

“The Lannisters send their regards”
Intertextual tools and theory
in the age of fandom

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“Quantitative Intertextuality”

Creating a dialogue between:

- Intertextual theory and macroanalytical methods
- Quantitative results and the experience of reading

Intertextuality

- Kristeva (1967): “Any text is constructed as a mosaic of quotations; any text is the absorption and transformation of another.”
- *loci similes*: Two-word pairs are the most basic and common form of text reuse.
- Hinds (1998): A “poetic of corresponding inexactitude, which draws on but also distances itself from the rigidities of philological and intertextualist fundamentalisms alike.”

Classical intertextuality

“Si licet,” exclamat, “Romani maxime rector
nominis et ius est, veras **expromere voces.**”

*“If it is permitted,” he cries, “greatest leader of the Roman
name, and if it is right to speak true words” (BC 1.360-361)*

Ultro flens ipse videbar
compellare virum et maestas **expromere voces**

*I myself, weeping spontaneously, seemed
to address the hero and to speak sad words (Aen. 2.279-280)*

Computational approaches

Tesseract

tesseract.caset.buffalo.edu/cgi-bin/check-recall.pl?session=00002341;cache=rec

Total results returned by Tesseract: 27761

type	tesseract returned	benchmark has	recall rate	mean score
1	376	400	0.77	5.19
2	1896	2284	0.83	5.42
3	327	423	0.77	6.22
4	62	113	0.73	6.61
5	69	100	0.69	6.66
comm.	263	414	0.64	6.72

Sort results: decreasing by tess score Change Display

Target Loc	Target Phrase	Source Loc	Source Phrase	Parallel Type	Tess Score	Commentators
1.359	Si licet, exclamat, Romani maxime rector / Nominis et ius est, veras expromere voces ;	2.279	Utro flens ipse videbar / Compellere virum et maestas expromere voces ;	4	9.721	R
1.367	Duc age per Scythiae populos, per inhospita Syrtis / Litora, per calidas Libyae silientis arenae.	4.41	Hinc Gaetulae urbes, genus insuperabile bello, / et Numidae infreni cingunt et inhospita Syrtis ;	4	9.343	V,R
1.132	totes popularibus auris / Impelli, plausuque sui gaudere theatri;	6.816	Quem iuxta sequitur lactantior Ancus, / nunc quoque iam nimium gaudens popularibus auris .	5	9.247	V,R
1.38	scelera ipsa nefasque / Hac mercede placent:	7.317	Hac generatque socer coeant mercede suorum:	5	9.020	TB,V,R
1.237	Constitit ut capto iussus deponere miles / Signa fore, stridor lituum clangorque tubarum / Non pla concinuit cum rauco classica cornu.	11.192	It caelo clamorque virum clangorque tubarum .	4	8.863	R
1.237	Constitit ut capto iussus deponere miles / Signa fore, stridor lituum clangorque tubarum / Non pla concinuit cum rauco classica cornu.	2.313	Exortitur clamorque virum clangorque tubarum .	5	8.863	R
1.450	Et vos barbaricos ritus moremque sinistrum / Sacrorum , Druidae, positis repetitis ab armis.	12.836	Morem ritusque sacrorum / adiciam faciemque omnis uno ore Latinos.	3	8.838	R
1.165	Ut ventum est parvi Rubiconis ad undae, / Ingens via ducti Patriae trepidantis imago / Clara per obscuram vultu maestissima noctem, / Turrigero canos effundens vertice crines, / Caesare lacera, nudaque edatere locertis, / Et gemitu permixta loquit:	11.64	Catillus lollat / ingentemque animis, ingentem corpore et armis / delcit Hemulium, nudo cui vertice fulva / caesaries nudique umeri, nec vulnera terrent:	3	8.836	
1.230	Eic fetus, noctis tenebris rapit agmina ductor / Impiger, et torto Balearie verbere fundas / Oclor, et missa Parthi post terga sagitta ;	12.856	Non accus se nerve per nubem impulsa sagitta , / armatam saevi Parthus quam felle veneni, / Parthus elve Cydon, talum immedicabile, torsit , / stridens et celeris incognita transiit umbras:	4	8.735	V
1.210	tum, torta levis al lancea Mauri / Haereat, aut latum subeant venabula pectus, / Per forum , tanti securus vulneris, exit.	4.131	retia rara, plagae, lato venabula ferro , / Massylisque ruunt equites et odora canum vis.	2	8.735	

