CORA Cork Open Research Archive
Cartlann Taighde Oscailte Chorcaí

Title	Incentives and unintended consequences: Lessons from sport
Authors	Butler, Robert;Butler, David
Publication date	2020
Original Citation	Butler, R. and Butler, D. (2020) 'Incentives and unintended consequences: Lessons from sport', Sport and Entertainment Review, 5(1). Available at: https://serjournal.com/2020/01/31/incentives-and-unintended-consequences-lessons-from-sport/ (Accessed: 22 June 2022)
Type of publication	Article (peer-reviewed)
Link to publisher's version	https://serjournal.com/2020/01/31/incentives-and-unintended-consequences-lessons-from-sport/
Rights	© 2020, the Authors.
Download date	2026-11-04 02:27:01
Item downloaded from	https://hdl.handle.net/10468/13306



UCC
University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Sport & Entertainment Review

Incentives and Unintended Consequences: Lessons from Sport



Robert Butler and David Butler, University of College Cork, Ireland

Abstract

This paper explores the relationship between changing incentives and unintended consequences in the context of the sports labor market and sports broadcasting. Appealing to two recently published studies, we demonstrate how the introduction of bonus points in rugby union, and intervention by broadcasting regulators in the European Union, have altered incentives and brought about consequences not envisioned. These examples are applicable across industries and demonstrate the

need for caution when implementing what appear to be, minor modifications to conditions impacting employees and consumers.

Introduction

Sport is big business and a leading form of entertainment. In a broadcasting era characterized by on-demand and catch-up viewing, sport has retained a privileged broadcasting position. It is one of the few remaining on-screen offerings viewed by appointment. In many respects, the entertainment value offered by live sport is embedded in the 'drama'.

A narrative plays out on a weekly basis through a sequence of suspenseful build-ups and occasional doses of surprise. The most obvious examples of this are witnessed in popular sports leagues throughout the world. The National Football League (NFL), English Premier League (EPL), Major League Baseball (MLB) or Premiership Rugby essentially provide viewers with weekly instalments over the course of a ten-month season, reaching a crescendo with the crowning of champions.

The need for league organizers to produce an entertaining product, was captured by Gary Cook, former Chief Executive Officer of English Premier League club Manchester City when saying:

> *"We're not a football club, we're actually a sports entertainment media company. So we must create content. We must provide events, we must create shows, we must create drama. And we must be part of the news, front page and back page, in every way. Am I competing with the other football club down the road, Manchester United, or am I competing with Walt Disney, with Amazon?"*
>
> Robinson and Clegg, 2018:153-4

While competition is the driving force behind many industries in a market economy, sport is different. *Joint production* is required. As Gary Cook alludes to, on first inspection there is a perceived rivalry with the 'club down the road', however the relationship is nuanced.

Of course, this contrasts with the expected motivations of rivals in other industries. For instance, competitors in the airline, retail or tourism sectors would likely be

pleased to see their rivals exit the market. Sports teams would rather this were not the case. Given these relationships, managing the rules and competitive structure within sports leagues, are essential to organizers. Optimizing the design of a competition and establishing appropriate incentives, stimulates fan interest, and maximizes entertainment value of the product.

The aim of this paper is to consider two scenarios where the manipulation of a rule altered incentives for different parties. Although these modifications were minor, both present fitting illustrations of how changing the structure of competition (on and off the field of play) can have unintended consequences.

With this in mind, the paper continues are follows. Section two provides a brief discussion of incentives and rule changes in sport. Section three explores how the introduction of a bonus system by sporting authorities impacted worker productivity, when employees operate in a team. This analysis should be useful to all managers guiding a group of workers with collective goals.

Section four examines how changes to industry competition rules in the broadcasting market has negatively impacted consumers, despite intending to have the opposite effect. Section five provides further discussion and concludes the paper.

Sports Rules and Incentives

All sports rely upon an institutional framework of both formal and informal constraints. Each one operates within a set of formal rules, within which incentives are framed, and behavior influenced. Obvious examples of this include the illegal handling of the football by outfield soccer players, the colloquially known double-dribble rule in basketball, or disqualification of sprinting athletes running outside an assigned lane. Each of these formal rules defines the way rivals compete.

