quite outside the historical record[64].

XI

Hans Delbrück, ordinarily no friend of warrior counts in the historical records, was enough taken of them with regard to Roman records about the Germans that he could comment :

> Consequently, here we have a case in which, despite the complete lack of useful, positive information, we are still able to state definite figures with great certainty. The relationships are so simple, and the economic and military, geographical and political facts so closely interlaced that with today's perfected methods of scientific research we are able to fill in the missing parts of the source accounts and to estimate the number of Germans better than the Romans could when they saw them before their very eyes and had daily dealings with them (Delbrück, 1920, 2 : 15).

In other words, Delbrück treated these figures in much the same way as other moderns desperately seeking to establish population levels in the past. He rejected their accuracy on the one hand, yet on the other assured his readers that modern techniques can somehow overcome this crippling handicap. In his case the argument was little more than that « [t]he military accomplishments of the Germans against the Roman Empire and its battle hardened legions were so great that they appear unthinkable without a certain mass of men... », (Delbrück, 1920, 2 : 15). This is not an example of « today's perfected methods of scientifc research » at all, but it is a wonderful token of the all too common notion that combining arithmetic and ideology can lead to answering unanswerable questions.

Six hundred years ago, Ibn Khaldun precociously commented on the issue of enemy numbers and casualties in quite a different vein. Earlier historians had « strayed from the truth and found themselves lost in the desert of baseless assumptions and errors ». He continued :

> This is especially the case with figures, either of sums of money or of soldiers, whenever they occur in stories. They offer a good opportunity for false information and constitute a vehicle for nonsensical statements. They must be controlled and checked with the help of known fundamental facts.

Ibn Khaldun went on to cite examples of the problem from earlier Muslim historiography. In refuting them he relied heavily on logistical arguments. For instance, Moses' Israelites could not have numbered 600,000 because, if they « were in battle formation, [they] would extend two, three, or more times beyond the field of vision ». He continued in this vein at some length, all the while adducing arguments that are perhaps even more valid today than they were in his time (Ibn Khaldun, 1967, 1 : 16-23). It is instructive to compare these views with those who would treat Caesar as accurate, for whom logistical considerations, whether tactical or strategic, never weigh heavily, on the rare occasions they weigh at all.

Caesar's accounts of his Gallic wars–and the civil wars that followed – have recently been described (Grant, 1995, 64) as « extremely potent, subjective and clever works of self-advertisement and personal propaganda, disguised beneath apparent self-restraint and modesty ». One key to their acceptance lies in their calculatedly matter-of-fact style. Unlike many of his contemporaries and successors, Caesar developed a discursive style that seems « modern » enough to win acceptance[65]. Thus he provided enough circumstantial detail to account for the incredible numbers he thrust at readers to convince them that the core of his narrative must be accurate, or at least accurate enough. As Woodman rightly pointed out, though « we must... remember that descriptive detail in the hall-mark of the fabricator of history ». (Woodman, 1983)

In yet another way Caesar's reports to the Roman senate seem extraordinarily up-to-date. Consider contemporary sportspeak, for instance, which consists so largely of telling supporters of one team that the opposing team is really better than its record indicates, a warning not to be surprised if the home team does poorly as well as a cue to be suitably impressed if they do well – one-downmanship, as it were, in aid of one-upmanship. In all this Julius Caesar must be considered one of history's earliest – and most perdurably successful – « spin doctors ».

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NOTES

1. The Mamluk historian Ibn Taghribirdi (1409-70), as quoted in Ayalon, 1971, 188.

2. In fact the editor of a later publication of the poem noted that « [t]he carnage occasioned by the wars of Julius Caesar has usually been estimated at two millions of men ». Campbell's oeuvre has not attracted much study, but see Macaulay, 1969, and Miller, 1978, 47-58. For the ambience see the discussion of Robert Wallace below.

3. And they are not alone ; this paper happens to spring from my study of the American Indian contact population debate in that Caesar's account and the modern response to it closely resembles the reports of Hernán Cortés, heavily used by those would would count high in this regard. For more see Henige, 1998, chapter 15.

