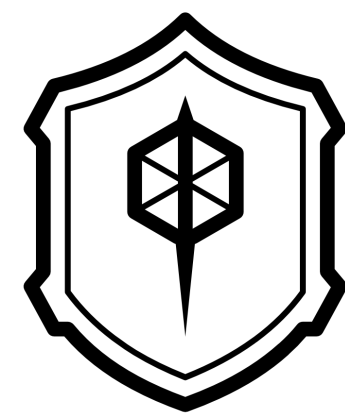


A VIZ OF ICE AND FIRE

Summarizing Entertainment Video
Using Color and Dialogue

Fred Hohman, Sandeep Soni, Ian Stewart, John Stasko

*2nd Workshop on Visualization for the Digital Humanities
Phoenix, Arizona, United States*



Polo Club
of
DATA SCIENCE





Game of Thrones is famous for its colorful ***cinematography*** and memorable ***dialogue***.



cinematography \approx color

dialogue \approx subtitles

Video

Video

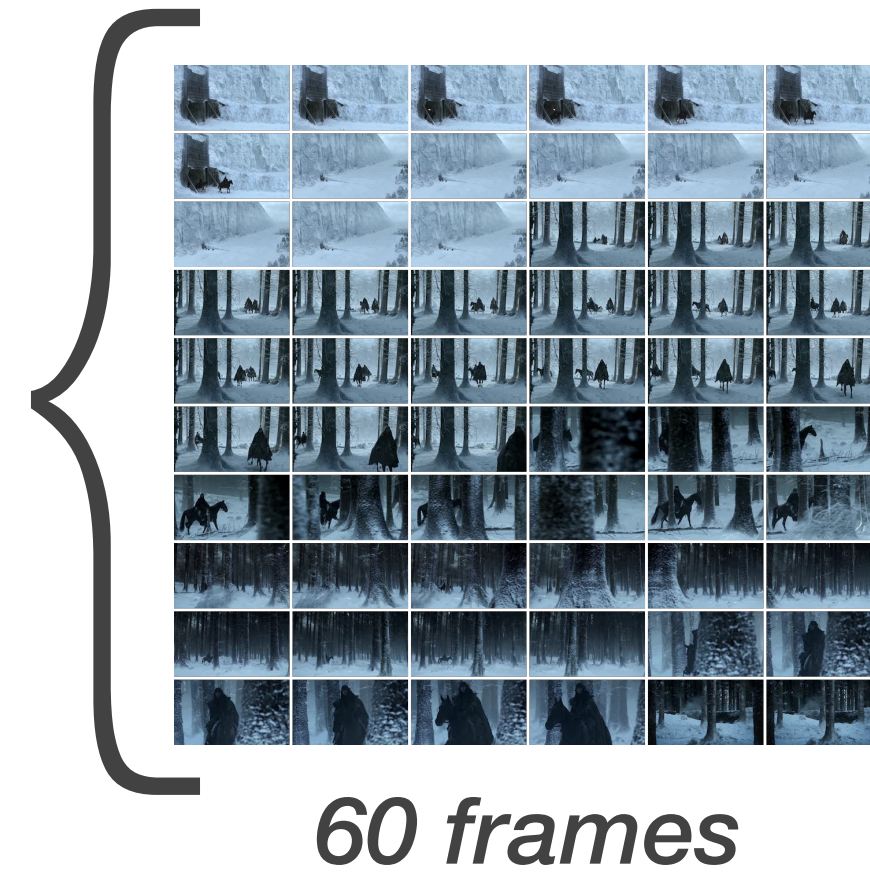


Data

Video



Data



+

*When you play the
Game of Thrones,
you win or you die.*

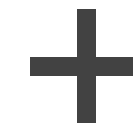
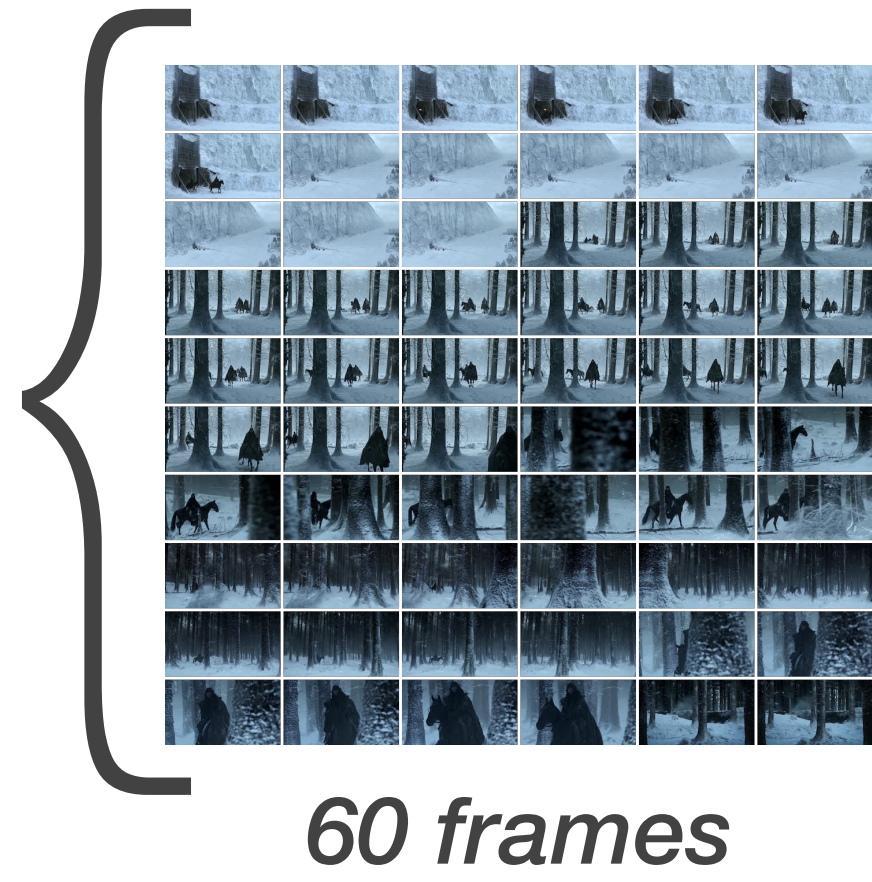
Subtitles



Video



Data



*When you play the
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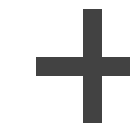
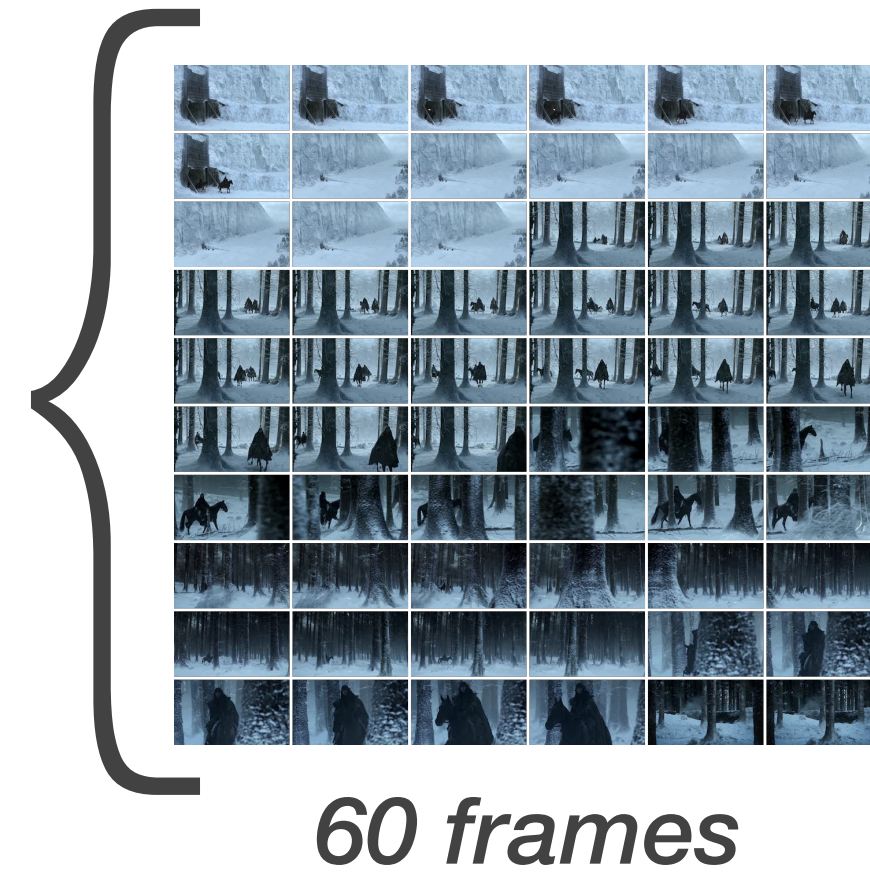
Subtitles



Video

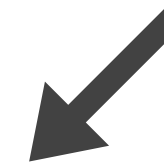


Data



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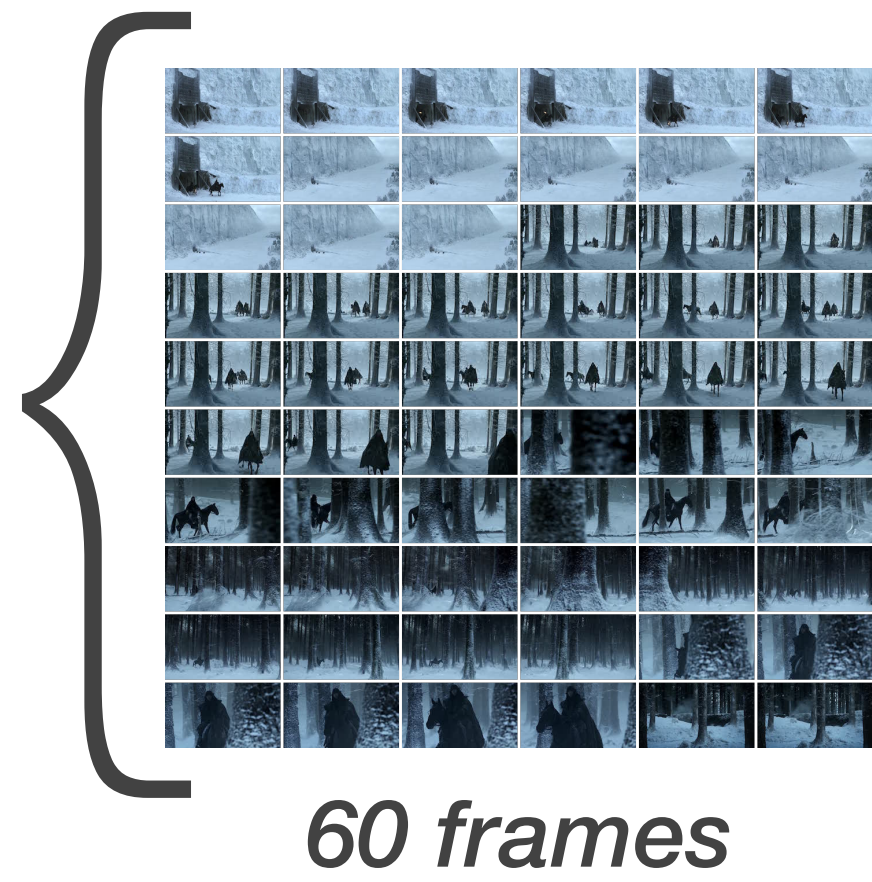
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Video



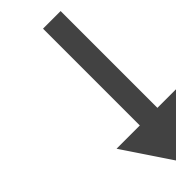
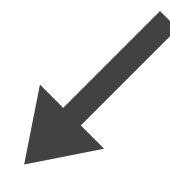
Data



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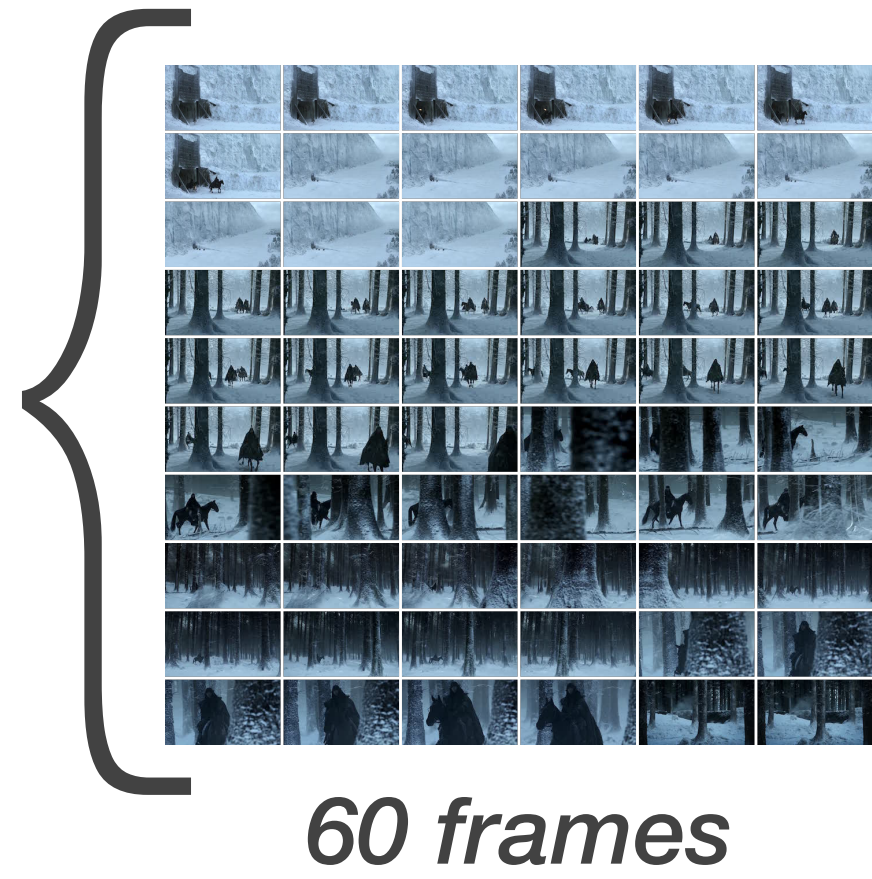
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Video



