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Mapping the terrain of sport: a core-periphery model

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ABSTRACT

In this paper, I propose a new way of defining sport that I call a 'core-periphery' model. According to a core-periphery model, sport comes in degrees – what I refer to as 'sport-likeness' – and the aim of the philosopher of sport is to chart those dimensions along which an activity can be more or less a sport. By introducing the concept of sport-likeness, the core-periphery model complicates the picture of what is or is not a sport and encourages philosophers interested in defining sport to engage with the social sciences in exploring the extension of the term sport in common usage. In this paper I present the results of a small survey about attitudes to sport, and use it to illustrate how a core-periphery definition of sport would proceed.

KEYWORDS Defining sport; movement compression; constitutive rules; facilitative rules; core-periphery

Introduction

In this paper, I propose a new way of defining sport – distinct from existing approaches such as essentialism, Wittgensteinian family resemblance or focal meaning – that I call a 'core-periphery' model of sport.¹ According to a core-periphery model, sport comes in degrees – what I refer to as 'sport-likeness' – and the aim of the philosopher of sport is to chart those dimensions along which an activity can be more or less a sport. In this view, there are central – core – activities that are indisputably sports – that possess *all* of the essential characteristics of sport to a sufficient degree – and then there are activities that lack one or more of the core characteristics of sport, or possess them to a lesser degree than 'core' sports, and which are therefore less sport-like.

By introducing the concept of sport-likeness, the core-periphery model complicates the picture of what is or is not a sport and, like a family resemblance model, encourages philosophers of sports to 'look and see' how the term is used in practice. The core periphery model therefore encourages philosophers interested in defining sport to engage with experimental methods to discover the extension of the term sport in common usage. From there,

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philosophers of sport can then attempt to determine those features possessed by the core of sport.

In this paper I start by outlining the core-periphery model of sport and distinguishing it from other approaches. Then, I present the results of a small survey and use it to illustrate how a core-periphery definition of sport would proceed. This survey is too limited in scope for the analysis to act as a definitive statement about the nature of sport. Instead, I use the survey to illustrate how the defining of sport ought to be undertaken using the core-periphery approach. In doing this, I tentatively draw out five characteristics of core sports: (core) sports 1) are essentially physical games; 2) are structured by constitutive rather than facilitative rules; 3) have the central aim of testing skills; 4) are played competitively; and 5) are open to all.

However, though this survey draws on everyday understandings of the term 'sport', philosophers of sport are not unthinkingly beholden to common usage even when using a core-periphery approach. There are therefore certain issues that remain that require traditional philosophical methodologies to settle. For instance, it is an open question whether a good definition of sport should include only internal characteristics, or whether it is appropriate to include external characteristics. Working out whether we ought to include external features or only internal ones is a matter for philosophers, rather than social scientists, and I touch on this issue briefly at the end of the paper.

Sport-likeness and core-periphery

In philosophical discussion about sport, borderline cases abound. There are disputes, for instance, about the status of 'mind sports' such as chess and bridge (Kobiela 2018); 'nature sports' such as hiking (Howe 2008, 2018, 2019; Krein 2014, 2015); activities with a central role for animals, such as equestrian (Holt 2023); activities involving machines, such as motor sports or shooting (Llorens 2017; Parry 2019); 'bar sports' such as darts or billiards (Paddick 1975); eSports (Hallmann and Giel 2017; Hemmingsen 2021; Hemphill 2005; Holt 2016; Jenny et al. 2016; Kane and Spradley 2017; Llorens 2017; Parry 2019; Witkowski 2012); martial arts (Allen 2013); judged sports such as synchronised swimming, gymnastics, figure skating (Hurka 2015); and even athletics (Berman 2013).

A question for philosophers of sport is how we account for these various activities. However, the answer to the question of what is or is not a sport depends crucially on how we approach defining terms like 'sport' in the first place. In this paper, I propose a core-periphery approach. In a core-periphery approach, 'sports' possess certain features. However, while there is a subset of activities – the core – that enjoy all of these features to a required degree, there are other activities that possess only some of them, or have certain of these

characteristics to a reduced extent. These activities are still sports, but are located on the 'periphery' of the definition: that is, they are sports, but less so than the core.

As a result of taking this approach, instead of asking whether or not an activity is a sport, a core-periphery approach instead asks us to consider how 'sport-like' an activity is (and why). For instance, there is a difference between darts and cricket that can give rise to an reluctance to put them on the same footing. But it doesn't seem plausible to eliminate darts from the sports family entirely. With the concept of 'sport-likeness' we can see the distinction between darts and cricket as a matter of degree, rather than being an either/or question. In this case we would say something like 'darts *is* a sport, it's simply less of a sport than cricket' and then – with reference to a robust core-periphery model of sport – be able to explain precisely why.

In addition, some of the definitional criteria of sport themselves admit of no obvious sharp dividing line. For example, essential physical movement is a frequent candidate for a defining feature of sport. But it seems obvious that activities can have more or less essential physical movement, and determining the point at which an activity switches between sport and non-sport on this basis is not easy. However, if we understand 'sport' as a gradated category, rather than as all-or-nothing, we can avoid drawing an arbitrary line. Thinking in terms of sport-likeness allows us to describe an activity with more essential movement as more sport-like than one with less, and then explain precisely why it is so in detail. There is no further question – is this (or is this not) a sport? – that needs to be answered.

An analogy to this way of thinking about sport is Derek Parfit's approach to personal identity (Parfit 1986). For Parfit, what we care about is not whether a future being *is* or *is not* us in a binary sense, but rather *how similar* the future being is to us.² For Parfit, there is simply no interesting answer to the question 'is that future being me?' when asked in a binary way. In fact, by focusing on that question, we end up eliding the question of similarity, which ought to be our concern. Similarly, if we understand sport through the lens of 'is this activity a sport?' we make the same kind of mistake. But if we understand activities as a collection of similarities and differences – which is the focus of a core-periphery account interested in sport-likeness – we can concentrate on charting the specific *qualities* of activities broadly within the wider sport family in detail, rather than giving undue attention to whether an activity is or is not a sport in a final, conclusive sense. A core-periphery account of sport therefore emphasises describing the terrain of sports as clearly as possible, rather than focusing on answering the question of which activities are 'in' and which are 'out'.

