

The eruption of tradition?

On ordinality and calculation

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Abstract

Numerical ordinal rankings (or ratings) are proliferating in the current social and economic world. Many are used to derive and justify relative monetary valuation, by modes of equation and calculation. The article shows how these composite manipulations of order and value tend to produce a parabolic curve: very few at very high value at the top, descending in a curve to very many of very low value at the bottom. The article illustrates the form of this ordinal curve and assesses the metaphors that evoke its persuasiveness. The Great Chain of Being is explored as a source of terminology.

Key Words

calculation • CEO salaries • Great Chain of Being • horse-racing • number • ordinality • value

INTRODUCTION

In completing *Marginal Gains: Monetary Transactions in Atlantic Africa* (Guyer, 2004), I became increasingly aware of circumstantial components in my central argument about the operation of ordinal variables. Ordinality emerged, I argued, from the empirical sources themselves as a pervasive principle of society and culture in historical Atlantic Africa, in the era of the great commercial trades in the extractive commodities of slaves, ivory and gold. Many things could be ranked, and counting-number itself stood within the repertoire of ranks, having benchmark or 'tropic' thresholds – at 20 or 200 or some other number/icon/concept – at which attachments were created to other ranks across the repertoire such as title society grades in politics and named degradations from 'the original' in the commodity market. The attachment of scales to numbers comprised not primarily a one-way reduction of quality to measure but one phase in the creation of equivalence, in a poetic and political play across rankings: price, power, precedence, and access to the spiritual world.

In the present world, increasingly complex 'things' – carbon emissions, derivatives, reparations – find their validation and typical expression in mathematical formulae,

which then make them susceptible to further calculative and comparative processes, with respect to price, risk, insurance and so on. The Atlantic African experience makes me pause over moments in this process where rank order emerges. Rank order may be only one form of numerical expression in mathematics but, in various forms, it is a powerful dynamic in social life almost everywhere: as precedence by age, by achievement, by station in a hierarchy. In present-day American cultural life, everything can be put into a competitive mode that yields a rank order. There are veritable factories producing rankings in every domain of life, such as the Forbes website, founded in 1996, which ranks and comments on personal wealth, salaries of CEOs, success of companies and so on, at a rate of 'more than 3,500 articles and original videos' every business day (Wikipedia entry, May 2008). *U.S. News and World Report* is similar for health and education. The University of Loughborough Department of Geography ranks global cities. Professional associations produce ranks for products, expertise, newness (as in 'rookie of the year'), etc.¹

My Africa work encourages an additional 'pause for thought' concern: over the middle and bottom of these orders, not just the star figure at the top. Not all rankings seem to do the same thing for the whole range of included instances. What does it mean to be 7th, or 11th in the title societies in eastern Nigeria in the 19th century? Or 14th, as my university, Johns Hopkins, is ranked among American undergraduate colleges in *U.S. News and World Report*?² What does it mean for my home city of Baltimore that it has 1 point towards a high of 12 points on the scale of global cities, along with Cape Town, Hanoi and Tehran? And how might any other city – say Nice or Krakow or Paramus, NJ – stack up? Does the bottom of an ordinal scale simply disappear into oblivion or is it somehow included, valued, in alternative ways? And again, taken as complete scales, top to bottom, do these western rankings work ephemerally, as a temporary phase in long calculative processes, or are they more akin to the Atlantic African historical situation, achieving relative stability as powerful 'market devices' (Callon et al., 2007)? Perhaps most importantly, do the numerical calculations and the ordinal numerical expressions of them invoke different political philosophies from each other, as Verran suggests, which are concealed rather than made visible by number itself? If so, are 'we the people' invited to participate mathematically in their production, or are we simply consumers of the results of the algorithms of others?