Reader Response: Benchmarking

- 3,000 phrases from Lucan *Bellum Civile* 1
- Each shares two or more words with a phrase from Virgil's *Aeneid*
- Shared words may be differently inflected
- 400 additional allusions were drawn from professional commentaries on Lucan
- Each phrase pair evaluated by graduate and faculty readers

Reader Response: Modeling

$$\text{score} = \ln \left(\frac{\sum \frac{1}{f(t_i)} + \sum \frac{1}{f(s_i)}}{d_t + d_s} \right)$$

$f(t_i)$ = Frequency of the i th matching term in the target phrase

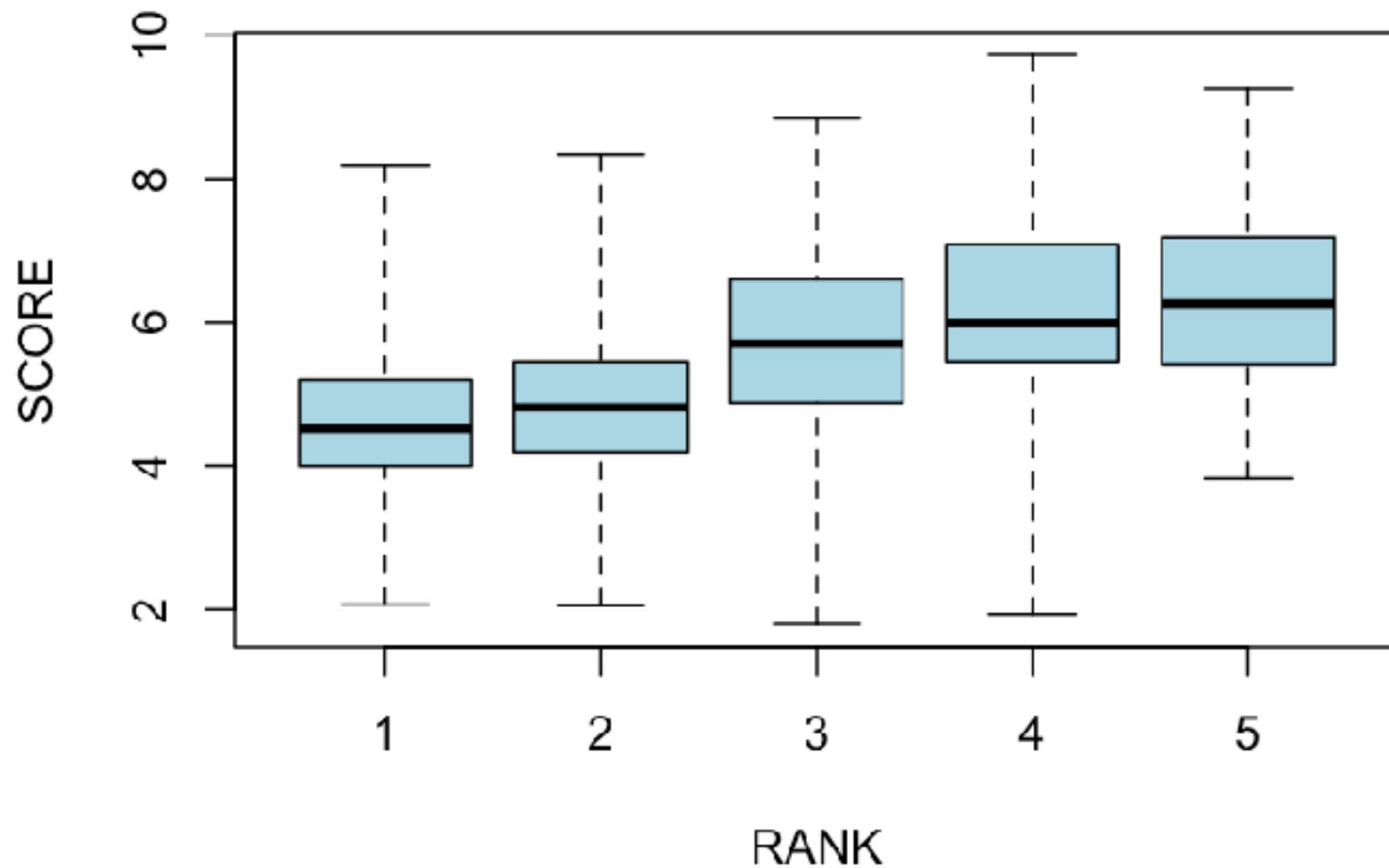
$f(s_i)$ = Frequency of the i th matching term in the source phrase

