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Argumentative Intelligence

Marc Lauritsen*

Argumentation is one of the most researched and discussed topics in the artificial intelligence ("AI") and law community. After decades of scholarship, we have a rich literature and vibrant centers of ongoing exploration. Yet that work seems to have had little impact so far on the real-world behavior of humans in law-related contexts. Few technologies that support arguers have gained traction. Why is that? We need "smarter" arguments more than ever. What new roles for AI are worth imagining and pursuing? Might it, for instance, help us determine when an issue has been argued about "enough" to consider it settled?

> Well have you argued, sir; and, for your pains,
> Of capital treason we arrest you here.
>
> Earl of Northumberland (to the Bishop of Carlisle), in Richard II (Act IV, Scene 1)

Introduction

This article was inspired by three things:

1. The "in memoriam" for Doug Walton that appeared in the September 2020 issue of the *Artificial Intelligence and Law Journal*;[1]
2. My long-standing interest in "who wrote the works of Shakespeare?"; and
3. Claims by former U.S. President Trump that the 2020 election was "stolen" from him.

In addition to celebrating a wonderful member of our community, and highlighting the work of others whose careers were enriched by collaboration with Doug, the memoriam provides a convenient high-level summary of scholarship around argumentation. His more recently appearing book with Fabrizio Macagno and Giovanni Sartor[2] on statutory interpretation goes much deeper.

In addition to cementing the reputation of a former president as a dangerous fraud, his Big Lie of a "stolen election" precipitated

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a violent attack on the U.S. Capitol and has inspired a batch of voter-suppression measures around the country.[3]

This article includes a look at the Shakespeare authorship controversy, followed by an admittedly naïve take on how we might approach a key question in such debates: When is enough enough? In other words, from the point of view of an argument observer, what constitutes a sufficient basis to adopt one position over another? What aspects of the structure and state of a dialogue justify us in regarding it as "over"? Do we need a non-procedural account of sufficiency of evidence/argument?

I am a lawyer, educator, and legal technologist who has long followed AI and law developments. As a practitioner, teacher of practitioners, and tool-maker for practitioners, I purport no expertise in argument theory. So, this piece might be seen as an exercise in self-ethnography. An introspective look at one decision maker's experience in the face of arguments from the perspective of one seeking to choose among competing stories.

This article is organized as follows. After an introductory framework, two sections detail an example of a complex factual argument. The next section raises questions about how such arguments might be judged. This article then presents an approach to how they might usefully be mapped, mentions several argument technologies presently in real world use, considers why so few are used by practitioners, and briefly explores ways in which AI might help. It then concludes.

Artisans of Argument

Lawyers, like most humans, "make" arguments all the time. It is one of the most common things we do. Many of us have read books and papers on argumentation. Yet few professional arguers make use of theoretical frameworks, let alone advanced tools. Arguing in the world of law remains largely artisanal, like much other contemporary professional legal work.

One can attend legal technology conferences and peruse legal tech periodicals without ever encountering products or services explicitly focused on argumentation. Brilliant scholarship does not appear to have made much headway into the minds of practitioners or the software code of legal tech products.

This field exhibits an even starker disconnection between academic research and real-world practice than related fields, such

as document automation, decision support, ediscovery, and due diligence.

A thoughtful practitioner might attempt some preliminary theorizing as follows.

Arguments are proposed reasons for believing (or at least accepting) something. They vary widely in terms of both their goals and their subjects.

The most common kinds of subjects of arguments are (1) facts (what actually happened, is happening, will happen, might happen), and (2) evaluations (what seems best, what should happen or have happened). The distinction is between actuality and desirability: between is and ought; true and good.

For example, the role of humans in climate change is a factual question with political implications, as are the 2020 election fraud claims. Politics is mostly about what should happen, but that is often motivated by beliefs about what has happened or will happen.

Of course, statements of putative facts or evaluative positions are not the only things argued about. Arguments even abound around the validity of other arguments, such as proposed rules of inference.

The most common goals are those of (1) discovering what is "right," "best," or "true," and (2) persuading others to adopt a particular point of view about such a thing. In the first case, the motivating question is "What is the best answer?" Participants with that goal are interested in learning and understanding, in a spirit of shared investigation. In the second, participants are motivated by some variant of "I am right, you are wrong, and here is why." They want to persuade, to win. They may even be truth-agnostic.

Truth is at most secondary in the second kind. But truthfulness can be useful even if persuasion is the main goal, because you are less likely to be proven wrong. And conversely, you may intend to serve what you believe to be truth or justice by counterarguing bad arguments. Sometimes it is important or at least handy to know with reasonable confidence what actually happened, or is happening.

Individual arguments can be judged based on how persuasive versus how "right" they are, which are largely orthogonal dimensions. A given argument might be scored high or low on either or both.

We can thus assess arguments along these dimensions: Are they sound? Are they persuasive? Even demonstrably fallacious arguments can be highly persuasive. (Millions in the United States are

understood by millions of others as having fallen prey to a narrative that was incoherent and not based on evidence. Friends in the United Kingdom can recite similar claims about Brexit.)

Most debates involve a mixture of factual and normative issues, and of truth-seeking and persuasion goals. We may both want to know what to believe and how best to persuade others to believe that.

While the subjects and goals of argument vary widely, they raise common challenges and opportunities. Indeed, they involve cognitive processes used in answering any question that requires thoughtful reasoning.

One thing seems clear: apart from their subject matter and institutional contexts, there is little that is law-specific about legal arguments. And most legal arguments involve questions both about what did (or will) happen as well as what should happen (or have happened).

Apart from their goals and subjects, we find ourselves in many different postures in relation to arguments. Sometimes we are passive observers; sometimes we are called on to act as arbiters. Sometimes we are active participants, needing to find, create (invent), or respond to arguments.