4. In citing classical authors I adopt a double approach, using both the standard procedure of referring to the particular sectioning of these works, and citing as well modern editions by title and page, since it is often these translations *qua* translations that are at issue.

5. The most influential work of the critics is Rambaud 1966. Rambaud, 1966, 179-182, included a brief and generalized discussion of Caesar's numbers. Cizek, 1995, 102-109, carries the argument forward.

6. The Helvetian episode is treated, among others, in Klotz, 1915; Pratt, 1936, 99-106 ; Stoessl, 1950 ; Walser, 1956, 1-7 ; Veith, 1906, 75-85 ; Harmand, 1970, 62-64 ; Harmand, 1995, 192. Generally, in these cases Caesar's numbers are noted but not confronted, and sometimes are warmly embraced.

7. « In castris Helvetorum tabulae repertae sunt litteris Graecis confectae et ad Caesarem relatae, quibus in tabulis nominatim ratio confecta erat, qui numerus domo exisset eorum, qui arma ferre possent, et item separatim pueri, senes [et] mulieresque. » Julius Caesar, 1958, 43-45 (i. 29), with emphases added. Other modern translations use « list », « lists », or « documents » for « tabulae ».

8. Schmittlein, 1970, 64, noted objections to the Helvetian figures, but merely observed that Ceasar « was satisfied to reproduce the numbers that figured in the tables of effectives of the Helvetians ».

9. T. Rice Holmes, generally an apologist for Caesar's accuracy, discussed some of the logistical prodigies involved in moving so many people by waggon : Holme, 1931, 237-241. Even then, however, he is not fully willing to regard Caesar's numbers as wholly fictitious. See also MacKendrick, 1972, 36-37 (over 12,000 tons of grain, 8500 waggons, and 24,000 draft animals required, for instance). In turn J.F.C. Fuller, 1965, 101n., calculated that 36,800 waggons would have been required. Bloch and Carcopino, 1935, 704, 704-705n, considered Caesar's numbers to be « rounded » and « palpably inflated », even though they spoke of « the archives[!] of the Helvetians ». Instead (Bloch and Carcopino, 1935, 714-715), they preferred the lower numbers of Appian, Orosius, and others discussed below. This hardly seems a sensible approach, given the lateness of these sources and our general lack of knowledge regarding the provenance of their own figures, which in any case do not agree with one another. Hemmerdinger, 1990, 204-205, offers the most bizarre grounds for accepting these figures : since both sets of addends total 368,000, the numbers are « unshakable » Emphasis in original.

10. Unlike the dispute over the meaning of « tabulae », no one seems to have suggested that « tabulis nominatim » can mean anything else than that individual names were included in these rolls. Certainly it is not easy to imagine sensible alternative categories.

11. Modern telephone directories typically have about 250 to 300 names per page, written much smaller than these tables could have been. This means that it would require about 350 directory pages to list 92,000 names, and 1400 such pages to encompass 368,000 names, at four columns to the page. The Helvetian tablets would be tantamount to listing every inhabitant of Nice or Bologna or Edinburgh.

12. See, e.g., Caesar, 1958, 45n.

13. In his usual way, Beloch was circumspect about the tablets, noting that they « supposedly » contained such information. But he was willing to accept Caesar's « census » of the 110,000 survivors, since that number was « smaller » and seemingly was carefully secured : see Beloch, 1886, 450-452.

14. Studies devoted directly to the count of Helvetii include Wachsmuth, 1903, 281-285 ; Müller, 1909, 69-75 ; Quinche, 1948, 124-129; Meyer, 1949, 65-70 ; Furger-Gunti, 1986, 101-104. The efficacy of Caesar's 'documentary' approach is reflected in the comments of Hignett, 1951, 550n. While Hignett (1951, 554, 558n) was critical of the figures in the historians of the Persian wars, and while he characterized other figures in *The Gallic Wars* as « wildly exaggerated » and « doubtful », for the Helvetii, he mentions instead that « [t]he figures are given by Caesar... on the authority of lists found in the Helvetian camp, and are now widely accepted as approximately correct ».

