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Winners and Losers in the Court of Appeal:

An empirical study of personal injury cases (2002-16)[*]

This article reports findings from an empirical study of 458 personal injury cases decided by the Court of Appeal spanning fifteen years. The study used conventional statistical software, *SPSS Statistics*, and two machine learning platforms, *Data Robot* and IBM's *Watson*, to analyse the dataset. The analysis reveals a general pro-Defendant bias within the Court of Appeal. Although neither Claimants nor Defendants reverse first instance decisions more than 50% of the time, Defendant Appellants reverse more often (47.3%) than their Claimant counterparts (39.5%); Defendants also successfully resist more appeals and are 20% more likely than Claimants to obtain a favourable outcome in appeals overall. These findings are broadly consistent with findings from other studies.

However, within a subset of cases involving judges with greater experience of deciding personal injury appeals, there is a shift – albeit slight – in favour of Claimants. The study tested a variety of factors which could potentially explain favourable outcomes in general and this pro-Claimant shift in particular. Those factors included the identity of the Appellant, the type of case, the type of advocate, the legal issues at stake, and the identities of the appeal judges. Controlling for the various factors, the study found that at least one appeal judge within the subset delivered pro-Claimant decisions at statistically significant levels. None of the other factors contributed to favourable outcomes at statistically significant levels.

Since a number of potentially pro-Claimant judges retired over the period of the study, it might be anticipated that the pro-Defendant bias will intensify. Such a trend is evident over the last four years of the study: favourable outcomes for Claimants fell from an average of 48% (2002-11) to 37.9% (2012-16) with an absolute low of 26.3% in 2016. Although Claimants win less than Defendants, this dramatic fall in the success rate for Claimants is

only partly explained by the increasing proportion of Claimant-initiated appeals over the last four years. Although that proportion rose from an average of 47.1% to 50% over the two intervals, the number of appeals dwindled from 34.2 to 23.2 per annum over the same timeframe. On the other hand, pro-Defendant intensification may help explain why the number of decided personal injury appeals is dwindling despite the increased proportion of such work in the High Court.

Whatever the reasons behind the pro-Defendant bias, if Claimants' legal advisors have the (accurate) impression of an intensification of that bias, that impression may well serve as a powerful disincentive on them to initiate or resist appeals. And if the average reversal rate for any appellant remains or falls significantly below 50%, it is possible that the availability of litigation funding for appeals will be compromised. The combined effect could be further reductions in the number of appeals alongside an entrenchment of pro-Defendant rights within tort law. In the alternative, as the doors to litigation and in particular appeals close, litigants might consider using machine learning technology to obtain more accurate information about the prospects of success and litigation risk in order to compromise appeals on a probabilistic rather than all-or-nothing basis. One possible consequence of this approach, however, is that novel claims would never be litigated unless litigation funders reassess their requirements of Appellants that the prospects of success should exceed 50%. It could potentially leave more individual Claimants under- rather than over-compensated.

INTRODUCTION

"...he had an impression, but some of his impressions are illusions".[1]

- Daniel Kahneman

Tort lawyers reading recently reported personal injury appeal cases may have been struck by any number of conflicting impressions. Two such impressions are that Claimant victories are rare in cases involving occupiers' liability; in other types of case some judges habitually deliver pro-Claimant decisions. These impressions raise many inter-related questions: is there a significant pro-Defendant bias in some types of case or even generally; are some judges unusually partial towards one category of litigant over another; can any unusual patterns be detected statistically; more broadly, are there factors which act as predictors of the likely outcome in cases; if so, what are they? Or, conscious of Kahneman's cautionary words, are our impressions here as elsewhere simply products of cognitive illusions – confirmation or availability biases which cause the interested observer to see patterns where none in fact exist?

This article begins to answer some of these questions via quantitative analysis of a large sample of personal injury ('PI') cases decided by the Court of Appeal between January 2002 and December 2016. The study confirms that both impressions are broadly accurate: there is a pro-Defendant bias in occupiers' liability cases, a bias which is particularly pronounced when the Defendant is a public body. Further, the pro-Defendant bias can be generalised across most types of personal injury cases. However, an analysis of a subset of cases decided by the appeal judges with the greatest experience of deciding personal injury-related appeals reveals a slightly more favourable picture for Claimants. Within this subset, some judges appear to deliver pro-Claimant decisions at statistically significant

levels or close thereto. Given that a number of these experienced (and arguably more pro-Claimant) judges have left the Court of Appeal, a possible inference might be that the general pro-Defendant bias of the Court of Appeal will intensify as new personnel are drawn from the less experienced (and arguably more pro-Defendant) ranks. The study provides some evidence in support of this conclusion. Other findings will be of interest. First, the reversal rate for most types of case was less than 50% irrespective of which side launched the appeal. This finding could have implications for the legal funding of appeals. Second, there is no statistically significant advantage gained by employing Queen's Counsel ('QC') in personal injury appeals. However, if junior counsel is acting for a Claimant who is facing a Defendant represented by a QC, then such Claimants had the greatest chance of a successful outcome, particularly in front of the more experienced judges. Third, and tangentially, the number of personal injury cases heard by the Court of Appeal is on the decline despite the fact that the proportion of such cases is on the increase in the High Court. It is speculated that this may be a function of the pro-Defendant intensification of the Court of Appeal's decisions.

QUANTITATIVE ANALYSIS OF APPELLATE DECISIONS AND PARTY BIAS

I.   Other studies

With the exception of Goudkamp and Nolan's empirical study of contributory negligence in the Court of Appeal,[2] recent UK scholarship using quantitative methods to analyse that Court's decisions is scant. There is some older empirical scholarship both within and outside the UK that has considered party bias in the appellate courts. As Robertson has pointed out,[3] so-called "quant-studies" are widespread in the US where empirical analyses of what courts do and why they do it have a long tradition. Some US-based journals like *Jurimetrics* and more recently, the *Journal of Empirical Legal Studies*, regularly publish quant-studies about a wide range of legal problems.[4] In the UK, Burton Atkins studied a large number of Court of Appeal cases decided between 1953 and 1985 with a view to testing Galanter's "party capability thesis".[5] The party capability thesis claims that the *Haves* generally fare better than the *Have-nots* in litigation.[6] In theory, the *Haves* are the resource-rich repeat players such as large companies and state bodies; the *Have-nots* are resource-poor and often one-off players, more often than not individuals. The Atkins study was interested in the question whether there was any statistically significant difference between the *Haves* and *Have-nots* in terms of successful reversal rates on appeal, and further whether there was any difference in this regard between reported and unreported decisions. He reached two conclusions: the *Haves* enjoyed a more favourable reversal rate than the *Have-nots* and this success rate was even more pronounced in unreported decisions. The differences were statistically significant. He therefore argued that unreported cases should be made available to all litigants as it might better inform strategic decisions about

proceeding with appeals. Since the Atkins study was published, more cases are now reported. Outside the context of the Court of Appeal, there has been some empirical work considering the House of Lords and Supreme Court most recently by Alan Paterson.[7] He reports the results of a quantitative analysis of the Law Lords' voting behaviour, with a particular interest in the voting relationships between them.