In what follows I mostly adopt the posture of a deeply interested observer. Let's take a look at an illustrative argument. Consider both what would convince you of the correctness of one of the positions, and what should convince you.

A Question of Identity

The identity of the author of the works of Shake(-)speare[4] is a remarkable mystery. It is astonishing that it is even an open question.

It seems fair to say that the majority of people who have entertained the question take an instinctive "Of course, Shakespeare wrote Shakespeare" attitude. Few have bothered, or been challenged, to engage with the question. On its face, the idea that anyone else did the writing seems ridiculous.

There is endless material on the issue, but little attention to the structure of the arguments themselves.

Those with no particular dog in the fight have this basic curiosity: What "story" makes the most sense? (Keep in mind that one specific series of events actually happened.)

Before looking into that specific identity, let's consider what reasonable inferences we might draw from the content of the Works themselves and the historical contexts in which they appeared. Suppose they were never attributed to an identified person. What might we have surmised?

Whoever wrote the Works clearly had a lot of knowledge and experience in addition to raw literary talent. The plays and poems are full of plots, quotations, and allusions from both classical and contemporary literature. Italian and French novellas seem to have been especially influential. The author likely was comfortable with those places and languages. Shakespeare scholars have long discerned evidence of familiarity with hundreds of books in multiple languages. Rhodri Lewis' "Hamlet and the Vision of Darkness"[5] and Rosalie Colie's "Shakespeare's Living Art"[6] are just two examples of extensive scholarship that underscores the deep learning that whoever was Shake(-)speare had. The author also was closely acquainted with the vocabulary and ideas in fields as diverse as law, astronomy, botany, music, heraldry, falconry, hunting, forestry, textiles, rhetoric, and munitions.

The Usual Suspect

William Shakspere[7] from Stratford-upon-Avon has long been the mostly unquestioned author of the works of Shake(-)speare. "His" name appeared after all on most of the non-anonymous publications of those works and the First Folio appears to identify him as the author. So does the "monument" at the Stratford-upon-Avon church. He was a shareholder in an acting company. The traditional story is deeply satisfying and comforting. Commoner from the countryside arrives in London to write the world's greatest literature. Many have written superficially credible accounts of how such a person could have done what is claimed he did.[8]

But there are numerous reasons to suspect this attribution. Foremost are the points above about the deep learning and cosmopolitanism so evident in the works, which are hard to imagine in a man who is not known to have had any formal education, to have owned any books, or to have travelled outside England. His extant signatures suggest that he was only marginally literate. Diana Price[9] and others have documented the utter absence of direct evidence supporting his authorship, unlike most of his

literary contemporaries. Richard Roe[10] makes a convincing case that Shake(-)speare must have travelled extensively in Italy.

The famous frontispiece of the First Folio, supposedly depicting Shakspere as the author, looks suspiciously like someone's face has been pasted over another's, like a mask, and has other oddities that suggest it was meant as an inside joke.

An ecumenical collection of authorship skeptics have signed a Declaration of Reasonable Doubt,[11] taking the position that "there *is* room for reasonable doubt about the identity of William Shakespeare, and that it is an important question for anyone seeking to understand the works, the formative literary culture in which they were produced, or the nature of literary creativity and genius."

My own view is that it is highly unreasonable not to doubt. However clever and imaginative that Stratford fellow might have been, someone else is far more likely to have uniquely had the experiences, attitudes, and comfort in multilingual intertextuality that the Works exhibit.

Of course, Shakspere could somehow have gained all the knowledge and skills needed to have written the works, without leaving any evidence of having done so. But by that logic anyone could have.

All of the alternative author camps do an admirable job of demonstrating the high implausibility of Shakspere having been the author. But if Will from Stratford did not write the works, who did?

Oxford

Edward DeVere, the 17th Earl of Oxford, has been the leading candidate for the past 100 years, after British school teacher J. Thomas Looney began researching and promoting that idea. Organizations and conferences dedicated to the proposition have flourished.

There are extant receipts for purchases of books by Oxford, including his Geneva Bible, Plutarch, Chaucer, Plato, Herodotus, and the History of Italy. He was closely connected to writers such as Lyly, Munday, Green, Nashe, and Watson, and received nearly 30 literary dedications himself. Webbe, Meres, and the author of the *Art of English Poesie* praised him as being among the foremost court poets, "best for comedy and interlude," and he sponsored two acting companies. He was affiliated with Pembroke and Montgomery, key players behind the production of the First Folio.

Many have made formidable cases for Oxford. See, for example, Hank Whittemore's blog,[12] and his book, *100 Reasons Shake-speare was the Earl of Oxford.*[13]

There are of course counterarguments, such as things having been written or authorially organized post Oxford's death in 1604 and claims that other candidates "fit" the evidence much better. Several plays have clues that strongly suggest they were written after Oxford died, for example, *The Tempest* (Strachey letter), and *Cymbeline* (reference to Jupiter's four moons, discovered circa 1610.)

Kit Marlowe

Christopher ("Kit") Marlowe was the other top dramatist of the age and could well be imagined to have penned the Shakespeare corpus had he not been killed in 1593.

But what if that had been a staged death? There is an extensive body of scholarship arguing that it indeed was, enacted to spare a key Elizabethan secret service spy/informant from certain political enemies. In which case, perhaps Marlowe "became" Shake(-)speare.

Peter Farey required surprisingly little cryptoanalytic energy to reach a strongly pro-Marlovian conclusion about the meaning of the famously cryptic "monument" inscription in Stratford.