15. Plutarch, 1914-26, 7 : 487 (Caesar, XVIII); Dio Cassius, 1914-27, 3 : 265-267 (XXXVIII.31-32) ; Orosius, 1964, 242 (VI.7). Conversely Strabo, 1917-33, 2 : 229 (IV.3.3), would have it that « about four hundred thousand » Helvetians perished in battle and only 8,000 returned to their homeland.

16. Conversely, Camille Jullian, 1908-26, 2 : 6n., believed that to this number should be added an unknown number of slaves, who were « very numerous » among the Helvetii!

17. For the myth-making use of the Helvetii for the later Swiss see Bergier, 1988, 12, who sees these numbers as « a certain exaggeration designed to enhance the military talent of Caesar and to justify the considerable expense » of the campaign.

18. And earlier than he, Napoléon III, 1866, 62-64, expressed reluctant reservations on logistical grounds.

19. Hans Delbrück, 1920, 1 : 487-489, had rejected Caesar's figure outright, among other things on the grounds that moving so many people would have required a waggon train not less than 180 miles long.

20. For the 1 : 4 ratio carried in modern times even beyond Caesarian lengths see Stoffel, 1887, 2 : 443.

21. Exhaustion should certainly be a consideration here. Fuller, 1965, 90-91, thought that fifteen minutes was the maximum that a legionnaire could fight in hand-to-hand combat before becoming exhausted, and, more generally, Clausewitz, 1976, 183-222, raised the time only to twenty minutes. John Keegan (1976) also treats the matter. For a related case see Donlan and Thompson(1976) and Donlan and Thompson (1978/1979) where, through experimentation, they

showed that Herodotus' account of a mile-long run in full armor to initiate combat was far beyond physical endurance.

22. Caesar's description implies that more than a thousand of the enemy died every single minute of the battle!

23. Caesar's account of the annihilation of the Tencteri and Usipetes was given the lie by the reappearance of the latter in the historical record in AD 14, again fighting the Romans : Tacitus, 1925-37, 3 : 329-331 (Annals, I.51). They reappeared finally in AD 83 : see Tacitus, 1925-37, 1 : 77-79 (Agricola, XXVIII). Almost as dramatically, in 57 BC Caesar defeated an army of the Nervii to the point where, he claimed, the defeat « brought the name and nation of the Nervii almost to utter destruction, leaving them with barely five hundred [men] that could bear arms ». Just the same, the relieving Gallic army at Alesia five years later included a contingent, according to Caesar again, of 5000 Nervii, and this was just a quota from a larger pool. Caesar, 1958, 125-127 (II.28). See, e.g., Holmes, 1931, 75-81.

24. Although in this case Napoléon III (1866, 138) seemed to have no doubts. Nor did Pratt (1936, 146), who had the two groups « counted » during the battle!

25. It would at least be easier to imagine achieving the same effect with Arabic numerals merely by misplacing a comma or adding a zero or two.

26. Perhaps they had in mind Caesar's comment on the utter lack of casualties among the Romans. Cf. Gelzer, 1961, 47.

27. In addition to almost any modern edition of *The Gallic Wars* see Dion, 1977, 58-61. A recent account of Caesar's Gallic campaigns that seems unable to decide whether or not to believe his figures is Jiménez, 1996, 45, 56-57, 64-65, 72-75, 86-87, 182-85 et passim. For similar ambivalence see Goudineau, 1990, discussed below.

28. David Hume, 1826, 3 : 499, thought that Gaul « might contain six millions » a figure he reached by propounding a general law that the ancient world was about one-third as populous as the Europe of his time.

29. Valentin-Smith, 1866, 34-38, listed fourteen such efforts (« to our knowledge ») and then added a fifteenth–8,343,320. Several other earlier efforts are summarized in Holmes, 1931, 340-343.

30. In addition to the responses to Beloch's conclusions discussed here, see Garofalo, 1901.

31. Cf. Delbrück's comment quoted below.

32. Levasseur also, of course, transformed Diodorus' « andrôn », which ordinarily meant « adult males » into « inhabitants » (« habitants »). Taken literally, Diodorus' usage suggests a population at least three times larger than Levasseur credited him with. Despite his general disagreement with Wallace noted earlier, David Hume was credulous enough to accept the testimony of Diodorus Siculus on another occasion on the grounds that he « very seriously insisted on » it. Hume, 1826, 468.

