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# From *Star Trek* to *The Hunger Games*: emblem gestures in science fiction and their uptake in popular culture

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**Abstract:** Research on emblems to date has not drawn on corpus methods that use public data. In this paper, we use corpus methods to explore the use of original fictional gestures in the real world. We look at two examples from popular science fiction, the Vulcan salute from *Star Trek* and the three-finger salute from *The Hunger Games*. First, a Twitter corpus of the Vulcan salute emoji shows that it is used to represent *Star Trek* fandom and wider nerd culture, alongside its use as a greeting. Second, a global news corpus shows the three-finger salute has come to be used as a pro-democracy protest gesture across political and cultural boundaries in South East Asia. These corpus studies show different trajectories for the two gestures, with the three-finger salute escaping the confines of its fictional world, while the Vulcan salute has come to stand in as a reference to the media it originated from. We conclude with a reflection on the opportunities, challenges, and limitations of bringing corpus methods to gesture studies.

**Keywords:** gesture; *Hunger Games*; *Star Trek*; emoji; genre fiction

## 1 Introduction

Worldbuilding in science fiction includes language choices that contribute to the fabric of the fictional setting. One element occasionally integrated is gesture, a ubiquitous feature of communication across human cultures. We explore gestures from two science fiction worlds and their adoption in wider society (see Figure 1). The first is the “Vulcan salute”, a greeting from the *Star Trek* universe. The second is the “three-finger salute” from the *Hunger Games* universe. Both are a type of gesture known as “emblems”.

We begin with an introduction to emblems and existing approaches to studying them. We then use two different approaches to corpora to explore the function these gestures have beyond their fictional worlds. First we explore the use of the Vulcan salute emoji on Twitter, then we examine references to the three-finger salute in a global newspaper corpus. This paper draws attention to the effect that gesture in science fiction can have on real-world communicative contexts, as well as the benefits and challenges of using corpus approaches to emblems.

## 2 Emblem gestures

The two focus gestures in this paper are emblems (Ekman and Friesen 1969). Emblems have standards of well-formedness and a conventional meaning for a particular group, which can have a distribution beyond linguistic boundaries (Payrató and Clemente 2020). Emblems often have conventional names and are perceived as intentionally communicative by users. These properties distinguish them from the more spontaneous and

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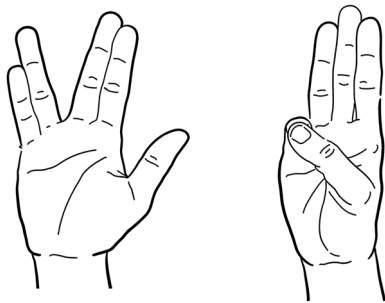


Figure 1: The Vulcan salute (*left*) and three-finger salute (*right*) gestures.

idiosyncratic gestures that are used alongside speech (Kendon 2004). Emblems have been noted in the literature to coalesce around specific functions including greeting/leave-taking as per the Vulcan salute, gestures of solidarity and resistance such as the raised fist used over the last century including in the Black Lives Matter movement (Leverette 2021: 2–6), and the Serbian “three fingers” (using the thumb, index, and middle fingers) used during the dissolution of Yugoslavia (Žikić 2004).

To date, studies of the distribution of emblem gestures have relied on survey, interview, and qualitative methods (Gawne and Cooperrider 2022). Corpus approaches to gesture have been limited by the lack of available annotated corpora of gestural phenomena. But with emblems, we can use their stable form/meaning and nameability as secondary measures to explore corpus data. For the Vulcan salute, we use its encoding as an emoji to analyse a corpus of Twitter messages. For the three-finger salute, we examine a corpus of newspapers to assess the uptake of this gesture in recent years by real-world protesters in South East Asia.

### 3 Vulcan salute: emoji on Twitter

The Vulcan salute involves the arm bent at the elbow, palm outward with fingers extended. The little finger and ring finger are held together, and the index and middle fingers held together, and the thumb also splayed. This is the gesture of greeting and leave-taking for Vulcans, a humanoid race in the long running *Star Trek* franchise. The gesture is typically performed with the phrase “live long and prosper” (*dif-tor heh smusma* in Vulcan), with the addressee reciprocating, sometimes with the less common second pair part “peace and long life”.

