Values, World Society and Modelling Yearbook 2016

Which is best? That is the question which several chapters address. Which is the best president (USA)? Which is the best policy (UK, Brexit)? Which is the best name (Dublin City Council's voting on the new bridge over the Liffey)? Which country has most Olympic gold medals? Which is the best Shakespeare play?

Social choice: the best Shakespeare play

Chapter 3   Shakespeare: World Society and World History
[draft, 4 September 2020]

"Um, where's Shakespeare?"
(Jeremy Hunt, cited by Danny Boyle, cited by Prescott and Sullivan, 2015)

As well as the analysis of the experts' rankings the chapter will include an analysis of Romeo and Juliet and a consideration of world society and world history using the following:
Maxwell, Dominic. "Globe-trotting with Hamlet." The Times Saturday Review. April 22, 2017: 16.
Dromgole, Dominic. *Hamlet. Globe to Globe.* Edinburgh: Canongate. 2017.
Prescott, Paul and Erin Sullivan. (Eds.) *Shakespeare on the Global Stage. Performance and Festivity in the Olympic Year*. London: Bloomsbury. 2015.
Also Pavel's 'A History of the Novel'.

Experts' rankings of Shakespeare's plays

Of the thirty-nine plays written by Shakespeare, which is the best? That was the question addressed in an intriguing investigation by *The Times* literary editor Dominic Maxwell. He asked "three dozen of Britain's most celebrated and opinionated Shakespeareans" to rank all the plays. He reports that:

> "… it was a closely run contest between the top two, and although King Lear appeared in most people's top ten, it wasn't in everybody's.
> After that there was a significant drop to third and fourth place. What was refreshing to see was how much opinion differed. Some plays, such as *The Merchant of Venice*, provoke wildly different reactions. So if you've ever come across a Shakespeare play you really didn't like, and maybe felt you'd failed in some way, don't worry.
> There's a Shakespearean professional out there who feels exactly the same."

The findings exemplify a common pattern for values in society. In a sense it is true to say that some objects in society are valued more than others but the statement is true only in a statistical sense. This arises because people have different values. A precise statement would take the form: 'a certain number of people value object A more than object B'. What an investigation like Maxwell's does is to tell us about the nature of *the social distribution of values* in a particular context.

The quotation above is not only about the social distribution of values – it is also about *what people feel about* the social distribution of values. How are we supposed to feel about people having different values? How are we supposed to feel about people having different values from our own values? More pointedly, are our values good or bad … right or wrong?

The quotation is about *people's beliefs about* the social distribution of values. Do beliefs match reality? In this case, do our beliefs match the findings of Maxwell's investigation? For example, one might have believed that there was a consensus amongst experts as to which were the best plays. The reality is that there is some measure of disagreement.

And also the quotation is about *people's values about the difference between beliefs and reality about* the social distribution of values! The reality may be positively valued in that it brings reassurance – "… don't worry … there's a Shakespearean professional out there who feels exactly the same" - or the reality may be negatively valued in that it undermines belief. (For my own part I must confess that the reality challenged my smug assumption that the rather limited number of plays I knew were the plays that were the best! Julius Caesar ranked 24th?) All this prompts reflection on what values are based on. Are values a reflection of objective merit or of subjective taste?

[I need to add here that judgments of value depend on the criterion being used. Different criteria may produce different judgments.]

The analysis of the data

We now proceed to look more closely at the social distribution of values in the rankings of Shakespeare's plays. Dominic Maxwell has very kindly shared his data with me and what follows is some further analysis. The

data consists of 34 experts voting on 25 plays. (One of the 34 experts is the joint vote of two experts.) These 25 plays correspond to the top 24 plays listed in the Times article plus Henry VI (ranked 28th to 30th). The original data also covered the other 14 – more-lowly ranked - plays. Although the experts were originally asked to rank all the plays the task was later reduced to requesting just the ranking of the top ten.

One criterion for the best play is the number of experts saying it is the best play. According to this criterion *King Lear* is the best play. Seven experts said so. No other play had as many experts saying that that other play was the best. Table 1 below shows the judgments of the experts as to which play was best. In second place *Hamlet* attracted the vote of six experts. *Macbeth* and *A Winter's Tale* each attracted the vote of three experts. *Measure for Measure*, *Much Ado about Nothing*, and *The Tempest* each attracted the vote of two experts. And a number of plays each attracted the vote of just one expert.

"What was refreshing to see was how much opinion differed."

The quality of being best is extremely strained! Not at all was it the case that there was a complete consensus with all experts agreeing that one particular play was best. Indeed fifteen plays had at least one expert judging it to be the best. For even the best play there were twenty-seven experts (80% of them) who said a different play was the best.