33. Cf. Jullian, 1908-26, 5 : 25-27, for much the same argument.

34. For an appreciation of Jullian's *œuvre* see Duval, 1989, 1 : 19-34.

35. For the context see Viallaneix and Ehrard, 1982; Pomian, 1984, 41-105; Dietler, 1994, 584-605; Simon, 1996.

36. The estimate was probably that of Beloch although Grenier provided no reference.

37. I assume that by « exactitude » he meant « reliability ».

38. Lot compromised his scepticism by wondering (Lot, 1947, 106-107) whether Caesar's figure of 110,000 Helvetians who returned home might not have been « the real number of emigrants » before their defeat.

39. A decade earlier Grenier, 1937, 3 : 447-455, had undertaken much the same exercise. Relying on Strabo and Diodorus, he pegged the population at « 15 to 20 million ». Along the way he turned « many » into « sixty », rejected « the arbitrary[!] calculations » of Beloch, whose method he regarded as « hypercritical », and quoted approvingly Jullian's speculation about the Gallic gods' expectations. Grenier thought as well that « we must accept the numbering of the Helvetians by themselves [sic] ».

40. Drinkwater, 1983, 170, does warn his readers that his estimate « still involves a very considerable amount of guesswork », but adds that « at least it removes the impression of just a bare handful of millions of people which one is likely to get from the standard [= ?] sources ».

41. Etienne relied on, and cited extensively, the arguments of Gustave Bloch mentioned above.

42. Cf. Vrind , 1928, 207-213 ; André, 1949, 98-101 ; Rambaud, 1966, 7-8 ; Zecchini, 1982, 1266-1271, 1281-1286 ; McDermott, 1979.

43. Thus Goudineau does not fall far short of Campbell in his claims.

44. Deyrer, 1987, has little to say about Caesar's numbers, but shows no evidence of actively disbelieving them.

45. Later he became slightly less moderate, settling on a figure of 48 million.

46. For details see Moreau, 1972, 373-385 ; Holmes, 1931, 346-347.

47. None who rely on Diodorus seem to have noticed that Diodorus also asserted that Heracles « founded a great city which was named Alesia after the 'wandering' (alê) on his campaign ». Diodorus Siculus, 1933-67, 2 : 405 (IV.19.2). He did so only to permit him to go on that « at last Gaius Caesar, who has been pronounced a god because of the magnitude of his deeds, took it by storm and made it and the other Celts subjects of the Romans ». Thus Diodorus not only has a claim but a story, buttressed by linguistic analysis. Presumably modern scholarship would reject the story on the grounds that Alesia was really an insignificant place before Vercengetorix gathered his forces there, and because Herakles was not a historical figure. I would suggest that the evidence for Herakles is no weaker than the evidence that 60 to 400 Gallic polities each had a population somewhere between 50,000 and 800,000. On the contrary, the evidence for Herakles is considerably more widespread that Diodorus' single voice on behalf of his population figures. Harman, 1967a, 956-986, discussed this matter at some length, but mentions Diodorus' population estimates, which he characterized as « highly schematic », only in passing. For Diodorus as eulogist of Caesar see Harmand, 1967a, and Sacks, 1990, 73-75, 160-184.

48. Caesar, 1958, 487-488 (VII.75-76).

49. For a more recent apologia see Harmand, 1973.

50. The degree to which students of Caesar's activities at Alesia have availed themselves of the options is suggested by the following sampling : Napoléon III , 1866, 292 (283,000) ; Jullian, 1908-26, 3 : 516n. (276,000 or 288,000 on the basis of an unclear listing) ; Cunliffe, 1988, 121 (281,000) ; Pratt, 1936, 193 (250,000) ; Bloch and Carcopino, 1935, 2 : 789 (300,000) ; Harmand, 1967b, 265-266