Competing approaches

In this section, I contrast the core-periphery approach to definition with other dominant approaches, with the aim of a) clarifying the core-periphery approach; and b) foregrounding some of the advantages of the core-periphery approach as compared to other approaches.

Essentialism

For the essentialist, there are certain necessary and sufficient characteristics that an activity *must* possess to be a sport. If an activity lacks even one, it can no longer be considered a sport. However, this way of defining sport creates two problems.

First, common usage of the term 'sport' makes it extremely difficult to pin down essential characteristics. While I certainly don't think that an activity is a sport *merely because* people commonly refer to it using this word – it's important, I think, to recognise that the focus is not on the word but on the concepts that stand behind it, and it's the philosopher's job to clarify those concepts even when it entails rejecting aspects of common usage – the essentialist approach risks becoming overly stipulative. That is, it can be *insufficiently attentive* to how words are used and fail to meaningfully reflect the kinds of concerns that motivate us to attempt to delimit and describe concepts like sport in the first place.

A core-periphery model, by contrast, lets us lay out more carefully the important dimensions or characteristics of sport (the core) without insisting that activities that fall short of that core need to be cut out of the picture entirely. This allows us to focus more on describing important differences and commonalities between activities commonly thought of as sports, while deemphasising overeager stipulation.

Second, and relatedly, the essentialist approach has no room for matters of *degree*. However, when it comes to certain commonplace (and common sense) aspects of sport, such as the necessity of physical movement, it is simply not obvious that sharp dividing lines can be drawn non-arbitrarily.

Family resemblance

In certain respects, the core-periphery model is more similar to a Wittgensteinian family resemblance approach than to essentialism. According to the family resemblance view, there are no *essential* characteristics possessed by a concept like sport. Rather, the emphasis becomes about identifying 'overlapping ... characteristics that form a complex network of similarities', a "'family of resemblances'" in which the degree of similarity is

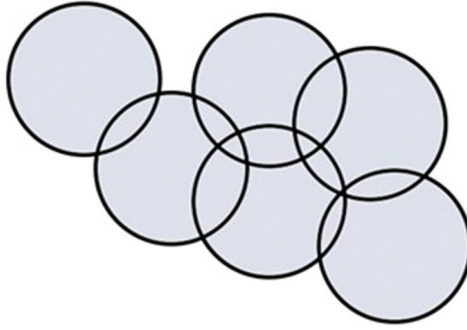


Figure 1. Family resemblance.

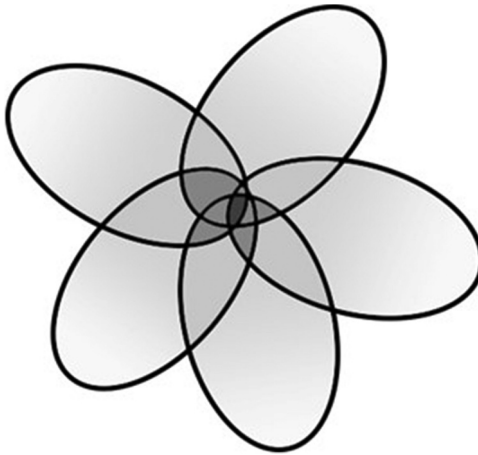


Figure 2. Core-periphery.

closest when we consider adjacent members of the family and furthest apart when we consider distant members of the family' (Morgan 1977, 17).

However, in a family resemblance model it is possible to 'chain' features: for instance, because A possesses features (i), (ii) and (iii), B possesses (iii), (iv) and (v), and C possess (iv), (v) and (vi), then even though there is no single feature in common between all three, we are still able to understand them as instances of a certain category (see Figure 1).

In a core-periphery model, by contrast, there is a core that possesses certain features – say, (i), (ii), (iii), (iv) and (v) – and then a range of activities that count as instances of that kind (though to a lesser extent) by virtue of possessing one or more of those features. Furthermore, the features can be possessed by activities to various degrees, meaning that individual activities that share the same features can be considered closer or further from the 'core' definition (see Figure 2).

The advantage of the core-periphery approach is that it captures better the intuition that some activities are more obviously or centrally sports than others. The family resemblance view has difficulty with this since, unlike the essentialist view, it tends to resist the idea that certain criteria are more at the heart of a definition than others.

Furthermore, a core-periphery approach does not chain features, a practice that can end up capturing too much. As Johan Steenberg points out, an uncritical use of the family resemblance model can lead to relativism, where 'sport can not be demarcated from non-sport because there are no limiting criteria' (Steenbergen 2001, 40).

Hence, essentialism, in William J. Morgan's words, "invariably is either too broad (such that activities not commonly thought of as sportive enterprises are granted admission into the realm of sport) or too narrow (such that activities commonly regarded as sportive ones are denied admission into the realm of sport)" (Morgan 1977, 16). However, a family resemblance view, while allowing more ambiguity than an essentialist one, arguably makes concepts like 'sport' too ambiguous and imprecise. A core-periphery model, by contrast, has the best of both worlds: like the essentialist, it can point to the specific features that demarcate sport from non-sport, while adopting the family resemblance view's move away from necessary and sufficient criteria.

Focal meaning

For a focal meaning view, while terms are used in many different ways, each of those ways ties back in some sense to a 'primary meaning' that 'serves as the normative guide for systematically ordering all its other meanings' (Morgan 1977, 26). Morgan uses the term 'medicine' to illustrate this idea:

The concept medicine ... can be used, for example, to refer to the science of medicine, or to a medical man, or to a medical instrument ... For all these respective uses of the concept refer back to one common core of meaning which is to be regarded as the primary meaning of the term, in this case the meaning indicated by the science of medicine itself. That is to say, we call an individual a medical man only because he is a practitioner of the science of medicine. Similarly, an instrument is designated as a medical instrument only in virtue of the fact that it is used by a medical man to further implement the science of medicine. In each case then, we are entitled to predicate the concept of medicine of some person or thing because it refers back to, and variously qualifies, the primary meaning denoted by the science of medicine. (Morgan 1977, 21–2)

Just as the science of medicine is taken here to be the primary meaning of 'medicine', for a focal meaning approach to sport, something would act as the focal meaning of the term 'sport', with other things related to that focal meaning referentially.