d_t = Distance between two lowest-frequency matching words in target

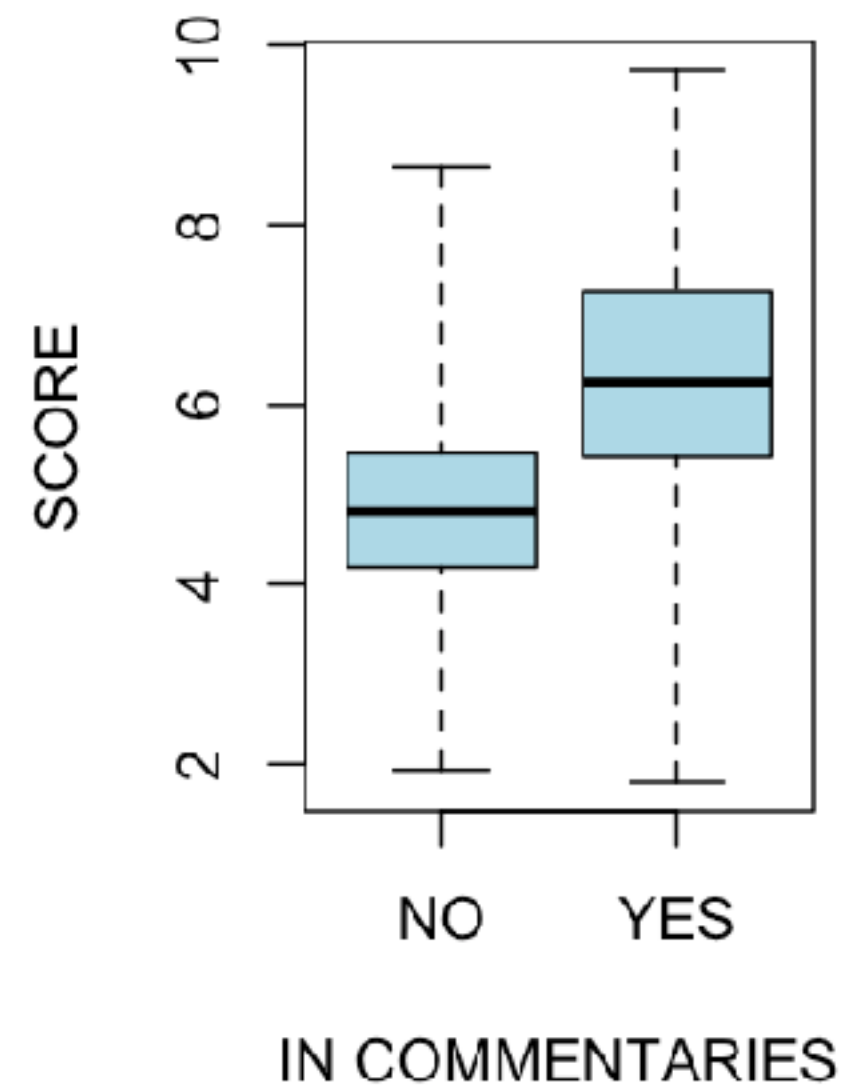
d_s = Distance between two lowest-frequency matching words in source

Reader Response: Modeling

Score Distribution by Reader Rank



In Commentaries



Study #1: “Game of Thrones” and its fans

As a clever man once told me, we make peace with our enemies, not our friends.
— Tyrion Lannister



Image: © HBO



Image: Pete Souza
(public domain)

You don't negotiate deals with your friends, you negotiate them with your enemies. — Barack Obama

Poniewozik, J. (2016) ‘Game of Thrones’: Tyrion, Daenerys and the Art of the Deal.

<http://www.nytimes.com/2016/05/16/arts/television/game-of-thrones-season-6-episode-4-daenerys-tyrion.html>



“That way lies madness and disaster”



Image: Henry Söderlund
(CC BY 4.0)

A Song of Ice and Fire



Image: [amazon.com](https://www.amazon.com)

George R. R. Martin

Audience

HBO show runners



Image: HBO (©)

“Game of Thrones”



Traditional *loci similes*?