One theory is that Marlowe took on the new identity of one Gregorio de Monti and spent much of the rest of his life working in the English embassy in Venice.[14] ("Monti" incidentally appears as an acrostic[15] when Sonnet 99 is put into a grid of the kind discussed below.)

Emilia Bassano

It would be quite satisfying if Shake(-)speare turns out to have been a woman. The strongest candidate for that is Emilia Lanyer/Lanier, nee Bassano, who was one of the first women to publish poetry in England.

Elizabeth Winkler's wonderful article in the *Atlantic*[16] serves as a great introduction to that possibility.

I have recently seen a manuscript that plausibly identifies Bassano as not only the Dark Lady of the Sonnets but also the Rival Poet who wrote a couple dozen of those very sonnets herself!

Henry Neville

To my surprise, it now seems that yet another "candidate"—one Henry Neville, who almost no one suspected 20 years ago—was actually the author we have been seeking. Educated at Oxford, comfortable in at least four foreign languages (Latin, Greek, French, and Italian), and widely traveled on the continent, Neville served as a member of Parliament and Queen Elizabeth's ambassador to France.

Details of his personal life and voluminous correspondence supply remarkable clues to hidden authorship. He, for instance, had a long relationship with Henry Wriothesley, the third Earl of Southampton, to whom the first published works (*Venus and Adonis* and *The Rape of Lucrece*) were dedicated, and who is generally understood to have been the subject of many of the later Sonnets (one of which has the acrostic "Neuille rimer." See below.) The two were imprisoned in the Tower of London (in adjacent cells), and narrowly escaped execution, for their roles in the Essex rebellion. Neville was praised by Ben Jonson (in his Epigram 109), even though he never published any literature under his own name, and his library contained some of the obscure books now widely regarded as having been sources for plays such as *Hamlet*, *Othello*, *Measure for Measure*, and *All's Well that Ends Well*. One of the best researchers is Ken Feinstein, whose website is worth visiting.[17]

Neville was born and died shortly before Will Shakspere from Stratford. Extra points in his favor include these:

- The Northumberland manuscript[18] seemingly in his hand includes several instances of both his and Shakespeare's names and the names of several of the plays.
- He was born at what would become Blackfriars Theatre (where some later Shakespeare plays were performed) and his father was pivotal in establishing it.
- Henry Cuffe was one of Neville's best friends. Shake(-)speare may have directly referenced Cuffe's unpublished manuscript ("Differences of the ages of man's life") in *As You Like It*.

The Billingbear catalog of Neville's library, compiled almost two centuries after his death and recently uncovered by Feinstein, is hardly proof of anything, although it seems reasonable to infer ownership of contemporary Italian books by the one youth in the family who spent time touring Italy on a book-buying errand for

his university. And it is notable that rare Shakespeare sources seem to have been in the possession of a man previously suspected for unrelated reasons to have been the long sought author. Ken Feinstein identifies correspondence, annotations, and other documentation that buttress these and other claims. There are dozens of correlations of words and ideas in the same time frames between the works and Neville's non-pseudonymous writings.

Evidence and reasonable inferences are accumulating in Neville's favor. I have yet to see a significant counterargument. But if the established authorities ever stop ignoring the issue one may still materialize.

Thomas North

Just when you think the debate may be drawing to a close, yet another candidate has emerged. It has long been known that passages in several of Shake(-)speare's Roman plays were taken almost verbatim from Thomas North's translation of a French version of Plutarch's *Lives*. And assumed that much earlier versions of some plays, now lost, were once in circulation, possibly including the famous *Ur-Hamlet*. Dennis McCarthy has devoted 15 years to documenting numerous further connections to North, a little known soldier and courtier, including in his unpublished travel journals from the 1550s. McCarthy believes that nearly all of the plays were originally written by North, and just adapted by Shakespeare for the public theater. His work is highlighted in Michael Blanding's 2021 book, *North by Shakespeare*.

Each of the above theories is deeply plausible to some sober intellectuals, and utterly preposterous to others. The very plasticity of the evidence and arguments—the mere fact that at least superficially credible cases can be made for multiple candidates—seems significant. If Will Shakspere indeed were the author, why would he and others not have made much more public noise about that fact? And why would others fit the job so much better?

Side Questions

Many questions remain open under various theories. Their openness alone may not pose reasons to doubt answers to other

questions, but were they to be answered they could buttress some such answers.

Why did the author not use his or her real name? Did the author want posterity to know his or her identity? Did he or she intentionally leave any clues?

How much biography is reflected in the works? What might be made of the many disguises, cross-dressings, and pretend deaths in the plays?

How much collaboration was involved in the works, simultaneously or sequentially?

If there were a secret author, his or her identity seems to have been well guarded, and respected by those who must have known, even long after his or her death. Why did no one appear to "flip," even in private correspondence?

Such an author must have decided early not to take credit for his or her work and been satisfied with anonymity. Few serious writers/readers in that age would have believed the cover story. It was somehow in their interest to keep things secret, and in the interest of those who knew to maintain that secrecy.

Where did Shake(-)speare's seeming androgyny come from? Was he or she bisexual?

Did "Shakespeare" begin life as a pseudonym or allonym? In other words, was it a reference to the man from Stratford when first used in *Venus and Adonis* (the "first heir of my invention," with a dedication that no commoner would make to a nobleman), or an outright coinage that turned out to be similar to the name of a real person who was becoming active in the theater world?

There are also many examples of dubious rabbit holes. Here are a couple.

Red Herrings

46th Psalm

If you open a copy of the King James version of the Bible to Psalm 46 and count 46 words from the beginning you get to "shake." If you start at the end (omitting the ceremonial "Selah") and count back 46 words you get to "speare." When that version was being finalized in 1610, William Shakespeare from Stratford was 46 years old. Coincidence, or might someone have been giving him a kind of birthday present?