THE PUZZLE OF ORDERS

So this article arises from two converging sources: On the one hand, challenging questions in the analysis of ranking and equivalence that arose in my West African work; and on the other, questions about what would otherwise be a counter-intuitive process under progressivist views of increasing sophistication in number use in the West, namely the rampant 'reduction' of complex calculations based on counting-number to ordinal number. Sometimes this is just a phase in a longer process, rather than being a destination. But its characteristics are puzzling. When examined closely, the imagery of contemporary scales clearly resonates through a rather limited and specific religious and social register before, and beside, their reinsertion into calculative mode. All fields have their own 'icons', 'legends', 'stars', 'idols', 'MVPs', 'heroes' with 'global' reach and 'timeless' durability to their reputations. Selective reference to a vaguely feudal past, the epics of King Arthur, Greek and Norse mythology, castles, magical powers, feats of explorers, princesses and so on in the media and popular culture allude to a 'traditional' order that

bears no resemblance to laboriously established historians’ reconstructions of the real past. Rather it is an imagined configuration, mixing jousts on white horseback³ with massed armies of strange beings or modern consumers or tele-audience voters on *American Idol*. So the terms become uncannily evocative of an ancient world with ‘tournaments of value’ (Appadurai, 1986) upstaging or intertwining with the imagery of neo-classical market competition or the class struggle of the capitalist mode of production. In this ‘ranking/rating’ phase of the calculative process, number can move around, sometimes morphing so rapidly from measure to order to fiction that its authors can forget to make the tables even add up.⁴

THE PARABOLIC IMPERATIVE

This would seem like a cheap and superficial ‘shot’ at post-industrial or Madison Avenue semantics if the phenomena were not so vast and so powerful, and in many cases so repetitive in their parabolic scalar form. In very many domains, the ‘1st’ is icon or idol, and often at a very wide interval from the 2rd, 3rd and 4th. In the scale of Global Cities, London, Paris, New York City and Tokyo (at 12 points) so far outstrip the next that there is literally no city at 11 points.⁵ Narrative commentaries often make clear that, at the top, it is, in fact, the intervals along the order scale, and not the absolute amounts, which are at stake in ‘competition’.⁶ In many cases, intervals diminish radically going down the scale, both in real terms and in proportion to their next positions. Two attached charts show the distribution of salaries for CEOs and stud fees for racehorses, showing the parabola at work.⁷

A *U.S. News and World Report* ranking of American hospitals would show a similar curve if the popular mathematical imagination were let loose on it to make its own inferences from the points-scale by medical specialty and the number of rankable medical specialties per center. A total of 5462 medical centers were ranked; 173 made it into the final list, and of those, 18 displayed ‘the marked breadth of expertise’ that qualified

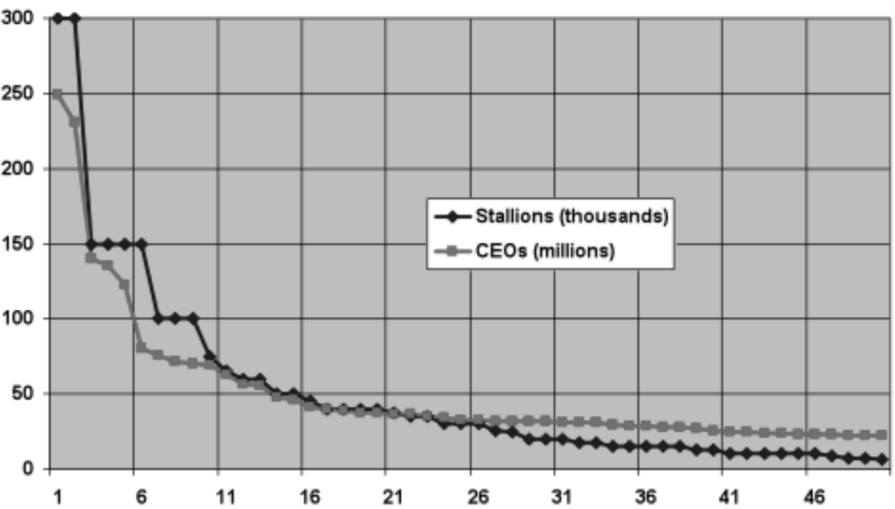


Figure 1. Thoroughbred stud fees and CEO salaries (top 50).

them for the ‘Honor Roll’. We can note what a huge proportion – about 95 percent – forms the tail of the distribution. Over five thousand are included on equal terms by virtue of category-membership, and then individually ranked, but they are ranked by several criteria whose values – once compounded with each other – relegate the distinctions amongst them to near-irrelevance. Such rankings and other honors – as we all know in academia – are further capitalized, in part simply as ‘reputation’ or ‘prestige’, for backing in the next phase of competitive processes. To understand the plausibility of such ordinal rankings in public life, should we look back in social time, to the symbolism of familiar ladder-like hierarchies, or forwards towards some futuristic hierarchical form? In any case, one should pause to see how such scales vary, converge and gain recognition, resonance and power.