Outside the UK, there are several empirical studies that consider the possibility of party advantage. Peter McCormick applied party capability theory to appellate success the Supreme Court of Canada between 1949 and 1992 and concluded that in the long run, in the 4000 cases analysed, the 'underdog' tended to lose.[8] Stewart and Stuhmcke analysed Australian High Court negligence cases between 2000 and 2010.[9] They concluded that the pattern of High Court decisions was consistent with a move in favour of Defendants even before the implementation of Australian tort reform following the Ipp Panel.[10] This implied that Australian tort reform - in part a response to the Australian version of the so-called compensation culture - was unnecessary. In the US, there have been many quant-studies ranging across a wide variety of topics related to the current study. By way of example, Eisenberg and Clermont's 2014 essay on "Plaintiphobia",[11] reported finding an anti-Claimant effect resulting from the US Supreme Court's summary judgment cases.[12] That essay built on similar studies that report pro-Defendant biases in other US courts.[13] Eisenberg and Clermont's statistical approach can be traced back to the 1960s when Nagel advocated the adoption of

quantitative techniques to test empirical generalisations in legal research.[14] Nagel also used correlation tools to predict case outcomes in a variety of types of cases.[15] In 1980, he demonstrated the usefulness of statistics for legal policy analysis.[16] One aspect of the 1980 study related to predicting outcomes in personal injury cases. But that study was limited to predicting the likely level of damages as a function of medical expenses – a correlation which seems quite obvious: the higher the medical expenses the more likely it is that someone is seriously injured; the more seriously injured, the higher the likely level of damages. Other studies have attempted to use quantitative analysis to predict the outcome of decisions with varying degrees of success.[17] The most recent example of this was undertaken by Aletras and others who used machine learning to predict the outcome of judicial decisions of the European Court of Human Rights.[18] They claim a 79% accuracy rate. There is also a tangentially-related descriptive study of winners and losers in US defamation litigation conducted by Franklin in the late 1970s.[19] One of the findings of that study was that Plaintiffs succeeded rarely (5-12% of the time) and "suffered adverse final judgments in 60 percent of their appeals."[20]

II. How is this study different and who might benefit from considering its findings?

Although other studies have used quantitative methods to analyse Court of Appeal decisions, this study differs from others in terms of scope, object of analysis

and boldness of its claims. The Atkins study used all available cases (3167) lodged with the Supreme Court library. His study captured the entire population of cases. It was broad in scope both in terms of number and appellate subject-matter. The instant study does not claim to capture the entire population of PI cases decided by Court of Appeal though it captures most of the reported decisions. Furthermore, unlike the Atkins study which focused primarily on reversal rates, the present study identifies which party had the substantively favourable outcome irrespective of who appealed. Like the Atkins study and the Goudkamp and Nolan study,[21] the object of analysis in the instant study is decisions of the Court of Appeal rather than other courts in the judicial hierarchy. However, our reasons for focusing on the Court of Appeal may well differ. Aside from the fact that there is no published empirical study relating to contemporary Court of Appeal decisions outside the specific area of contributory negligence, an assumption of this study is that the Court of Appeal is theoretically subject to the doctrine of precedent in a way that the Supreme Court is not. As such, the legal rules should in theory play an important part in determining outcomes in the Court of Appeal compared with the Supreme Court. Of course, some legal rules and doctrines could be described as partisan. For example, in the law of negligence, the rules surrounding the imposition of a duty of care in novel scenarios (the cases building on *Caparo*[22]) are arguably pro-Defendant; whereas some of the recent rules relating to causation (*eg Fairchild*[23] and *Bailey*[24]) are arguably pro-Claimant. One might therefore expect to observe favourable outcomes for Defendants in novel duty cases and favourable outcomes

for Claimants in cases turning on causation. But if factors other than partisan rules correlate with particular outcomes, this would be a surprising observation especially if one such factor is the presence of a particular judge on the appellate panel. This may be less surprising in the Supreme Court where there is a relative freedom to fashion the law, but it would be less expected in a court which is theoretically more restrained by the law.

The use of quantitative methods and in particular machine learning and/or artificial intelligence is gaining increasing traction in our era of big data. It is spreading to the law.[25] Although this article does not claim that quantitative methods can be used to predict the likely outcome in all PI cases, it demonstrates a healthy prediction rate which could inform lawyers' and litigation funders' decisions about the prospects of success in individual cases. This information could encourage settlements based on litigation risk which could be calculated quite precisely as an algorithm can generate a precise probability of success. The article also draws attention to the factors which may act as the strongest predictors of likely outcome. Insofar as prediction is the lawyer's business,[26] then anything that sheds light on what a court might do given certain variables is going to be helpful to the practising lawyer, the student of law and others. To the extent that this study reveals that factors other than legal rules may lead to party bias in some cases, this study may also act as a useful reminder to judges of their humanity and the need for them to be alert to the potential operation of unconscious cognitive biases in their decision-making.

III. Clarifying the meaning of party bias

Many practitioners have an intuitive sense of the general distinction between Claimants and Defendants as groups of litigants. Firms of solicitors and barristers often make their names representing one category or the other. Institutions such as the Association of British Insurers and the Association of Personal Injury Lawyers are conventionally thought of as respectively Defendant and Claimant organisations. In the cases analysed in the study, Claimants are invariably individuals who have been injured as a result of another' negligence. Unless they have been especially unlucky in life or are fraudsters, they are probably one-off players. They may not be resource-poor given the availability of conditional fee arrangements, but they are probably risk averse: they probably need their damages more quickly than Defendants are prepared to pay them; and they may be inclined to accept settlement offers that undervalue their claim.[27] When Claimants succeed in court, the tenets of corrective justice are arguably achieved as a Defendant is required to remedy the injury wrongfully caused. The named Defendant is also often an individual. When the Defendant is not an individual but rather a corporate body, the Defendant is usually sued because of some individual's wrongdoing and because they invariably have a deeper pocket than the immediate wrongdoer. However, in both cases a proven wrongdoer is very rarely found to be personally liable.[28] This is because any liability is normally discharged by a liability insurer or

by the corporate body itself.[29] A finding of liability therefore has the distributional consequence of spreading the cost of the Claimant's loss widely even if a condition precedent of that loss-spreading is the Defendant's wrongful behaviour. The wrongful behaviour does not, however, have any personal consequences for the individual Defendant apart from the ignominy of being branded a tortfeasor in a court of law. They are blamed but rarely found personally liable. Whether tort liability has a deterrent effect on behaviour is a moot point. At best, the deterrent effect is marginal.[30] This study assumes that most, if not all, judges are aware of these facts despite the (ideological) language of individualism and personal responsibility that features so prominently in the law of negligence. Thus, for the purposes of this discussion, a pro-Defendant bias is taken to mean a pro-institution decision, or at the very least an anti-Claimant decision; it could also be seen as a pro-Have or anti-Have-not decision in the Galanter sense. Conversely, a pro-Claimant decision can be seen as a (sympathetic) decision favouring the individual or the underdog against some larger collective better able to absorb the individual's loss.

