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Shakespeare, Social Media and Social Networks

Shakespeare has a lot to say about *Social Media* and *Social Networks*. In a quick review of the literature, we find Shakespeare's dramas have a similar number of characters to those found in natural social networks, which is something we do not find in works by other playwrights. The works of Shakespeare have also generated a growing topic of discussion in the context of technology social media – so much so that there is a call from engineering researchers who see the need to bring Shakespeare to their classrooms. As Brent Strong comments in his article *Why Engineers Should Read Shakespeare*:

My job as a professor, increasingly, is to suggest that engineers build bridges and to demonstrate the building of such bridges, literal as well as figurative bridges. The bridges may be between engineering and business or between engineering and industry. They may even be between engineering and the arts and



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humanities. But most of all, they are between engineers and those who surround them. The question each of you must answer is whether you want to make the effort to build bridges of significance. That takes effort. Perhaps your effort can begin with Shakespeare (12).

In this context, we think that if Shakespeare had the genius to capture certain properties of the human nature of social networks, and at the same time, to continue to generate cross-cutting debates in modern-day social media and in engineers' education, then it is necessary show the points of contact of his works with our actual present-day social networks.

Social Media and Shakespeare's Plays

Today, when speaking about social networks, we immediately think of

sites such as *Facebook*, *Twitter*, *LinkedIn*, *Pinterest*, *Telegram*, or *Wattpad*, among social media tools. It is interesting that the concept of social networks came before the invention of the Internet. Within this context, we can find different metaphors for social media in Shakespeare's plays that may help build bridges between science and the humanities. We will mention only a few examples.

In his article "Could Shakespeare Have Tweeted Hamlet?," Joel B. Predd (10) compares the number of letters a person can tweet and those a character can speak at a time, but he arrives at a negative conclusion. According to him, the limit of characters that can be tweeted is 140, which would be more than those included in each line assigned to a character in a Shakespearean play. Nevertheless, Predd does not consider that Shakespeare wrote most of his plays in *blank verse* with regular

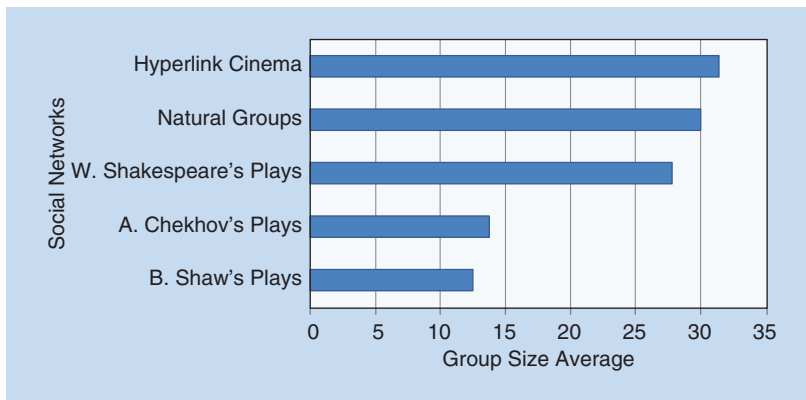


FIGURE 1. Group size mean in different types of social networks.

meter but rather unrhymed lines of iambic pentameter: a verse or line of five feet, normally with ten syllables, alternately unstressed and stressed (3), all of which could hardly exceed 140 characters. From this point of view, it is likely that Shakespeare could have tweeted an important portion of blank verse in *Hamlet*, just as he could have done with other plays.

On the other hand, and to go on with the metaphor of communication networks, Wellman & Rainieen (14) comment in their article “If Romeo and Juliet had Mobile Phones” about the impact of communication media in social relationships. They point out that “the story of Romeo and Juliet is the story of two individuals escaping the boundaries of their densely-knit groups. It is a story of the social network revolution that began well before Facebook: the move from group-bound societies to networked individuals” (14). Thus, they conclude that if Romeo and Juliet had brought mobile phones with them, they would not have committed communication mistakes; therefore, the play would not have ended tragically.

Other authors expand the metaphor of communication beyond mobile phones and turn Shakespeare’s plays into a digital reality amenable to computer analysis. In

an up-to-date and “human” version of this topic, Eric T. Nalisnick and Henry S. Baird (see (6), (7)) analyze Shakespeare’s plays as if his scripts were true communication traces in a social network. In their article “Extracting Sentiment Networks from Shakespeare’s Plays,” they perform an algorithmic sentiment analysis. They find that through such an analysis it is possible to identify positive and negative feelings among the characters.