Three of the top four plays are tragedies. All the top seven plays are tragedies or comedies – none are histories.
http://www.opensourceshakespeare.org/views/plays/plays.php

Table 1 The number of experts saying a given play was best

No. of experts	Plays
7	King Lear
6	Hamlet
3	Macbeth; A Winter's Tale
2	Measure for Measure; Much Ado about Nothing; The Tempest
1	Henry IV, Part II; Love's Labour Lost; Merchant of Venice; Othello; Titus Andronicus; Twelfth Night; [two other plays]

"After [the first two] there was a significant drop to third and fourth place."

A technical point. Overall a few plays were best for many experts and many plays were best for just a few experts. This is a very common pattern and a very simple model is provided by a geometric series. Listing the plays in decreasing order of 'expert support', the number m of expert 'bests' is given by $m=7(27/34)^n$ where n is the play's place in the list (n starts at 0).

Figure 1 A technical point: the distribution of experts' best rankings

m: the number of experts ranking play as best

.   n: plays listed in decreasing order of m
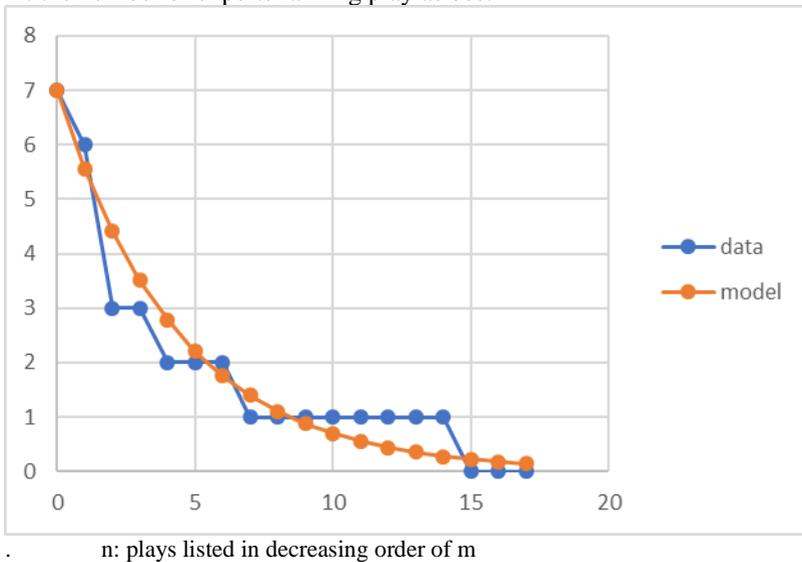
A broader criterion for the best play is the number of experts saying it is *either* the best play *or* the second-best play. We might refer to this as the 'top-2' criterion. By the top-2 criterion Hamlet beats King Lear: 13 experts v. 11 experts. Similarly we can define the 'top-3' criterion … the 'top-10' criterion. By the top-10 criterion King Lear beats Hamlet: 27 experts v. 24 experts.

Figure 2 lists the plays in the order given in the original article in *The Times*. It compares the plays according to the ten different criteria: the top-

1 to top-10 criteria. Each play is represented by a line. Higher lines represent plays with more expert support. Occasionally the lines cross indicating that one play 'overtakes' another play as the criterion used changes.

The ten criteria order the plays in much the same way but there are a number of instances of one play overtaking another.

Here too the three of the top four plays are tragedies. All the top nine plays are tragedies or comedies – none are histories.
http://www.opensourceshakespeare.org/views/plays/plays.php

Figure 2 The number of experts saying a given play is in the top-k

The number of experts placing the play in top-k

.   ten different criteria, placings in top-k   also Henry IV, II
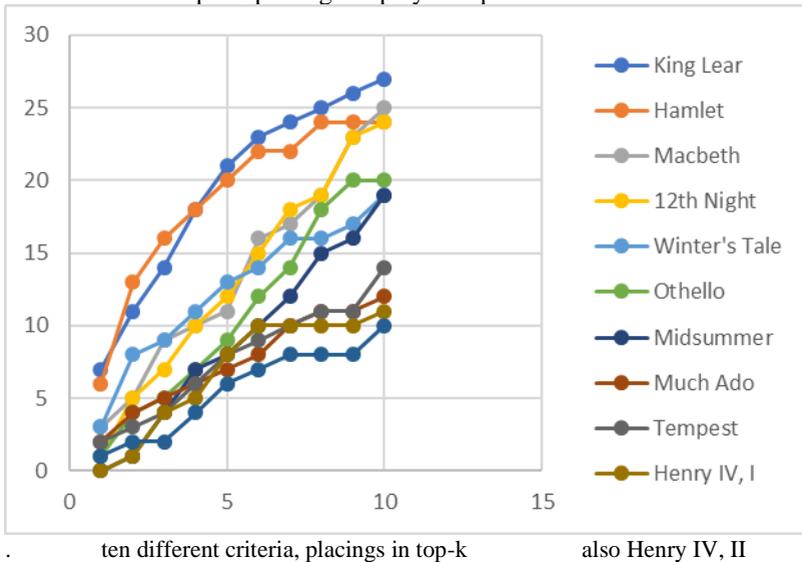
Dominic Maxwell however uses a different criterion. He uses the sum of rankings. This is equivalent to the mean ranking. The distinction between the 'top-1' criterion and the mean ranking criterion is worth commenting on. This distinction corresponds to the debate in the voting literature between the first-past-the-post criterion and the Borda count. [This will be discussed in a later chapter.] Of course the mean is the fundamental measure used in most statistical analysis.