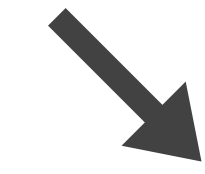
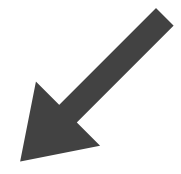
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+

*When you play the
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you win or you die.*

Subtitles



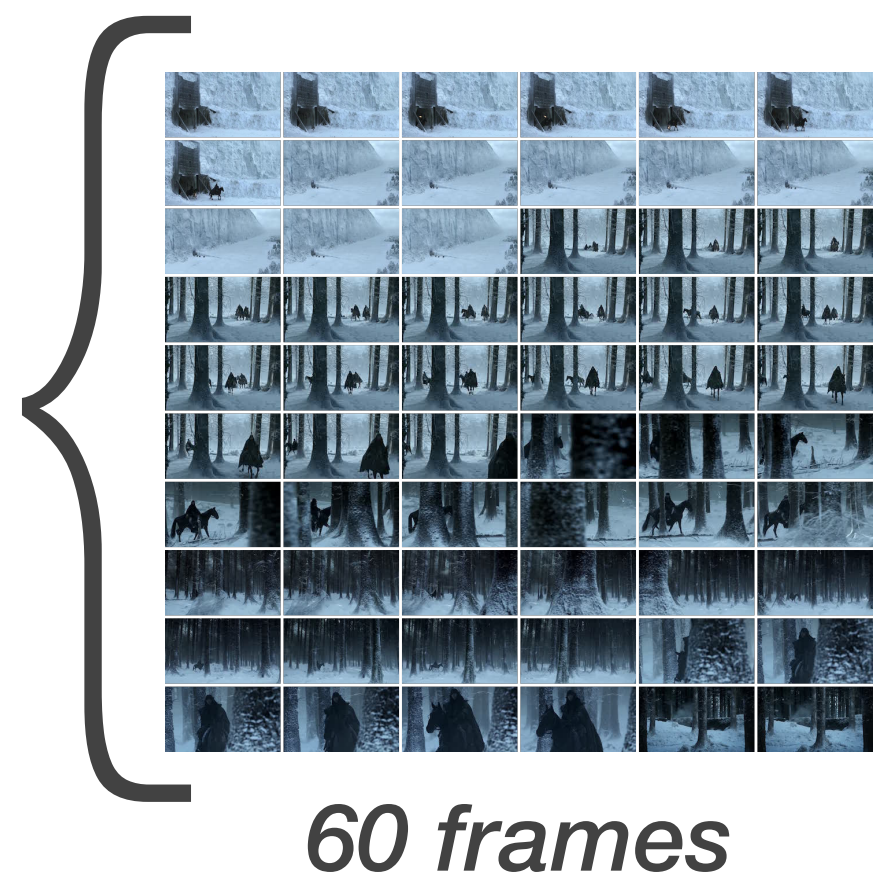
*When you play the Game of Thrones,
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Video

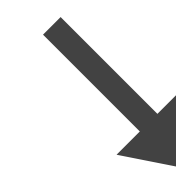
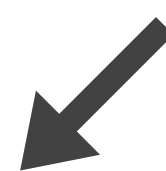


Data



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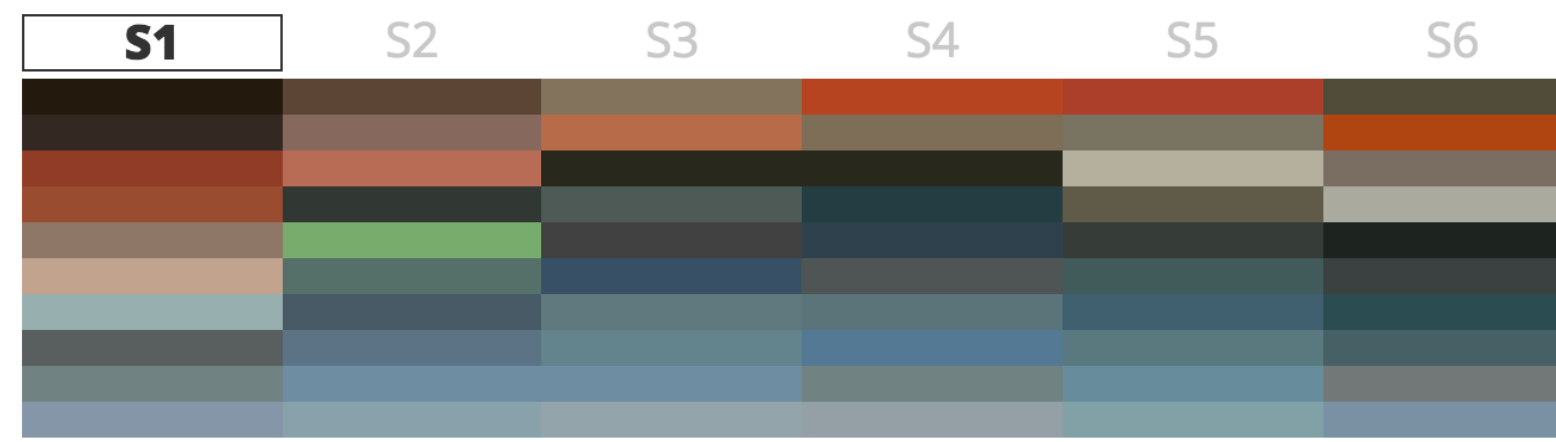
*When you play the
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Subtitles



*When you play the Game of Thrones,
you win or you die.*



Season	Episode	Time	Color	Positive	Death	...
1	7	11		2	1	...

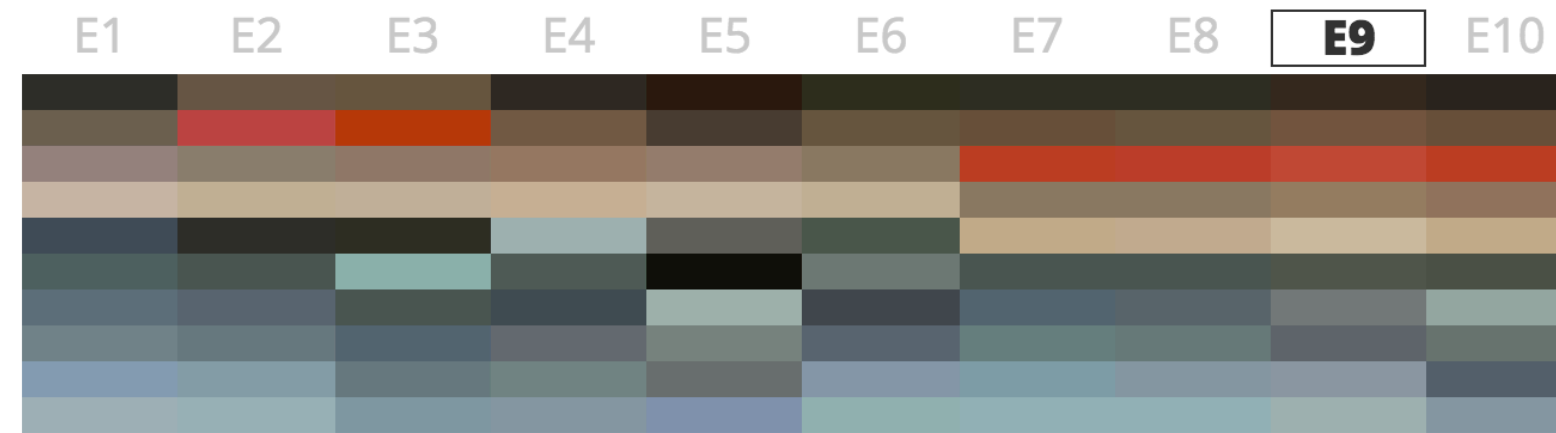


Season 1

First aired in: April 17, 2011

Last aired in: June 19, 2011

Average U.S. viewers: 2.52 million



S1E9: "Baelor"

Directed by: Alan Taylor

Written by: David Benioff & D. B. Weiss

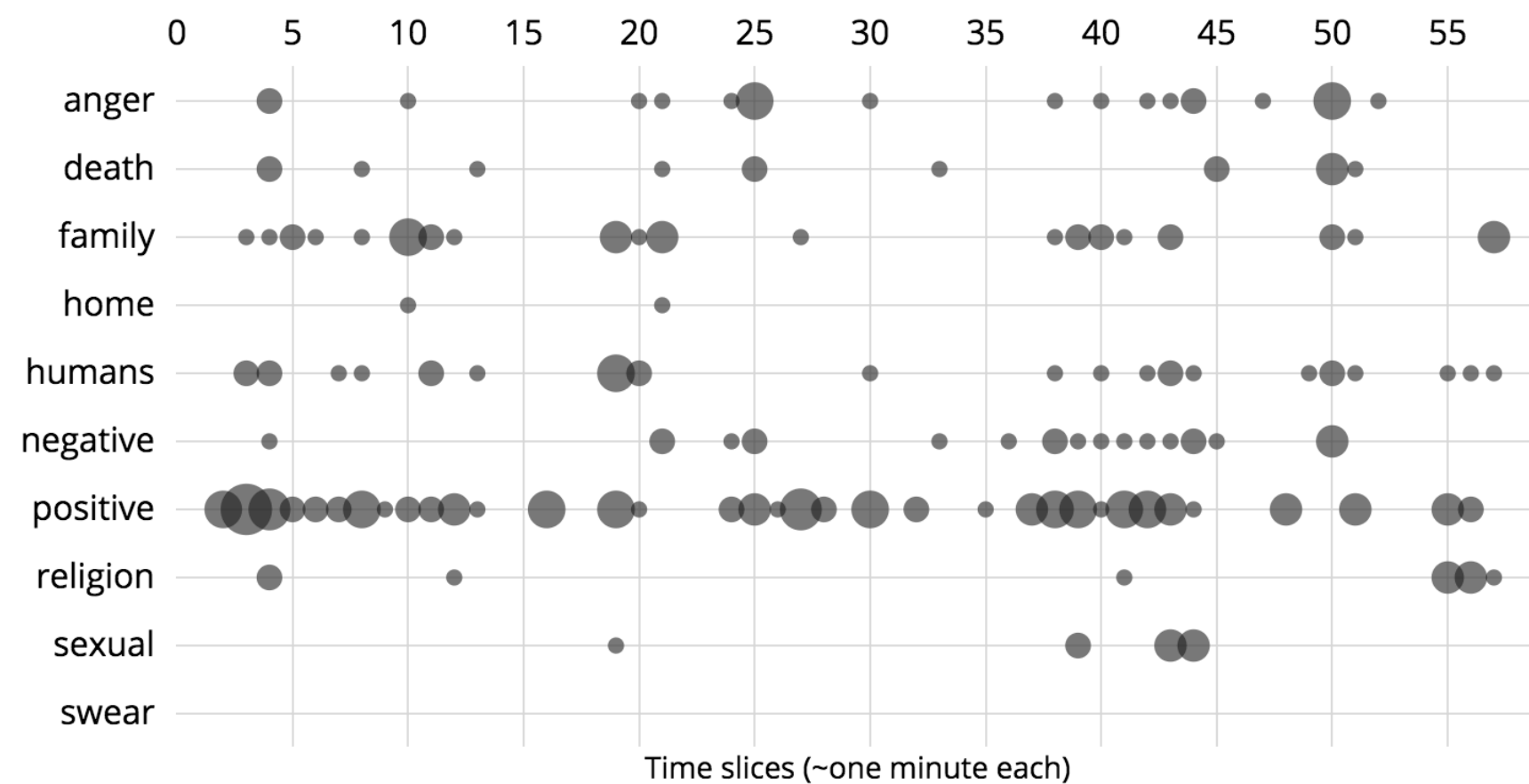
Original Air Date: June 12, 2011

U.S. viewers: 2.66 million

Runtime: 56 minutes



Frames

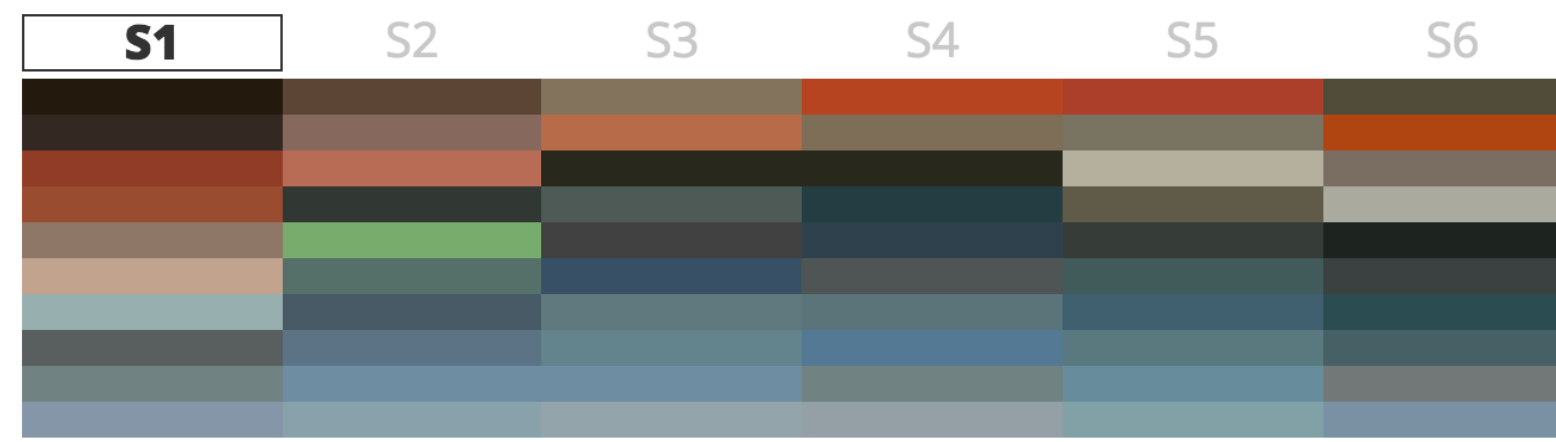


Dialogue

I am Eddard Stark,
 Lord of Winterfell
 and Hand of the King.
 I come before you to confess my treason
 in the sight of Gods and men.
 I betrayed the faith of my King
 and the trust of my friend Robert.
 I swore to protect and defend his
 children,
 but before his blood was cold
 I plotted to murder his son...
 And seize the Throne for myself.
 Traitor!
 Let the high Septon
 and Baelor the blessed bear witness to
 what I say:

Top words in S1E9



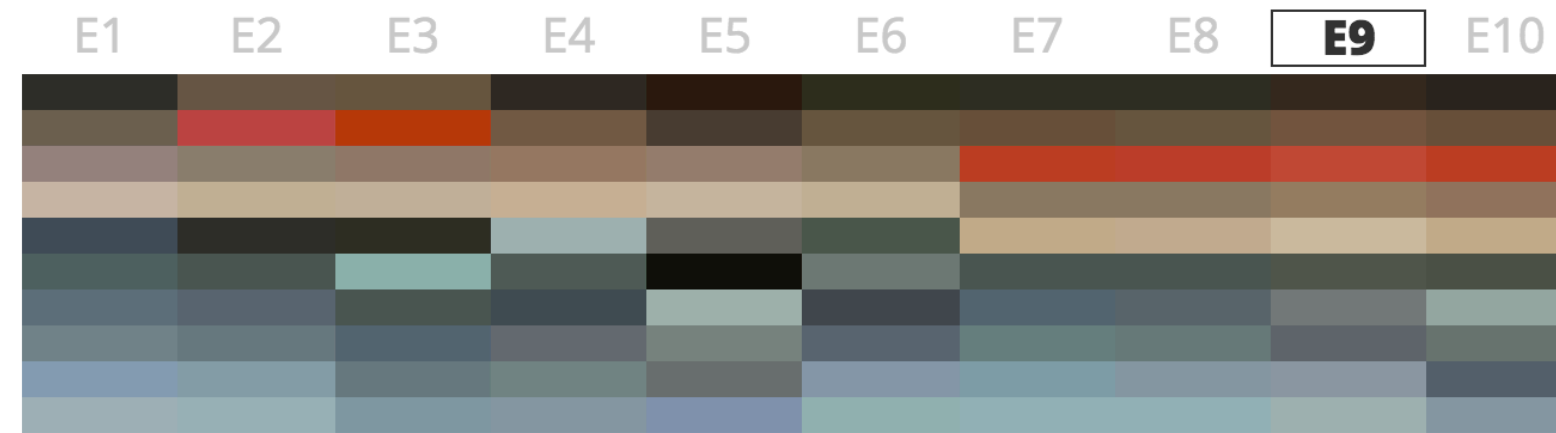


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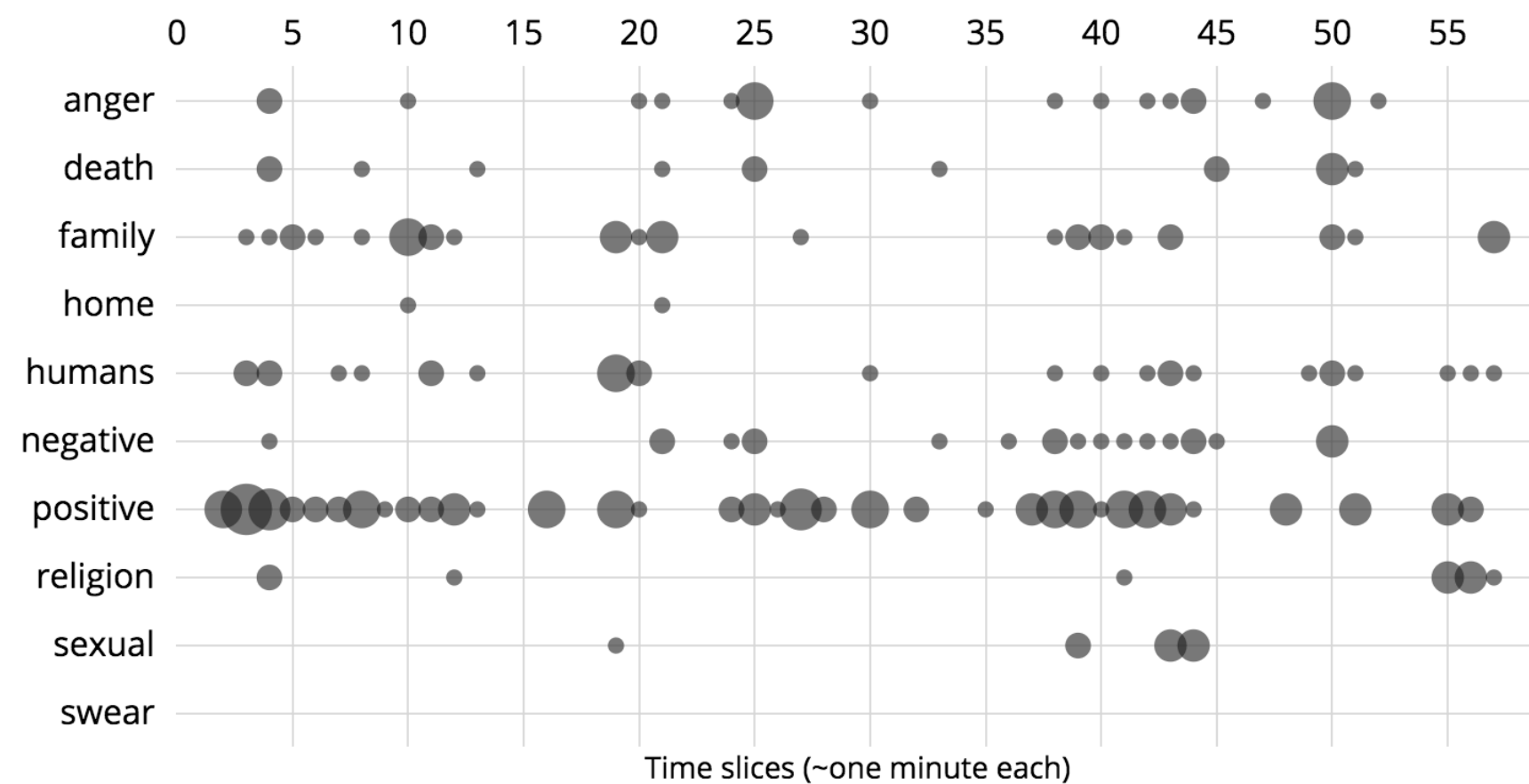
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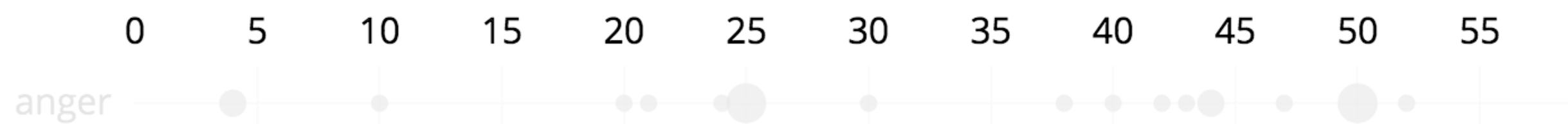
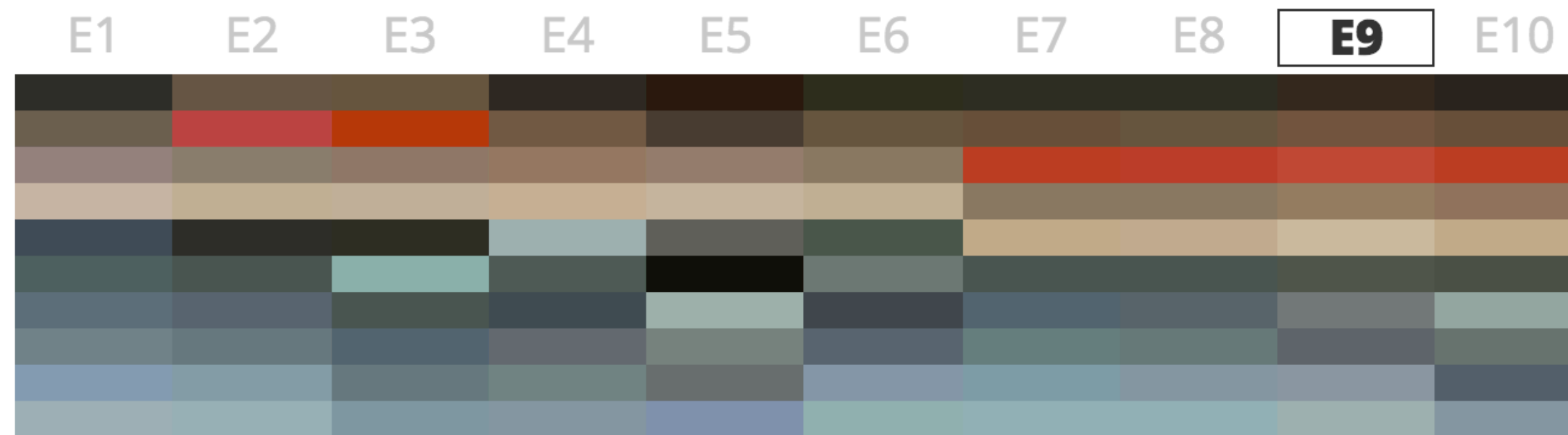
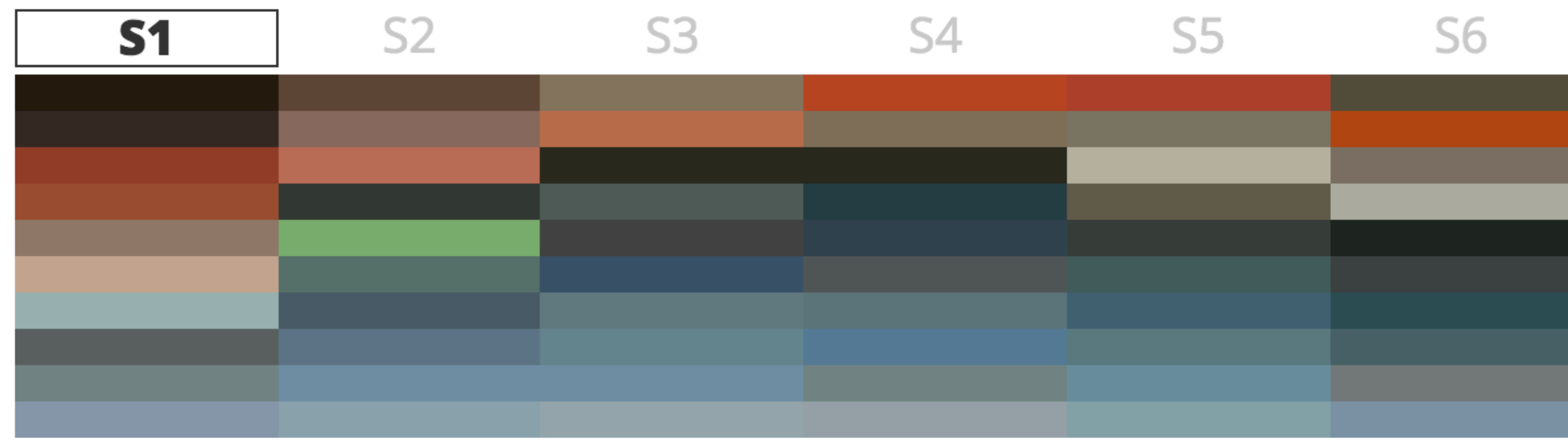
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Color Slice Plot



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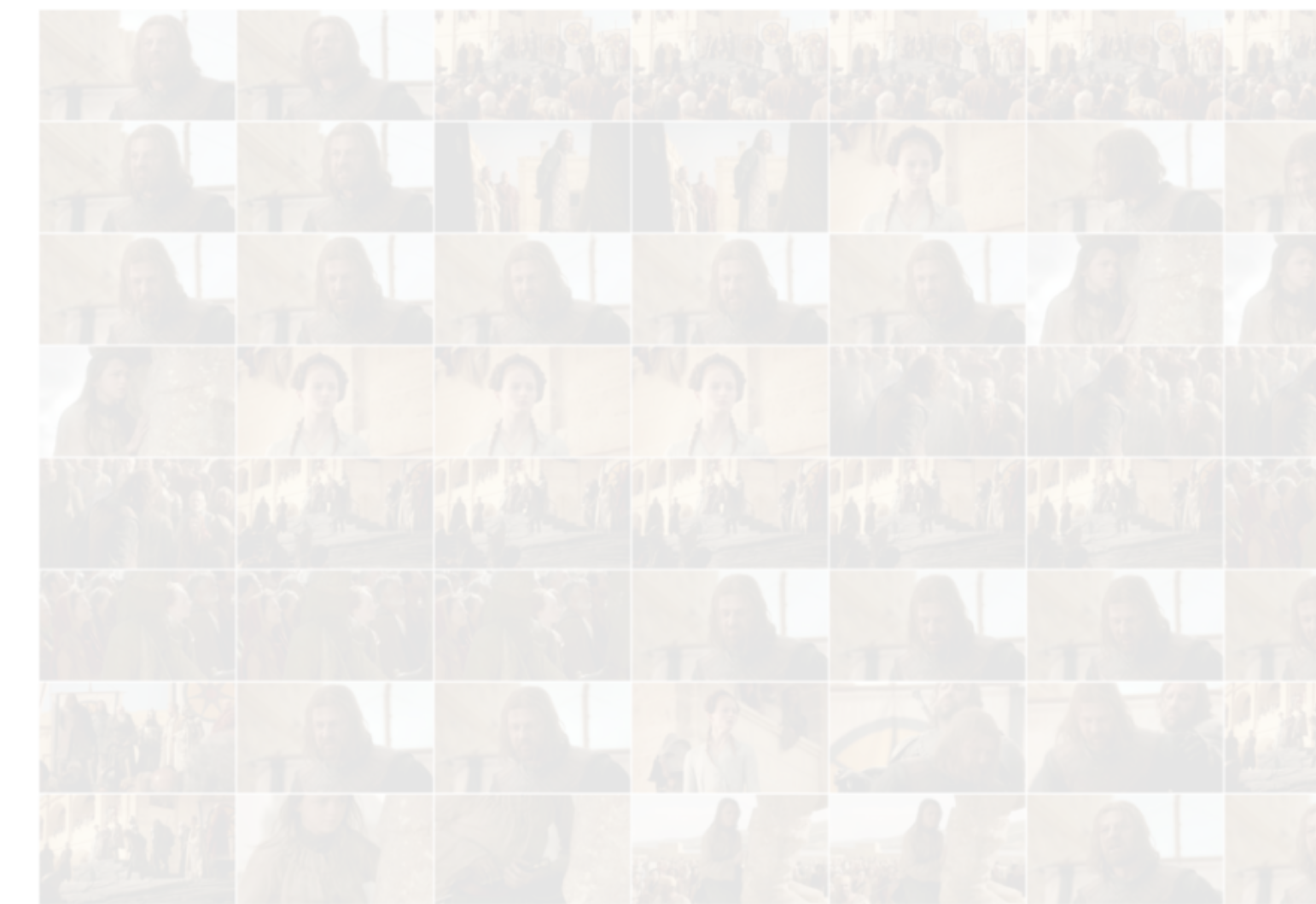
Written by: David Benioff & D. B. Weiss