It turns out that those two words were approximately in the same positions in earlier English translations of the Bible, so at most an editor would just have had to nudge them a bit to achieve the desired effect. But it seems implausible that the august editors of a religious work would engage in such behavior.

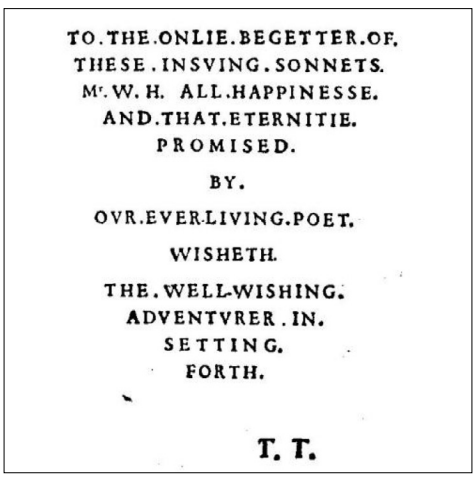
An alternative theory is that someone used a pre–King James version of the 46th Psalm to come up with the Shake(-)speare name. (Pick a psalm, use its number to count words from its beginning and end, see if you come up with something interesting.)

So, this is likely just a fun fact, signifying nothing. Since both Marlowe and Neville were also around age 46 at this time, even if significant it does not shed light on the authorship issue. Although interestingly Neville's mentor and friend Henry Saville was the only non-cleric among the editors of the King James Bible.[19]

Sonnets

There is a substantial subgenre in the authorship field around alleged cryptographic "clues" in the Works. Baconians were especially adept at this, finding steganography and anagrams everywhere. Much of it is laughable, and I have seen conferences refuse to even consider proposed papers that suggest it.

One of the more recent, and more plausible, theories concerns the Sonnets. Published in 1609, these poems of timeless beauty are prefaced by an odd dedication:


TO.THE.ONLIE.BEGETTER.OF.
THESE.INSVING.SONNETS.
Mr.W.H. ALL.HAPPINESSE.
AND.THAT.ETERNITIE.
PROMISED.
BY.
OVR.EVER-LIVING.POET.
WISHETH.
THE.WELL-WISHING.
ADVENTVRER.IN.
SETTING.
FORTH.
T. T.

James Leyland and James Goding have proposed that this puzzling Dedication is a "map" of the sonnets.[20] Table 1 shows what it

looks like if you simply put its letters (omitting spaces and punctuation) into a 15 column grid.

Table 1

T	O	T	H	E	O	**N**	L	I	E	B	E	G	E	T
T	E	R	O	F	T	**H**	E	S	E	I	N	S	U	I
N	G	S	O	N	N	**E**	T	S	M	R	W	H	A	L
L	H	A	P	P	I	**N**	E	S	S	E	A	N	D	T
H	A	T	E	T	E	**R**	N	I	T	I	E	P	R	O
M	I	S	E	D	B	**Y**	O	U	R	E	V	E	R	L
I	V	I	N	G	P	O	E	T	W	I	S	H	E	T
H	T	H	E	W	E	L	L	W	I	S	H	I	N	G
A	D	V	E	N	T	U	R	E	R	I	N	S	E	T
T	I	N	G	F	O	R	T	H						

Note that "NHENRY" (bolded in Table 1) appears, arguably constituting a kind of authorial signature. There are plenty of other interesting possibilities, such as the grid serving as an index to the sonnets by noting the row and column numbers. For instance, the acrostic beginning at row 1 column 8 is "LETE," arguably the French l'ete, corresponding to Sonnet 18 ("Shall I compare you to a summer's day?"). Many have noticed that the numbers of the sonnets themselves appear to have been intentionally selected, for example, that the number of Sonnet 8, about music, may refer to the number of notes in an octave and that of 52 ("in the long year set") to weeks in a year.

If someone constructed the dedication so as yield acrostics, might someone have also done that with one or more of the sonnets themselves?

At least one sonnet (134) seems to deliver. Rosemary Warner discovered that when its letters were put into a 29 column grid, it looks like Table 2. (I have bolded her finding—in the tenth column—and several other strings of possible interest. Note that "Neuille" was one way Henry's name was often spelled, and "rimer" was a common way to refer to a poet.)

I think I was the first to notice "sum naso" in the bottom left. Ovidius Naso ("Ovid"), of course, was one of Shake(-)speare's greatest influences. He was a famous exile, tongue-tied by authority. Naso served as Ovid's cognomen—an extra personal name given to an ancient Roman citizen, functioning like a nickname and typically