A SPECULATIVE MOMENT

In the early 1970s, Goux captured the difference between a noble-feudal and a bourgeois-capitalist ethics and symbolism of quantity: ‘Thus, in opposition to the feudal nobility, which avidly devours more than it possesses, flaunting its luxury as the obligatory *sign* of rank, the bourgeois political economy must preach . . . postponement of *jouissance*’ (1990: 203). Hence, with rank as a dominant principle, one has to compete in arenas to sustain relative standing in an ordinal logic, spending up to the hilt to do so. By contrast, the bourgeois logic of saving supports competition in markets, to achieve a niche that is judged by its size rather than by status criteria. There are at least these two, and perhaps another, ordinal dynamics that may add and compound each other’s persuasive effects in the present. There is the symbolism of orders from the past, alluded to by Veblen (1899), in his identification of the specific things that can satisfactorily fulfill a role in ‘conspicuous consumption’. Many evoke feudalism: large lands and houses, large dogs, large jewels and large entertainments. We see the invocation of long history in a different form in Bourdieu’s (1984) finding that the older and more aristocratic and traditional a thing is – such as furniture, cuisine, fabric – the higher up the consumption scale it stands. Silk brocade still evokes status, in spite of populism and republicanism in the political realm.

Veblen and Bourdieu, however, refer to a fairly simple cultural gradation, built on status and class, symbolized as a structure: a ladder, or a pyramid. So an additional algorithm must account for the specifically parabolic shape of the present curve of value. I explore here the idea that this lies in additional meanings and practices that have been folded into an increasingly ambiguous concept of competition. Arenas and markets are joined by ‘the ratings’: recurrent testing at intervals, by multiple criteria, of the participants in what is – in the meantime – a *continual* interactive process. Between moments when the process stops for the ratings to move in, all participants relate to one another continuously and competitively. The results seem very close to what Bateson (1958[1936]) called ‘schizogenesis’: the continual reproduction, confirmation and intensification of difference, which is then ritually marked when the process itself is momentarily suspended, as if for collective contemplation and affirmation. In arenas, the lowest category remains there, either eliminated or returning for a next round or ‘revenge’. In the market, rising and falling occur at all times. In ratings, initial advantage offers recurrent opportunities to capitalize on it and initial disadvantage takes ever-increasing effort, or miraculous intervention, to overcome. In any ongoing process, then,

it is critically important to theorize how, when and by whose agency snapshot moments are produced, interpreted and fed back into it.

There is an interesting parallel here with the mathematics of ordinality. The Wikipedia entry on ordinals explains that 'ordinal arithmetic describes the three usual operations on ordinal numbers: addition, multiplication, and exponentiation'. These would pattern closely the social processes alluded to above: the tournament or the games add and subtract status in a 'rules of the game', 'level playing field' idiom. The market multiplies profit by expanding pools of buyers and sellers. And recursive replication is exponential in the sense depicted above: advantage is recurrently rated, which then folds back into the next stage of the process.⁸ In social life, each mode of creating and amplifying ordinality would produce a very different sort of lived social order: all, however, under the same terms of competition and ranking. So do we lay-people of the mathematical world ask ourselves whether we recognize these implicit computational variants or are they rendered opaque by the use of a common language and a merged set of symbols about – quite simply – 'competition'?