However, a core-periphery model differs from the focal meaning view in that it is more interested in *criteria* than in *reference*. For instance, in the medicine example we go from the science of medicine to things – medicine man, medical instrument – that *refer* back to the core concept of medical science. Focal meaning is about extending a core meaning into other domains (practitioners, instruments). However, a *core* is about finding the centrally important features within a single domain (activities). In the core-periphery model, then, the issue is whether activities in the same domain possess certain features (and to what degree), rather than how a primary meaning is extended into other domains.

In certain respects, however, a core-periphery model takes something from all three of these approaches: the core, in a sense, is an adoption of the idea of *focus* from focal meaning; the comfort with ambiguity and rejection of necessary and sufficient conditions is taken from the family resemblance view to allow for the existence of a periphery; and it borrows an interest in delimitation from the essentialist view to set the boundaries of that periphery (in the sense that at a certain point activities will be so lacking in core features that they are no longer examples of sport at all).

Core-periphery and social science

What features of an activity are those that matter in terms of its sport-likeness? According to a core-periphery model, some features are likely to be absolutely required, and some might be optional. Of the optional criteria, it's an open question the extent to which they matter (for instance, precisely *how much less of a sport* is an activity that lacks one or more of the optional criteria?). Furthermore, many of the criteria are likely to be a matter of degree, and it is an open question precisely how sharp the drop-off the sport-likeness of an activity is, as the feature reduces.

It's not obvious that these problems can be resolved 'from the armchair'. The question of defining sport from a core-periphery perspective therefore ends up being at least partly empirical, a matter of how the word is used in practice.³

The rest of this paper is therefore focused on demonstrating how a core-periphery approach might be applied, combining the collection of empirical data about how people commonly understand the term 'sport' with a philosophical analysis from a core-periphery perspective. I do this by presenting and analysing the results of a survey conducted in 2022 on attitudes towards various sports-like activities.

I want to emphasise that the remainder of this paper is intended as an *illustration* of the core-periphery model, rather than as presenting any final conclusions about how sport should be defined from a core-periphery perspective. I hope to conduct more research in this vein in the future on a larger scale, ideally in collaboration with experimental philosophers. Here, however, my

central goal is to demonstrate how we might approach defining sport from a core-periphery perspective in general terms.

Survey methodology

My survey received 215 responses in total. The respondents were predominantly university students, either students in my own International College at Tunghai University in Taiwan, or the students of colleagues at universities in the USA, Canada, China and South Korea, with a cluster of responses from the colleagues of a friend at a video game design company in New Zealand.

As a result of the sampling method the respondents skewed younger than the population average: most (73%) respondents were between 18–24 years old. Slightly under half (49%) were from English-speaking countries (the US [11%], Canada [25%], the UK [3%], New Zealand and Australia [8%], South Africa [1.5%]); the remaining respondents were predominantly either from East Asia (~21% in total, including Taiwan [16%], China [2%], Japan [1%] and Korea [1.5%]) or South East Asia (~20% in total, including Indonesia [12%], Thailand [3%], the Philippines [2.5%], Cambodia [1.5%], Vietnam [1%] and Singapore [0.5%]). The remaining respondents were from South Asia (2.5%), Eastern Europe (2.5%), Africa (2%), the Middle East (2%) and the EU (2.5%). The survey was therefore dominated by English-speaking and Asian respondents, with non-native-English speaking or non-Asian respondents making up only around 7% of the total.

The questionnaire was conducted online, using the website SurveyMonkey. The survey was described to respondents as ‘part of a project to how people understand the concept of “sport”’. It contained four questions:

- (1) An open question about the respondent’s nationality;
- (2) A question about the respondent’s age, with options being ‘Under 12 years old’; ‘12-17 years old’; ‘18-24 years old’; ‘25-34 years old’; ‘35-44 years old’; ‘45-54 years old’; ‘55-64 years old’; ‘65-74 years old’; and ‘75 years or older’;
- (3) ‘Assuming that we are talking about competitive versions of the activities listed below, please evaluate your level of confidence that they should be classified as “sports”’. Answers to this question were given on a 7-point Likert Scale; the activities were *definitely* (3), *probably* (2), *may be* (1), *may not be* (–1), *are probably not* (–2), or *are definitely not* (–3) a sport, with a neutral option (0) in the middle (‘I am not sure whether or not this is a sport’).
- (4) ‘What is your level of interest in the following activities?’ Answers to this question were given on a 5-point Likert scale: *not at all interested* (1); *not very interested* (2); *a little interested* (3); *somewhat interested* (4); *very interested* (5).

The activities listed in questions (3) and (4) were Soccer; Rugby; Cricket; Tennis; Badminton; Baseball; Golf; Ice Hockey; Basketball; Table Tennis; Synchronised Swimming; Rowing; Tobogganing; Fencing; Piano; Formula One Racing; Gymnastics; Ballroom Dancing; Diving; Yachting; Karate; Judo; Figure Skating; *League of Legends*; *Counter-Strike: Global Offensive*; *Fornite*; Swimming; Running; Shooting; Archery; Horse Riding; Darts; Weightlifting; High Jumping; Javelin; Shot Put; Chess; Cycling; Fishing; Billiards; Pick Up Basketball; and Street Football. The order of the options was randomised for each respondent.

In choosing these activities, I attempted to capture as wide a range of sports or potential sports as possible, especially with mind to cases where there is active debate about whether a general class of activity should be included as sport in the first place, e.g. eSports, mind sports, bar sports, animal sports, judged sports, and so on. The notable class missing in the survey is nature sports.