Sports also contain informal rules which flow directly from spontaneously emerging norms and habits. These influence the way rivals behave and include customs such as kicking the ball out of play in soccer for an injured opponent, conceding a putt in match- play golf, or applauding the opposition from the field of play (as is the norm in rugby). As sport has grown in popularity and economic value, external rules have emerged that do not govern the playing of the sport, but rather the interaction of sport with society and the economy.

The Reserve Clause in Major League Baseball prior to 1975 and the “retain and transfer” system in English football are relevant examples of this. Both are now obsolete as a result of the Seitz decision, regarding baseball pitchers Andy Messersmith and Dave McNally, and the European Court of Justice 1995 Bosman ruling. Such rules today extend to economic issues including work permits, signing of youth players and broadcasting arrangements.

The advantage of studying the impact of rule changes in sport is that they occur in a partially controlled environment. In its most basic form, this involves circumstances where the extrinsic stimuli, designing to elicit a preferred outcome by rewarding behavior, have changed across time.

From a sporting perspective, examining incentives in different environments can allow for detailed examination of issues such as player motivation, competition structure and contracts of employment. Indeed, many researchers have considered these topics previously (see Fernie and Metcalf, 1999 for a classic application to sport) and have used sport as a test bed to explore how rule changes might impact incentives in traditional labour markets (Kahn, 2000).

The economic issues considered in this paper concern employee performance and bonus schemes, and industry competition and consumer welfare. Both are examined following rule changes; the first by a sport's governing body (Rugby Europe) and the second by a political entity (the European Commission). This paper goes a step further. Our examples show how rule changes can lead to the opposite result to what is originally intended by policymakers and governing bodies. As such, these examples are relevant outside of the sporting context.

Rugby Europe is the administrative body for rugby union in Europe. Formed in 1999, the objective of the organization to is administer, develop, organize and promote rugby union in Europe. The body operates under the authority of World Rugby – the global governing body.

The scenarios should be of interest to governments, managers and executives, as the sporting environment in which each appears acts as lens to consider the outcome of similar changes in society. There is no intuitive reason why changes to

incentives in the sporting arena would not be replicated under similar circumstances in other industries across the economy.

Employee Effort And Bonus Systems: The Case Of Rugby Union

Worker productivity and employee motivation are a key concern for every business and manager. This is acutely true when the opportunity for employees to shirk is magnified by tasks that must be completed by teams of workers. It is well established that free riding can be reduced, and in some cases eliminated entirely, if monitoring costs decline or the chances of been caught shirking increase.

However, it may be the case that monitoring of agents and identification of free riders becomes so costly that employers simply cannot measure employee productivity effectively. In order to overcome this, employers incentivize employees to engage in effort-maximizing work practices by eliciting a variety of performance-related payment mechanisms, most notably bonus systems. We examine changes to a bonus scheme within a workplace setting – the rugby pitch.

> It is worth noting, the bonus scheme was enacted by Rugby Europe who are the employer of all rugby players in Europe in a broad sense.

Inspiration for this original research is found in the earlier work of both Wright (2014) and Kendall and Lenten (2017), each providing excellent overviews of rule changes in sport. The latter use notable examples from cricket, football and tennis to demonstrate the impact of changes on these sports through time. These include seemingly insignificant alterations, that have far-reaching consequences. Butler (2019) also catalogues several of these changes in soccer, Gaelic games, golf and rugby.

Butler, Lenten and Massey (2019) examine bonus schemes on the field of play and the ability of these to induce greater levels of effort from players. From a labour perspective, this work casts light on how changes to incentive mechanisms can impact productivity. There is an added dimension, however.

The introduction of a try bonus point in *European Cup Rugby* from 2003 was an explicit attempt by rugby organizers to increase entertainment value, encouraging players to exert greater effort in pursuit of the most rewarding and exciting score in rugby – a try. Little did policymakers know, this would result in the emergence of

an unintended consequence – a perverse incentive arose. Arguably this has led to a reduction in entertainment value to fans. How did this play out?