The creation of the gesture is attributed to Leonard Nimoy, who played Spock, the first and most iconic Vulcan on the show. Nimoy (1975: 104) claimed inspiration from kohanim (Jewish priests), who perform the gesture with two hands as a form of blessing. The handshape is similar to the Hebrew letter shin (ש), the first character in Shadai, one of the names of the God of Israel (Dellon and Rozen 2014). Nimoy’s creative multimodal expansion of the written script has become firmly entrenched in *Star Trek* canon, becoming a key symbol representing the franchise.

This emblem is commonly used to evoke the utopian futurism of the *Star Trek* world, used by astronauts and space industry employees in media imagery (Alalinarde 2017; Kim 2018: 181). Rap performer Pharrell Williams used the Vulcan salute instead of gang signs while performing with N.E.R.D., and co-founded a record company called *Star Trak* (2001–2014), part of a larger Black “nerdcore” cohort that shows that pop subculture boundaries can be removed while racial boundaries persist (Gazi 2017).

The Vulcan salute was encoded as an emoji in 2014 (Unicode 7.0).<sup>1</sup> The original candidate document (L2/12–275) overtly refers to its function as a gesture in *Star Trek*, arguing that “the semantic case for 🖖 is hardly much different than that for 🙄 or 🙌” (Unicode 2012: 7). We use the status of the Vulcan salute emblem as an emoji to explore a corpus of Twitter data to investigate how it is used in social media communication.

<sup>1</sup> <http://www.unicode.org/versions/Unicode7.0.0/> (accessed 23 June 2022).

### 3.1 Corpus

We used the /2/tweets endpoint of the Academic Research Twitter API<sup>2</sup> to download 2,445 tweets in English from 13–14 February 2022 that used the 🖖 emoji with any/all skin tone modifiers. Exemplars of use are anonymized by removing the user name and replacing content words with synonyms while leaving the emoji unchanged (see Ayers et al. 2018 for ethical use of public social media data). There were 2,445 tweets with 2,534 uses of the Vulcan salute in all tweets, suggesting repetition in the use of this emoji is low. We cleaned the corpus to remove obvious spam and bots. We removed 486 tweets from the data, leaving 1,957 tweets.

### 3.2 Analysis

#### 3.2.1 Function analysis

We selected the first 1,000 tweets from our sample and coded them for their thematic context. As these were tweets extracted in isolation from their context, it was often difficult to assign a clear function to the emoji in a tweet as we were missing the initial pair part of the interaction or the larger interactional context. We give an example of each context of use in Table 1.

The raised hand examples are likely from individuals unable to distinguish the Vulcan salute emoji from the raised hand emoji (🙋), or simply mistyping. Some Valentine's Day usages appear to use the salute as it looks like a V, or possibly to reference genitalia, but this is unclear (however, one tweet in the “other” category was an overt reference to performing cunnilingus). Two other events in the data collection window are represented. The first is the anniversary of the 2019 Pulwama bomber attack in the disputed Indian-administered Kashmiri region. The emoji was used as a salute of respect, possibly having been found through a keyword search for “salute”. The second was the 2022 Super Bowl, won by the LA Rams, who play in the Western Division. The usage

**Table 1:** Different contexts and functions of the Vulcan salute emoji in the first 1,000 tweets, including examples.

Context and example	Total
Fandom “Why is Star Trek so awesome? 🖖❤️”	125
Greeting/farewell “@twitterID Goodnight and LLAP, Commander 🖖”	62
Nerdom “@twitterID May the Force live long and prosper with you 🖖”	43
Superbowl “HAPPY SUPERBOWL SUNDAY, Y'ALL!!! 🖖🙌😄”	27
Westside “Half time show got me saying WEST SIDE!!!! 🖖”	24
India “#14/19 never forget Remember our heroes #JaiHind IN 🖖”	13
Valentines “Happy Valentine's Day 🖖 I am so glad I met you. 🖖💕”	10
Raised hand	5
Other	14
Bot	227
Unclear	450
<b>Total</b>	<b>1,000</b>

2 <https://developer.twitter.com/en/products/twitter-api/academic-research> (accessed 14 March 2022).










around the Super Bowl appears to be an approximation of the “west side” gesture (the middle and ring finger are held together, the little and index fingers splayed to create a “W”), which is not currently an emoji. These examples illustrate the communicative flexibility of handshape emoji, which can have functions beyond the specific intended reason for their inclusion in the Unicode standard (see Gawne and Daniel 2021 for more on this).