	Target	Source	Score
1	... I've just realised that Wilko Johnson plays Ser Ilyn Payne !!!	... since Ilyn Payne snipped your daddy's neck	9.58
2	Daario Naharis : meet the new face of the man the Mother of Dragons fancies ... via @guardian	The Second Sons are yours and so is Daario Naharis .	9.49
3	Daario Naharis : meet the new face of the man the Mother of Dragons fancies ... via @guardian	Daario Naharis .	9.49
4	Daario Naharis : meet the new face of the man the Mother of Dragons fancies ... via @guardian	And Daario Naharis ?	9.49
5	@Jamie_Obertelli What's the name of the one you were telling me about?	Why are you telling me ?	8.83
6	... Either I had it, or I'll be having it, within 48 hours of any given moment. -@louisck	You could have had either .	8.74
7	Not sure about the video but these girls can sing: ... - HAIM - Don't Save Me	Didn't you marry one of these Frey girls ?	8.71
8	"The Lannisters send their regards! ". #GOT	The Lannisters send their regards .	8.48
9	@JLuxfordFilm "The Lannisters send their regards! "	The Lannisters send their regards .	8.48
10	There's a storm coming : ...	There's a storm coming .	8.44

Word tri-grams

	Target	Source	Score
1	"The Lannisters send their regards! ". #GOT	The Lannisters send their regards.	8.53
2	@JLuxfordFilm "The Lannisters send their regards! "	The Lannisters send their regards.	8.53
3	...You're right. Where do you think the expression 'wet wipe' came from?	- Is that the Blackwater? - Where do you think I'm taking you?	6.71
4	There's a storm coming : ...	There's a storm coming.	6.62
5	Mexican boy: Viene la tormenta! ... Gas Station Attendant: He said there's a storm coming in.	There's a storm coming.	6.62
6	Just finished watching #Archer, right in time for the new season of #ItsAlwaysSunnyInPhiladelphia	Got to get this salt pork to the Twins in time for the wedding.	5.94
7	... with the back of your hand it's ok. With the palm you run the risk of picking up diseases.	...I'm gonna put a sword through your eye and out the back of your skull.	5.59
8	Sharon Needles - Why Do You Think You Are Nuts?	- What do you think? - You leave tonight.	5.20
9	... I said, I'm not afraid anymore. Do you hear me? I'm not afraid anymore!" #KevinMcCallister	Do you hear me?	5.20


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@wongfelix88




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Unless I'm very much mistaken, the Red Wedding is less than 24H away. Jaime Lannister sends his regards. [#asoiaf](#) [#HBO](#) [#gameofthrones](#)


7:05 AM - 2 Jun 2013





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There's a storm coming: youtu.be/zTzh8uhn1qc

1:05 AM - 23 Jul 2013

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GBM
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GBM are a four piece band from North London. You can find out more? facebook.com/thehorrorofane...
+ youtu.be/mhuXpLY5a7U

Joined April 2009

Limitations of lexical matching

Tesserae Benchmark:
Lucan's *Civil War* Book 1 vs. Vergil's *Aeneid*



A bust of Vergil in Naples 

Bi-gram matching
necessarily misses
33% of human
identified parallels



Bust of the Roman poet Lucan 

Similarity in meaning

“Thus, by judicious transfers and imitation he brought it about that, in what we read from another source in his work, we prefer his version or we marvel that it sounds better than its source. Let me say that he took from others from a half to about a full line of verse, then full passages slightly changed and rewritten, but with their meaning left intact, so that their source might be obvious...”

— Macrobius on Vergil, *Saturnalia*

Semantic Analysis

- Popular strategy in natural language processing
 - Designed around the notion of word co-occurrence
 - Deerwester *et al.* 1990, **Latent Semantic Indexing**
 - Blei *et al.* 2003, Latent Dirichlet Allocation
 - Commonly deployed over large corpora
 - Jockers 2013, *Macroanalysis*

Algorithm parameters

- Gensim (<https://radimrehurek.com/gensim>) LSI implementation
- Query window: 500 characters around and including a target line of text
- Document window: 1,000 characters around and including a line to match against
- Stoplist: 250 most common words
- Bag-of-words: inflected form of each word replaced with the set of all possible stems
- Number of topics: 10, 15, 20
- Count a hit in the top 50 results as a “match”

Non-lexical allusion

Just as when the swirling south wind drives the vast sea back from the Libyan Syrtes, and the shattered mass of the mast, with its sail, groans, the helmsman abandons the stern and leaps into the waves; and though the fittings of the hull are not yet strewn apart, each sailor fashions his own personal shipwreck; so too they desert the city and flee into war. Parents, frail with age, cannot call back their sons, nor wives, by their tears, their husbands; nor the ancestral homes, so long as they place their hopes on an unlikely salvation. No one hesitated on his threshold, to depart, perhaps, with a final look, filled with the love of his city. The crowd rushed on, heedless. How easily the gods give everything, how little they care to preserve it.