The *European Rugby Cup*, or *Heineken Cup* (as it was more commonly known due to the sponsorship of the competition), lasted from October 1995 until May 2014, 19 competitions in total. The tournament brought together the best rugby union club teams from countries such as England, France, Ireland, Italy, Scotland and Wales, competing under a quasi-knockout structure. An initial group stage, consisting of 24 teams across six groups, required playing both home and away to decide qualification for a later knockout or playoff phase.

> For the 2014/15 season the tournament was replaced by the *European Rugby Champions Cup*.

This later phase included a quarter-final, semi-final and final. Commencing in early October each year, the group stage resulted in clubs playing a total of six matches, and finished in early January the following year. The eight teams that successfully qualified from the group stage (6 group winners and 2 best second-placed teams) then competed in single knockout games, culminating in the European Cup Final each May.

> This six-game, home and away structure, has been in place since the 1997-98 competition

For the first eight seasons of the competition, scoring occurred under traditional rules. However, from 2003/04 two new incentives were put in place in the group phase only, to encourage more exciting play. A bonus point was awarded for scoring 4 of more tries and a losing bonus point would be achieved if a team were defeated by 7 points or fewer. The try- scoring bonus was designed to encourage both teams to attack more. The losing bonus point incentivized effort, even when defeat was highly likely near the end of a game.

For example, a converted try in rugby is worth 7 points. If a team were trailing an opponent 20-6 with just seconds to play, while winning the game would be impossible, scoring a converted try would reduce the deficit to 20-13, meaning a losing bonus point would be achieved. Points scoring for each match outcome under both systems is presented in Table 1.

Table 1: Match Outcomes and Points Awarded: Pre and Post September 2003

Seasons	1995-2003	2003-2014
Win	2	4
Win and Four Try Bonus	-	5
Draw	1	2
Draw and Four Try Bonus	-	3
Loss	0	0
Loss and Four Try Bonus	-	1
Loss, Four Try Bonus, Losing Bonus	-	2

With the introduction of bonus points, rugby administrators argued this would increase spectator excitement and the entertainment value of the product. Butler et al. (2019) sought to answer whether this is the case, focussing on the 4-try bonus point aspect. The findings support the view that – yes this has worked – but with an important catch.

The analysis breaks teams into Home and Away categories and considers the likelihood of achieving a bonus point both before and during the game. Amongst other things, we asked:

Before a game starts, how likely is the home/away team to score 4 tries? Before a game starts, how likely is the home/away team to score a 5th try, having already scored 4? During a game, how likely is the home/away team to score a 4th try, having already scored 3? During a game, how likely is the home/away team to score a 5th try, having already scored 4?

Butler et al., 2019

Table 2 summaries the results. The bonus for scoring 4 of more tries is effective in inducing greater effort levels for home teams. The rule change meant that both teams are more likely to score 4 tries before the game starts and during the course of play when they have already scored 3 tries. Away teams report a much weaker effect and are only significantly more likely to reach the bonus threshold within-game, if 3 tries have been achieved. However, there is a caveat. Once a bonus has been secured, by either the home or away team, players reduce their efforts. In part, this behavior undermines the intended effect of the try point bonus system – greater entertainment.

Our intuition is that, just like any group of workers in joint production, once a target has been achieved effort begins to slacken. Rugby players are no different to employees on production lines. The incentive to score a 5th, 6th or 7th try is reduced once the 4th try has been achieved. The introduction of this bonus scheme has had unforeseen and unintended consequences that makes viewing the sport less attractive.

As many sports now use broadcasting revenue as their primary source of income, a decline in the entertainment value of the on-screen product is not advantageous. This example highlights the importance of deep consideration for, what might appear on the surface to be, minor alterations to the rules of the game.

Table 2: Summary of Results from Butler, et al. (2019)

Question	Home	Away
Before Game Effects		
The team is significantly more likely to score 4 tries before the game starts.	Yes	No
The team is significantly more likely to score 5 or more tries before the game starts.	No. The team is significantly *less* likely to score a 5th try.	No.
Within-Game Effects		
The team is significantly more likely to score a 4th try having scored 3 tries during the game.	Yes	Yes
The team is significantly more likely to score a 5th try having scored 4 tries during the game.	No. The team is significantly *less* likely to score a 5th try.	No

Source: Butler, Lenten and Massey (2019)

Butler, et al. (2019) findings are supported by earlier work by Butler and Butler (2017). We investigate the number of goals scored by soccer teams under different points systems. These systems included 2 points for winning, 3 points for winning, and in one instance, 4 points for winning. Like the bonus points system in rugby, these rule changes were implemented to encourage greater effort amongst soccer players and to increase the incidence of the most entertaining aspect of a soccer match – goal scoring.