METHODOLOGY

i. Sampling

The sample was drawn from cases reported on *Westlaw*. The first search term was "injur!".[31] This search term was chosen for two reasons. First, it would capture

most individuals who had suffered harm in the form of personal injury. This group of harmed individuals stood as a proxy for the Claimant category. Second, as demonstrated in Figure 1 below, personal injury claims constitute an increasing proportion of the workload of the High Court of the Royal Courts of Justice, which in turn feeds into the stream of appeals. The initial search was filtered to Court of Appeal (Civil Division) decisions in tort law between 1 January 2002 and 31 December 2016. I chose the start date for two reasons. First, one of the judges that had sparked an initial interest in the study was promoted to the Court of Appeal in 2002. Second, to extend the range beyond 2002 risked skewing the sample and therefore the results of the analysis because the number of reported appeals in PI cases has reduced fairly dramatically over the years. Figure 2 demonstrates this downward trend. The trend runs in the opposite direction to the trend observed in Figure 1. So, whilst the High Court is seeing an increasing proportion of PI cases in its workload, the Court of Appeal is seeing a decreasing number of PI-related appeals. The end date also provides a full year's worth of data and the 15-year time-frame ensures that we have a broad cross-section of cases in the sample.
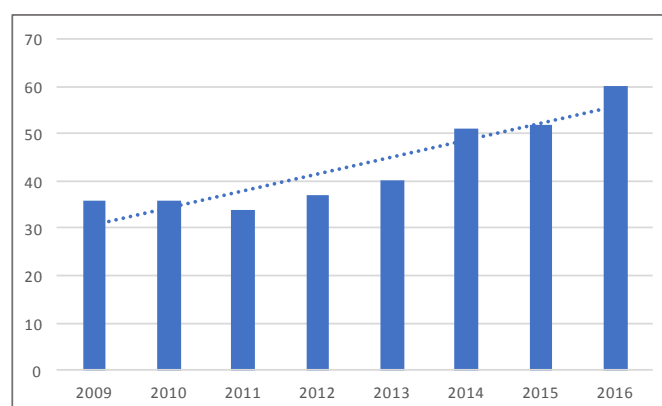
Figure 1: Annual relative frequency of personal injury and clinical negligence claims commenced in the High Court of the Royal Courts of Justice 2009-2016, with trend line.[32]
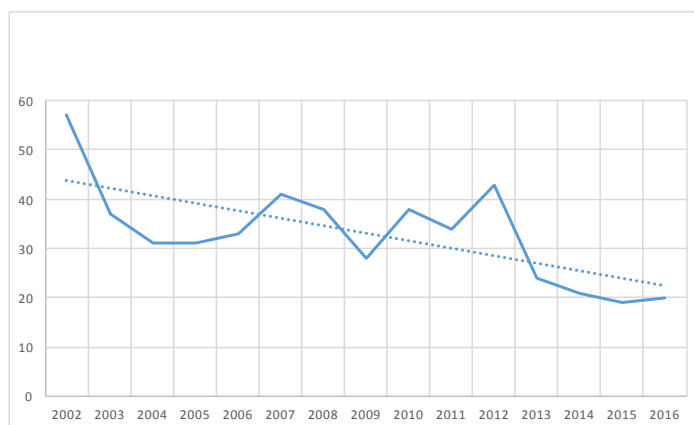
Figure 2: Annual number of appeals in sampled PI cases with trend line.

I manually screened the resultant sample to determine whether individual cases should be excluded from the final sample. Screening involved reading the summary *Westlaw* report of every case and where necessary the official judgment. The target cases were appeals in cases involving negligently inflicted PI which resulted in a clear win for either the Claimant or the Defendant. The reason for targeting non-intentional tort cases is that liability in such cases is normally discharged by proxies for the Defendant category: an insurer or a corporate body. This is not invariably the position in intentional tort cases. Similarly, cases not involving personal injury as the gist of the action could dilute the Claimant category. Cases involving intentional torts, carriage by air, economic loss cases (including Part 20 claims for contributions), procedural and/or costs appeals were therefore excluded unless

these issues were subsidiary to a main PI-related issue. Five cases were removed from the sample because it was not easy to identify a clear winner from the contents of the official report.[33] A further category of case was also removed: road traffic accidents between two or more cars. In this type of case it is often a matter of chance which party issues proceedings first, particularly where both parties are injured. In this situation, the distinction between a Claimant and Defendant becomes largely meaningless. This sort of case accounted for approximately 10% of the final sample.

There are 458 cases in the final sample. They were classified into categorical variables: which party appealed, the type of case, what broad legal issues were involved on appeal, the nature of the injury, the type of advocate representing each party, the identity of the judges on the appellate panel, the identity of any dissenting judge, whether the appeal resulted in a reversal, and whether the outcome was favourable for the Claimant or Defendant. There are sixteen categories for type of case (reflected in Table 3 below), fourteen for type of legal issue,[34] and five for type of legal representation.[35] Except for type of injury, all this information was coded and recorded in *Excel* and input into *SPSS Statistics*. Data was also input into two machine learning platforms: some early data collected for this study was input into *Data Robot*[36] and the final sample was input into *IBM Watson*.[37] Both platforms aim to identify the factors which can act as predictors or drivers of measured outcomes.

Some limitations about this type of exploratory study ought to be acknowledged. Those limitations can be classified under the heading of potential bias. For example, Clermont and Eisenberg have cautioned against only using win rates as an object of analysis. Their caution stems from the operation of the selection effect bias. This bias entails *inter alia* that observed cases are unlikely to reflect the "mass of underlying disputes"[38] because of the much larger number of cases that settle. This bias is undeniable if the researcher's concern is to understand the legal system as a whole. However, the more limited scope of this study was to focus on how Court of Appeal judges vote in the cases they decide. The main reason for focusing on voting behaviour rather than, for example, content analysis of judicial opinions is summarized in Goldman's legal realist hunch that "...votes in specific cases - what judges actually do - are more important in revealing their attitudes and values than are the rationalisations they provide in their written opinions telling us why they voted as they did."[39] This focus also takes seriously Herman Oliphant's claim from 1928 that "not the judges' opinions, but which way they decide cases will be the dominant subject matter of any truly scientific study of law."[40]

A selection bias was also suggested by Atkins.[41] He adverted to the selection bias caused by reported cases. His finding that the pro-Defendant bias was even more acute in unreported cases implies a distorting effect caused by the absence

of those unreported cases if they cannot be included in the sample. However, many more cases are reported now than was in the case in 1992. Therefore, a significant bias caused by unreported cases is now less likely. Additionally, as is generally recommended in the literature,[42] the coding adopted has not been subjected to a reliability check by another coder.

ANALYSIS

i.   Reversal and favourable outcome rates: Defendant advantage

We have seen that earlier studies confirm a pro-Defendant bias in different areas of law and across jurisdictions. This is so whether we look at reversal or outcome rates. The distinction between the two is that the reversal rate measures how frequently Appellants overturn a lower court's decision whereas the favourable outcome rate includes how often any party successfully appeals (*ie* reverses) or resists the other side's appeal. For the purposes of the analysis, the reversal rate included twenty-three cases of partial successes. However, when measuring favourable outcomes, the analysis only included clear wins for either party.[43] Although we are mainly interested in the favourable outcome rate, the study confirms a Defendant advantage in terms of reversal rates. However, the reversal rate across the board would not look promising to a litigation funder. Crucially, neither Claimants nor Defendants reverse more than 50% of the time: Claimant Appellants reversed the lower court's decision in 39.5% of their appeals,[44]

Defendant Appellants reversed 47.3% of theirs.[45] There is some variability between types of case, but the combined reversal rate is only 44.3%.[46] This implies that over the long term any appellant is more likely to lose than win their own appeal. Given that litigation funders usually require a probability of success of more than 50% as a precondition for continued funding, it may strike some as surprising that so many PI cases reach the Court of Appeal in the first place. This insight may also explain why the overall number of appeals is falling. That said, the 44.3% reversal rate in the sample is substantially higher than the average 35% reversal rate identified by Atkins between 1952 and 1983.[47] The elevated reversal rate in the sample is borne out by official statistics. *Judicial Statistics*[48] state an average reversal rate of 39.5% for appeals from the Queen's Bench Division ('QBD') of the High Court and 46.5% for appeals from the County Court between 2008 and 2016. If the figures are combined to take into account that there are more appeals from the County Court than the High Court, then as demonstrated in Table 1 below, the combined average reversal rate is 43.9% although it slumped to a low of 33.1% in 2015.