A BRIEF REVIEW OF THE GREAT CHAIN OF BEING

Several of the images for the peak of the parabolic order come straight from the Great Chain of Being: the encompassing theory of all of life that was developed in Christian Europe under religious intellectual hegemony in the medieval period. It is a vast, inclusive, fixed – that is, *non-competitive* – hierarchical ordering that seems to be staging a remarkable comeback as a source of imagery, in part in accord with the new evolutionism.⁹ In the original version, every class of being was internally ordered as well as taking its place in the encompassing hierarchy. Each position partakes to some degree of the nature of the next immediate steps above and below, both internal to the class and between the class and its proximate beings in the great scale of things. Narratives and ontologies define the specific places that beings and things occupy. Below the Angels and Man, the animals are ranked by relative intelligence and independence: the most noble is not possible to domesticate; the next level is domesticated but spirited (horses, dogs); and at the bottom are docile domesticated animals (sheep). Everything in the universe has its place, judged by multiple intersecting criteria. Familiar Shakespearean poetics plays across the categories: the King is like the Sun, the Lion, the Eagle; the heroic leader is 'dolphin-like', and so on.

There was also a mathematics of lateral symmetry and internal composition (Tillyard, 1942: 51), such as nine hierarchies of bad angels to match the nine hierarchies of good angels. And there were analogs up and down as well as across the registers according to the four ranked elements that exist in all things: earth, water, air and fire (in ascending order). Within one group – Man – the brain has three hierarchical faculties: the sensual; a middle rung consisting of common sense, 'fancy' and memory; and the third, the highest, the one shared with God and the angels, 'reason' (consisting of two parts: understanding and will) (Tillyard, 1942: 71). So the overall hierarchy could be held in abeyance and manipulated for symbolic and instrumental purposes by adding and subtracting the criteria of relevance to specific situations. 'It was through their retention of the main points and their flexibility in interpreting the details that the Elizabethans were able to use the great correspondences in their attempt to tame a bursting and pullulating world' (Tillyard, 1942: 100).

According to Suber (1997), the Great Chain scheme co-existed with new logics in the work of the foundational early modern mathematicians and philosophers such as Leibniz, Descartes and Spinoza. So we might also turn to the mathematics of that time, and particularly the emergence of spirals and parabolas, which work ordinality through sequences, giving amplification effects. I am afraid this task lies beyond my level of erudition in the history of mathematics. I tried working with non-linear series, such as the Fibonacci sequence:¹⁰ developed in the 13th century, informing the mathematics of spirals, and remaining important for 20th-century topics such as fractals (Eglash, 1999). Clearly mathematics itself has developed through overlapping and combining theories. The public symbolism of ordinal number may track the same shifting coexistence and therefore not find corrective complaints coming from mathematical experts when important distinctions are not made. The best I can do is to return to the ethnographic question about the ways in which ordinal processes that differ in formal characteristics and social results are expressed. How do 'we the people' understand ordinal processes in the arena, the market and the ratings? Does public culture extrapolate from the arena – through concepts such as 'the level playing field' and 'the rules of the game' – and from the market – through concepts such as 'freedom' and 'choice' – to create a composite vocabulary to guide our own ranking computations? When we concentrate closely, I suggest that we find several such vocabularies together – along with the Great Chain of Being.

A MODERN RANKING SCHEME, AS AN EXAMPLE: STUD FEES FOR RACEHORSES

The fact that stud fees can yield more income than racecourse earnings puts into relationship the arena, the market and the ratings in a synergistic recursive relationship. Smarty Jones, winner of the Derby in 2004, 'stands for \$100,000 a mating and has a full book of 110 mares' this year (Joe Drape in *The New York Times*, 28 April 2008). The following profile for Point Given, at only \$15,000, offers the most complete review of how scalar calculations work alongside symbolic cross-references, to create the upward spiral compound effect of ratings.¹¹ The numerical ordinals are in bold and the other ordinal scales in italics.

He is the **first** *Thoroughbred* ever to win **four** million-dollar races **in a row**. He is one of just **five** horses since **1900** to win the Preakness-**G1**, Belmont-**G1**, and Travers-**G1**. And, for *good measure*, he **added** a victory in the Haskell **H.-G1** in the midst of that **string** of wins. He is a **six-time Grade I** winner, with **five Grade I** victories coast-to-coast in 2001 alone. The **five** are not only a *museum-quality* compilation of races – Preakness, Belmont, Travers, Santa Anita Derby and Haskell – but are the **most** Grade I races won by any horse in the world in 2001. His Timeform **rating of 133 is the highest** for any American racehorse in 2001, and he closed out the year with the *ultimate American honor* – becoming the **11th** 3 year old honored with the *gold Eclipse Award*, as *Horse of the Year*.