Table 2

S	O	N	O	W	I	H	A	U	**E**	C	O	N	F	E	S	**T**	T	H	A	T	H	E	I	S	T	H	I	N
E	A	N	D	I	M	Y	S	E	**L**	**F**	E	A	M	M	O	**R**	G	A	G	D	T	O	T	H	Y	W	I	L
L	M	Y	S	E	L	F	E	I	**L**	**E**	F	O	R	F	E	**I**	T	S	O	T	H	A	T	O	T	H	E	R
M	I	N	E	T	H	O	U	W	**I**	**L**	T	R	E	S	T	**O**	R	E	T	O	B	E	M	Y	C	O	M	F
O	R	T	S	T	I	L	L	B	**U**	**T**	T	H	O	U	W	I	L	T	N	O	T	N	O	R	H	E	W	**I**
L	L	N	O	T	B	E	F	R	**E**	**E**	F	O	R	T	H	O	U	A	R	E	C	O	U	E	T	O	U	**S**
A	N	D	H	E	I	**S**	K	I	**N**	**D**	E	H	E	L	E	A	R	N	D	B	U	T	S	U	R	E	T	**I**
E	L	I	K	E	T	**O**	W	R	I	T	E	F	O	R	**M**	E	V	N	D	E	R	T	H	A	T	B	O	**N**
D	T	H	A	T	H	**I**	M	A	S	F	A	S	T	D	**O**	T	H	B	I	N	D	E	T	**H**	E	S	T	A
T	U	T	E	O	F	**T**	H	Y	B	E	A	U	T	Y	**T**	H	O	U	W	I	L	T	T	**A**	K	E	T	H
O	U	V	S	U	R	E	R	T	H	A	T	P	U	T	**S**	T	F	O	R	T	H	A	L	**L**	T	O	V	S
E	A	N	D	S	U	E	A	F	**R**	I	E	N	D	C	A	M	E	D	E	B	T	E	R	**F**	O	R	M	Y
S	A	K	E	**S**	**O**	H	I	M	I	L	O	O	S	E	T	H	R	O	U	G	H	M	Y	V	N	K	I	N
D	E	A	B	**U**	**S**	E	H	I	**M**	H	A	U	E	I	L	O	S	T	T	H	O	U	H	A	S	T	B	O
T	H	H	I	**M**	**A**	N	D	M	**E**	H	E	P	A	I	E	S	T	H	E	W	H	O	L	E	A	N	D	Y
E	T	A	M	I	**N**	O	T	F	**R**	E	E																	

passed down from father to son. (Naso means "nose.") He habitually refers to himself by his nickname in his poetry because the Latin name Ovidius does not fit into elegiac metre.

One of the developments that nudged me toward the Neville camp was this work on hidden clues in the Sonnets, despite my ongoing suspicion about anything that smacks of cryptology. Neville used codes in his diplomatic correspondence. There were significant Elizabethan enthusiasms for acrostics.[21] And that could have been a way to pass the time while sitting in the Tower.

So, I created a simple app to facilitate the process of transmuting texts into grids. It parses the input text to remove spaces and punctuation and arrays the letters in a grid of a specified width. (I display all the letters in caps and change the archaic "long s" [ſ] to a regular "S" for easier reading.) Some of the ensuing vertical "words" are five letters or more long and eerily relevant.

I realize our statistical intuitions can be misleading, and confirmation bias is in play. Still, when things like "neuille rimer" and "noted weed" occur in close proximity it is hard not to imagine some intentionality behind them.[22]

It is not as difficult as one might suspect to construct complex "plain" texts that yield impressive acrostics when you start with them. So perhaps the Bard did compose some of his timeless poetry on a framework in which he also embedded interesting clues for posterity.

Intrigued by this, I set forth to explore other sonnets, using my little software program to quickly deliver grids of given widths. I am pretty much left with the view that it has all been a fool's errand, since (1) nearly every grid produces several four or more character "words" as acrostics, so any "finds" are likely to be coincidental and cherry-picking, and (2) it is hard to imagine how even the greatest genius could devise exquisite poems that not only are timeless literature but also provide secret meanings when stretched onto grids of various sizes—without a computer. But perhaps they would have been embedded just to amuse or impress the wiser sort who could be clued in to their presence—like an Elizabethan Easter egg. Once you know the parameters, you can work things out on paper in minutes.

It seems quite a stretch to imagine the Bard arranging his words to produce references that his readers can only see by removing spaces and punctuation and plotting the letters on a wide grid.

Still, I noticed that several other sonnets seemed to "name" people. For example, Sonnet 113; 30 columns, as shown in Table 3:

Again, arguably significant strings are bolded. Note "nashe" upside down in the middle, like "neuille" in the earlier example. Also "fish," "lent," "Brute" (et tu?) and (almost) "Ulysses."

Thomas Nashe was a fellow writer, and arguable collaborator. One of his more notorious pieces was *Lenten Stuffe, or the Praise of the Red Herring*. (I did not know that at the time I generated the above grid.)

My program reports how many characters there are when a sample text has been entered. Sonnet 72—with the line "My name be buried where my body is"—has 324, which is 18 squared. There is a character in Marston's *What You Will*[23] named Quadratus, who some believe is based on Neville. That could be an allusion to his portly physique, his being an "honest man," or a particular interest in rectangles with equal sides. When 18 is used as the number of columns, the resulting grid is a perfect square. I will not reproduce the result here, but it includes "mole" ("Well said, old mole!"), "velo" (Italian for "veil"), and "terset"—a three-line unit of poetry, which one can imagine as a metaphor for the triangular love affair(s) thematized in the sonnets. (Such stories enthusiasts spin!)

It seems clear that the author of the Works was a cunning linguist who drank deeply from world literature in multiple languages and loved to play with words. So perhaps it is not that much of a stretch to imagine that the author also liked to play with letters.

What possible techniques or machinery might have been used? Paper cutouts? Printer's letters? Movable type? To what end? Just self-satisfaction? Letters in a bottle? Clues for posterity? What about the expected decoders? How might anyone have been expected to find this stuff if it were actually placed there?

If we were to discover some kind of mechanical device, such as with moveable type, that made it easy that would be significant!

A friend pointed out: "There is an obvious computational experiment: Generate a range of grid sizes, check each grid for words and names (using a dictionary) and tabulate the results. Does the statistical distribution have a distinct mode, or is it uniform?"

The method involves stripping out spaces and punctuation, so the system would have to deal with long strings of untokenized letters, looking for "words" of various lengths, backward and forward.