Year	Allowed	Dismissed	Total	Reversal Rate
2008	109	142	251	43.4
2009	92	99	191	48.2
2010	132	123	255	51.8
2011	110	129	239	46.0
2012	108	136	244	44.3
2013	96	122	218	44.0
2014	82	121	203	40.4
2015	53	107	160	33.1
2016	52	85	137	38.0
Total	834	1064	1898	43.9

Table 1: Outcome of appeals from County Court and QBD of the High Court to the Court of Appeal (Civil Division) 2008-16. Source: *Judicial Statistics*.[49]

The reversal rate drawn from *Judicial Statistics* includes all appeals from both the QBD[50] and County Court[51] and therefore encompass more than just PI cases. Nevertheless, the combined data evidences a declining reversal rate which is mirrored in the sample data. The closeness of the average reversal rate, its downward trend and the fact that a large majority of the population of PI cases was captured during sampling implies that the final sample is reasonably representative of the population of cases.

What happens when we focus on outcomes instead? Logically, the favourable outcome rate is higher than the reversal rate because it includes those cases where a party has successfully resisted an appeal. The Defendant advantage persists, but Defendants can now claim that their chances of a favourable outcome in the long run are over 50%. As noted in Table 2 below, Claimants had favourable outcomes in 45.4% of their cases including cross-appeals whereas Defendants were successful in the other 54.6%. When cross-appeals are excluded, there is a commensurate drop in success rates, particularly for Claimants, where the success rate falls to a mere 37.4%. The Defendant success rate also fails to reach 50%, although at 49.1% Defendants are about a third more likely than Claimants to emerge as the winner. This difference has not been tested for statistical significance on the basis that the samples may not be truly independent. However, the general message seems to be that prospects of success are generally better for Respondents than Appellants,

but Claimants' chances improve significantly when there is a cross-appeal – particularly where it involves contributory negligence.

		Appellant			Total
		Claimant	Defendant	Cross-Appeal	
Winner	Claimant	82 (37.4%)	112 (50.9%)	14 (73.7%)	208 (45.4%)
	Defendant	137 (62.6%)	108 (49.1%)	5 (26.3%)	250 (54.6%)
		219	220	19	458

Table 2: Successful outcome rate as a function of identity of the Appellant, including cross-appeals.

As Table 3 below demonstrates, there is some variability in success rate depending on the category of case, yet Claimants only have a more than evens chance of a favourable outcome in three categories: Claimant cyclists (66.7%), public liability ('PL') non-occupiers' cases involving public body Defendants (61.5%) and in clinical negligence cases (52.9%). Conversely, Claimants were least successful in occupiers' liability ('OLA') cases against public bodies (26.7%), although their success rate increased markedly (to 41.7%) against private Defendants in OLA cases.

Type of Case	No. Cases	Relative Frequency (%)	Favourable outcome (Claimant)	Claimant Success Rate (%)
Employers' Liability	**175**	**38.2**	82	46.9
Road Traffic *	**84**	**18.3**		
Pedestrian	32	7.0	16	50.0
Motorcycle/moped	25	5.5	10	40.0
Passenger	18	3.9	7	38.9
Cyclist	9	2.0	6	66.7
Other: Private Defendants	**55**	**12.0**		
Occupiers' Liability (OLA)	24	5.2	10	41.7
Public liability (non-OLA)	31	6.8	14	45.2
Other: Public Bodies	**121**	**26.4**		
Clinical Negligence	51	11.1	27	52.9
Social Services	19	4.1	6	31.6
Highways Act	16	3.5	7	43.8
Occupiers' Liability	15	3.3	4	26.7
Public Liability (non-OLA)	13	2.8	8	61.5
Emergency Services	7	1.5	3	42.9
Miscellaneous	**23**	**5.0**		
Animals	10	2.2	3	30.0
Holiday claims	11	2.4	5	45.5
Unclassified	2	0.4	0	0
Total	**458**	100.0	**208**	**45.4**

Table 3: Categories of non-intentional personal injury cases appealed between 1 January 2002 – 31 December 2016 with relative frequencies, favourable outcomes and success rate for Claimants. *Collisions between cars have been excluded for the reasons explained above.

One effect of using multiple categories is that the individual sample sizes become quite small. This is particularly relevant to Claimants' successes in the cyclist and PL (non-OLA) categories and their failures in OLA cases against public bodies. Nevertheless, the picture presented by Table 3 is clearly one of a general pro-Defendant advantage. These findings also confirm the impression that since 2002 at least, public body Defendants seem to have benefitted from strong legal protection in OLA cases compared with other types of case. Whether that

protection has become stronger since *Tomlinson v Congleton BC*[52] (the case involving a teenage boy who dived into shallow water in a former quarry, broke his neck and attempted to sue the Council owner occupier) remains an open question.

ii. Explaining the bias statistically

The question then arises whether it is possible to identify any factors which may explain the pro-Defendant bias. This is where quantitative research methods become especially useful. A central aim of much quantitative research is to uncover statistical relationships between independent and dependent variables. The independent variables are the potential causes of the dependent (or proposed outcome) variable. In this study, the overall winner variable was the dependent variable requiring an explanation by the other potentially explanatory independent variables. All the variables in this study are nominal categorical variables *ie* variables that fall into distinct categories where order is unimportant. The appropriate statistical test for independence of association between categorical independent and dependent variables is the Chi-square test. So, by way of example, running that test in SPSS[53] on Type of Case (as per Table 3) and Overall Winner reveals no statistically significant relationship between them. The test could be run on all the variables in turn, but machine learning platforms speed up this process considerably.[54] Both *Data Robot* and *Watson* revealed surprising candidates as potential drivers of outcomes. Although both platforms indicated that the identity

of the Appellant was a driver of the likely outcome, they also implied that the identity of the judges hearing the appeals was of greater significance in some cases. *Watson* suggested that the combination of the second and most senior judges (in that order) on an appellate panel was the strongest driver of outcome, with a predictive strength of 63%. *Data Robot*, which processed an incomplete sample of cases, suggested similar drivers of the overall winner: the second most senior judge, followed by the most senior and finally the junior judge were more important drivers of the winner category than the identity of the Appellant, the type of case, the nature of legal representation or the legal issues at stake in the appeal. In reality, it is a combination of factors which will produce a particular outcome. But *Data Robot* claims to be capable of discovering the best algorithm for predicting outcomes based on all the variables used in a dataset. Whilst I had access to the *Data Robot* platform, I ran *Data Robot's* final algorithm on a fresh sample of 49 cases. *Data Robot's* algorithm predicted the correct outcome in 35 of them. This is a success rate of 71.4%, which although not as impressive as the 79% success rate claimed by Aletras *et al*, it is probably better than many lawyers' best guess in cases that go to appeal; it is almost certainly more precise. This level of predictive accuracy may help explain why elite law firms are turning to artificial intelligence, including machine learning, to improve efficiency even if the final decision on whether to litigate or pursue an appeal is probably still made by a human being.