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U.S. viewers: 2.66 million

Runtime: 56 minutes

Frames



Dialogue

Yan Eddard Stark,
Lord of Winterfell

Top words in S1

sword
honor

Runtime: 56 minutes

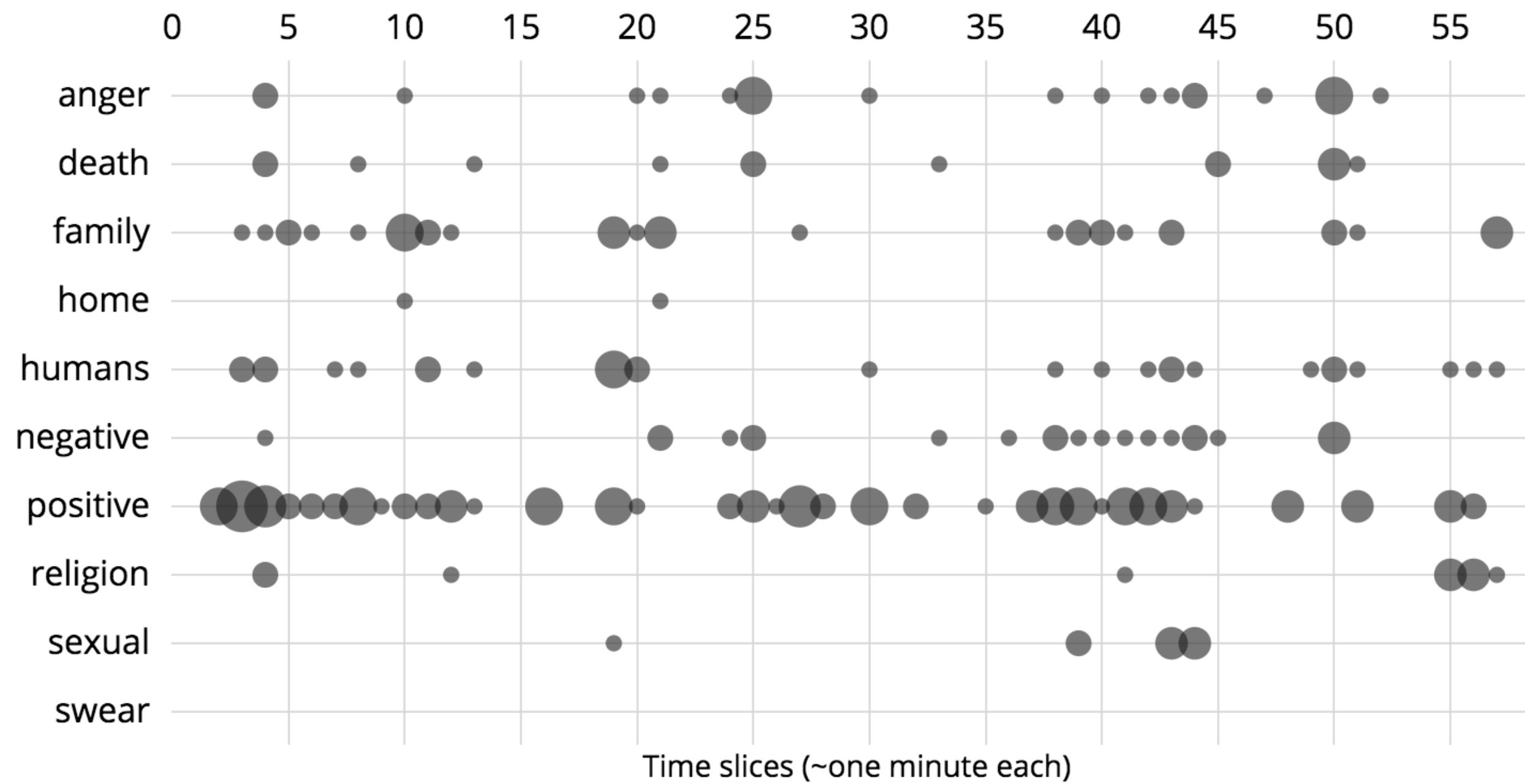
Color Slice Plot



Frames



Dialogue Plot



Dialogue

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 Traitor!
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 and Baelor the blessed bear witness to
 what I say:

Top words in S1

- sword
- honor
- drink
- khaleesi
- must
- hand
- half
- fine
- stop
- years

Runtime: 56 minutes

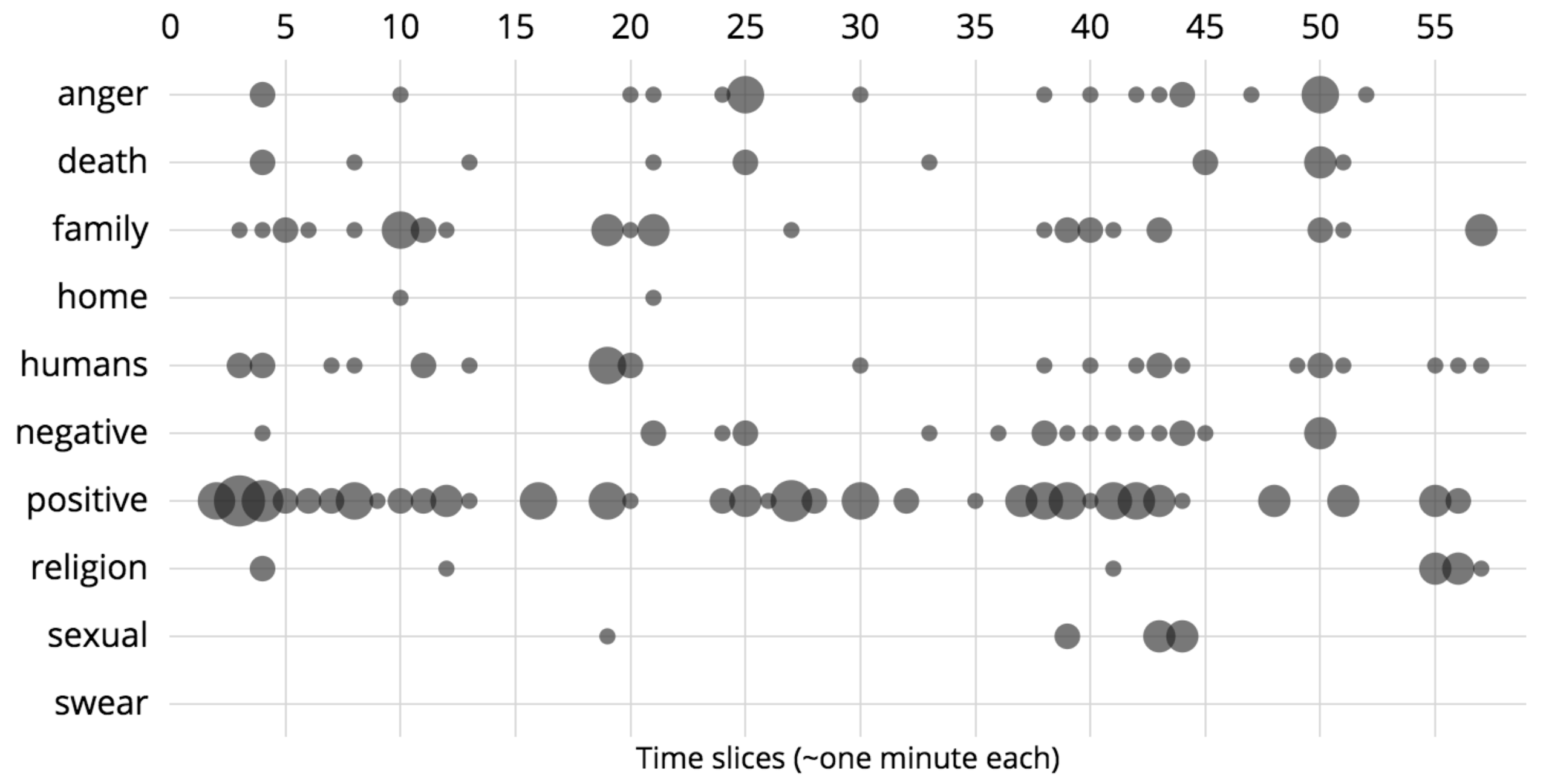
Color Slice Plot



Frames



Dialogue Plot



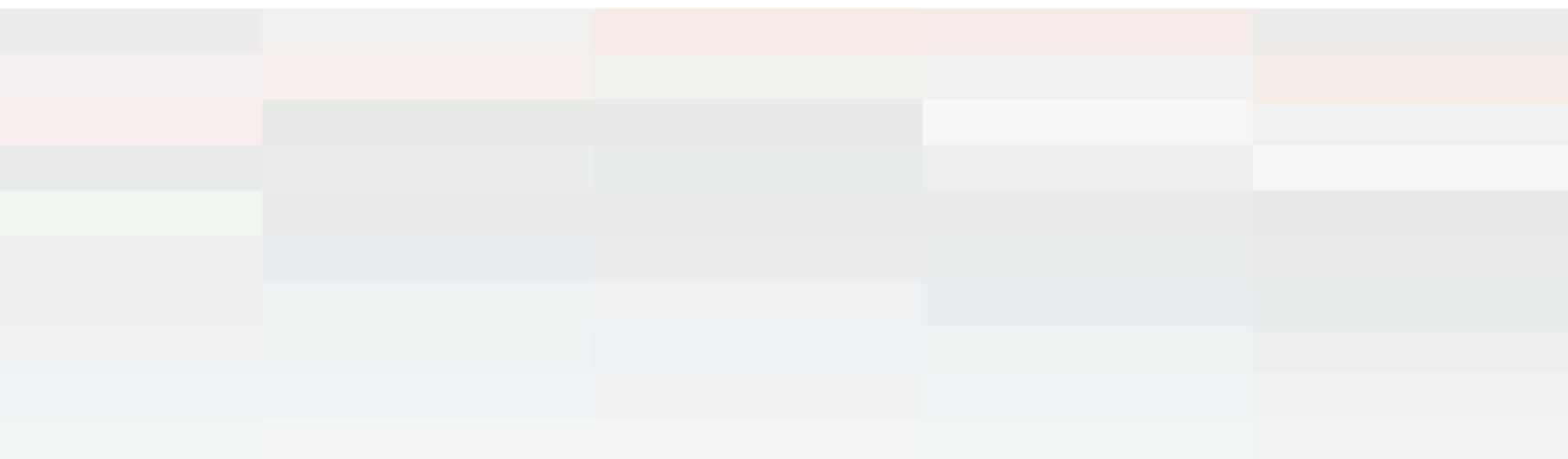
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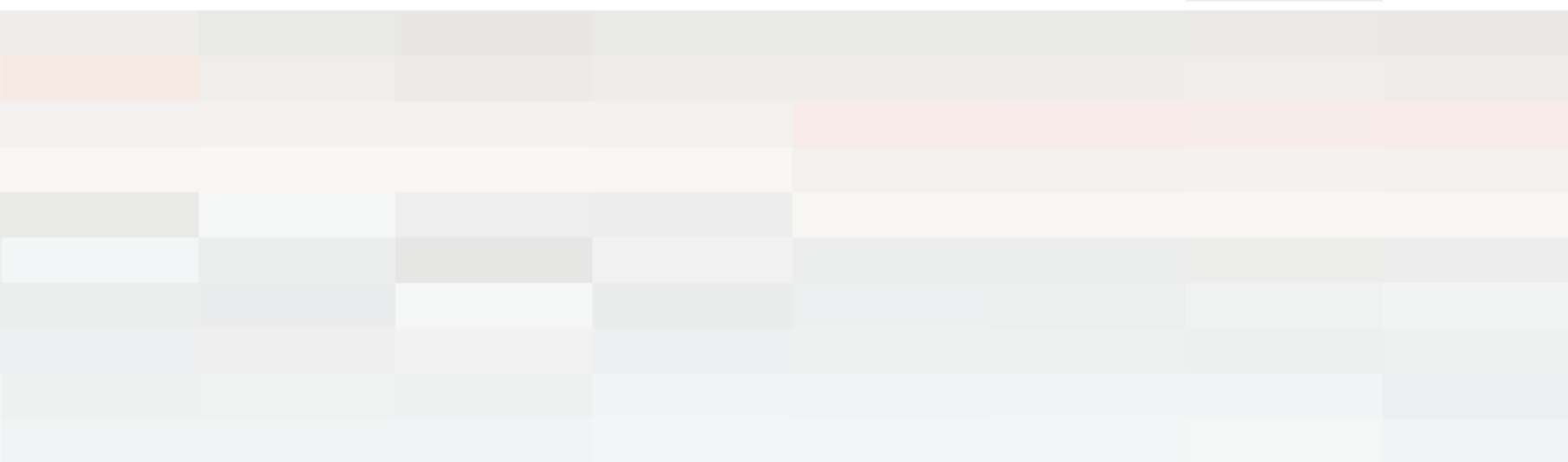
Top words in S1