The dictionary would need to be tuned to Elizabethan English, and include the many, many variations in spelling. It should

Table 3

S	I	N	C	E	I	L	E	F	T	Y	O	U	M	I	N	E	E	Y	E	I	S	I	N	M	Y	M	I	N	D
E	A	N	D	T	H	A	T	W	H	I	C	H	G	O	U	E	R	N	E	S	M	E	**T**	O	G	O	E	A	**B**
O	U	T	D	O	T	H	P	A	R	T	H	I	S	F	U	N	C	T	I	O	N	A	**N**	D	I	S	P	A	**R**
T	L	Y	B	L	I	N	D	S	E	E	M	E	S	S	E	E	I	N	G	B	U	T	**E**	F	F	E	C	T	**U**
A	L	L	Y	I	S	O	U	T	F	O	R	I	T	N	O	F	O	R	**M**	E	D	E	**L**	I	U	E	R	S	**T**
O	T	H	E	H	E	A	R	T	O	F	B	I	R	D	O	F	F	L	**O**	W	R	E	O	R	S	H	A	P	**E**
W	**H**	I	C	H	I	T	D	O	T	H	L	A	C	**K**	O	F	H	I	**S**	Q	U	I	C	K	O	B	I	E	C
T	**S**	H	A	T	H	T	H	E	M	I	N	D	**E**	**N**	O	P	A	R	**T**	N	O	R	H	I	S	O	W	N	E
V	**I**	S	I	O	N	H	O	U	L	**D**	S	W	**H**	**A**	T	I	T	D	O	T	H	C	A	T	C	H	F	O	R
I	**F**	I	T	S	E	E	T	H	E	**R**	U	D	**S**	**T**	O	R	G	E	N	T	L	E	S	T	**S**	I	G	H	T
T	**H**	E	M	O	S	T	S	W	E	**E**	T	F	**A**	U	O	R	O	R	D	E	F	O	R	M	**E**	D	S	T	C
R	**E**	A	T	U	R	E	T	H	E	**M**	O	U	**N**	T	A	I	N	E	O	R	T	H	E	S	**E**	A	**T**	H	E
D	**A**	Y	O	R	N	I	G	H	T	T	H	E	C	R	O	E	O	R	D	O	U	E	I	T	**S**	H	**A**	P	E
S	**T**	H	E	M	T	O	Y	O	U	R	F	E	A	T	U	R	E	I	N	C	A	P	A	B	**L**	E	**O**	F	M
O	R	E	R	E	P	L	E	A	T	W	I	T	H	Y	O	U	M	Y	M	O	S	T	T	R	**U**	E	**M**	I	N
D	E	T	H	U	S	M	A	K	E	T	H	M	I	N	E	V	N	T	R	U	E								

probably also include Latin, French, Italian, and a couple other languages.

In the event that strings in adjacent columns (like "sum naso") or going around "corners" are to be considered, that would require special arrangements.

This could be a good research program for a Ph.D. thesis.

Judging the Stories

Arguments about what happened 425 years ago can rarely be settled definitively, but this one may be coming to a close.

We have much more ready access nowadays to most of the primary material. Most of the relevant "raw" facts are known and not contested. But people are largely still talking past one another, cherry-picking weaknesses in opposing theories.

What would the best case look like? Which kind of complete argument would be most satisfying? When might we reach closure? How many "coincidences" does it take to get past the unending debate? When is enough enough?

This, of course, is in part the familiar accrual of arguments issue. How should one add up the various points pro and con a position? Sometimes the mere accumulation of points can make the overall effect less plausible (a paradox of choice).

There has been so much junk scholarship around the authorship question that people are naturally suspicious. It is hard to keep track of all the defects that have been spotted in the various stories. One could be a full-time collector of arguments pro and con the various candidates. There are so many one can easily find plenty to support any position. I have only given the merest sampling of the vast landscape of authorship arguments.

Claims that would overturn centuries of received wisdom carry a high burden of persuasion. It is understandable to think that anything so amazing could not possibly be true. And if one or more of the theories outlined above were accepted, that could radically change Shake(-)speare-related education and scholarship.

We do not have the option of scientific reproducibility. There is no source of ground truth against which to check our theories. How can we have reasonable confidence in any particular one?

Several high-level criteria suggest themselves:

- Narrative coherence, or cumulative narrative plausibility. There are significant coherence problems in the "stolen election" theory for example. (For example, why did down-ballot Republicans do so well if millions of votes were fabricated to elect a Democrat president?) Truth tends to be coherent.
- Evidence based. Is the theory falsifiable? Is there reliable evidence for all of the core propositions underlying the story?
- Lack of significant counterevidence or counterarguments. Have any significant arguments been lodged against the theory that have not adequately been rebutted?
- Completeness. It is important to have at least candidate stories about all key aspects of the "top" story. For example, if Henry Neville were the Bard, what else would likely be true? Did he have the motive and opportunity to act as has been claimed?

Arguments like this come down to dueling stories. And they are stories all the way down. One is constantly constructing narratives, then testing them for plausibility. When one is substantially more coherent, complete, evidence-based, and un-rebutted than others, it is a good candidate for the right answer.[24]

The Social-Psychology of Belief

We humans tend to fall in love with our stories.

We resist finding things plausible that undermine our preconceptions, and uncritically accept ones that support them. We tend to mistake the intensity of our beliefs for evidence of their correctness. Subjective conviction can be misleading. (Just because you have come up with a good reason or two to continue thinking what you think is no reason to think you are finished thinking!)

Our beliefs are often the result of motivated reasoning, social pressure, or confirmation bias.

The "Shakespeare industrial complex" behind the adult amusement park that is Stratford-upon-Avon, and the associated literary establishment, helps to explain the odd persistence of a

demonstrably false narrative. Many scholars take the traditional story as a given; challenging it is seen as career suicide.

Early proponents of a candidate may make exaggerated or unfounded claims, which are shown to be unwarranted and used to discredit their theory. If part of the proffered rationale is shown to be fallacious, we tend to reject the overall conclusion, even if other points independently support it.