The machine learning platforms suggested that the identity of the Appellant was a predictor of outcomes. Quite simply, being a Claimant or a Defendant was

associated with a particular outcome. *SPSS Statistics* confirmed a statistically significant association between identity of Appellant and outcome (p = 0.01);[55] and we can simply look at Table 2 to observe big differences in success rates depending on who is appealing. However, this does not tell us why being a Claimant or Defendant Appellant should make a difference to the outcome. This is where statistical analysis can help untangle which factors are likely to be playing meaningful roles in the outcome. The appropriate test to use in this context is binary logistic regression.[56] This test allows the researcher to test whether particular variables are associated with a particular outcome at statistically significant levels whilst controlling for other variables. Regression tests revealed no statistically significant relationship between the type of case, legal representation or main legal issue and outcome (although if the main issue related to quantum of damage, it came close to statistical significance). Given the number of judges in the sample, the regression analysis could not test for an association between judges and outcome although the Chi-square test revealed a statistically significant relationship between the most senior judge on the panel and the outcome (p = 0.04).

In summary, according to *SPSS* the variables which were most significantly associated with particular outcomes were whether the Appellant was a Claimant or a Defendant and the identity of the most senior judge on the appellate panel. When the Appellant was the Defendant, and not controlling for any other factor, that Appellant was 4.68 more likely to obtain a favourable outcome than a Claimant Appellant. To test whether the presence of a particular judge on the appellate panel

is associated with a particular outcome, the data set was restructured[57] so that there was a separate record for each judge's vote. The result of the Chi-square test as applied to the whole sample revealed a statistically significant association (p = 0.05). However, a majority of the 133 judges in the sample had sat on five or less panels.[58] This renders the Chi-square test unreliable. It would be possible to run the test on all judges with experience of more than five PI panels, but a more accurate picture of individual voting behaviour is arguably obtained by considering judges with experience of more panels. For that reason, a subset of more experienced judges in this type of case was taken. Of the 133 judges, 20 had sat on twenty or more panels and between them, they were responsible for 624 votes, or 47.3% of all the votes cast. Table 4 below sets out those judges' pro-Claimant and pro-Defendant votes.

Judge	Panels	Pro Claimant vote		Pro-Defendant vote	
		No.	%	No.	%
1	25	10	40.0	15	60.0
4	27	8	29.6	19	70.4
5	28	12	42.9	16	57.1
9	50	22	44.0	28	56.0
31	20	8	40.0	12	60.0
32	34	9	26.5	25	73.5
33	27	19	70.4	8	29.6
38	60	40	66.7	20	33.3
39	24	12	50.0	12	50.0
40	37	26	70.3	11	29.7
43	50	30	60.0	20	40.0
47	30	20	66.7	10	33.3
53	20	10	50.0	10	50.0
62	34	15	44.1	19	55.9
68	27	14	51.9	13	48.1
69	22	13	59.1	9	40.9
72	37	16	43.2	21	56.8
75	24	12	50.0	12	50.0
83	24	6	25.0	18	75.0
91	24	9	37.5	15	62.5
	624	311	49.8	313	50.2

Table 4: Observed pro-Claimant and pro-Defendant votes of all judges sitting on 20 or more appellate panels taking into account dissenting votes.

The Chi-square test statistic on this subset of judges confirmed a strong statistically significant relationship between the identity of the judge and the outcome ($p < 0.001$), an even stronger association between judges and outcome than had been the case across the full sample. And this despite the fact that all the other variables were now in most cases being counted more than once following restructuring of the dataset.

Although a Chi-square test can only alert a researcher to there being an issue that should be investigated further, and cannot by itself indicate the direction of any relationship, each individual judge has a voting record which could be indicative of their personal tendency. What Table 4 reveals is that there are a number of judges in this subset who delivered pro-Claimant decisions at a much higher rate than the average (*eg* Judges 33, 38, 40, 43, 47 and 69). Conversely, there are also some high pro-Defendant rates (*eg* Judges 1, 4, 31, 83, 91 and especially 32). Overall the Claimants' success rate in the subset of cases was slightly higher at 46.1%[59] than the 45.4% success rate in the full sample. Although this is a very small difference (and probably cannot be tested for statistical significance as it would violate one of the assumptions of the z-test), one potential explanation for the difference could be that a number of the more experienced judges are more pro-Claimant in their voting behaviour than the less experienced judges. This point seems supported by the increased proportion of pro-Claimant votes amongst the

more experienced judges (49.8% of the votes cast). Given that inexperience of appellate panels logically entails smaller sample sizes, the study did not test that hypothesis directly; but it tested whether there is any statistically significant relationship between the identity of the more experienced judges and outcome whilst controlling for other factors. It did this using logistic regression.[60]

The results of the logistic regression revealed that at least one appellate judge delivered pro-Claimant decisions at levels that were statistically significant. This finding may in part explain why the Claimant success rate overall has improved slightly in front of the more experienced judges. The regression test applied to the judges and outcome whilst controlling for identity of Appellant continued to demonstrate a statistical relevance of being a Claimant or Defendant. However, the presence of Judge 40 on an appellate panel was associated with a 184% increase in obtaining a pro-Claimant outcome (p = 0.037). Two other judges (33 and 38) came close to delivering pro-Claimant decisions at statistically significant rates (with respective p values of 0.052 and 0.055). When adding in and controlling for the type of case, the presence of Judge 40 on the bench continued to be associated with pro-Claimant outcomes (p = 0.036). Judge 33 remained close to statistical significance (p = 0.056) and Judge 47 was pulled into the picture (p = 0.051) being associated with a 189% increased likelihood of a pro-Claimant outcome. When adding in and controlling for the type of legal representation, only Judge 40 remained pro-Claimant at statistically significant levels (p = 0.034) with the chances of a pro-Claimant outcome increasing to 200%. Finally, when adding in and

controlling for the main legal issue, Judge 40's pro-Claimant stance was no longer statistically significant although it remained close (p = 0.07); but the presence of Judge 33 on an appellate panel was now associated with a 283% increase in pro-Claimant decisions (p = 0.021). Judge 47 was close to being pro-Claimant at statistically significant levels (p = 0.055) with a 200% increase in the chance of a pro-Claimant outcome. Once all the variables were included, the identity of the Appellant ceased to be associated with a particular outcome at statistically significant levels but the type of case and main legal issue could be so associated: if the cases involved either OLA claims against private defendants or claims under the Highways Act then the odds generally strongly favour Defendants whereas if the main legal issue involves breach of statutory duty, causation, damages or a factual/evidential issue then the odds swing in the Claimants' favour. But once again, it is difficult to be precise in this context due to double counting of these variables.

Five of the six initially earmarked pro-Claimant judges retired from the Court of Appeal before the end of 2016: one in 2010, two in 2011 and another two in 2013. If there is an association between particular experienced judges on appellate panels and pro-Claimant outcomes, then if a number of the pro-Claimant judges have left the Court, it might be expected that pro-Claimant will have reduced commensurably. Such a trend appears to be confirmed by the study. Figure 3 below sets out the proportion of Claimant Appellants between 2002 and 2016 in comparison with the overall success rate for Claimants over the same timeframe.