(248,000 or 258,000) ; Potier, 1973, 271 (240,000) ; MacKendrick, 1972, 51 (245,000) (245,000) ; Holmes, 1931, 341 (258,000) ; Hignett, 1951, 569 (258,000), Fuller, 1965, 153 (266,000), Beloch, 1886, 455-456 (267,000); Markale, 1982, 230 (about 248,000) ; Grenier, 1945, 402 (about 248,000) ; Lot, 1947, 122 (254,000); King, 1990, 52 (248,000) ; Markale, 1976, 99 (240,000) ; Colomb, 1947, 272 (« more than 200,000 ») ; Keppie, 1984, 92 (« an alleged 250,000 ») ; *Vercingétorix et Alésia,* 1994, 215 (258,000). Jullian, 1965, 127, spoke of « nearly 300,000 men » only to deny it in a footnote.

51. Thus some manuscripts have « CCL », others « CCXL », still others « CCXXX », accounting for the differences in Caesar's last figures.

52. For the text history of *The Gallic Wars* see, among others, Seel, 1967, 27-37 ; Jullian, 1908-26, 1 : 149-152n.

53. Perhaps a word about the number of Gauls within Alesia during the siege is in order. Caesar rendered this as 80,000, but the site most commonly thought to be Alesia is far too small (from 97 to 140 hectares) accommodate such a number, and many modern scholars reject his figures on this basis. See, e.g., Delbrück, 1920, 1 : 531-532 ; Fuller, 1965, 150n ; Markale, 1982, 226; Potier, 1973, 265-268 ; Harmand, 1967b, 357-378. Yet Caesar's ability to know this figure is likely to have been greater than his ability to know the size of any armies opposing him in the open field, or just campaigning elsewhere. Others (e.g., Jullian, 1908-26, 3 : 507n) defend the presumed overcrowding on the basis that the circumstances were « exceptionally grave ». No mention of the victualing problems that must have attended the siege for all its parties.

54. A good example of this *modus operandi* is Cavaignac's argument (1923, 138) that Orosius' figure of 157,000 for the Helvetii proper is to be preferred to Caesar's estimate of 263,000 because 157,000 + 105,000 (the number of Helvetii auxiliaries claimed by Caesar), happens to total 262,000! Meyer, 1949, 68-70, also found it attractive to assume that somehow Orosius had happened on a source that more accurately recorded the Helvetian population. He saw it as a paleographic issue, with « CLVII » being turned into « CCLXIII » or even « CCCLXVIII » at some scribal stage/s. In this way the possibility of such a census is preserved, allowing further negotiation as to what numbers it contained. It seems a course of desperation to rely on Orosius. To prefer his unnamed source over Caesar is tantamount, say, to taking a 1995 undocumented source for the population of central Mexico in the sixteenth century over the evidence of Hernán Cortés.

55. Cavaignac 1923, 137-54. After postulating this correlation several times, Cavaignac closed by claiming that « [t]hese results have been obtained by a method radically independent of that given by Caesar for the levy of Alesia ». He went on to say (1923, 153) that he feared – as well he might – being reproached for arguing in « a vicious circle ». Actually, he tried hard to maintain as close a ratio to one-third as he could by seeking to explain away apparent exceptions as the result of ancient or modern misunderstandings of the tribal units involved. Cavaignac went so far as to claim that we have a census in disguise in Plutarch's and Appian's figures, multiplied by four, suggesting, it would seem, that they had had the opportunity to learn the size of the entire population, from which they had inferred the number of warriors.

56. The very notion of such an assembly is itself a modern retrojection of Gallic solidarity.

57. Although it could also suggest logistical constraints in terms of transport and victualling.

58. It hardly seems irrelevant to point out the stresses put on modesty by the system of triumphs that were awarded to successful generals during the last days of Republic. Nor perhaps to make the point more directly by noting that, according to Pliny, Caesar's archrival Pompey was even more successful than he was in killing the enemy. Pliny wrote that Caesar had killed 1,192,000 « human beings », Gallic and otherwise; but this impressive figure was dwarfed by the totals accorded to Pompey – 846 pirate ships destroyed in one battle alone, 876 towns vanquished in Spain, and 12,183,000 people killed or routed in battle or forced to surrender, along with another 1538 towns! Pliny, 1938-62, 2 : 565-571 (VII.24-26). It would be a wonder indeed if Caesar did not feel obliged to exaggerate in this contest of impossibly high numbers.