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- honor
- drink
- khaleesi
- must
- hand
- half
- fine
- stop
- years

S2 S3 S4 S5 S6



E3 E4 E5 E6 E7 E8 E9 E10



15 20 25 30 35 40 45 50 55



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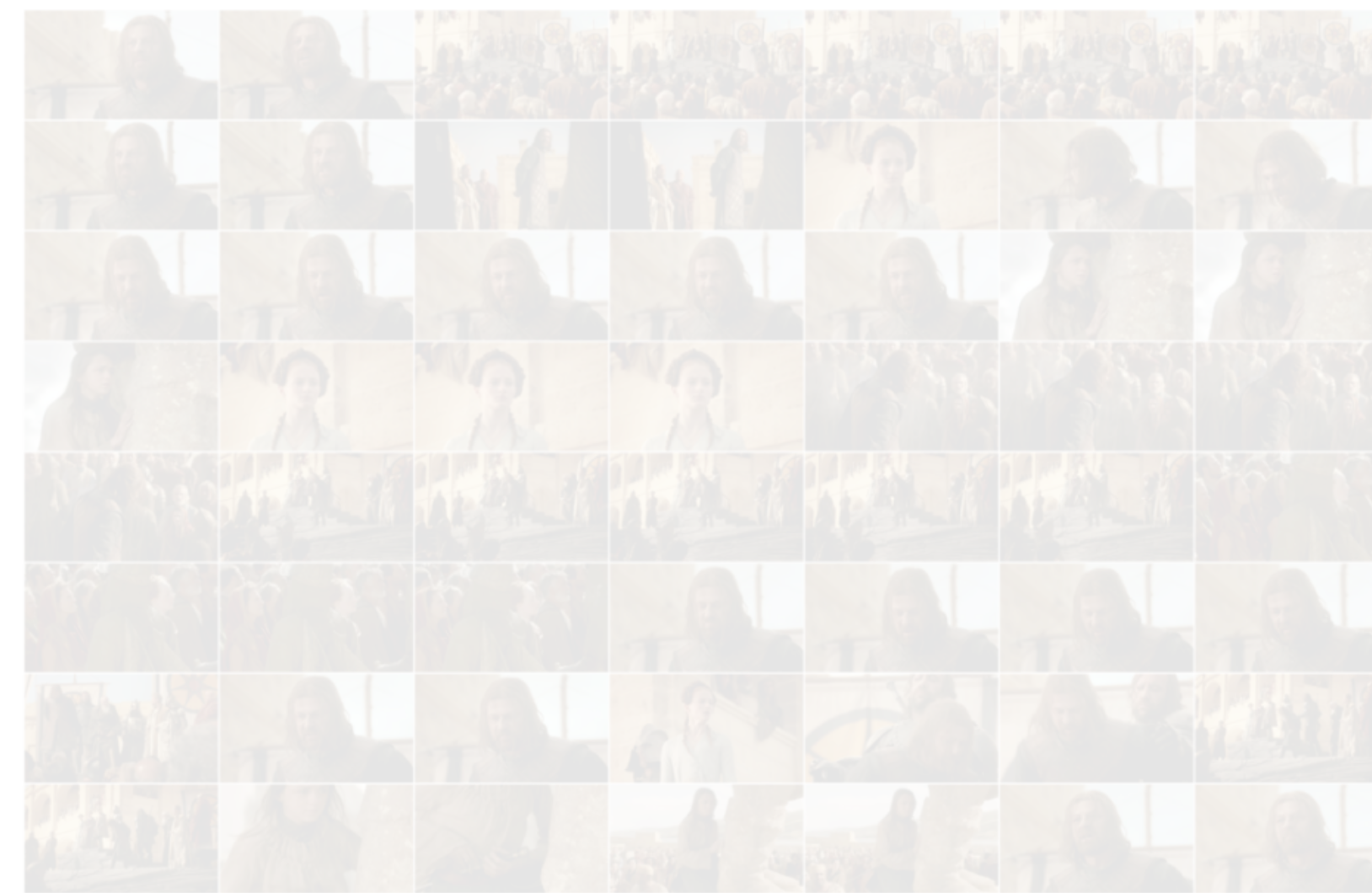
Written by: David Benioff & D. B. Weiss

Original Air Date: June 12, 2011

U.S. viewers: 2.66 million

Runtime: 56 minutes

Frames



Dialogue

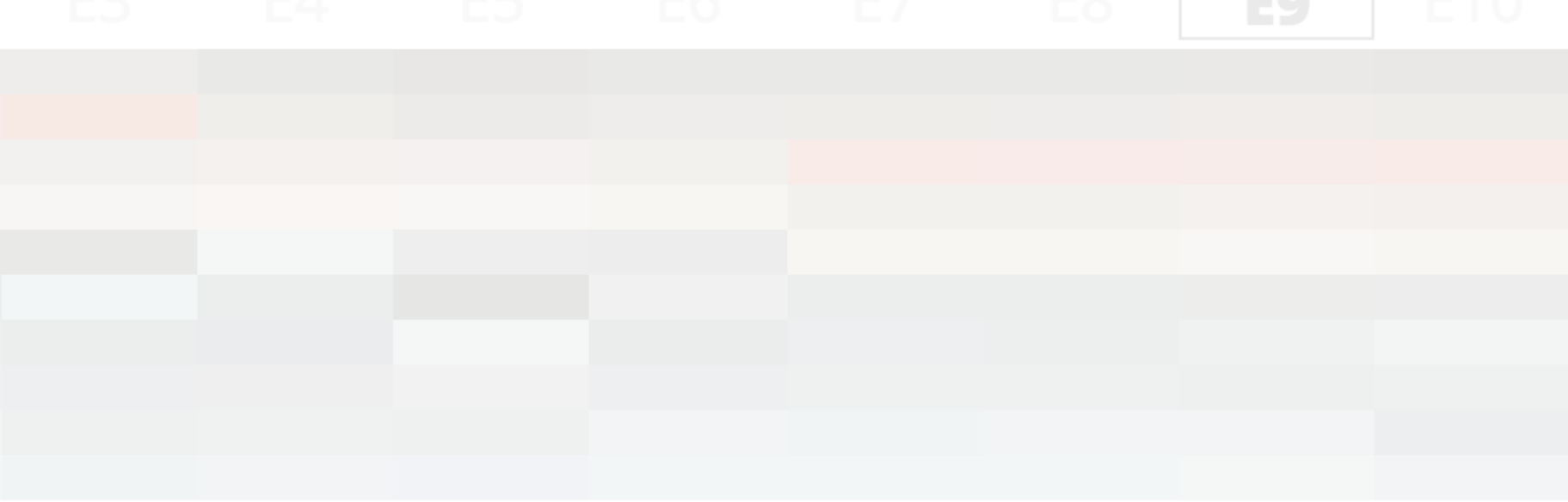
I am Eddard Stark,
Lord of Winterfell
and Hand of the King

Top words in S1E9

sword 13

honor 9

Metadata



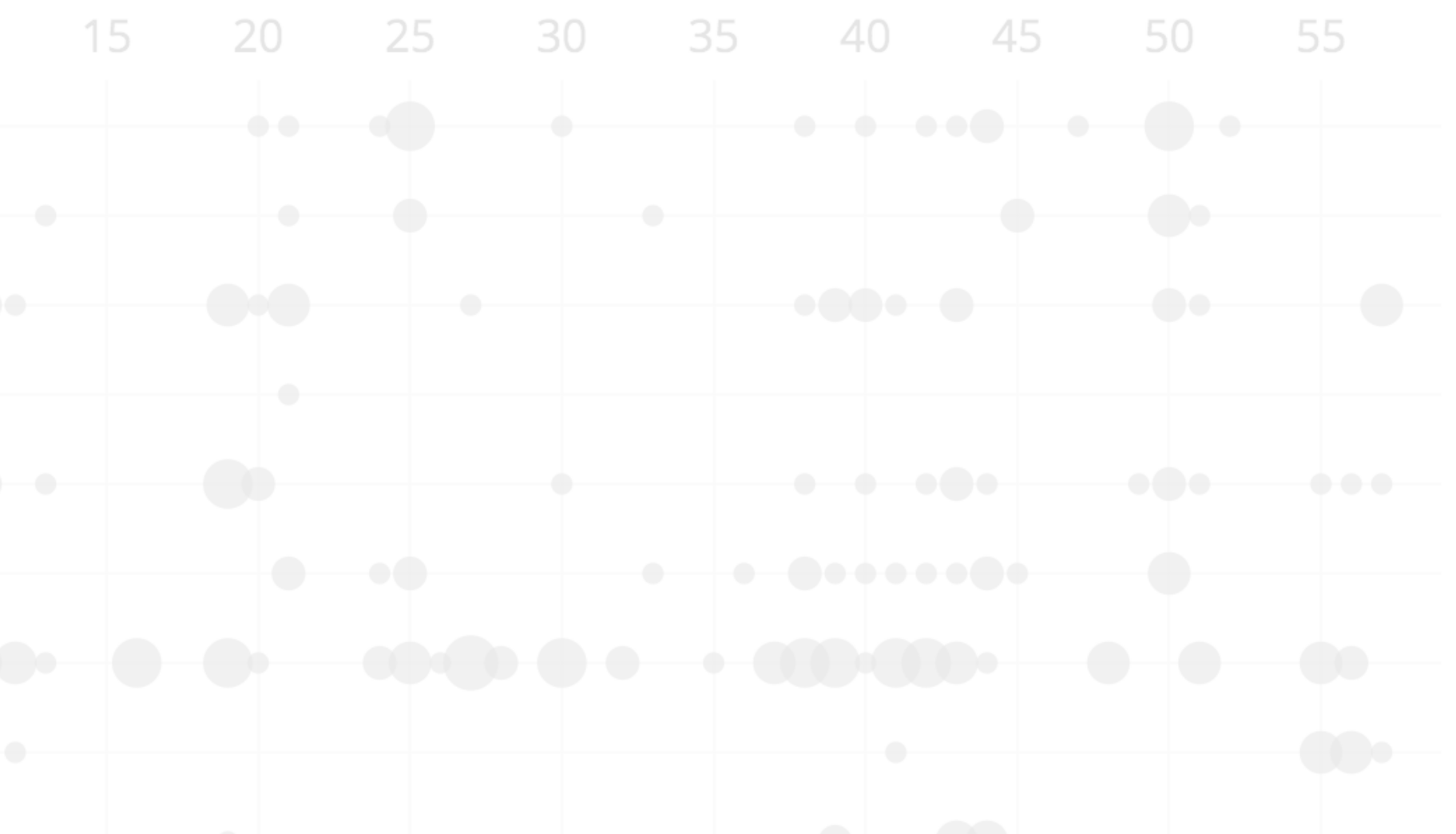
STE9: "Baelor"

Directed by: Alan Taylor
Written by: David Benioff & D. B. Weiss
Original Air Date: June 12, 2011
U.S. viewers: 2.66 million
Runtime: 56 minutes

Frames



Frames



Dialogue

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 but before his blood was cold
 I plotted to murder his son...
 And seize the Throne for myself.
 Traitor!
 Let the high Septon