The proportion of Claimant appellants reached peaks of 57.9% in 2014 and 2016. Those peaks also seem to be inversely proportional to pro-Claimant outcomes at 31.6% and 26.3% respectively. Conversely in 2005 and 2015, when the proportion of Claimant appellants fell to about 30%, their overall success rate was at least 50%. In only two years did Claimants have favourable outcomes in excess of 50% (55.2% in 2005 and 57.1% in 2010).
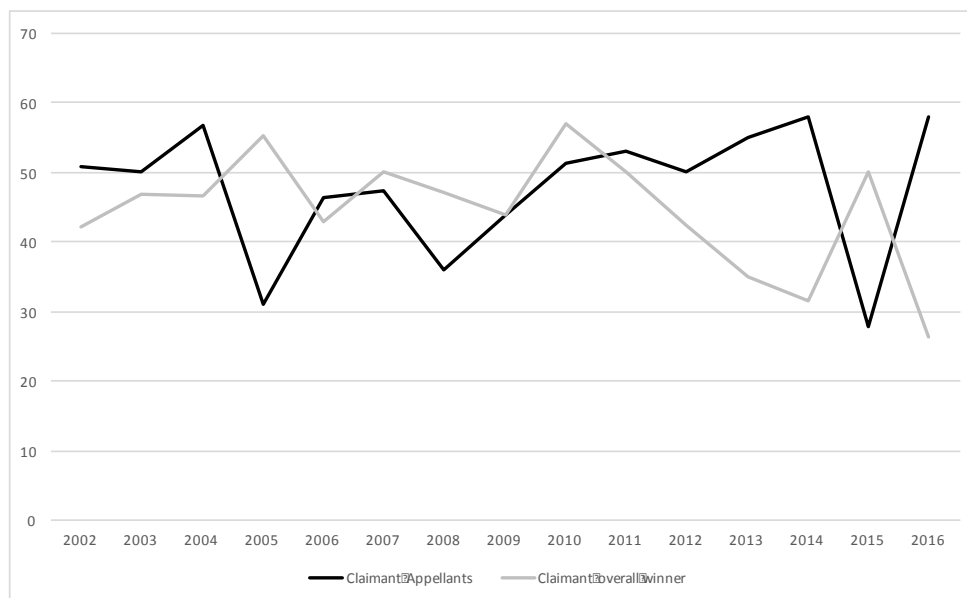

Figure 3: Proportions of Claimant Appellants compared with proportionate overall success for Claimants 2002-16.

If we consider the cases decided since the end of 2011 until the end of 2016, some 116 cases, the favourable outcome rate for Claimants dropped to 37.9% on average with a low of 26.3% in 2016. Over that timeframe, Claimants were Appellants 50% of the time. This is a significant drop in success rate compared with the previous

ten years when the average favourable outcome rate for Claimants was 48%. As Claimants were Appellants in 47.1% of the cases between 2002 and the end of 2011, there seems to be a negative relationship between being a Claimant Appellant and favourable outcomes. But the size of the fall in the favourable outcome rate for Claimants is much larger than the proportionate increase in Claimant-initiated appeals. As demonstrated in Figure 2 earlier, the number of appeals has fallen significantly in recent years. These observations tend to confirm the argument presented here that factors other than the identity of the Appellant *per se* are strong drivers of outcomes. Whether the anti-Claimant trend will continue remains to be seen as personnel in the Court of Appeal continues to change. But given that the new personnel are drawn from a pool of judges that, on average, is slightly more pro-Defendant than the more experienced pro-Claimant judges they replace, then unless greater experience of appellate panels in PI cases augments an individual judge's pro-Claimant leanings it is likely that the pro-Defendant bias will further intensify.

Just as Edwards and Elliott[61] have cautioned against the use of numbers to prove unfounded judicial bias, it could be suggested that factors other than party leanings of judges explain the distribution of decisions. It is not denied that there are other factors at play, but this study suggests that some contenders are not statistically significant. One of the points relied on by Edwards and Elliott was the notion that Defendants tend to take more 'arguable' points on appeal. Whether this is a claim predicated on the idea that Defendants have better lawyers, or

whether it is simply another version of Galanter's capability theory is not entirely clear. But the argument runs something like this: because repeat players in this type of litigation tend to be Defendants, they have a greater influence on which types of case are appealed (those being the ones they feel more confident in winning and which in turn they win); these favourable decisions then become "embedded in the substance of legal rights."[62] The logic of this argument, then, is that it is the law, the legal rights or rules, which determine any bias. However, this explanation would not account for any *pro-Claimant* bias observed in some judges. And if there is an observed pro-Claimant bias which is independent of legal rights, then there is reason to think that whatever explains the pro-Claimant bias in some judges – be they cognitive, cultural or personal biases, some of which are unavoidable – also explains any observed pro-Defendant biases. Furthermore, and by way of example, quantitative analysis of the sample cases did not reveal any statistically significant association between the quality of legal representation and outcomes. A very crude measure of the quality of legal representation is whether a party employed a QC or not. Using that measure, Table 5 below sets out the number of favourable outcomes in the full sample as a function of the quality of legal representation. Although that Table reveals that Claimants have proportionately more positive outcomes when represented by junior counsel facing a Defendant represented by a QC, there are only 27 cases in that category from which to draw any meaningful conclusions.

Representation	Outcome		Total
	Pro Claimant	Pro Defendant	
Neither party with QC	83 (41.9%)	115 (58.1%)	198
Both parties with QC	68 (46.9%)	77 (53.1%)	145
Winning party only with QC	29 (46.0%)	34 (54.0%)	63
Losing party only with QC	27 (52.9%)	24 (47.1%)	51
No legal representation	1 (100%)	0 (0.0%)	1
			458

Table 5: Pro-Claimant and pro-Defendant outcomes as a function of the quality of legal representation in whole sample.

However, when we analyse the subset of cases and count *votes* rather than favourable outcomes, then the distribution within the "losing party only with QC" category becomes very different. Table 6 below shows that when junior counsel represents Claimants against Defendants who are represented by a QC, the Claimant share of the votes reaches 67.6%. The equivalent proportion of votes, taking into account dissents and absent judges for that category of case within the full sample is only 50.4%.[63]

Representation	Votes		Total
	Pro Claimant	Pro Defendant	
Neither party with QC	123 (47.9%)	134 (52.1%)	257
Both parties with QC	95 (44.8%)	117 (55.2%)	212
Winning party only with QC	44 (50.6%)	43 (49.4%)	87
Losing party only with QC	46 (67.6%)	22 (32.4%)	68
No legal representation	0 (0.0%)	0 (0.0%)	0
			624

Table 6: Pro-Claimant and Pro-Defendant votes taking into account any dissenting votes.

The logistic regression test implied no significant relationship between the type of legal representation and outcome. Nevertheless, the Table reveals that in the subset cases Claimants seem to benefit from unequal playing fields in front of the more experienced judges. If some judges are by inclination pro-Claimant, then this makes sense because such judges may feel that the odds are even more unfairly stacked against risk averse, one-off litigants facing a resource-rich Defendant able to employ the services of a highly-paid silk. In this situation, the pro-Claimant/underdog or anti-institutional bias arguably becomes especially marked and may therefore provide a partial explanation for this striking observation.