Historically, Point Given casts an *even more imposing shadow*. He *annihilated his opponents in the Test of Champions*, the Classic Belmont Stakes, winning by over **12 lengths** in **2:26 2/5**, the **fourth fastest** Belmont ever run. This time was faster than the last **two** Triple Crown winners, *immortals* Affirmed and Seattle Slew. And it is

nearly **two seconds** faster than 2003 winner Empire Maker. Then, there's the Preakness / Belmont / Travers '**Triple.**' In the last **102 years**, *only Hall of Fame* members Man o' War, Whirlaway, Native Dancer and Damascus achieved what Point Given did winning this *trinity* of races.

In his last **four** starts, all **million dollar** races, *record crowds* were drawn to watch the *dominating* horse run, including the **largest ever** in the history of Saratoga and Monmouth Park racetracks for his final **two** starts.

Daily Racing Form *Executive Editor* Joe Hirsch is not prone to *hyperbole*. Upon the announced retirement of Point Given, he wrote: 'We were fortunate to have him as long as we did, and we will *treasure* the *rich* memories he left us.'¹²

The variables cross the numerical scales: frequency of wins, margin of wins, time at the finish, size of the purse, rank ordering of speed for the history of each race, crowd size and so on; symbolic resonance is conveyed through rank of race, fame, treasure, champion, annihilation, eclipse, gold, museum-quality and so on. The price-value would seem to be a recursive compound, placing the stud fee on a curve of the kind we see again in CEO salaries and in the ranking of medical centers.

DOING THE CALCULATIVE GRAMMAR

In public life, the insertion of a math grammar is generally left to the reader (or listener). So what are we invited to do when we witness ordinal sequences, and especially those with an infinite tail? We can apprehend them through the hyperboles of an invented mythical past, shaped by the Great Chain of Being, that convinces us of an upward orientation towards vistas of surpassing worth. Alternatively, we can pause on the specific ordinal mathematics of each case, and the conditions of their creation, circulation and deployment. As an internally composite complex of number manipulations, where rating and ranking mark ongoing processes, the phenomena of ordinality deserve anthropological attention, as one of the powerful social devices of our moment in history.

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- 1 For example Mallard (2007: 165) notes for product testing by consumer advocates: 'The most usual device is the ranking of products and the attribution of grades to them, for instance on a scale from 0 to 20.'

- 2 In case of interest: Princeton, Harvard, Yale, Stanford, CalTech, Penn, MIT, Duke, Columbia, Chicago, Dartmouth, Wash. St. Louis, Cornell . . . then Brown, Northwestern and JHU together.
- 3 Cf Annie Liebowitz's photo of soccer star David Beckham as a knight on a white horse.
- 4 See a case included in the original paper about the scientific ranking of Canadian university research (Gagnon et al., 2000).
- 5 It is odd that Dubai does not seem to figure at all up to 2004 (http://en.wikipedia.org/wiki/Global_Cities), but its symbolic strategies for moving up are classic: to build the tallest buildings, host a world-class golf tournament, become a center for horseracing and golf, attract sports icons to live there (David Beckham, for one).
- 6 For example, on a salary case for a 'Wall Street legend': in 'the me-too meritocracy [he must earn] at least as much as the average of his high-paid peers. The compensation package is expected to vault him ahead of the \$22.5 million pay package of his predecessor' (Dash, 2005).
- 7 For another example, of many, a website on eco-tourism notes the enhanced value of 'icon species': 'In Guam, "icon species" that are valued by divers include sharks, turtles, manta rays (*Manta birostris*), and the Napoleon wrasse (*Cheilinus undulatus*)' (Tupper and Rudd, n.d.).
- 8 See Hart (2010) for reference to the phenomenon he refers to as the power law.
- 9 Many modern uses, from *Mad* magazine to *Nature*, can be found by entering the title into the internet.
- 10 In the Fibonacci sequence of numbers, each number after the first two is the sum of the previous two numbers. Thus the sequence is 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, etc.
- 11 Ideally, this account would include an analysis of the odds in specific races, but I am not sure how to include it.
- 12 See www.horsethats/stallions.html

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