One acknowledged problem with this survey design is with question (3). In this question, the neutral option is ambiguous: it could mean ‘I don’t know enough about this activity to rate it’ or ‘I know about the activity but am unsure how to categorise it’. These two potential responses should have been presented as separate options. In the end, due to this ambiguity I chose to exclude all ‘0’ answers from the results. In a few cases, this did have some effect on the scores – cricket goes from an average of 2.52 with the ‘0’ responses included to 2.72 with them excluded, and tobogganing goes from 0.92 to 1.17 – but in general including or excluding the ‘0’ responses had minimal impact on the results. In the cases where it does have an effect, the activities tend to be those that are little known outside certain countries and so it made more sense to treat such responses as ‘I don’t know enough about this activity to rate it’ rather than ‘I don’t know how to categorise this activity’.

Another design problem is that questions (3) and (4) used an ordinal Likert scale rather than an interval scale, which would have allowed me to properly identify differences along intervals. While I do not think that this undermines the goal of the paper – e.g. illustrating in general terms how a core-periphery model would work – it is certainly an element of the survey design that would need to be corrected for any future research.

Survey results

Of all 42 activities listed, 29 received an average response of ‘2’ or above (between ‘is *probably* a sport’ and ‘is *definitely* a sport’). However, there was significant diversity within this range. Hence, I divided the ‘2’ range into

several groups: core activities (2.78 and above), slightly controversial activities (2.5 to 2.77), and somewhat controversial activities (2.25–2.49).

The core activities comprised (in descending order): Soccer, Badminton, Tennis, Basketball, Baseball, Rugby, Ice Hockey, Swimming, Running and Cycling. The second group contained Cricket, Gymnastics, High Jump, Rowing, Figure Skating, Table Tennis, Judo, Fencing, Karate, and Diving. Finally, we have Golf, Javelin, Weightlifting, Archery, Shot Put, Street Football, Synchronised Swimming, Pick Up Basketball and Horse Riding as somewhat controversial activities (see [Figure 3](#)).

After this, there is a large and quite noticeable gap between lowest score in the '2' range (2.25) and the next highest score, found in the '1' range (between 'may be a sport' and 'is probably a sport'), starting with formula one racing at 1.49, followed closely by shooting (1.44), with another small jump to billiards (1.27), then tobogganing, darts and ballroom dancing following far behind at 1.17, 1.09 and 1.07 respectively. Yachting follows closely behind this 0.95.

Around 0 we find a small constellation ranging from 0.03 to 0.26, consisting of fishing, chess and the eSport, *Counter-Strike*. This is followed by a group of two other eSports – *Fortnite* (−0.63) and *League of Legends* (−0.51) – trailed far behind by competitive piano playing (−1.80) (see [Figure 4](#)).

The core activities – 2.78 and above – also display a very low standard deviation, ranging from 0.51 to 0.76, with an average of 0.65. As the mean

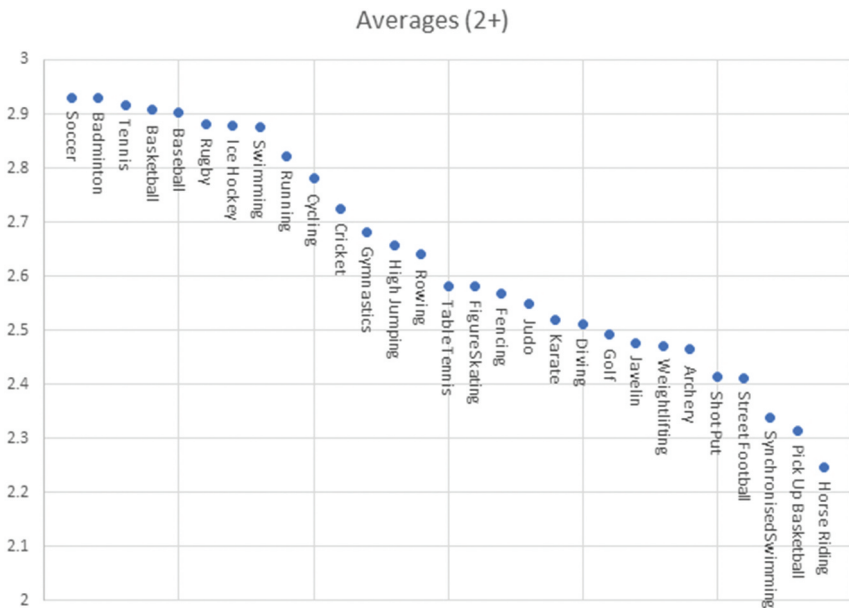


Figure 3. Graph of averages (2+ Range).

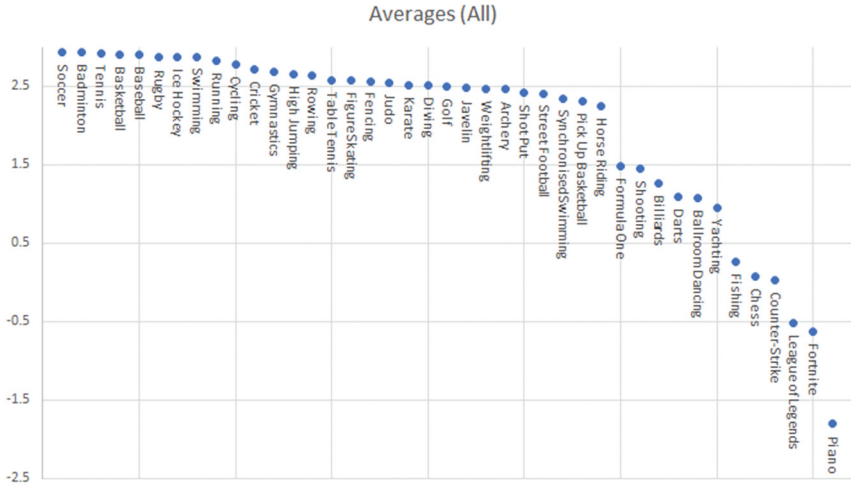


Figure 4. Graph of averages (All).

score reduces in the slightly controversial and somewhat controversial activities, the standard deviation increases as well, from 0.84 at the higher end of the slightly controversial activities, to 1.32 at the lower end of the somewhat controversial activities. This standard deviation increases further as the score goes down (see Figure 5).