Table 2 below lists the plays in the order given in the original article in *The Times*. It compares the plays in terms of three criteria: the mean, the third quartile and the top-10. The three criteria all order the plays in much the same way. However there are some differences in the orderings demonstrating again that the choice of the criterion can affect the 'results' – and thus providing room for contention!

Notes:
(i) The third quartile is used here as a substitute for the median. For this data the median is not very informative because rankings are available only for the top ten places.
(ii) Table 2 uses a slightly different definition of the mean from that in The Times. The order is almost identical with the order according to the mean*. The original ranking is based on the sum of ranks given. This is equivalent to the mean ranking. The mean ranking quoted is based on the same data set except that the two experts are treated as just one. Both means assign a zero score where no ranking is given outside the top ten.
*Exceptions are adjacent switches of: *Much Ado about Nothing* and *The Tempest*; *Anthony & Cleopatra* and *Measure for Measure*; and *Coriolanus* and *Titus Andronicus*. Also the mean of Henry VI is anomalously high because I used the highest rated Part in my calculations.

Here again three of the top four plays are tragedies. All the top nine plays are tragedies or comedies – none are histories.
http://www.opensourceshakespeare.org/views/plays/plays.php

The final column of Table 2 has nothing to do with the experts' rankings. The source is quite different. It is an attempt to obtain an independent measure of the relative importance of the plays using the frequency of mentions of each play in the book *Shakespeare on the Global Stage*, as reflected in mentions in the book's Index (Prescott and Sullivan, 2015, pp. 352-353). There is at best a very weak relation between the expert's rankings and the mentions in the Index. Note that five plays have six or more Index entries – but none of them are histories.

Correlations between the rankings

[More work needs to be done on this section.]

Because the plays are competing for a high ranking there is a tendency for there to be a fair number of negative correlations. The most negative

**Table 2** The mean, third quartile and top-k ranking for each play

.	mean	3rd quart	top-k	Index
King Lear	5.8	9	27	6
Hamlet	5.6	9	24	12
Macbeth	4.1	7.8	25	3
Twelfth Night	4.0	7	24	2
The Winter's Tale	3.7	7.8	19	2
Othello	3.2	5.8	20	8
A Midsummer Night's Dream	2.7	5	19	2
Much Ado about Nothing	2.2	4	12	1
The Tempest	2.3	4.8	14	23
Henry IV, Part I	2.0	4.8	11	2
Henry IV, Part II	1.7	1.4	10	1
As You Like It	1.6	2.9	12	2
Anthony & Cleopatra	1.4	1.5	9	2
Measure for Measure	1.5	2	12	0
Richard II	1.4	2.5	10	1
Coriolanus	1.1	1	10	2
Titus Andronicus	1.2	0	6	0
Romeo & Juliet	1.0	2	11	8
Richard III	1.0	0	6	5
The Merchant of Venice	0.9	0	8	3
Love's Labour Lost	0.7	0	3	0
Henry V	0.6	0	5	5
The Comedy of Errors	0.5	0	5	0
Julius Caesar	0.2	0	2	3
[three other plays]				
Henry VI, Parts I to III	1.4	0	7	3
[twenty other plays]				

correlation is -0.4. This was between Hamlet and Henry IV, Part II. This arises because experts who gave a top-ten ranking to Hamlet tended not to give a top-ten ranking to Henry IV, Part II – and vice versa. See Figure 3. However there were also a good number of positive correlations. The highest was 0.6 between Henry IV, Part I and Henry IV, Part II. See Figure 4.