(*Civil War* 1.498 – 511)

After the gods saw fit to overturn the affairs of Asia and visit undeserved punishment on the race of Priam, after proud Ilium had fallen and all of Troy, built by Neptune, was a smoking ruin, we were driven by signs from the gods to seek exile far away and find vacant lands. Near Antander and the mountains of Phrygian Ida we constructed a fleet, though we were unsure where the fates were taking us, where we were to settle, and we gathered our men together. Summer had only just begun and my father Anchises ordered us to give sail for our destiny. I wept as I left the shores and harbors of my fatherland, and the plains where once was Troy. I was cast, an exile, onto the high seas, together with my companions, my son, the spirits of my household and the great gods above.

(*Aeneid* 3.1-12)

Recovered *Civil War* 1 (*BC*) – *Aeneid* (*AEN*) commentator parallels

BC Line	AEN Line	Shared Context	Topics	LSI Rank	LSI Prec.	BoW Rank	BoW Prec.
1.60	1.291	Destiny of Caesar; peace	10	3	0.18	86	0.00
1.139	4.441	The blowing wind; tree	20	1	0.22	1	0.28
1.141	2.626	The blowing wind; tree	15	1	0.32	45	0.00
1.193	2.774	An apparition	20	33	0.08	47	0.00
1.193	3.47	An apparition	15	42	0.06	145	0.00
1.291	11.492	Horses	20	26	0.02	212	0.00
1.490	11.142	Flight	15	17	0.22	23	0.08
1.504	2.634	Abandonment	15	3*	0.52	70	0.00
1.504	3.11	Abandonment; Navy	15	4	0.16	215	0.00
1.673	2.199	Omens; terror	15	31	0.02	162	0.00
1.676	4.68	Dido as Bacchant	15	1	0.40	2	0.08
1.676	6.48	Prophecy	15	39	0.44	148	0.00
1.695	6.102	Frenzied discussion	20	22	0.20	31	0.20

* also found by Tesserae lexical matching

Recovered 12/35 “missing” parallels

Study #2: “Amateur” fiction on the web

wattpad.com:

- 2 million writers
- 100,000 new pieces per day
- 20 million readers

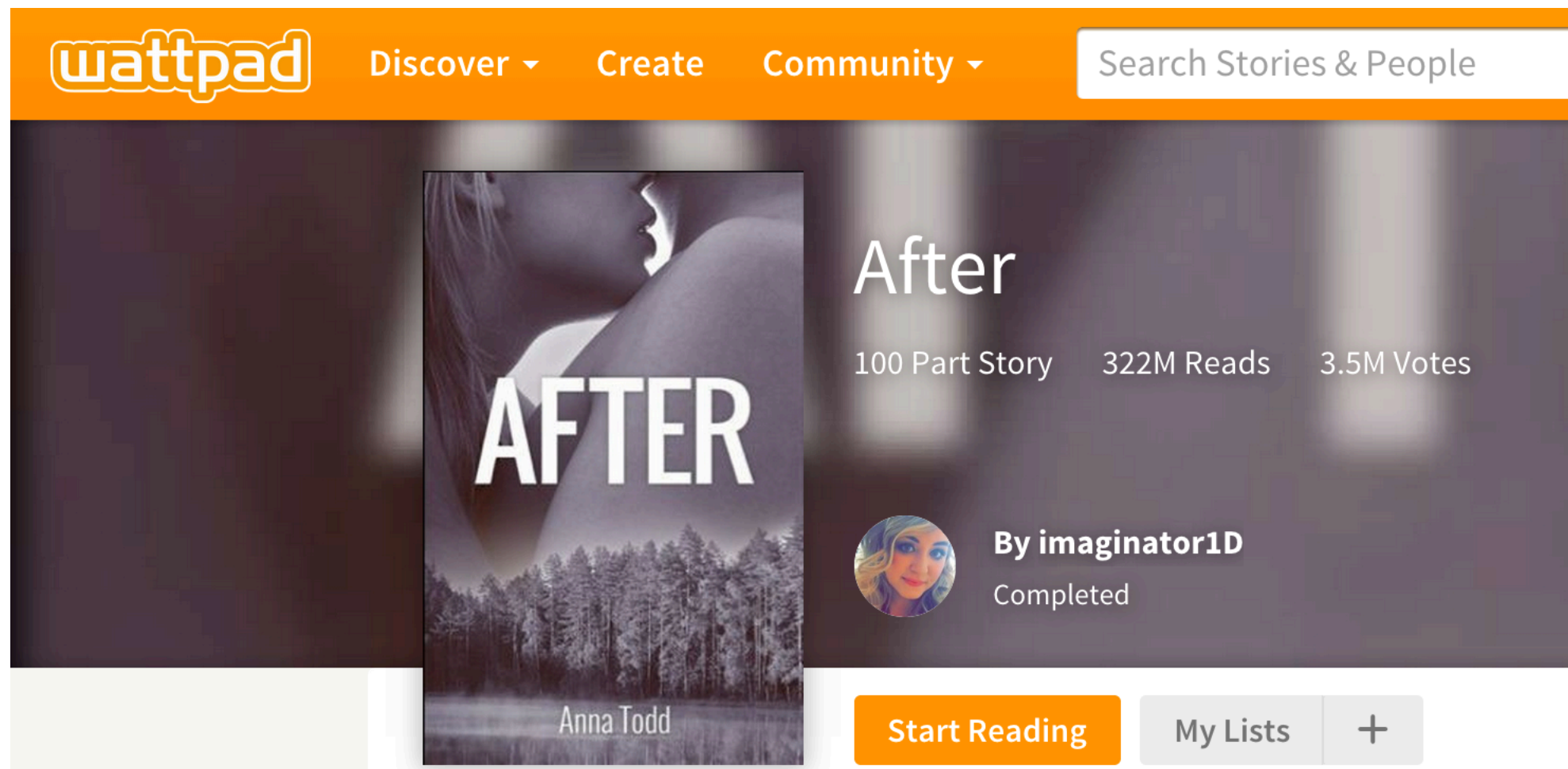


Image Credit: wattpad.com

Song, dialogue, and the novel

“Some novelists draw on their own experience; others borrow from history, mythology or classic literary tropes. Anna Todd, a 25-year-old debut novelist in Texas, found inspiration in Harry Styles, the tousle-haired heartthrob from the British boy band One Direction.”

“Fantasizing on the Famous,” The New York Times, Oct. 21st, 2014



Why net fiction?

- Emerging literatures
- Direct participation in a popular narrative
- Interactive engagement with a text
- Fluid relationship with traditional media and the marketplace