Akin to our findings on the rugby pitch, we conclude that there was no meaningful increase in attacking play – as measured by the number of goals scored – when incentives changed. On the contrary, we find a consistent decline in the number of goals scored, over four decades, even when the number of points for winning a match increased by 50%. Increasing the number of points for a win could generate higher levels of loss aversion and result in more defensive rather than attacking play.

These findings are supported by evidence of the now defunct Golden Goal and Silver Goal in international soccer, which inadvertently increased defensive play despite being intended to encourage greater attacking by both teams.

The Golden Goal is a sudden death goal applied across a number of team sports which can be used to decide the winner of a game once normal time has ended. The Silver Goal was a less dramatic end and when initiated by UEFA in 2002 meant a team leading after the first half of extra-time would be considered winners

Intervention and Consumer Protection

The second investigation into rule changes is not instigated by a sport's governing body, but rather by a pan-national institution – the European Commission. Since the 1980s, there has been a rapid rise in live broadcasting of sports. This has been witnessed across many sports and has resulted in a dramatic increase in revenues to teams, franchises and player salaries, a re- categorization of some sports broadcasts to "public good" status, and even changes to the rules of sports to make them more entertaining to viewers.

Szymanski (2006) and Noll (2007) argue that the rise in sports broadcasting since the 1980s has been facilitated by two key factors; improvements in technology and changes in the regulatory climate, with a notable shift towards deregulation of the industry and the proliferation of private satellite television channels. The movement from free-to-air broadcasters, traditionally owned and funded by national governments, towards privately own satellite channels which may require a subscription fee, has resulted in a surge in demand for content. Sport has helped to satisfy this demand.

One of the best examples of this is the English Premier League (EPL). The entertainment value of the EPL has stood the test of time. This is exemplified by the most recent domestic broadcasting agreement for live games between the EPL, British Sky Broadcasting (BSkyB), British Telecom (BT), and for the first time, Amazon. The three recently agreed to pay the EPL approximately £5 billion combined, for three seasons of live games, from 2019-20 to 2021-22.

While this total is comparable to the most recent agreement in 2016, a rapid increase in the value of live broadcasting rights is evident when comparing recent rights sales to those earlier in the decade. For example, during the 2012/13 league Butler and Massey (2019) show that annual rights were valued at £591 million or £4.28 million per game. The following season, this had risen to just over £1 billion, a cost per game of £6.37 million.

By 2016/17 the annual cost of all live games had roughly trebled in value when compared to 2012/13, and now stood at £1.712 billion per season or more than £10 million per game. The most notable change from the start of the 2019/20 season has been the entry of, for the first time, a third broadcaster. Amazon will hold exclusive rights over a set of 20 games person until May 2021.

Since 2007, just two companies shared the broadcasting rights. Prior to 2007, a BSkyB monopoly existed. Table 4.1 outlines this various broadcasting arrangements since the foundation of the EPL in August 1992. The movement from one, to two, and now three different providers, is directly linked to a 2006 European Commission ruling in this market. The motivation for Butler and Massey (2019) was this 2006 European Commission ruling, prohibiting the sale of all live EPL games to a single broadcaster, ending the BSkyB monopoly.

The study considered the impact of this European Union imposed rule change on both the total cost to subscribers and the cost per game. Just like the introduction of bonus points in European club rugby, this decision had an unintended consequence. Standard economic theory predicts that monopolies charge higher prices than competitive markets.

The greater the extent of competition, the lower the price to consumers. In a best case scenario, “perfect competition” would reduce prices to the average cost of

production, maximizing consumer surplus. If this was the intention of the European Commission (2006:5) when stating "that no single Bidder shall be awarded all of the Live Audio-Visual Packages exclusively by the FAPL" in their ruling on this case in March 2006, the results of their actions have been misguided.