This is what a core-periphery model would expect. There are likely to be several core features of sport, and these features can come apart. When it comes to peripheral activities, different features will be pulling in different directions. If respondents are paying attention to, or emphasising, different features of the core, then they will also differ on whether the presence of absence of a certain feature is sufficient to rule that activity in or out, and this variety of responses will increase the standard deviation.

The exception to the general trend for increased standard deviation as the scores drop is piano. Given that piano is also the stand-out lowest score (−1.8, with the next lowest being −0.63), this makes sense: piano is so far from the core – it lacks so few of the core features of sport – that the uncertainty about which features to emphasise no longer arises.

Analysis

The task for a core-periphery model of sport is to draw from the data the features that are present in the activities in the core of sport, but that are missing or attenuated in activities that are considered to be more peripheral. This is the empirical dimension of the core-periphery approach. We also need to ‘tidy’ the results. This may involve correcting local confusions, such as

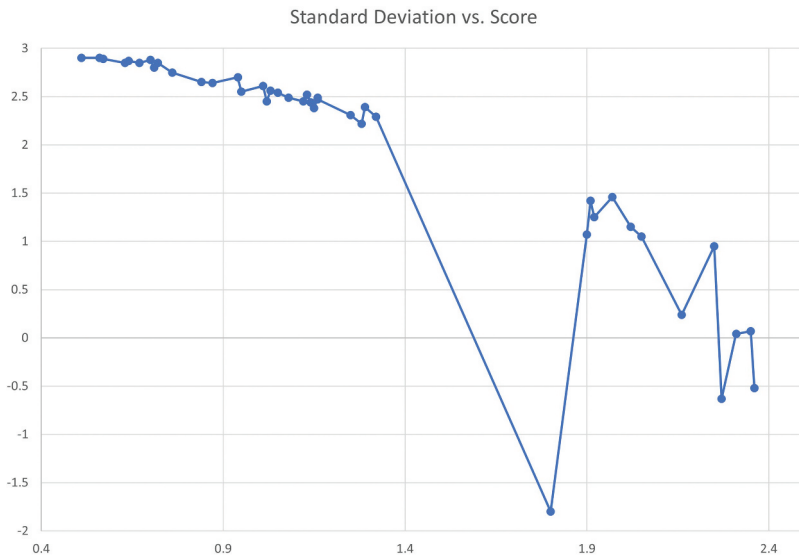


Figure 5. Standard deviation vs. score.

where activities are rated higher or lower than can be explained without resorting to idiosyncratic causes. Cricket is an example of this: the fact that it is almost unknown outside the Commonwealth better explains its low score compared to similar-seeming activities such as baseball than assuming that it differs in some significant, fundamental way.

But tidying the results may also involve making a philosophical case for a certain view about what kinds of features are appropriate for including in a definition in the first place. I do this below in my discussion of whether or not to include two features that *do* seem to genuinely explain widespread differences in scores across groups of activities: leisure and access. Whether or not certain criteria are the kinds of criteria that *should* ground a definition of sport is not able to be settled by the analysis of empirical data: it is a philosophical question, not a social scientific one.

For the remainder of this paper I attempt to abductively draw out the principled features that best explain the survey results in terms of a core of activities that possess all features of sport and a periphery that lacks or attenuates one or more of those features; I do my best to account for outliers that seem to be contingent rather than principled; and I identify the features for which there is uncertainty about whether they *ought to be* included in a consistent, coherent core-periphery definition of sport, even if they seem to be part of a common sense understanding.⁴

The analysis of the results involves identifying which features are possessed by 'core' sports, but that are absent or reduced in sports that have

received a lower rating. It seems to me that there are several criteria that core sports possess (and that other activities do not) that I think help to explain the results:

- (1) Core sports are essentially physical.
- (2) Core sports are structured by constitutive rather than facilitative rules.
- (3) The competition in core sports has as a central aim the testing of skills.
- (4) Core sports are played competitively, and not merely for leisure.
- (5) Core sports are open to all.

I will discuss each of these in turn.

Physical games and essential physicality

Bernard Suits claims that sports are games, and of a particular kind: they are ‘games of physical skill’ (2005, 2). Sports are those games in which physical skill is essential – rather than incidental – to the activity itself. It cannot merely be that the participants perform physical activities in the game: monopoly players make physical movements when they roll the dice or move their piece around the board, but monopoly is not a sport. Rather, in sports ‘the outcome is dependent, to a certain degree at least, upon the physical prowess exhibited by the participants’ (Meier 1988, 13). In Monopoly greater or lesser skill in moving pieces around the board does not contribute to the outcome of the game: these movements are therefore ‘incidental, peripheral, and of little or no consequence’ (Meier 1981, 83). By contrast, the outcome in the game of baseball is ‘necessarily and significantly determined by the demonstration and exercising of physical skill or prowess’ (Meier 1981, 85).

However, while essential physicality has been a central idea in discussions of sport (Paddick 1975; Schieman 2016; Parry 2019), precisely what is meant by ‘essential physicality’ is still somewhat unclear. There are two plausible accounts of essential physicality that seem to account for the survey results: the gross vs. fine movement distinction (Loy 1968) and movement compression (Hemmingsen 2023a).

Gross vs. fine movement focuses on the quality of the movement itself: whether it involves large movements utilising major muscle groups, or whether it is about exact movements that only use small muscles, usually in the hands and fingers. This distinction has been criticised by some as ‘arbitrary and counterproductive’ (Meier 1981, 84), since it can be difficult to draw a sharp boundary between activities that utilise fine or gross motor skills. However, while drawing a sharp distinction may matter to an essentialist definition of sport – since activities have to be either ruled in or ruled out definitively – a core-periphery approach is comfortable with the idea that the gross/fine distinction is a spectrum along which sports activities can lie.