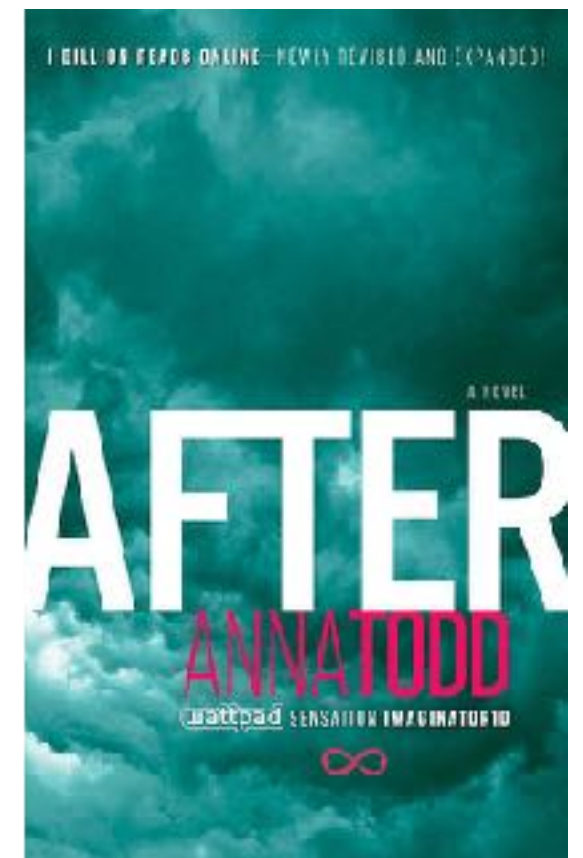
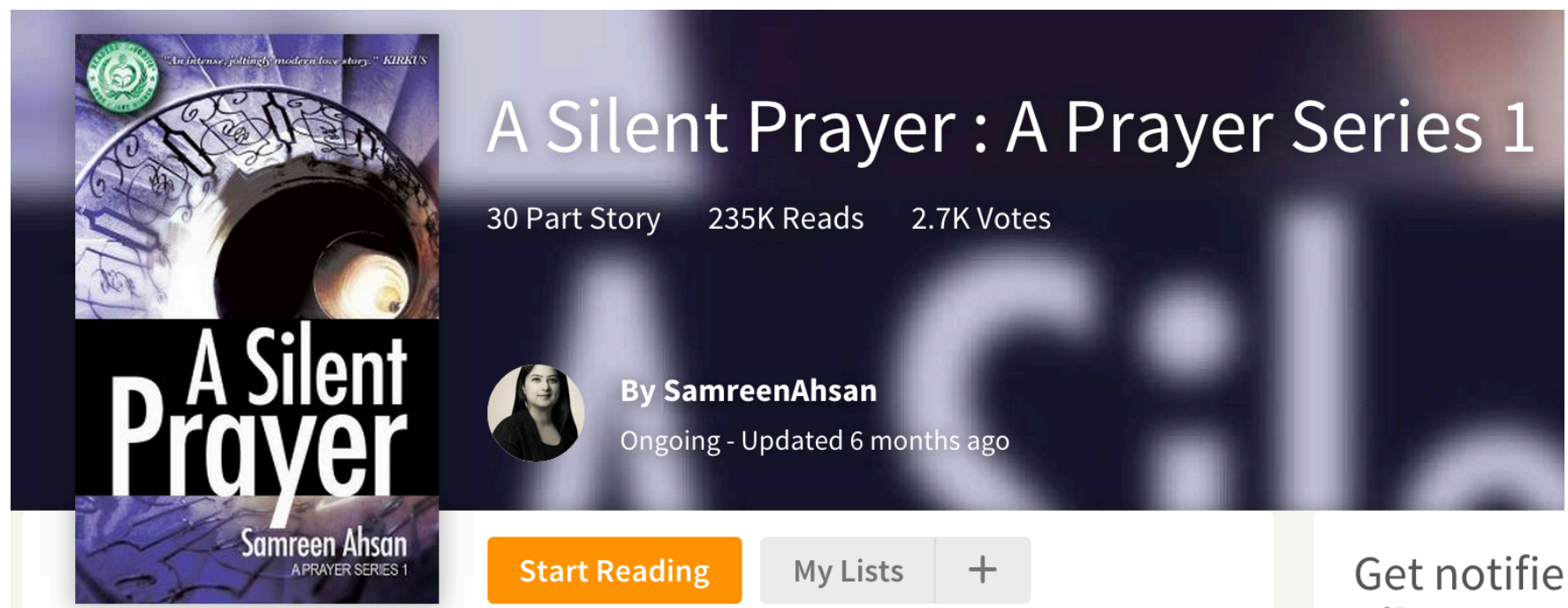


Image Credit: Gallery Books

A Silent Prayer

- “Supernatural” Romance
- Also a statement on the first generation immigrant experience
 - Conflict between religious tradition and contemporary culture
- Clever use of allusion and a plot framed by the *Qur'an*



A Silent Prayer and Religious Texts

“No. there are many, more than the human population. They have a world within our world, but we can’t see them unless they want to be seen. There are males and females. There are good ones and bad ones, as well. You know what the interesting part is? Each human has been assigned a Jinni, a demon. We don’t see it but it is always there. We recognize it when our soul is not strong enough to protect our body and our demon takes over, which makes us do all of the possible sins.”

(*A Silent Prayer*, Chapter 16, 4)

Yet the foolish among us hath spoken that which is extremely false of GOD; but we verily thought that neither man nor genius would by any means have uttered a lie concerning GOD. And there are certain men who fly for refuge unto certain of the genii; but they increase their folly and transgression: and they also thought, as ye thought, that GOD would not raise any one to life. And we formerly attempted to pry into what was transacting in heaven; but we found the same filled with a strong guard of angels, and with flaming darts: and we sat on some of the seats thereof to hear the discourse of its inhabitants; but whoever listeneth now, findeth a flame laid in ambush for him, to guard the celestial confines.

(The *Qur'an*, Chapter 72, 4-9)

Corpus

- Primary works: complete texts of *After* and *A Silent Prayer* from wattpad.com
- Comparison works:
 - The Book of Genesis (Authorized Version, digital text from Project Gutenberg)
 - The Qur'an (translated by George Sale, digital text from Project Gutenberg)