We see folks we disagree with as rhetorically adept but truthfulness-challenged. Once you are reasonably convinced of something it is natural to assign stupidity or venality to those that are not.

Democrats and Republicans seem to live in alternative realities. The camps see each other respectively as largely climate change "alarmists" and climate change "deniers." I have corresponded with people who seem quite stable and rational but have persuaded themselves of radically incompatible versions of the historical reality behind Shake(-)speare. There are bitter disagreements even within the several camps.

We fantasize not only about proving someone wrong but having them acknowledge it. That almost never happens. It is an example of the triumph of hope over experience.

A Thought Experiment

Some have dreamed of having easy access to an organized network, or cloud, of points relevant to some issue under consideration, each signifying a discrete proposition (a "proplet"), connected by links that signify various kinds and degrees of implication. The relationships, of course, are typically many-to-many. They are directed, and vary in intensity and valence.

A Simple Holistic Argument Kiosk ("SHAK") was proposed for this purpose in a fascinating but scattered paper presented at the International Conference on Artificial Intelligence and Law in 2005.[25]

A battalion of graduate students could catalog and assign Globally Unique Identifiers to every point, and their *alleles* (point "synonyms" and near-synonyms), that might participate in an argument. What attack and support relationships are they the target or a component of?

Such a thing seems straightforwardly achievable with current tech but could require a prodigious amount of human effort. It is not artificial intelligence ("AI"), but perhaps still productive of better arguments.

Such an architecture reflects the fact that you may well accept a given point, but not all of the implications from it that someone claims.

One strategy would be to encode the known arguments for and against a given point in a structured frame like this:

	Point	
Pro (Arguments or subpoints that tend to make the subject point more plausible)	*Strength/Acceptance*	*Con (Arguments or subpoints that tend to make the subject point less plausible)*
	Widely accepted	
	Unclear	
	Disproven/Rejected	

Mere acceptance, of course, is not a reliable criterion, and things that are settled can become unsettled. But within a community of thinkers, that a point has survived without challenge can justify building on it.

Each point in such a frame (or "point profile") would be clickable to its own profile. The collection in that sense would be fractal and multidimensional. It would include critical answers as well as critical questions.

Good scientists and historians are always open to new evidence and new theories.

From a UX point of view, being able to focus on one point at a time would have advantages. Sometimes it take multiple points to make a proposed inference. Intermediate propositions and proposed rules of inference are often involved.

Imagine a huge graph, with colors signifying relative plausibility (to a given person or group), covering the dueling hierarchies of propositions associated with the various stories. It might express both the implicative/logical and temporal/causative sequences being contended.

Note that a network of objects and their relations is quite different from a network of claimed propositions and their implications.

A tool like Laugment[26] could be used to map the former, such as the relevant objects and relationships of the Elizabethan world: people, places, things, events. It could also map the propositions and claimed inferences about that world.

Argument Tech in the Real World

As mentioned near the top of this article, lawyers and other professional arguers tend to make little use of theoretical frameworks or technology in their work. A few commercial and quasi-commercial counterexamples can be mentioned though.

The Compose system from Casetext[27] for drafting motions provides a "parallel search" facility that finds supporting authority for your arguments. It also helps identify and formulate arguments.

There are systems that analyze briefs, either yours or those of your opponents, such as Clerk by Judicata.[28]

The StoryBuilder platform from Everlaw[29] is designed for "collaborative narrative building and trial preparation."

Some readers of this article will be familiar with the Araucaria[30] and Carneades[31] systems. And there are ongoing innovations such as Arg-tuProlog.[32]

Rationale[33] and Kialo[34] are examples of graphical argument mapping tools that are offered commercially. (There is even a nice map of the Shakespeare authorship debate in Kialo.[35])

If significant other tech is out there, it is hiding well from the average practitioner.

Dr. Ralf Grötker offers consulting services around argument mapping and related topics.[36] Gregor Betz[37] has conducted a number of projects in which he uses argument maps for practical purposes.

I only recently became aware of the Centre for Argument Technology, at the University of Dundee.[38] It offers a wealth of resources on many aspects of theoretical and computational argumentation.

Why has there been so little practical adoption or commercial attention?

One reason that tech has not yet played much of a role in non-theoretical arguments may be that it requires deeper interaction with our thoughts and emotions than we have been ready for. Maybe we have not yet found the right interface. Or maybe it is just too complex for effective human-machine collaboration given present tools.

Roles for AI

How might AI better help us deal with the messiness of arguments, especially those in which plausibility plays a central role? What has not yet been tried in terms of argument aids?

Automated implausibility detection seems a long way off. But a tool that provided guided deconstruction of a story would be worth trying. It would be especially useful to have a real-time debunker of demagogic arguments.

A system with good knowledge of argument schemas could help a user try some on for a given case.

We have word processors—why not argument "processors"?

We have pencil sharpeners. An Argument Sharpener could use adversarial techniques to improve arguments.

Had Enough?

Crazy as much of the authorship literature is, argument theorists can find endless examples of instantiated schema and other material for analysis in it. I offer the cursory look here for both amusement and inspiration.[39] Among other things, it may represent an exhausting debate that can finally be brought to a definitive close.

To this observer, our wonderfully rich theory in the argumentation field seems so far to have had little practical impact. Nor has it spawned much new technology (or at least its actual use.) Yet there is a clear need for better tools and greater usage.

As this article is being written, the world is suffering from a new pandemic of sophistry. Voices of reason are shouted down; hyperpartisanship prevails. Not only in the courts of public opinion, but in courts of law and the groves of academe.