FUTURE RESEARCH & CONCLUDING REMARKS

With the help of quantitative methods, this article has begun to answer some of the questions raised by the distribution of outcomes in personal injury decisions delivered by the Court of Appeal. But the research also leads to new questions which could be amenable to quantitative analysis. For example, have public bodies received better legal protection since the House of Lords decision in *Tomlinson v Congleton BC*?[64] Is the Court of Appeal in fact becoming increasingly pro-Defendant as predicted here, or are the last four years an aberration? Is the pattern of outcomes different when potentially pro-Claimant judges sit on the same panel as potentially pro-Defendant judges or if judges have to explain their decision by giving a reasoned judgment? Does a judge's experience of sitting on personal injury

appeals make any difference to their voting record over time? What other factors might be relevant predictors of outcome: the type of injury, the type of Claimant (in terms of their race, gender, age or profession) or a more specific category of Defendant beyond the public-private dichotomy used here. Additional factual variables could easily be crunched by machine learning platforms such as *Data Robot* and *Watson* to reveal hitherto unobserved patterns. And if the accuracy of prediction rates begins to exceed 80% based on just a few variables, then the more interesting question becomes when and why does the computer get it "wrong"; are novel cases the casualties of machine learning because the algorithm will be unfamiliar with the novel variables? Perhaps it is in these instances that the added value of the human lawyer comes to the fore. There are other questions which are less prone to quantitative analysis such as what does it really mean to be pro-Claimant or pro-Defendant? Is this a function of judicial attitudes towards risk and its distribution and allocation in society? Do judicial attitudes about the so-called "compensation culture" have an impact on outcomes? Could cognitive biases (to which all humans, including judges, are subject) account for some of the observed party biases? Can fluctuating judicial attitudes about judicial comity explain fluctuations in the reversal rate? Or is the return to the historic norm of 35% simply a function of current legal policy to keep disputes out of the court room? Some of these sorts of questions could be analysed statistically if judges would be prepared to answer survey questions. But judicial willingness to participate might be found

wanting if researchers told judges (as they ethically should) that the survey was testing for amongst other things the possibility of judicial bias.

Quantitative analysis can go a long way towards distinguishing between justified and unjustified impressions about the winners and losers in the Court of Appeal. This article has also suggested potential practical uses for machine learning in the business of assessing and settling cases. The study echoes earlier findings demonstrating a general pro-Defendant bias at appellate level. Defendant Appellants have better reversal and outcome rates than Claimants and are approximately 20% more likely to have a successful outcome irrespective of who appeals. Although neither Claimants nor Defendants can claim a reversal rate exceeding 50% - a matter which will be of interest to litigation funders and others – until recently the average reversal rate of 44.3% has nevertheless been higher than it has been historically (35%). However, as Table 1 demonstrates, the reversal rate over the last two years of the study (35.5%) fell back towards the historical average. Whether this low reversal rate represents a return to an historical norm and/or an unstated policy to discourage litigants from using courts, or is only a temporary correction remains to be seen.

Despite the observed pro-Defendant bias, it also appears that over the period of the study some judges with greater experience of determining personal injury appeals may have been delivering pro-Claimant decisions at statistically significant rates. This finding may act as a reminder to practitioners of adage to "know thy bench" before embarking on submissions let alone proceeding with a case.

However, when controlling for the identity of the Appellant, type of case, the main legal issue and the type of legal representation, only one judge of the twenty analysed fell into this category. Of course, this is an observation that could be put down to chance: you might expect to see such a distribution of decisions 5% of the time. And having one pro-Claimant judge in the Court of Appeal is scant consolation for Claimants who now experience successful outcomes less than 40% of the time. However, the fact that the mere presence of particular judges on an appellate panel might be associated with significantly increased chances of success for either party merits further investigation even if there are other things going on.

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[1] Kahneman, D. *Thinking Fast and Slow* (Allen Lane 2011) 30

[2] Goudkamp, J. and Nolan, D. 'Contributory Negligence in the Court of Appeal: an empirical study' (2017) Legal Studies 1.

[3] Roberston, D. 'Appellate Courts' in Cane, P. and Kritzer, H.M. eds. *The Oxford Handbook of Empirical Legal Research* (OUP 2010) 573.

[4] For a general history of legal empirical research in the US and UK see Adler, M. and Simon, J. 'Stepwise Progression: The Past, Present, and Possible Future of Empirical Legal Research in the United States and the United Kingdom' (2014) 41(2) Journal of Law and Society 173.

[5] Galanter, M. 'Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change' (1974) 9(1) Law & Society Review 95.

[6] Atkins, B.M. 'Selective Reporting and the communication of legal rights in England' (1992) 76 (2) Judicature 58.

[7] Paterson, A. *Final Judgment: The Law Lords and the Supreme Court* (Hart 2013). This came twenty years after his first study: Paterson, A. *The Law Lords* (Macmillan 1982). Paterson also notes the existence of other empirical studies of judicial attitudes, particularly related to the House of Lords *ibid*. footnotes 5 and 6: Robertson, D. *Judicial Discretion in the House of Lords* (Clarendon Press

1998); Hanretty, C. 'The Decisions and Ideal Points of British Law Lords' (2013) 43 Journal of Political Science 703.

[8] McCormick, P. 'Party Capability Theory and Appellate Success in the Supreme Court of Canada, 1949-1992' (1993) 27(3) Canadian Journal of Political Science 523.

[9] Stewart, P. and Stuhmcke, A. 'High Court Negligence cases 2000-2010' (2014) Sydney LR 585.

[10] Ipp, D. *et al.*, *Review of the Law of Negligence: Final Report* (Commonwealth of Australia 2002).

[11] Eisenberg, T. and Clermont, K.M. 'Plaintiphobia in the Supreme Court' (2014) 100 Cornell L. Rev 193

[12] *Celotex Corp. v. Catrett*, 477 U.S. 317 (1986); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242 (1986); *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574 (1986); and *Bell Atl. Corp. v. Twombly*, 550 U.S. (2007).

[13] Clermont, K.M. and Eisenberg, T. 'Appeal from jury or Judge: Defendants Advantage' (2001) 3 Am. L. Econ. Rev 125; Clermont K.M. and Eisenberg, T. 'Anti-Plaintiff Bias in the Federal Appellate Courts' (2000) 84 Judicature 128.

[14] Nagel, S.S. 'Testing Empirical Generalisations in Legal Research' (1963) 15(4) Journal of Legal Education 365. This article provides a useful template for any researcher wishing to adopt quantitative methods in legal research.

[15] Nagel, S.S. 'Applying Correlation Analysis to Case Prediction' (1964) Tex. L. Rev. 1006; Nagel, S.S. 'Predicting Court Cases Quantitatively' (1965) 63 Mich. L. Rev. 1411; Nagel, S.S. 'Judicial Prediction and Analysis from Empirical Probability Tables' (1966) 41 Ind. LJ. 403.

[16] Nagel, S.S. 'Some Statistical Considerations in Legal Policy Analysis' (1980) 13 Conn. L. Rev. 17.

[17] Grünbaum, W.F. and Newhouse, A. 'Quantitative Analysis of Judicial Decisions: Some problems in prediction' (1965) 3 Hous. L. Rev 201; Ruger T.W. *et al.,* 'The Supreme Court Forecasting project: Legal and Political Science Approaches to Predicting Supreme Court Decision making' (2004) 104 Colum. L. Rev. 1150 a study in which a statistical model correctly predicted the US Supreme Court's affirmation/reversal rate 75% of the time compared to a 59.1% success rate by "legal specialists".

[18] Aletras *et al* 'Predicting judicial decisions of the European Court of Human Rights: a Natural Language Processing perspective' (2016) Peer J Comput. Sci. 2:e93; DOI 10.7717/peerj-cs.93

[19] Franklin, M.A. 'Winners and Losers and Why: A Study of Defamation Litigation' (1980) Am. B. Found. Res. J. 455.