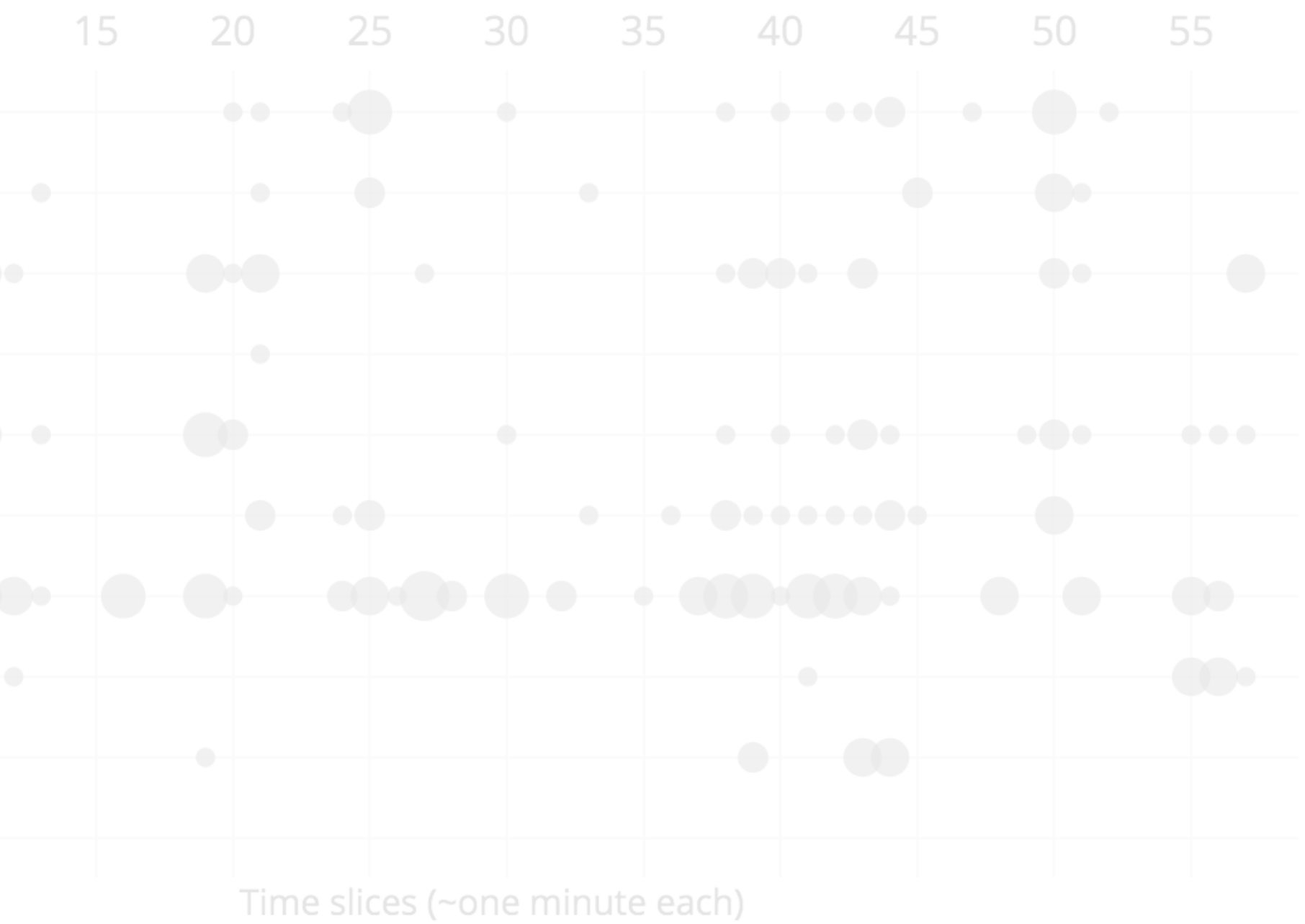
Top words in S1E9

sword	13
honor	9
drink	9
khaleesi	8
must	8
hand	7
half	7
fine	7
stop	7
years	6

Runtime: 56 minutes



Frames



Dialogue

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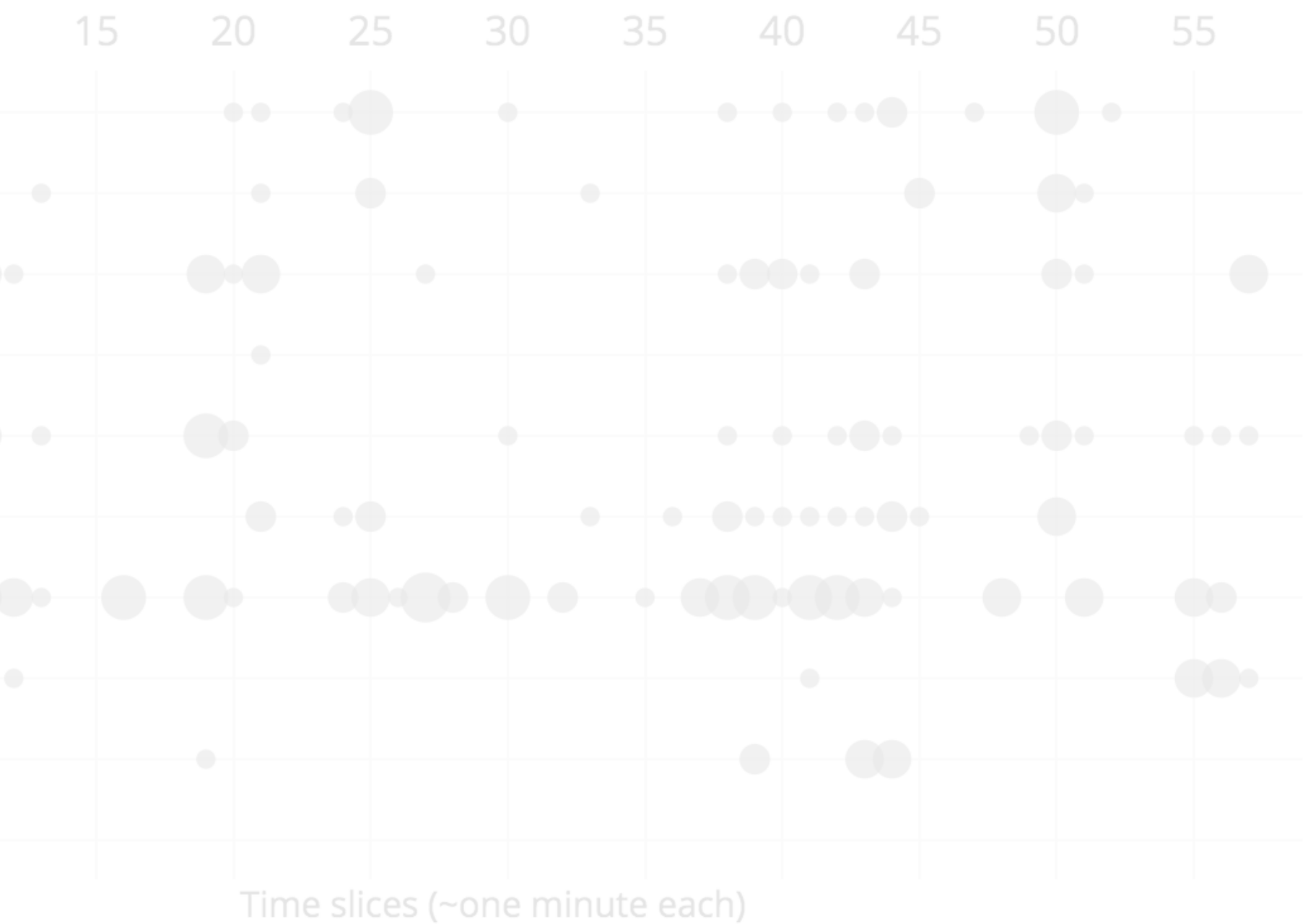
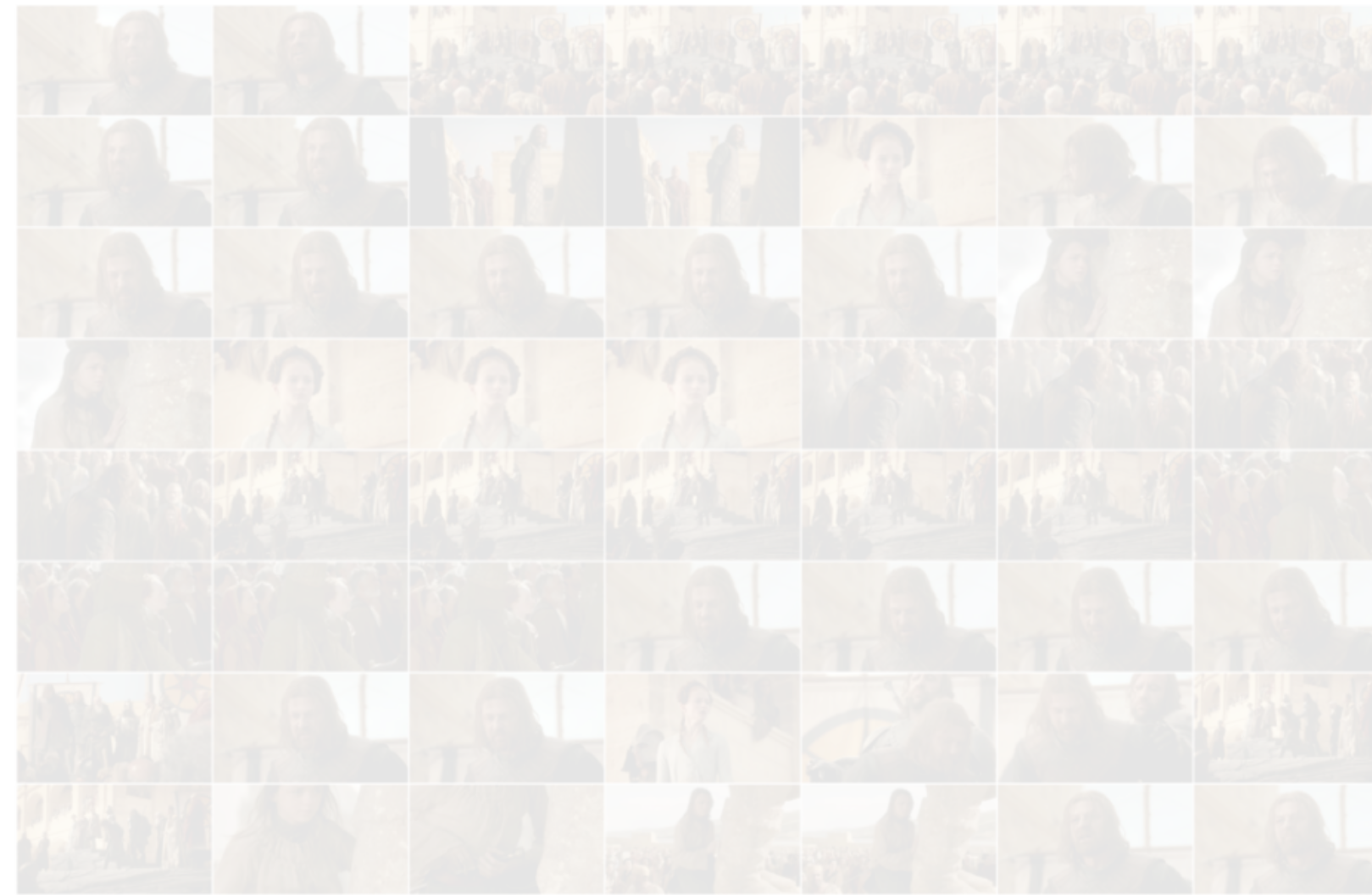
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khaleesi	8
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fine	7
stop	7
years	6

Dialogue

Runtime: 56 minutes

Frames



Dialogue

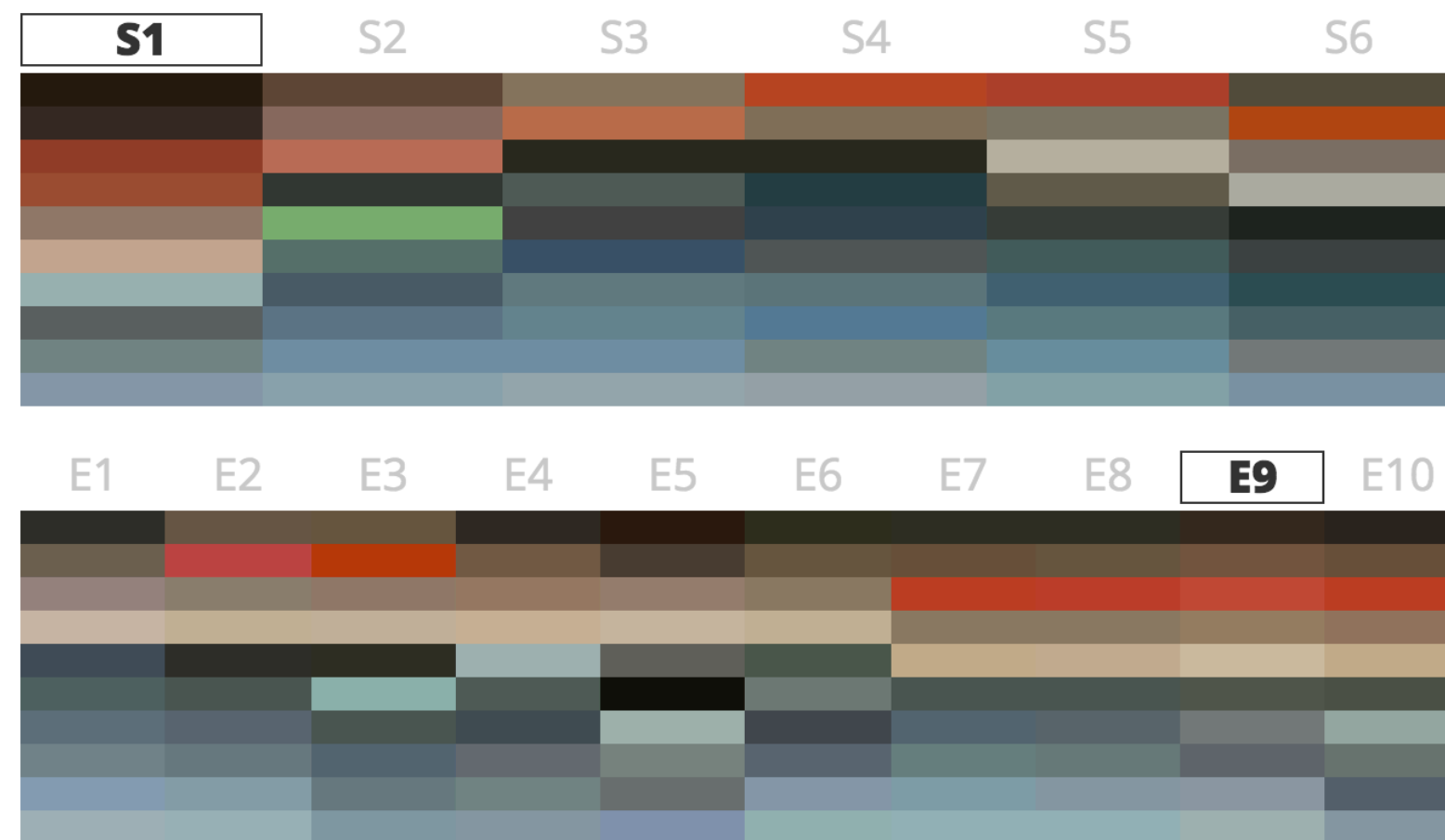
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Top Words