It is pollyannish to expect the world to become less argumentative. Carefully reasoned arguments are not effective against talented demagoguery. It would be foolish to imagine intelligent argument tech only being used by the forces of good. We are in for an arms race. But we can aspire to help some of those arguments be more intelligent.

It is easy to be cynical. We should resist defeatism. Humility does not require surrender. We can acknowledge our non-rational motivations. We can seek to reduce argument malpractice, and fail less often to call out "bad" arguments.

Sometimes enough is never enough, though in law and policy making (legislation, adjudication, government administration) it may have to be. We often have to act on incomplete information. I am momentarily satisfied that Neville's authorship is the best explanation for the extraordinary works of Shake(-)speare, although by the time this article appears in print a better one may have emerged. Yet when it comes to the thoroughly discredited stolen election theory, we are still likely to have been right to exclaim "Basta!"

Notes

* Marc Lauritsen, president of Capstone Practice Systems, is a lawyer, educator, and software developer. Mr. Lauritsen taught in and directed the clinical program at Harvard Law School, and directed Project PERICLES, a research program in law and computers. Mr. Lauritsen may be reached at marc@capstonepractice.com. He says that he is "grateful to Bruce Leyland, Damien Riehl, Dennis McCarthy, Ken Feinstein, LaVern Pritchard, Ros Barber, and Tim van Gelder for helpful reactions to drafts of this article." Mr. Lauritsen added that this article "has not been fact checked by any reputable authority."

1. Atkinson, K., Bench-Capon, T., Bex, F., Gordon, T.F., Prakken, H., Sartor, G., and Verheij, B. 2020. In memoriam Douglas N. Walton: The influence of Doug Walton on AI and law. Artificial Intelligence and Law, pp. 1-46, *available at* https://link.springer.com/article/10.1007/s10506-020-09272-2.

2. Walton, D., Macagno, F., and Sartor, G. 2021. Statutory interpretation: Pragmatics and argumentation. Cambridge University Press.

3. Yes, this paper adopts an "unscientific" tone, and makes injudicious use of the first person pronoun. Politics has no place in a scientific article about artificial intelligence and law. Or does it? There are good arguments on both sides of that question.

4. I put parentheses around the hyphen because works appeared under both forms of the name: Shakespeare and Shake-speare.

5. Lewis, R. 2020. Hamlet and the Vision of Darkness. Princeton University Press.

6. Colie, R.L. 2015. Shakespeare's living art. Princeton University Press.

7. That is one way his family named was spelled, and often used to distinguish the particular man from whomever was the true author. Other common versions spelled the first syllable "Shax," "Shacks," and "Shags," suggesting a quite different pronunciation than "shake."

8. One of my favorites is Anthony Burgess' "Shakespeare" (1970).

9. Price, D. 2001. Unorthodox biography: new evidence of an authorship problem.

10. Roe, R.P. 2011. The Shakespeare Guide to Italy: Retracing the Bard's Unknown Travels. Harper Perennial.

11. https://doubtaboutwill.org/declaration.

12. https://hankwhittemore.com/.

13. Whittemore, H. 2017. 100 Reasons Shake-speare was the Earl of Oxford. Forever Press.

14. *See* https://ruayres.wordpress.com/2014/12/02/evidence-that-christopher-marlowe-was-the-ghost-of-william-shakespeare/.

15. An *acrostic* is a text in which certain letters in each line spell out a word or phrase vertically.

16. Winkler, E. 2019. Was Shakespeare a woman? The Atlantic. June.

17. http://nevilleresearch.com.

18. https://shakespearedocumented.folger.edu/resource/document/shakespeares-name-plays-and-poems-included-northumberland-manuscript.

19. *See* http://www.whatabeginning.com/BBooks/TheBard/P.htm.

20. http://leylandandgoding.com/who_will_believe_my_verse. Note that they use a slightly different allocation of characters to cells, leaving in dashes, for instance.

21. *See, e.g.*, Hazard, M.E. 2000. "Elizabethan silent language." U of Nebraska Press.

22. Sonnet 76 has the quatrain:

> Why write I still all one, ever the same,
> And keep invention in a noted weed,
> That every word doth almost tell my name,
> Showing their birth and where they did proceed?

I found "weed" twice in a grid of this sonnet, and "noted weed" close together in a grid of sonnet 101. ("Noted weed" means familiar clothing.)

23. https://en.wikipedia.org/wiki/What_You_Will.

24. I am privately rooting for a syncretic scenario. For example, a lot of North material was used by the concealed poets; Marlowe continued to play a role, as did Oxford, Bacon, and Lanyer; but Neville became the lead author, as the Great Poet and Remixer.

25. Lauritsen, M. 2005. Intelligent tools for managing factual arguments. In Proceedings of the 10th international conference on Artificial intelligence and law (pp. 95-104).

26. *See* http://www.lawmoose.com/.

27. https://compose.law/.

28. https://www.judicata.com/.

29. https://www.everlaw.com/storybuilder/.

30. https://en.wikipedia.org/wiki/Araucaria_(software).

31. https://carneades.github.io/. This is a research prototype and is, since Tom Gordon's retirement, no longer being actively developed.

32. Roberta Calegari, Giuseppe Contissa, Giuseppe Pisano, Galileo Sartor and Giovanni Sartor. Arg-tuProlog: a modular logic argumentation tool for private international law (JURIX 2020).
33. http://www.rationaleonline.com.
34. https://www.kialo.com/.
35. https://www.kialo.com/shakespeare-authorship-question-31656.
36. http://www.explorat.de/ (auf Deutsch).
37. http://www.philosophie.kit.edu/mitarbeiter_betz_gregor.php.
38. https://arg-tech.org/.
39. Ros Barber's *Shakespeare: The Evidence* (https://leanpub.com/shakespeare) is a good start for a deeper look.