[20] *ibid.* 498.

[21] n 2

[22] *Caparo Industries plc v Dickman* [1990] UKHL 2.

[23] *Fairchild v Glenhaven Funeral Services Ltd* [2002] UKHL 22 and subsequent cases developing the material increase in risk doctrine.

[24] *Bailey v Ministry of Defence* [2008] EWCA 883 and subsequent cases.

[25] For a recent advertorial, see 'Why Lawyers Care About Machine Learning' by Conduent Legal and Compliance Solutions at http://www.lexology.com/library/detail.aspx?g=6808ad70-f5b6-4e4e-af62-60f165090f7d. Or the Information Commissioner's March 2017 publication 'Big data, artificial intelligence and data protection' at https://ico.org.uk/media/for-organisations/ documents/ 2013559/big-data-ai-ml-and-data-protection.pdf both accessed on 22 June 2017. See also Susskind, R. *Tomorrow's Lawyers: An Introduction to your Future* (2017, OUP) and Susskind, R. and Susskind, D. *The Future of the Professions: How Technology will transform the Work of Human Experts* (2017, OUP).

[26] Lawlor, R.C. 'Foundations of Logical Legal Decision Making' (1963) 4 MULL Mod Uses Log L 98. No doubt drawing on Holmes' aphorism mentioned above.

[27] See further Genn, H. 'Understanding Civil Justice' 50 CLP 155; Genn, H. *Hard Bargaining: Out of Court Settlement in Personal Injury Actions* (1987 OUP).

[28] Hedley, S. 'Making sense of negligence' (2016) Legal Studies 1.

[29] Hedley quotes the usual statistic of 94% derived from the Pearson Commission's report (*Report of the Royal Commission on Civil Liability and Compensation for Personal Injury* (Cmnd. 7054, 1978) vol. 2, para 509) and makes the point that although this statistic is old, "no serious observer imagines that it would be *lower* today" *ibid.* 6, footnote 23.

[30] There is some evidence of a deterrent effect of medical malpractice liability in the US: Zabinski, Z. and Black, B.S. 'The Deterrent Effect of Tort Law: Evidence from Medical Malpractice Reform' (2015) Northwestern University Law School, Law and Economics Research Paper No. 13-09. http://dx.doi.org/10.2139/ssrn.2161362

[31] By using an exclamation mark, all cases which include a word with "injur" in its root should be caught by the search term.

[32] https://data.gov.uk/dataset/civil-justice-statistics

[33] Those five cases were: *McDonald v Department for Communities and Local Government* [2013] EWCA Civ 1346, *AC v Devon CC* [2013] EWCA Civ 418, *Brown v Richmond upon Thames LBC* [2012] EWCA Civ 1384 *Goodwin v Bennetts UK Ltd* [2008] EWCA Civ 1374 and *Clark v Devon CC* [2005] EWCA Civ 266.

[34] Duty of care, breach of common law duty, breach of statutory duty, causation, remoteness, contributory negligence, illegality, limitation, vicarious liability, damages, procedural issues, evidence/factual issue, burden/standard of proof, other defences. There were up to four legal issue variables included per case. Most cases had one or two issue only. Just under 10% of cases had three or more legal issues and only 6 cases had four or more legal issues.

[35] Neither side with QC, both sides with QC, winning side only with QC, losing side only with QC, no legal representation.

[36] https://www.datarobot.com/

[37] https://www.ibm.com/watson/

[38] Clermont K.M. and Eisenberg, T. 'Do Case Outcomes Really Reveal Anything about the Legal System? Win Rates and Removal Jurisdiction' (1998) 83 Cornell L. Rev. 581.

[39] Goldman, S. 'Behavioural Approaches to Judicial Decision-Making: Towards a Theory of Judicial Voting Behaviour' (1971) 11 Jurimetrics J. 142.

[40] Oliphant, H. 'A Return to *Stare Decisis*' (1928) 14 American Bar Association Journal 159 quoted in Gillman, H. 'What's Law got to Do with It? Judicial Behaviouralists Test the "Legal Model" of Judicial Decision Making' (2001) 26(2) Law & Social Inquiry 465, 469.

[41] n 6

[42] Epstein, L. & Martin, A.D. *An introduction to Empirical Legal Research* (2014, OUP) 114.

[43] It is recognised that appeals exist in which a loss may nevertheless count as a win as far as an individual party is concerned. For example, a party (usually a repeat player) may wish to clarify the law for strategic reasons whilst losing a particular appeal. However, it is suggested that this is not a common phenomenon in personal injury cases in the Court of Appeal.

[44] Of the 219 Claimant Appellant cases with no cross appeal, the Claimant reversed 74 times (33.8%) and was partially successful in another 9 cases (37.9%). If the cross appeals are included (of which there were 19), the Claimant reversed another 11 times resulting in total reversal rate of 94/238 or 39.4%. There was a "score-draw" in 2 cross appeals: *Phethean-Hubble v Coles* [2012] EWCA Civ 349 and *Dziennik v CTO Gesellschaft fur Containertransport MBH and Co* [2006] EWCA Civ 1456.

[45] Of the 220 Defendant Appellant cases with no cross-appeal, the Defendants reversed 95 times (43.2%) and were partially successful in another 12 cases (48.7%). If the 19 cross appeals are included, Defendants reversed another 6 times resulting in a total reversal rate of 111/239 or 47.3%.

[46] This figure includes cross appeals. If cross appeals are removed from the analysis, the reversal rate falls to 39.3%.

[47] The 1990 Atkins study found an average reversal rate of 35% between 1952 and 1983. Quoted in Robertson, D. n 3, 578.

[48] Table 3.9 of the additional tables in *Judicial Statistics Quarterly* published on 2 June 2016 accessible via https://www.gov.uk/government/statistics/civil-justice-statistics-quarterly-january-to-march-2016-and-the-royal-courts-of-justice-2015.

[49] https://www.gov.uk/government/statistics/civil-justice-statistics-quarterly-january-to-march-2017

[50] Excluding Administrative, Family or Admiralty law cases.

[51] Excluding Family and Admiralty law cases.

[52] [2003] UKHL 47.

[53] Accessed via the cross-tabs function within descriptive statistics.

[54] For a technical overview of machine learning, see Genuer, R *et al* 'Random Forests: some methodological insights' (2008: INRIA Saclay) RR No. 6729.

[55] Put very crudely, there is a about a 1% chance that the observed outcomes would happen by chance.

[56] Accessed via *Analyze > Regression > Binary Logistic* in SPSS.

[57] Via the restructure data wizard in SPSS.

[58] Just over 60% of the judges had sat on 5 or less panels.

[59] The 46.1% figure relates to the proportion of cases won rather than the 49.8% figure set out in Table 4 which represents the proportion of pro-Claimant votes cast.

[60] The logistic regression test was run on an increasing range of variables. Because all the variables except the judges would often be counted more than once in the restructured dataset, if there was any sign of a statistically significant relationship between particular judges and outcome, then that significance would be an underestimate. Conversely, any sign of a statistically significant relationship between any other variable and outcome should be diluted due to the multi-level effect of double or sometimes treble counting of those other variables.

[61] Edwards, H.T. and Elliott, L. 'Beware of Numbers (and Unsupported Claims of Judicial Bias)' (2002) 80(3) Wash ULQ 723.

[62] n 6, 61.

[63] 67 of the 133 votes cast.

[64] n 52