The survey results do provide some support for the gross vs. fine movement way of understanding essential physicality: despite being highly physical at the professional level, eSports favour fine over gross motor control, and this is reflected in the extremely low scores of the eSports included in the survey: *Counter-Strike* (0.02), *League of Legends* (−0.51) and *Fortnite* (−0.62). This distinction may also account for the comparatively low scores of horse riding (2.24) and formula one (1.48) (though I think there may be confounding factors here as well). Since horse riding requires more gross physicality (in the sense of gross physical *control*, if not physical *movement*) than formula one, but not as much as, for example, soccer or basketball, then it makes sense that horse riding would be higher than formula one but lower than a core sport like soccer.

Finally, archery (2.46) had a much higher score than shooting (1.44). Though both involve whole body control, the drawing of the bow in archery adds a degree of gross movement that is not present in shooting, thereby potentially explaining archery's higher score.

By contrast, movement compression is about the *effect* of the movement on the game, e.g. the degree to which 'the quality of the initial action translates to a difference in outcome in the activity along various dimensions' (Hemmingsen 2023a, 7). For instance, in cricket,

extremely small differences in where I strike the ball with my bat, the angle of the bat, the speed of movement, and so on, affect where that ball ends up going. When I play a stroke, there's no aspect of my movement that fails to be relevant to what subsequently happens. (Hemmingsen 2023a, 7)

By contrast, in the eSport *Counter-Strike*,

clicking the left mouse button fires your weapon. Many details of this action matter to the outcome, such as the precise timing of the click, and where the cursor is pointing, etc. However, it doesn't matter at all *how* you click the button; it doesn't matter if you press it softly or with force, [or] what finger you use ... the quality of your ... movement here is *compressed* into a single outcome. (Hemmingsen 2023a, 8)

Movement compression seems to be consistent with the survey results as well. eSports involve significantly more movement compression than any other activity from the survey, thereby explaining the extremely low scores of *Counter-Strike*, *League of Legends* and *Fortnite*. Similarly, the fact that a person's actions are mediated in horse riding and formula one (through the horse and car respectively) introduces a level of movement compression (though less than in eSports). As for the difference in the scores of archery and shooting,

in archery, the flight of the arrow depends *not only* on how the bow is held and where it's pointed, but also crucially on how the bow is drawn. In shooting, while it clearly matters in certain ways how one pulls the trigger – shooters need to pull the trigger in such a way as to ensure that the gun doesn't move inappropriately, for instance – nonetheless the trigger-pull is a point of movement compression. . . The flight of the bullet occurs identically regardless of whether the trigger is pulled gently or with force, in just the same way as a mouse click in *League of Legends* or *Counter Strike* has the exact same effect regardless of the quality of the movement that goes into it. (Hemmingsen 2023a, 15)

Hence, while it seems likely that essential physicality makes a difference to an activity's sport-likeness, it isn't clear precisely how to cash out this concept. Of the two, the gross/fine distinction is more concerned with the *athleticism* of an activity. There can be highly athletic activities that also involve high levels of movement compression: a video game such as *Dance Dance Revolution*, for instance. But typically, more gross movement will correspond to greater athleticism. So, if essential physicality is connected in some way to athleticism, then this would incline us towards the gross/fine distinction as the best way of cashing this idea out.

However, especially when considering the constitutive/facilitative distinction discussed below, it is not obvious that this is the way to go. Further research needs to be undertaken to determine whether the gross/fine distinction or the concept of movement compression is a better account of essential physicality (or indeed whether it is both, or neither).

Constitutive vs. facilitative goals

Athletics are often considered obvious instances of sport. However, this is not wholly uncontroversial, and there has been some discussion in the philosophy of sport about how to classify athletics. Mitchell N. Berman, for example, states that he

[does] not find it jarring to conclude that there is a potentially significant distinction between, say, baseball, soccer, and tennis on the one hand and the 100-meter dash, the high jump, and weightlifting on the other. (Berman 2013, 172)

Whereas the former are sports, he thinks, the latter are not. And it seems that the results of the survey provide some support for Berman's reluctance to include athletics within the core of sport. Of the athletics included in the survey, only swimming (2.87), running (2.82) and cycling (2.78) are found within the top group. Even then, they are on the very bottom of the group, and are lower than all traditional ball/ball-adjacent games, excepting cricket (2.72),⁵ table tennis (2.58), golf (2.49), street football (2.41) and pick up basketball (2.31) (all of which are special cases that I will address later in the paper).

Aside from swimming, running and cycling, which are at the lower end of the top category, the other athletics in the survey include gymnastics (2.68), high jump (2.65), rowing (2.63), javelin (2.47), weightlifting (2.47), and shot put (2.41). These scores are quite notably lower than most of the ball/ball-adjacent games included in the survey. It seems plausible, then, that athletics lack some feature that puts such activities outside the core.

The sport/athletics distinction cannot be a matter of the level of skill, or essential physicality, or athleticism of the activity. Some sports will involve more skill, essential physicality or athleticism than some athletics (basketball seems more athletic than the hammer throw, for instance); and conversely some athletics will involve more skill, essential physicality and athleticism than some sports (compare the average baseball player to a decathlete). Rather, the basic issue with athletics is that the player's movements are *non-conventionally effective*. As Barry Allen puts it, 'a runner works a track as a medium; it receives the runner's exertion and produces aimed-for effects. These are real effects that do not depend on a convention' (2013, 243). In other words, when a runner learns to run fast, they're learning movements whose effectiveness does not depend in any way on the established conventions of the activity of running. Running fast is running fast; and doing so is effective outside of competitive running. As Kevin J. Krein puts it, 'High jump, and other sports like it, are designed in a way that allows us to measure human athletes against each other. High jump is about being able to jump higher than another human' (Krein 2014, 198), nothing more, nothing less.

However, the movements in ball games are to a much greater extent *conventionally effective*. A soccer player learns to pass the ball quickly and accurately to other players. A baseball pitcher learns to throw a baseball quickly and accurately. A tennis player learns to hit a tennis ball with a racquet with enough topspin to keep the ball from landing beyond the designated play area. None of these movements are *effective* outside the games of which they're a part. Players of these games may develop certain real-world-applicable skills incidentally, but there is no real-world environment in which a tennis stroke, for example, is meaningful and effective in and of itself. But runners are the best at running, cyclists the best at cycling, swimmers the best at swimming, and so on. We don't need a competitive game to understand and appreciate these movements, even if we need games to determine who is the best at them.