Table 3: Broadcasters and Live Games from 1992 to 2022

Seasons	No. of Packages	Sky Sports	Prem Plus	Setanta Sports	ESPN	BT Sports	Amazon	Total
1992–1997	1	60	–	–	–	–	–	60
1997–2001	1	60	–	–	–	–	–	60
2001–2004	1	70	40	–	–	–	–	110
2004–2007	1	88	50	–	–	–	–	138
2007–2009	6	96	–	42	–	–	–	138
2009-2010*	6	96	–	–	42	–	–	138
2010–2013	6	115	–	–	23	–	–	138
2013–2016	7	116	–	–	–	38	–	154
2016–2019	7	126	–	–	–	42	–	168
2019–2022	7	128	–	–	–	52	20	200

Source: Updated from Butler and Massey (2019)
* Season sold as part of the 2007-2010 broadcasting deal but re-sold to ESPN following failure of Setanta Sports to pay for rights for the 2009-2010 campaign.

Table 4 lists the cost to consumers in the United Kingdom under the various iterations of competition, for selected seasons. As Butler and Massey (2019) demonstrate, intervention in the market by the European Commission has been not worked. The arrival of competition in the form of one, and most recently two competitors, has forced prices upwards. The cost per game to subscribers was at its lowest, £2.17 per game in 2006/07, during the BSkyB monopoly.

Given that information on the third provider has recently become available, we have the opportunity to extend Butler and Massey (2019) and include the third entrant – Amazon. From a consumer's perspective this has, unsurprisingly, exacerbated the problem. Evidence of this is presented in the bottom row of Table 4.

Table 4: Real Cost of Live Football to UK Consumer between 2000 and 2020.

Season	Broadcaster Providers	Total Cost to Subscriber	Games	Total Cost per Game
2000-2001	1	£182.35	60	£3.04
2003-2004	1	£262.99	110	£2.39
2006-2007	1	£299.91	138	£2.17
European Commission ruling outlawing broadcasting monopoly from 2007/08 season				
2007-2008	2	£410.94	138	£2.98
2009-2010	2	£318.45	138	£2.31
2011-2012	2	£328.03	138	£2.38
2015-2016	2	£455.00	154	£2.95
2016-2017	2	£458.19	168	£2.73
2019-2020	3	£499.02*	188**	£2.65

Source: Butler and Massey (2019) and Radio Times (2019).
*Estimation assumes a fixed price for both *Sky Sports* and *BT Sports*, set in 2015, for the 2019-20 season. It is probable that customers had to pay higher monthly subscription fees but, given extensive product bundling and introductory discounts, ascertaining marginal price increases is problematic. The estimations presented are therefore a 'best case' scenario.
**Only 188 of the 200 live games broadcast during 2019/20 can be viewed because some of those screened by *Amazon Prime* have synchronized kick-off times.

The current arrangement (three providers) surpasses the previous highest total cost of £458.19, and results in an increase of £40.83 over the season, to almost £500. The price per game does decrease marginally by 8 pence. The lowest price per game in continues to be the final year of the BSkyB monopoly, with the lowest total cost of £262.99 during the 2003-04 BSkyB monopoly, albeit with fewer live games.

These findings could be described as running contrary to economic theory. The rule change to force competition in the industry has caused prices to increase. Rather than encouraging competition, the European Commission' actions have simply meant the creation of at least "two monopolies..., each operating in a different market and selling a different product" (Butler and Massey, 2019:618). If the intention of the European Commission ruling was to increase consumer welfare or decrease the cost to subscribers, their efforts have had the opposite effect. Further segmentation of this market is likely in the years ahead if other broadcasters and streaming platforms follow Amazon's lead.

Conclusions

We demonstrate two instances where minor rule alterations have unintended and perverse consequences. While we use the sporting lens to explore economic concepts and the role of incentives, similar effects should be replicated across different domains with the same conditions. We believe the findings that emerge from these scenarios are appropriate demonstrations to guide policymakers, and those with decision making authority. In particular, the scenarios speak to the need for rule makers to consider second and third order implications.