From a social media approach, the three cases already mentioned contribute to reinterpret Shakespeare’s plays from a different perspective that not only makes the playwright more meaningful to young generations, but also builds interdisciplinary links between literature and engineering.

Shakespeare’s Plays as Social Networks

Shakespeare’s genius undoubtedly lies in his capacity for both observation and building plots that capture the essential aspects of human nature. One of the many parameters of a social network is its group size, which shows the number of nodes that a given network possesses. Is the number of characters in networks created by Shakespeare in any way similar to natural networks? There are only

a couple of studies that indirectly answer this question.

During the last decade it has been possible to verify, from an empirical approach, that Shakespeare’s plays are highly similar to different types of social networks. For instance, Stiller and Dunbar (11) confirmed that the average group size in Shakespeare’s plays is similar to that found in natural networks. The similarity of characters’ exchanges between Shakespeare and these networks is not casual or unsystematic, and in fact does not occur in the case of other dramatists. For example, Voloshinov & Gozhanskaya (13) have corroborated that authors as important as Chekhov and Shaw wrote their first plays with a smaller number of character exchanges compared to the ones written by Shakespeare (see Figure 1).

Finally, and despite the fact that Krems & Dunbar did not find statistical evidence about the mean group size in Shakespeare’s plays (mean = 27.8) compared to the mean number of characters in a film (mean = 31.42), they state that “the actual numerical difference is in fact rather small” (4). Therefore, and according to recent findings, we should highlight the fact that group sizes in Shakespeare’s plays are similar to the ones in other social networks (see Table I). We shouldn’t forget what Shakespeare also expressed in *Othello*: “’Tis true: there’s magic in the web of it (...)” (3.4.69).

Shakespeare as a Bridge

The question of who Shakespeare was (see (1), (2)) has long been a topic of controversy. Shakespeare was, above all, a poet and playwright (i.e., a writer of plays; a dramatist) who worked on the basis of mimesis, or imitation, in his act of creation. However, there is less

discussion about how he connected people and drama.

On the one hand, we get the impression that Shakespeare's wit – his creative and imaginative mind – enabled him to design and represent the natural human characteristics of groups and their relationships (see (8)). Shakespeare's scripts were the technological devices he had to link people and drama. On the other hand, today the interactions that exist among Shakespearean characters are similar to those we find in social media tools. In this sense, Shakespeare could be considered an "Engineer of Social Systems"; that is to say, one who designs realistic social networks.

Technology and the humanities share the same objective: to facilitate communication among people in a globalized world. For many individuals who work to develop technology to benefit humanity, Shakespeare can become a source of knowledge about human nature and the way in which people communicate. This task requires creating paths to connect people with people, a challenge that many engineers currently undertake. Perhaps some of them could borrow these abilities by looking at Shakespeare.

Shakespeare used the work "engineer" in *Othello* (2.1.65) to signify "one who invents and fashions systems" (9). Engineers therefore can build new bridges between engineers and those who surround them. In the same way that Shakespeare's scripts are the bridge between audience, actors, and stage, social media and social networks are bridges that link people with the events and experiences of other people. In this sense, the playwright's statement that "All the world's a stage" (*As You Like It*, 2.7.140) becomes more meaningful than ever.

Table 1. Group Size in Different Types of Social Networks.

Type of Network	Social Network	Group Size
<i>Natural groups</i>	Hunter-gatherer camps	25
	Hunter-gatherer camps	37.7
	Australian aboriginal camps	25.82
	British social networks	35
	Russian social networks	24.8
<i>Hyperlink Cinema</i>	21 Grams	25
	Ajami	32
	Amores perros	31
	Babel	34
	Crash	33
	Happy Endings	24
	Hereafter	34
	Love Actually	37
	Magnolia	31
	Mammoth	32
	Syriana	33
	Traffic	31
	<i>W. Shakespeare's plays</i>	Richard III
Romeo & Juliet		35
Hamlet		33
Troilus & Cressida		29
King Lear		28
Titus Andronicus		24
A Midsummer Night's Dream		23
Othello		22
The Tempest		19
Twelfth Night		18
<i>A. Chekhov's plays</i>	The Seagull	13
	Uncle Vanya	10
	Three sisters	14
	The Cherry Orchard	18
<i>B. Shaw's plays</i>	Pygmalion	12
	Heartbreak House	13

Note: This table was compiled from the research published by [4], [11], [13].

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(continued on page 30)

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VIEWPOINT (continued from page 19)

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