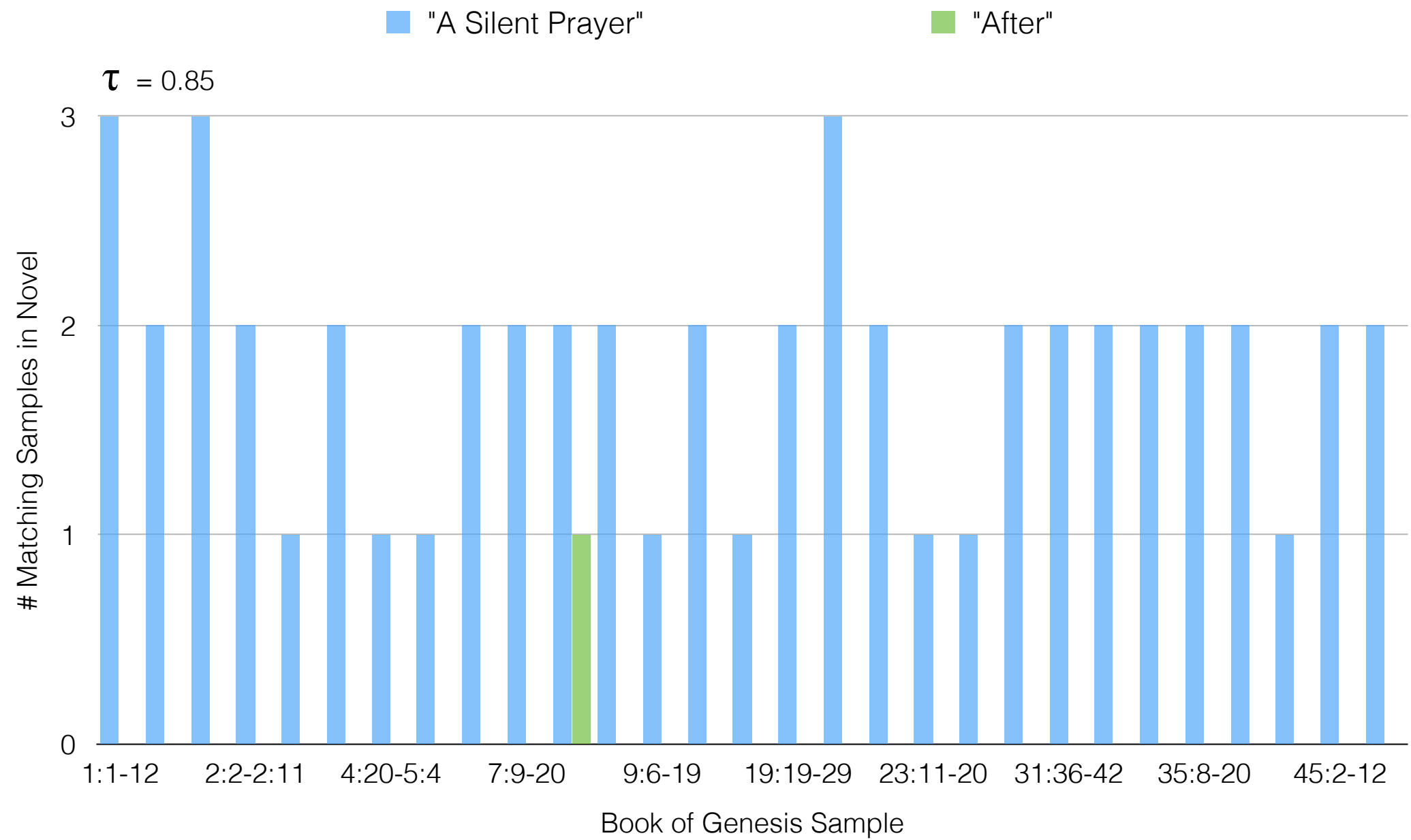
Algorithm Parameters

- R “lsa” package
- Query window: 100 words
- Document window: 250 words
- Stoplist: 650 common words (Jockers 2014)
- Thresholds over cosine similarities

Qur'an Chapter 72 and *A Silent Prayer* Chapter 16

- Three query samples from Qur'an Chpt. 72
- All samples from *A Silent Prayer*
- Threshold: 0.9; 20 topics
 - **Query 1: Chapter 16, Sample 4 (0.906)**
 - **Query 2: Chapter 16, Sample 3 (0.908)**
 - **Query 3: Chapter 16, Sample 3 (0.906)**
- Control: all samples from *After*
 - No matches

Matches to Genesis



Ongoing work

- Large scale automated study to understand readership trends
- Algorithms that exploit context more like human reader
- How can we model an overarching relationship between a text, its framing material, and its audience?

Acknowledgements



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Project #146976 "Intertextuality in Flavian Epic Poetry"



Neil Coffee
(U. Buffalo)