To put this issue in Berman's terms, athletics are activities in which the rules are facilitative rather than constitutive (Berman 2013, 166). We certainly *need* rules in running competitions. Imagine, Berman says, what a running race would look like without formal rules:

Questions regarding the conduct of the competition would naturally arise, whether at the outset or over time. Precisely what distance should we run?

Should we run at the same time or seriatim? How many tries do we get? . . . How do we know when to start? What if one of us starts too soon? Is that disqualifying or does he get additional chances? If competitors are more or less tied at the race's conclusion, is the winner the one who first touches the line or who first completely crosses it? (Berman 2013, 165–6)

We clearly need rules for athletic *competition* to be possible. However, the aim of the rules is not to give rise to a *game* – to, as Berman puts it, ‘make realization of the prelusory goals harder’ (Berman 2013, 166), as we find in cricket or soccer – but rather merely to most fairly *facilitate* the testing of these prelusory goals. Hence, we can describe the rules as ‘facilitative’. By contrast, without a set of rules, there is no such thing as soccer, or baseball, or tennis: these rules *constitute* the very activity itself; hence ‘constitutive’ rules. I think ordinary language use in English tracks this distinction: we *play* sports but *do* athletics.

This not only explains athletics’ lower scores in comparison to ball sports, but it also explains the scores for the martial arts included in the survey: fencing (2.56), judo (2.54), karate (2.51), and archery (2.46). As Allen puts it, in martial arts ‘violence is essential to the art and its training’ (Allen 2013, 247). Even when never used to harmful effect in the competitive activity itself,

to train [in a martial art] you have to understand how the techniques function combatively. You have to know, performatively, where the energies go to make a technique an irresistible response to violence . . . Everything about martial arts movements is expressively purposive. It is not a game. No movements are symbolic or merely graceful. There is an instrumentality being trained, and its purpose is violence. (Allen 2013, 247)

When this fails to be true of a martial art, we might think of that activity as a form of dance rather than as a martial art (Allen 2013, 247). In this respect, the movements in martial arts are non-conventionally effective, and rather than constituting the activity, the rules in competitions are instead to facilitate the prevention of injury, the showing of respect, and to enable the purposive movements to be tested fairly.

In summary, though the constitutive vs. facilitative rule distinction does not seem to be a weighty one when it comes to the sport-likeness of an activity (there are many highly-rated activities that have facilitative rather than constitutive rules), it arguably does make some difference, and explains the clear grouping of ball sports – all games – at the top, with athletics/martial arts grouped slightly, though definitively, below this group. Cycling, running and swimming are the highest of the athletic activities, but even there they are rated lower than the ball sports, excepting those such as cricket (which joins the other ball sports decisively when the score is restricted to countries that are familiar with it), and the ‘leisure’ sports such as golf, table tennis, street football and pick up basketball, which (I argue) are a special category.⁶

Tests of skills

Core sports are tests of skills. The skills being tested in sports are physical ones (thanks to criterion [1]); however, essential physicality (1) is about whether physical movement is integral to the game, whereas the testing of (physical) skills (3) is about *what* is being *evaluated*. For instance, ice skating is essentially physical: there is no version of ice skating that is not a physical activity; what's more, its physicality is essential rather than incidental. However, what is being evaluated in ice skating is not *merely* the physical skills of skating, there is also an aesthetic element. In this sense, ice skating might be thought of as the production of aesthetic beauty *via* physical skill, rather than merely a test of physical skill and nothing more.

Similarly, activities in which luck plays a significant role – such as competitive fishing – are games in which skill is subordinated to random chance, even if the activities remain essentially physical.

Additionally, activities in which the quality of the equipment matters to a significant degree – such as yachting, an essentially physical activity – are arguably less of a test of skill *alone*; the fact that equipment differs between competitors means that *not only* the competitor's skill affects the outcome.

The idea that sports must centrally test skills therefore has several dimensions. First, it asks us to consider the degree to which the competition is truly between human beings. For instance, while the quality of the bicycle matters to cyclists, and certain paraphernalia – such as swim caps – are a matter of ongoing debate, generally speaking all competitors in cycling and swimming start on an equal footing. But in activities such as formula one (1.48) and yachting (0.95), the quality of the equipment can be a decisive factor. In yachting, for instance, enormous sums are spent on designing and building the yachts, with technological developments providing significant advantages. It is possible, then, that the decisively lower scores in these activities is due to there being an unearned advantage during the active part of the competition; the struggle is as much between the designers of the machines as the humans engaged in the competition on the day, and that it therefore is *not exclusively* a test of the skill of the participants.

Second, a higher role for chance undermines the activity as a test of skills. This can perhaps be seen to some extent in the lower score of yachting (0.95), where the vagaries of the weather make at least some difference to the outcome, and may partly explain why yachting is rated noticeably lower than formula one (1.48): in both, the quality of the vehicle makes a difference, but the element of chance is greater in yachting. It is also likely to be a factor in the lower score of fishing (0.26).

The randomness factor also possibly explains the lower score of *Fortnite* (−0.62) compared to the other two eSports, *Counter-Strike* (0.02) and *League of Legends* (−0.51). Unlike in the other two eSports, in *Fortnite* the weapons

and supplies – integral to success in the match – are distributed randomly throughout the map. Depending on chance, players may or may not have easy access to essential resources that can have a significant impact on the outcome.

Third, events that have an aesthetic dimension, and that are therefore judged rather than refereed – such as piano (–1.80), ballroom dancing (1.07) and synchronised swimming (2.33) – tend to have lower scores. Perhaps included in this group is equestrian dressage, though this activity was not distinguished from equestrian activities more generally in the survey. The idea here seems to be that the more that the aesthetic, judged elements dominate the physical skill-based, refereed elements, the less that activity is essentially a test of *skill*.⁷ This is a criterion that comes in degrees: gymnastics (2.68), figure skating (2.58) and diving (2.51) scored relatively high, synchronised swimming (2.33) in the middle, and ballroom dancing (1.07) and piano (–1.80) trailing far behind, tracking the increasing centrality of the aesthetic, judged dimension of the activities.