59. For a study of a set of similar circumstances see Burns, 1978, 187-190.

60. Among the paradigms for the medieval chroniclers were the accounts of Josephus and the Books of Maccabees concerning the revolt of the Maccabees in the second century B.C. For the numbers involved, where « eye-witnesses habitually magnified the size of the enemy army and minimized that of their own », see Bar-Kochva, 1989, 29-67.

61. At Thapsus in north Africa, Caesar claimed that his forces killed 10,000 of the enemy at the cost of « fifty soldiers missIng and a few wounded ». For good measure Plutarch increased the 10,000 to 50,000, « without losing as many as fifty of his own men » See Plutarch, Caesar (LIII.2), in Plutarch, 1914-26, 7 : 567. A year later at the battle of Munda in Spain he had slightly more difficulty – 33,000 Pompeian soldiers killed at the cost of « about a thousand men. » Caesar, 1978, 281, 369 (LXXXVI, XXXI) ; cf. Holmes, 1923, 3 : 267-270, 367-368, 531-534, 548-551 ; Kromayer and Veith, 1924-31, 2 : 552-577, 3 : 844-857.

62. Further, see Hammond, 1938, 186-201; Sherwin-White, 1984, 128-129 ; Baker, 1967, 204 (« a remark which may be received in the sporting spirit in which it was made ») ; Hind, 1994, 154-155. Through these later Roman authors, Sulla would thus have us believe that he had time to muster his entire force before dusk and determine the losses, and that he knew their numbers to a man.

63. Rostovtzeff and Ormerod, 1951, 249-251, make the Pontic army less than 50,000 on the basis that it was triple the size of the Roman forces, an exiguous line of argument at best. At the same time Marcus Crassus was reporting that he had killed 12,000 of Spartacus' slave army at the cost of three dead and seven wounded : see Ward, 1977, 91n.

64. Recent studies of the War Scroll include Yadin, 1962, 156-197 *et passim* ; and Davies, 1977.

65. This makes it easier to think of Caesar as a war correspondent, for which see Keightley, 1975.

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RÉSUMÉ

Dans son récit de la guerre des Gaules, Jules César fournit souvent les effectifs de ses adversaires. Ils dépassent fréquemment 100 000 combattants et peuvent monter jusqu'à 430 000. Ces chiffres ont été largement mis à contribution pour imaginer, voire pour calculer, le niveau de population de la Gaule indépendante. Cet article s'interroge sur l'utilité de prendre au sérieux les déclarations de César ; il semble en outre particulièrement inadapté de s'en servir pour en déduire la population totale de la Gaule. La démonstration s'appuie sur des arguments tantôt logistiques, tantôt tirés des documents. Ceci permet notamment de montrer que le réalisme du style narratif de César ne constitue pas une garantie suffisante pour prendre pour argent comptant ces chiffres non confirmés par ailleurs. Les données du général romain doivent plutôt être considérées comme le type même des surestimations auxquelles on a généralement recours en période de guerre, une habitude dont l'histoire remonte aussi loin que l'Egypte de l'Ancien Empire et qui a perduré jusqu'à la guerre du Viet-Nam, voire au-delà.

SUMMARY

In his account of his Gallic compaigns, Julius Caesar frequently provided numbers for his opponents. These ranged as high as 430,000 and often exceeded 100,000. In modern times, Caesar's figures have been widely used to suggest, and even to calculate, population levels for ancient Gaul. In this paper, I take issue with the notion that it is expedient to treat Caesar's numbers seriously, and even more inappropriate to use them to infer overall population levels. To do this, I use logistical and textual arguments, pointing out, for instance, that Caesar's matter-of-fact discursive style is hardly warrant to take his itherwise uncorroborated numbers at face value. Rather, they should be considered as typical examples of the genre of exaggerated wartime numbers, a genre with a history reaching back as far as Old Kingdom Egypt and as far forward as the Vietnam war and beyond.