The outcomes we describe are not unsurmountable. With regards to bonus points in rugby, a mechanism needs to be adopted to ensure that the reward of a bonus

does not result in shirking once the prize has been achieved. The current four-try target could be modified to achieve this. Administrators should move away from a stationary target (4 tries), towards a moving target such as points difference.

For example, teams could be awarded a bonus point if they win by 10 points or more. If this were the target, teams would not be certain of the bonus point until full-time. Greater production levels and effort could be expected. This mechanism would mirror the losing bonus point which appears to work successfully.

The European Commission's intervention in the EPL broadcasting market remains misguided. The solutions appear relatively straightforward. Instead of the current model where there are effectively three different markets and a monopoly operating in each. We recommend regulators consider the following options, ranging from mild to radical, if they wish to protect consumer interests.

Adopting a conservative strategy, the European Commission could prohibit collective selling entirely or allow EPL clubs to sell their own broadcasting rights, of those games not broadcast live, to consumers. Alternatively, some games of particular public interest could be forced onto free-to-air television.

A more radical solution would be the dual screening of different games, by different providers, at the same time. More radical still would be the removal of the sale of exclusive rights to matches so that many broadcasters could buy rights to the same matches and then compete on services. All of these options could reduce prices for consumers, the likely intended effect of the original intervention.

References

Arias, J. L., Argudo, F. M., and Alonso, J. I. (2011). Review of rule modification in sport. *Journal of Sports Science and Medicine*, *10*(1), 1.

Butler, R. (2019). *A Primer on the Economics of Sport*. Oaktree Press. Cork, Ireland.

Butler, D., and Butler, R. (2017). Rule changes and incentives in the League of Ireland from 1970 to 2014. *Soccer and Society*, 18(5-6), 785-799.

Butler, R., Lenten, L., and Massey, P. (2019). Bonus Incentives and Team Effort Levels: Evidence from the 'Field'. *Working Paper Series*, Department of Economics, University College Cork, Ireland.

Butler, R., and Massey, P. (2019). Has Competition in the Market for Subscription Sports Broadcasting Benefited Consumers? The Case of the English Premier League. *Journal of Sports Economics*, 1527002518784121.

Considine, J., and Gallagher, L. (2018). Competitive balance in a quasi-double knockout tournament. *Applied Economics*, 50(18), 2048-2055.

European Commission. (2006). Commitments of the FAPL (Non-Confidential Version). Available at https://ec.europa.eu/competition/antitrust/cases/dec_docs/38173/38173_132_7.pdf

Fernie, S., and Metcalf, D. (1999). It's not what you pay it's the way that you pay it and that's what gets results: Jockeys' pay and performance. *Labour*, 13(2), 385-411.

Kahn, L. M. (2000). The sports business as a labor market laboratory. *Journal of Economic Perspectives*, 14(3), 75-94.

Kendall, G., and Lenten, L. J. (2017). When sports rules go awry. *European Journal of Operational Research*, 257(2), 377-394.

Lenten, L. J., and Winchester, N. (2015). Secondary behavioural incentives: Bonus points and rugby professionals. *Economic Record*, *91*(294), 386-398.

Noll, R. G. (2007). Broadcasting and team sports. *Scottish Journal of Political Economy*, 54(3), 400-421.

Radio Times (2019). Amazon Prime Video guide: what to watch and how much it costs. Available at https://www.radiotimes.com/news/on-demand/2019-04-05/amazon- prime-video-cost-guide-what-to-watch-how-to-sign-up/

Robinson, J. and Clegg, J. (2018). *The Club: How the Premier League became the richest, most distributive business in sport*. John Murray, United Kingdom.

Szymanski, S. (2006). The economic evolution of sport and broadcasting. *Australian Economic Review*, *39*(4), 428-434.

Wright, M. (2014). OR analysis of sporting rules–A survey. *European Journal of Operational Research*, 232(1), 1-8.

Bri Newland **January 31, 2020** **Management**
Broadcasting Regulation, **Consequences**, **Entertainment**, **Incentives**, **labor market**, **Rugby**, **Rugby Union**, **Sport Broadcasting**, **Sport Business**