Leisure

Being considered more of leisure activity than a serious, professional competition can potentially explain some of the survey results. This seems most obvious in the cases of the ball sports with lower scores: all are associated with leisure, with scores differing based on the extent to which this is true. Given its association with relaxation and retirement, golf (2.49) is the obvious example, but we can also note table tennis (2.58) – which is a common casual, go-to activity for enjoyment with friends – and both pick up basketball (2.31) and street football (2.41), which are otherwise more or less indistinguishable from basketball (2.90) and soccer (2.93), but which were created explicitly for casual enjoyment. We might also add bar sports, such as darts (1.08) and billiards (1.26) to this list. Finally, it may be a contributing factor to the low score of fishing (0.26) and is perhaps a contributing factor to the scores of the eSports as well.

Access

It also seems likely that there is an egalitarian dimension to sport. Those activities that have socio-economic barriers to access received scores lower than comparable activities. Obvious cases here are yachting (0.95), formula one (1.48), horse riding (2.24) and especially golf (2.49) (given that it is otherwise nearly indistinguishable from core sports). It is also possible that the access factor explains golf's lower score relative to the other leisure activity of table tennis (2.58); and yachting's lower score as compared to formula one (1.48) (even if formula one vehicles cost more than yachts, at the

very least hopeful drivers can usually learn to drive on more accessible vehicles, whereas a certain socio-economic status is required to even begin learning how to sail a yacht).⁸

The Inclusion of Leisure and Access

While features (1)-(3) are 'built in' to the activities themselves – they are internal to their constitution – leisure and access are external; they are about how people happen to *relate to* those activities. For instance, soccer without essential physicality, or without being a test of skills, would no longer be the same game. By contrast, while it just so happens that pick up basketball is more of a leisure activity than a professional one, we can easily imagine a world in which the very same game is taken seriously as a professional sport without it changing it in any essential sense. Similarly, it just so happens that golf has certain barriers to entry – often substantial green fees, club membership costs, etc. – but it is quite possible to imagine a world in which that isn't true, but where golf is otherwise essentially identical.

One *philosophical* (i.e. non-social-scientific) question a core-periphery definition of sport must face, then, is whether a good definition of sport only includes internal characteristics (M. Hemmingsen 2023b), or whether it is acceptable to include external ones as well. If the former, then even if it turns out that leisure and access *are* factors in explaining the extent to which various activities are considered sports, this is merely a mistake in the popular understanding of sport, borne of unclear thinking. If the latter, then leisure and access are truly part of how we *ought* to define sport, rather than simply how people just so happen to do so. However, settling this question is outside the scope of this paper, and arguably outside the scope of empirical research in general.

Conclusion

I have argued for an approach to defining sport that I have called a 'core-periphery' model. This approach holds that there are certain 'core' sports that possess all of the required features of the definition of sport, and do so to a sufficiently robust extent. Other activities – those that lack one or more of these features, or have one or more of the features to a reduced degree – may still be considered sports, however they are less 'sport-like' than core sports, and are located on the periphery.

In order to determine which features are required for an activity to be considered a 'core' sport, an essential first step is to engage in empirical research into how the concept is understood in popular usage. The results of such research are not the end of the discussion by any means, as *normative* conceptual analysis is a matter for philosophical discussion and debate. However, empirical research is required to ensure

that this analysis picks out the relevant concept, and also to help settle issues that are not so amenable to philosophical analysis, such as the degree to which the absence or attenuation of certain features makes an activity less sport-like.

Notes

1. While the term 'core-periphery' may be familiar from, e.g. John Friedmann's 'core-periphery four-stage model of regional development' (Friedmann 1966) or Immanuel Wallerstein's (1974) World Systems Theory of international relations, it has a distinct meaning in this context. In particular, the spatial element of traditional core-periphery models in human geography and international relations is metaphorical, and I am absolutely not suggesting – such as in World Systems Theory – that there is any sense in which the 'core' of sport is in some kind of exploitative relationship with those activities in the periphery.
2. Of course, for Parfit similarity comes down to psychological continuity and connectedness, which is where the analogy to defining sport breaks down.
3. I am not suggesting that there is no place for philosophers in defining sport: philosophers are still needed to tidy the concept of sport, to ensure that it is coherent and consistent.
4. Again, I want to emphasise that I am engaged here in a demonstration of an approach, rather than definitively arguing for a concrete definition of sport.
5. Cricket's score is an odd case. Despite being very much the same kind of activity as baseball, its score is much lower. However, compared to baseball or American football, which are well known – even if not actively followed – in countries without national teams or popular leagues, citizens of non-cricket playing countries tend to know about cricket only in the vaguest terms, if at all. I think it's this ignorance that explains cricket's comparatively low score. To test this, I restricted the responses to only individuals from cricket-playing nations (including Canada, where the sport is known, but could hardly be called outrageously popular), who would at least have some basic knowledge of the game. When I did this, cricket's score increased to 2.91, putting it decisively in the top tier alongside baseball.
6. It is noteworthy that this criterion undercuts the status of activities that are traditionally central to the Olympic and Commonwealth Games. Given that being included in the Olympic Games is often taken to mean that an activity is quite definitively a sport – to the point where inclusion in the Games has been treated by some philosophers of sport to be a *starting point* for discussions about defining sport – much more research is required to conclusively demonstrate the relevance of the facilitative/constitutive distinction.
7. It is important to note that this is not saying in any sense that these activities are *unskilled*; they may be as or more skilled than core sports. The point is that in core sports, skill is the dominant thing that is being evaluated by the activity, whereas in figure skating or diving, skill is at least somewhat decentred by the evaluation of the aesthetic *product* of that skill.
8. While I didn't have the data to undertake this analysis here, if access does matter there is likely to be a negative correlation between respondents' scores and the median cost of golf memberships by country. Hopefully future research will bear this out.

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