Color Slice Plot



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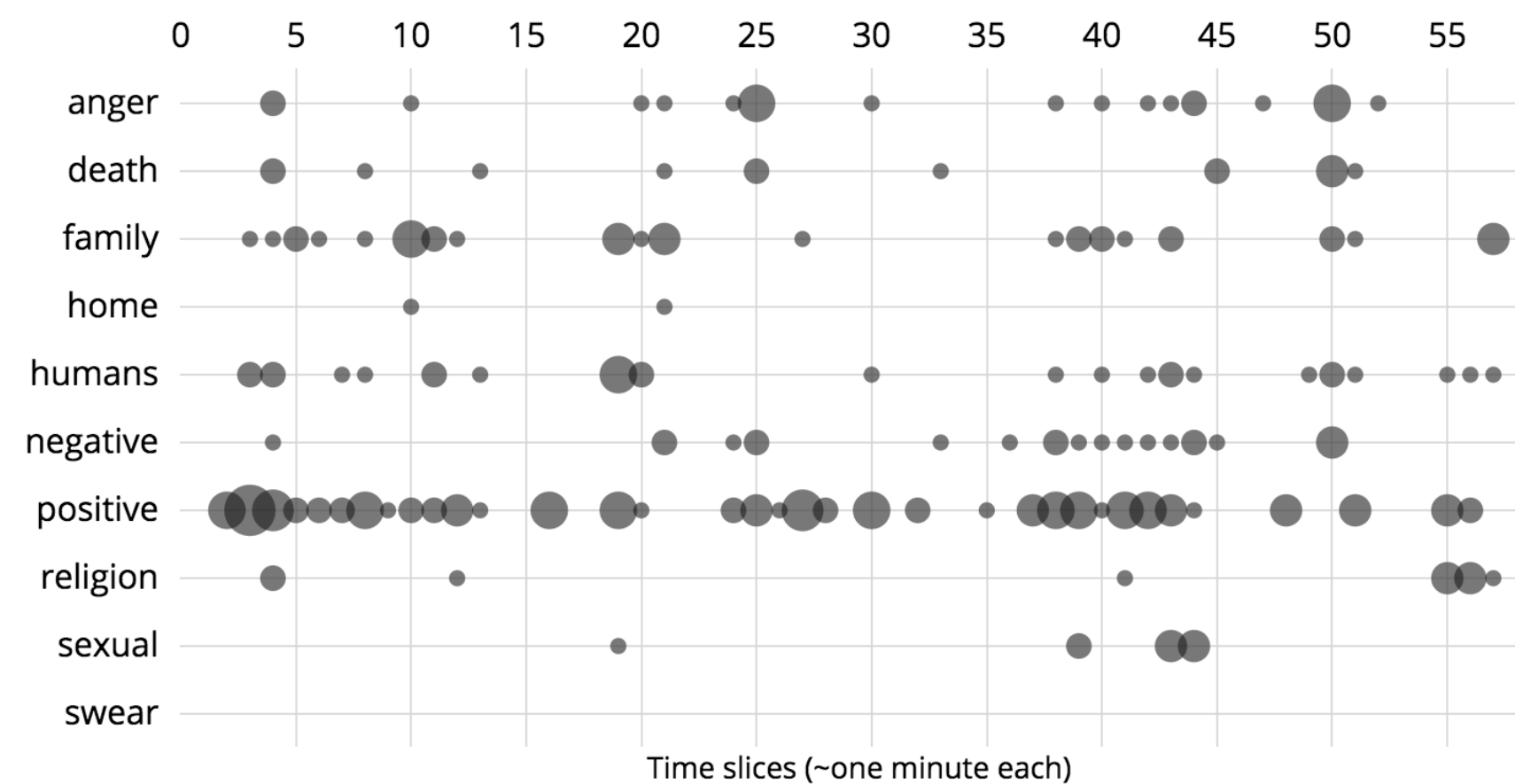
Metadata

Frames



Frames

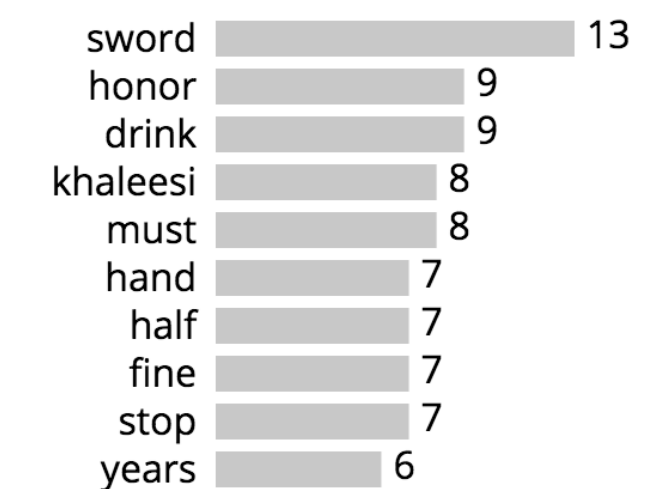
Dialogue Plot



Dialogue

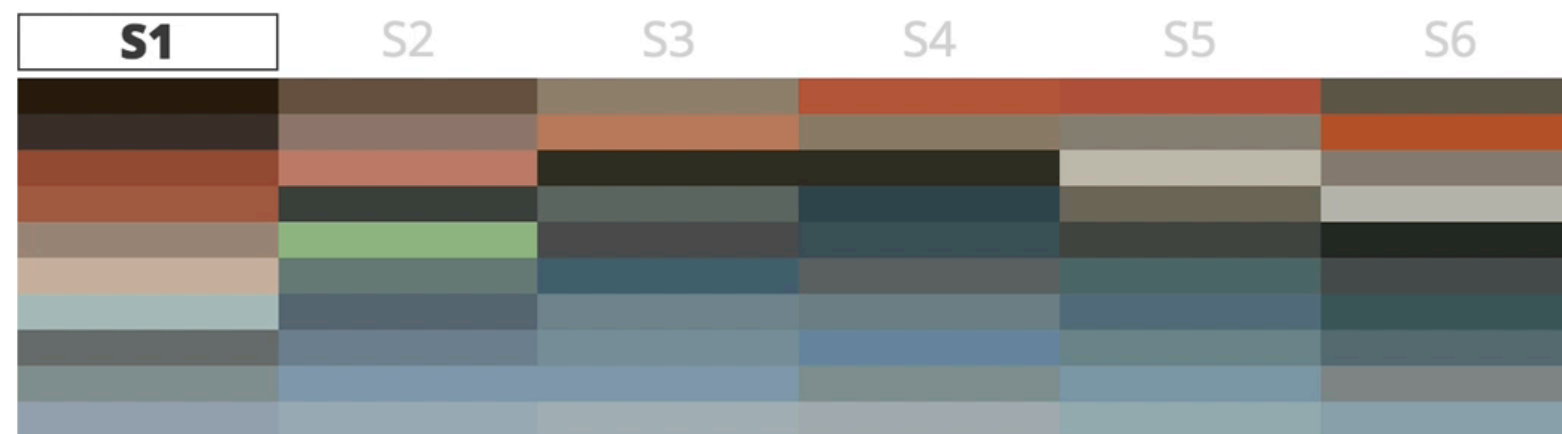
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Top words in S1E9



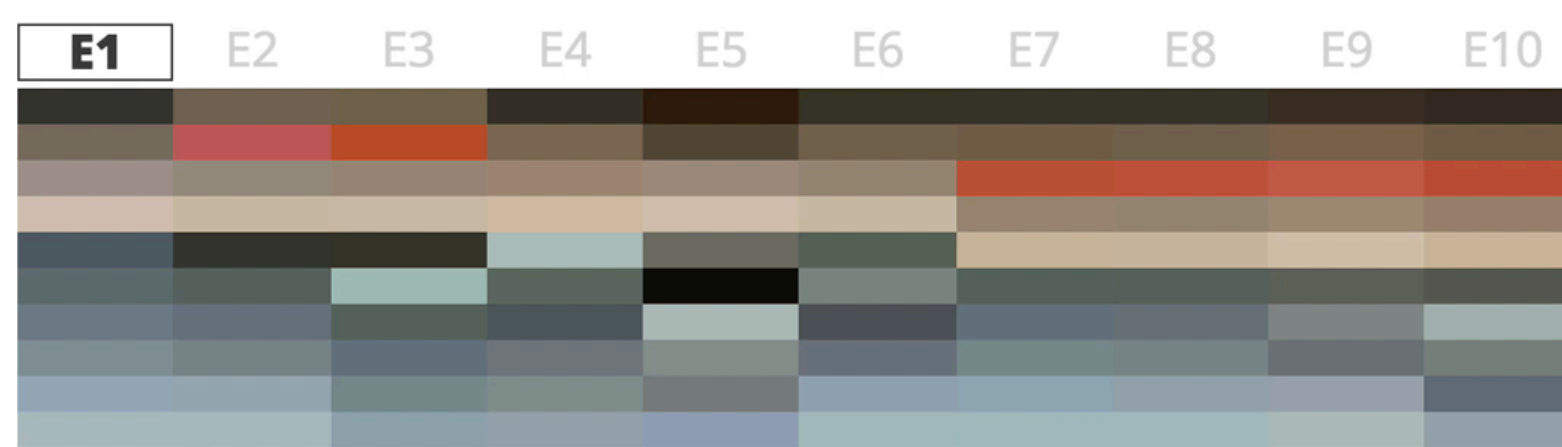
Dialogue

Top Words



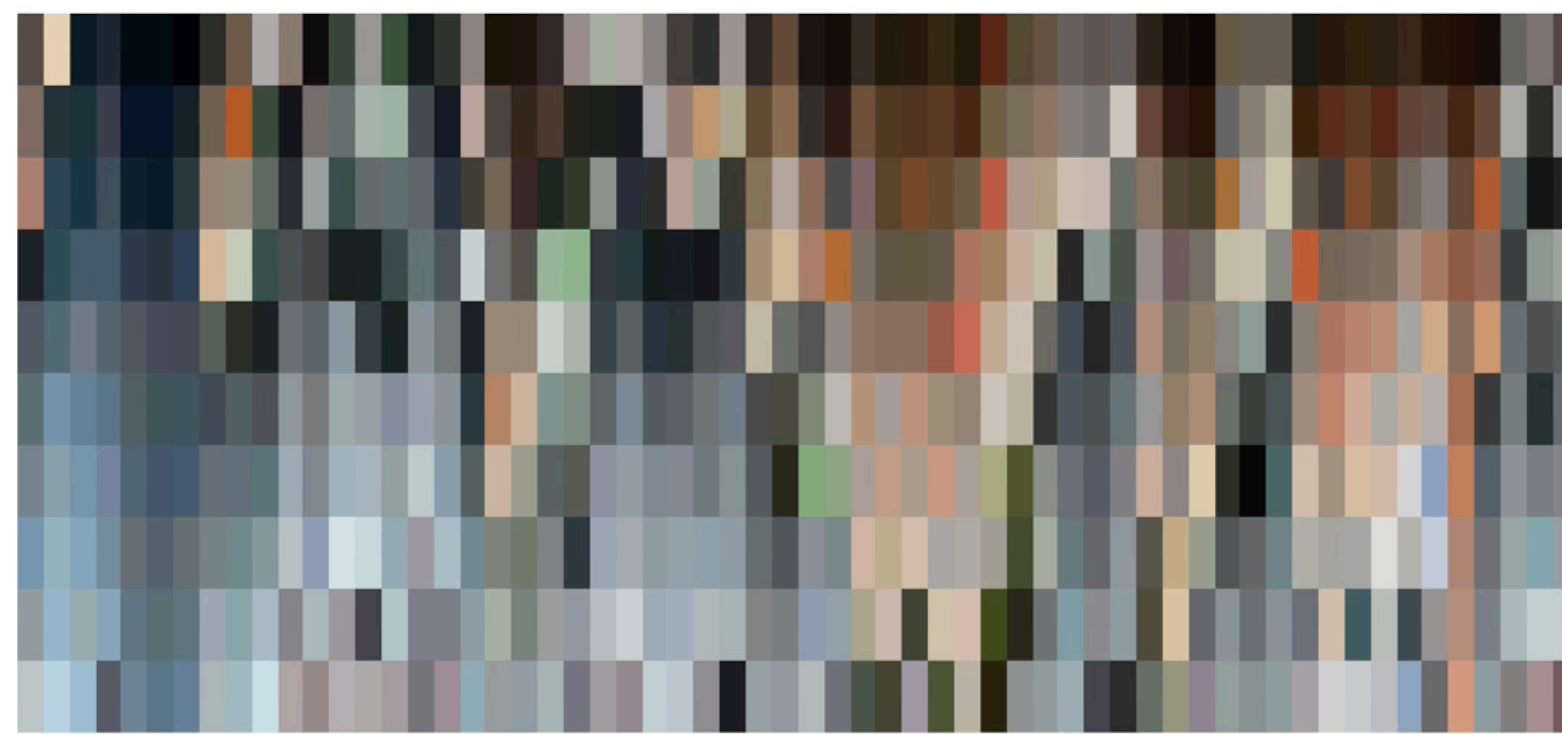
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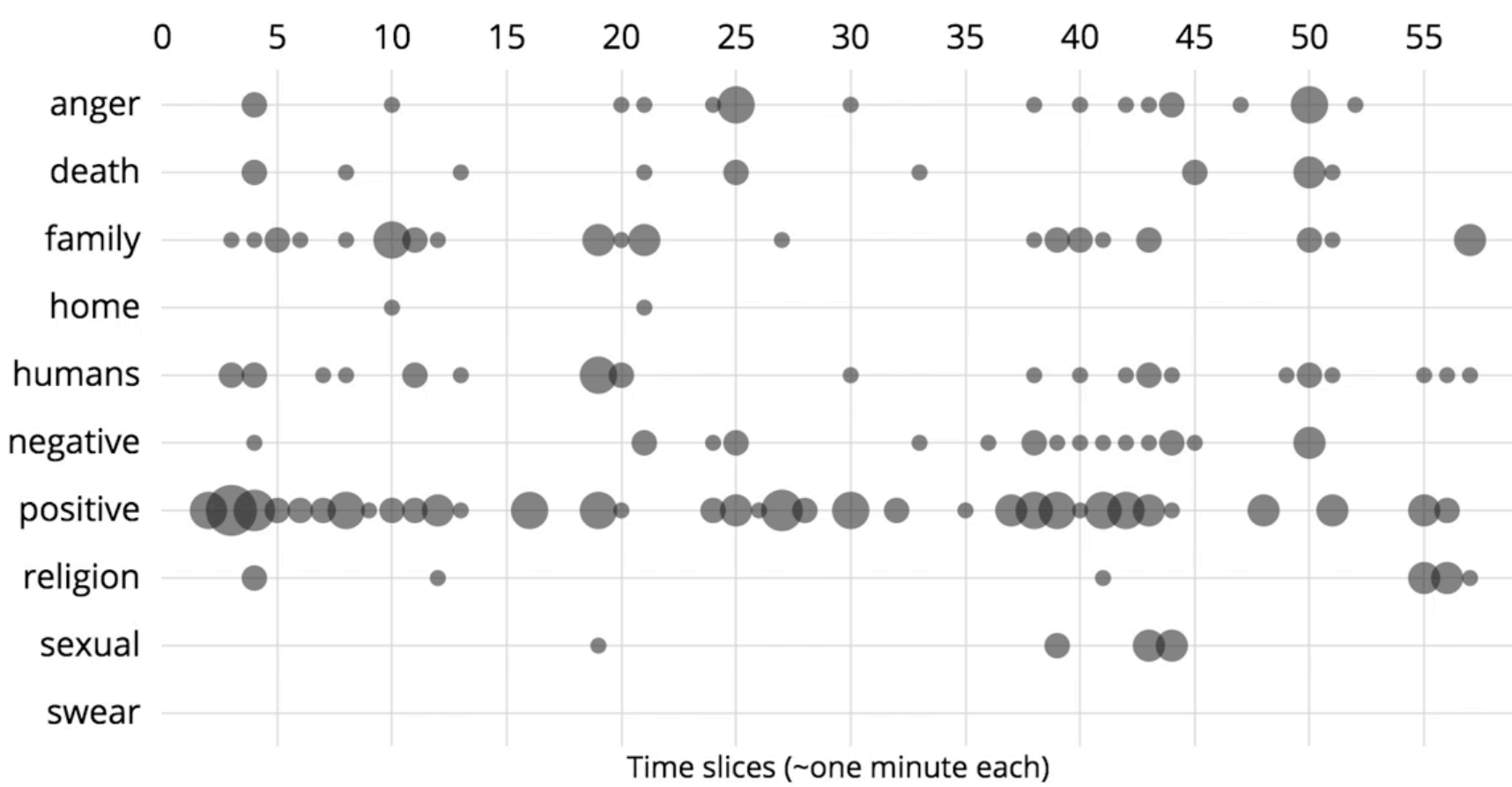