8   e

**Figure 3** A negative correlation between Hamlet and Henry IV, Part II
Henry IV, Part II

.   Hamlet
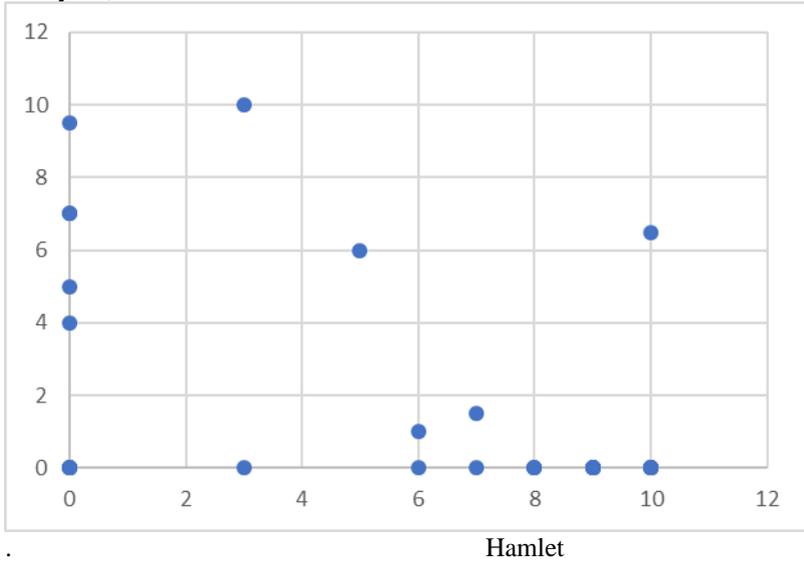
Figure 4 A positive correlation between Henry IV, Part I and Henry IV, Part II
Henry IV, Part II
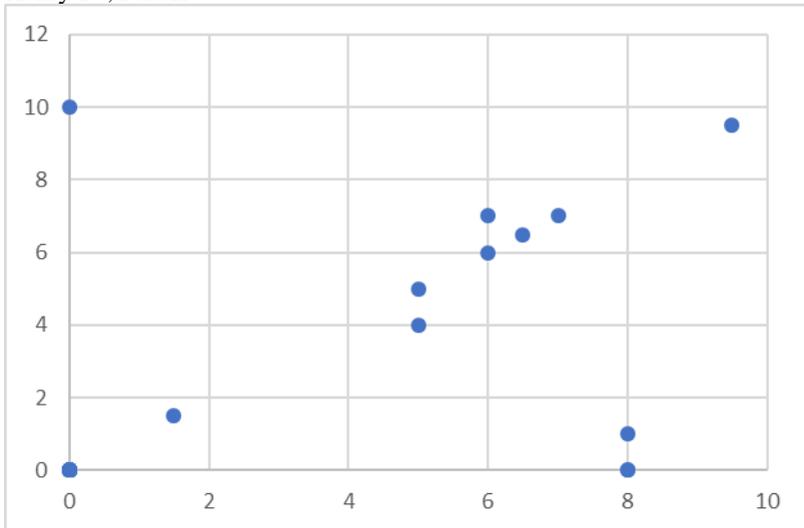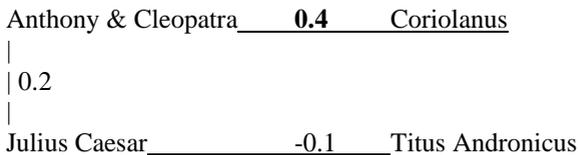
.   Henry IV, Part I

The plays could be grouped into clusters of plays with positive correlations between one another. Figures 5 to 8 show: a cluster of tragedies including The Tempest; a cluster of Roman plays; a cluster of the historical plays; and a cluster consisting of two comedies and a historical play. The numbers indicate the size of the correlations between plays.
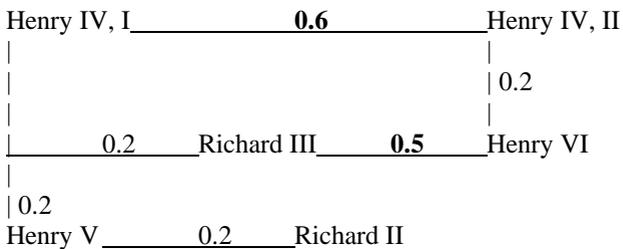
Figure 5 Correlations between some of the tragedies and comedies

Romeo & Juliet **0.4**   Tempest **0.4**   Winter's Tale
| |
| 0.3   [0.3 R&J,M] | 0.3
| |
Hamlet   0.3   Macbeth
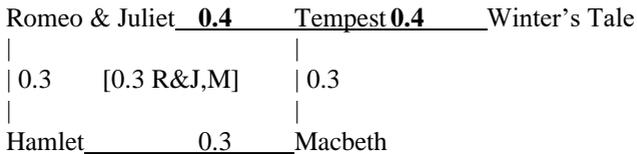
Figure 6 Correlations between the Roman plays

Anthony & Cleopatra   **0.4**   Coriolanus
|
| 0.2
|
Julius Caesar   -0.1   Titus Andronicus

Figure 7 Correlations between the historical plays

Henry IV, I   **0.6**   Henry IV, II
| |
| | 0.2
| |
| 0.2   Richard III   **0.5**   Henry VI
|
| 0.2
Henry V   0.2   Richard II

Figure 8 Correlations between three plays

Henry V   **0.6**   Comedy of Errors
| |
| |**0.5**
| |
| **0.3**   Love's Labour Lost