S1E1: "Winter Is Coming"

Directed by: Tim Van Patten
Written by: David Benioff & D. B. Weiss
Original Air Date: April 17, 2011
U.S. viewers: 2.22 million
Runtime: 61 minutes

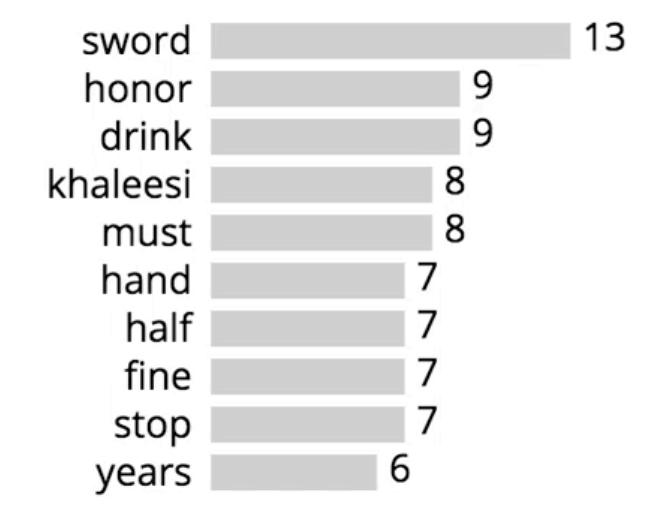


Frames



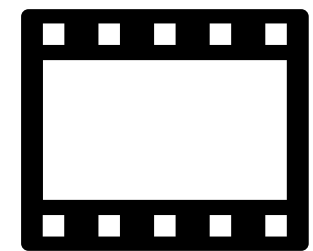
Dialogue

Top words in S1E1





Automatic data creation → no manual annotation



First step for quick video analysis



Find interesting video segments to do further high resolution inspection

MovieBarCode

Digital Humanities 2016

Companion Apps for Long Arc TV Series

TVX 2014

sViSIT

TVCG 2013

ColourVis

Computers & Graphics 2010

The Video Explorer

MMSys 2010

Jointly explore video with
color + text analysis

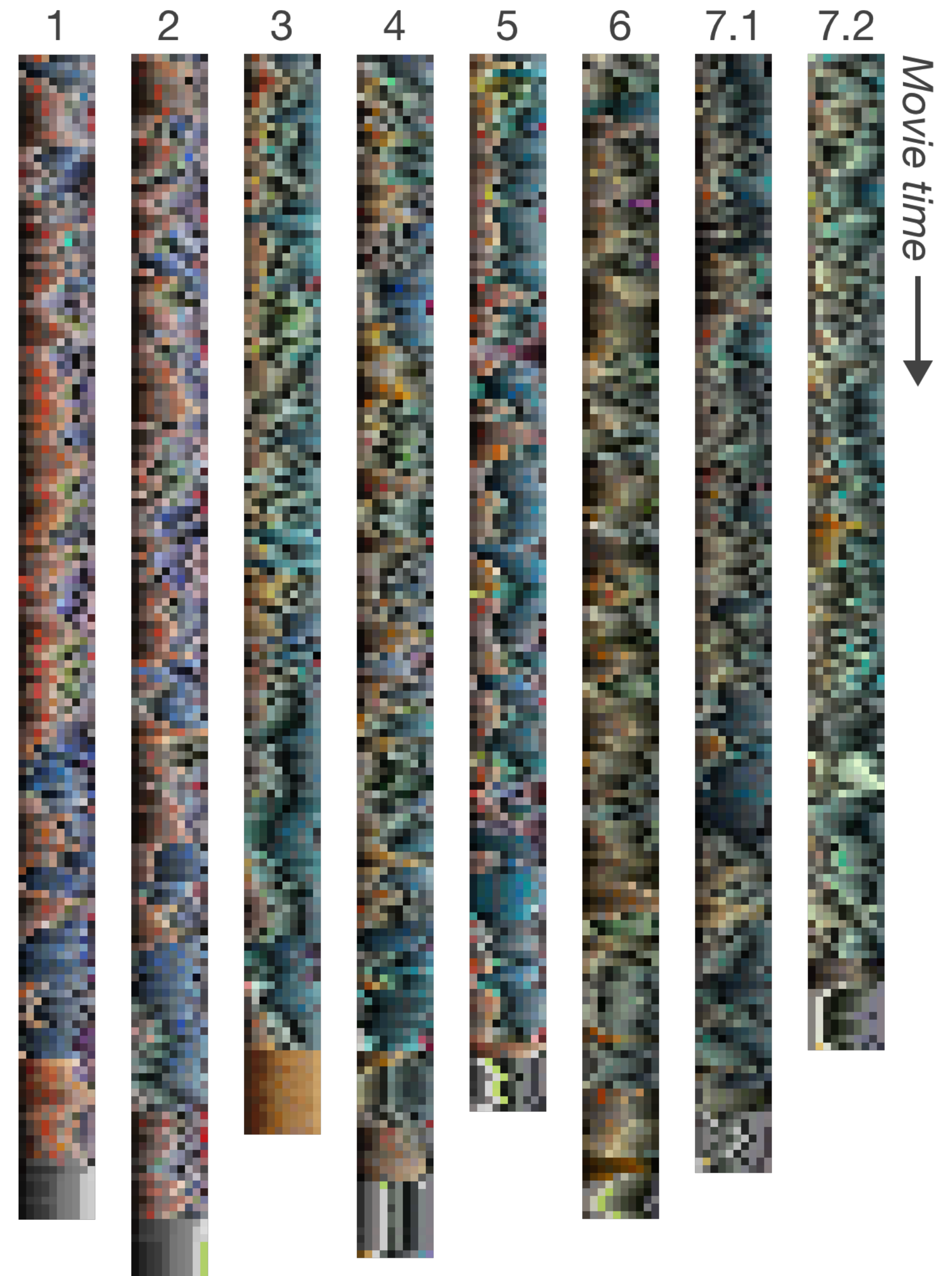
Future Work

Exploratory system evaluation

Wider range of entertainment media

- Harry Potter
- Star Wars
- Batman movies
- *Suggestions welcome!*

The *Harry Potter* series color signatures.



A VIZ OF ICE AND FIRE

Summarizing Entertainment Video Using Color and Dialogue

fredhohman.com/a-viz-of-ice-and-fire

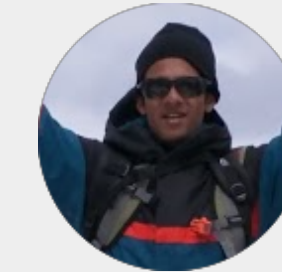
Thanks!



Fred Hohman

fredhohman.com

fredhohman@gatech.edu



Sandeep Soni

sandeepsoni.github.io



Ian Stewart

ianbstewart.github.io



John Stasko

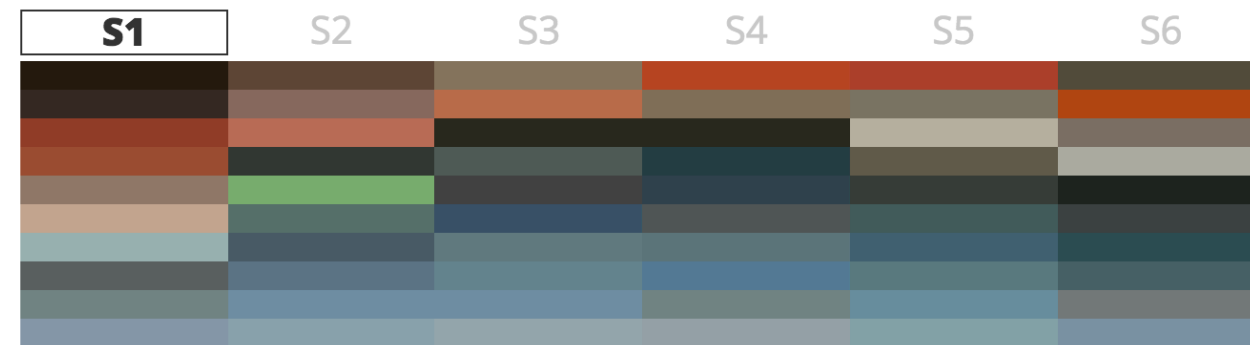
www.cc.gatech.edu/~stasko



Georgia Tech Visualization Lab

Polo Club
of
DATA SCIENCE

We thank the members of the GT Visualization Lab and the anonymous reviewers for their constructive feedback.

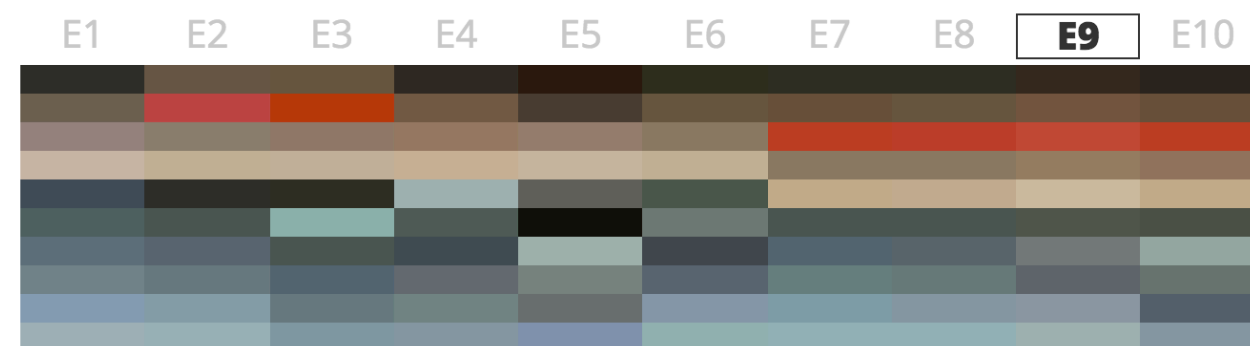


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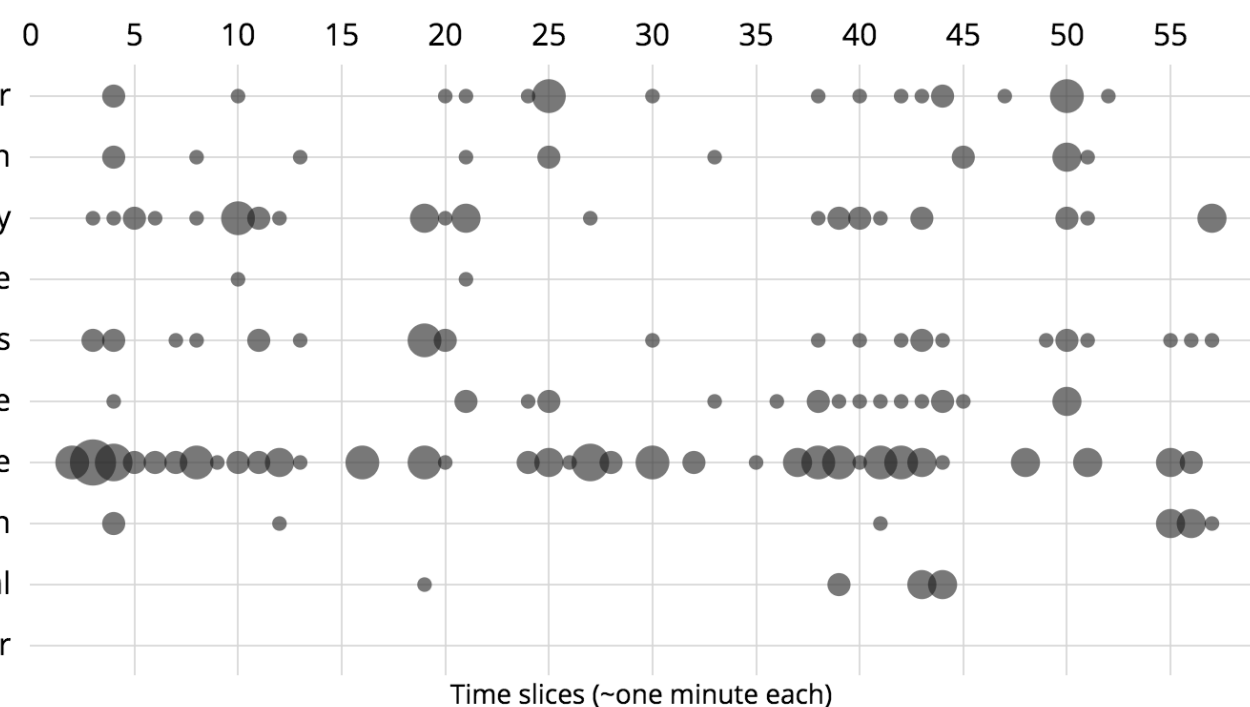
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Top words in S1E9