Although we have probably under-attributed the usage of the Vulcan salute as a greeting or final interactional turn because of the way the data collection isolates tweets from their interactional context, we also see that over 16 % of tweets with a clear function are used to signify *Star Trek* fandom or “nerd culture” more generally.

### 3.2.2 Frequency analysis

We also used the `/2/tweets/counts/all` endpoint to collect frequency data for the 30 days preceding 28 February 2022 across the 20 most common languages on Twitter. This endpoint allows authorized users to provide a search query and returns the number of tweets which match that query within a specified timeframe. We focus on the 20 top languages on Twitter for the time period, and collected data on a range of 22 emoji that we thought were likely to show cross-linguistic variation in frequency; the table with the full set of emoji is in Appendix.<sup>3</sup> Table 2

**Table 2:** Frequency of use of the nine emblem emoji, including the Vulcan salute, used in tweets across 20 languages in early 2022, as a percentage of the total number of occurrences of the 22 selected emoji.

									
English	0.17%	4.49%	14.37%	0.86%	0.54%	1.59%	0.82%	21.60%	1.02%
Japanese	0.06%	2.16%	20.12%	0.18%	0.15%	5.01%	3.86%	19.62%	0.44%
Arabic	0.01%	4.91%	5.44%	0.49%	0.05%	0.62%	0.36%	7.18%	0.02%
Spanish	0.11%	4.25%	8.71%	1.00%	0.44%	1.18%	0.40%	14.67%	0.62%
Indonesian	0.03%	1.65%	15.13%	1.86%	0.20%	0.59%	3.79%	24.54%	0.36%
Portuguese	0.05%	1.54%	8.46%	1.20%	0.48%	0.79%	0.38%	22.14%	0.35%
Hindi	0.01%	2.38%	3.42%	0.24%	0.06%	0.90%	0.29%	52.08%	0.12%
Turkish	0.08%	1.74%	8.18%	0.42%	0.10%	1.81%	0.21%	21.68%	0.59%
French	0.07%	3.78%	10.47%	1.03%	0.39%	0.79%	0.24%	12.73%	0.26%
Farsi	0.01%	4.69%	1.74%	0.13%	0.14%	0.73%	0.10%	4.46%	0.13%
Tagalog	0.06%	1.42%	6.74%	0.71%	0.34%	1.53%	0.96%	10.88%	0.62%
Thai	0.17%	1.56%	7.41%	0.15%	0.10%	2.74%	0.97%	15.99%	0.84%
Korean	0.05%	0.76%	26.04%	0.21%	0.18%	0.90%	2.57%	12.72%	0.17%
Italian	0.05%	1.14%	6.55%	0.66%	0.26%	0.65%	0.25%	9.07%	0.27%
German	0.30%	2.85%	19.79%	1.10%	0.59%	1.68%	0.23%	9.14%	0.66%
Russian	0.09%	2.97%	13.57%	0.77%	0.27%	2.10%	0.26%	8.22%	0.68%
Chinese	0.06%	2.27%	10.28%	0.62%	0.37%	0.59%	0.15%	6.96%	0.08%
Polish	0.04%	2.60%	15.41%	1.08%	0.51%	2.19%	0.86%	7.12%	0.51%
Dutch	0.08%	4.02%	17.95%	0.87%	0.49%	0.59%	0.32%	10.92%	0.39%
Estonian	0.03%	2.58%	6.47%	0.76%	0.26%	0.77%	1.10%	11.65%	0.41%

<sup>3</sup> This data is also part of an ongoing project on emoji emblems with Alexander Robertson.

represents the results for nine emblem emoji, indicating the frequency of occurrence of each emoji in tweets in each of the 20 languages as a percentage of the total number of occurrences of all 22 emoji. Cell values are normalized by row sum. Cell colours are determined relative to column rank – darker cells indicate that an emoji is especially prevalent in a particular language, relative to other languages. Skin tone modifiers are neutralized.

The Vulcan salute emoji exhibits low frequency even in languages where it is used, corresponding with Unicode frequency data (Daniel 2021), where the Vulcan salute was the least-used hand gesture. Using language as a broad (and limited) proxy for culture, we can see that this emoji has particularly low uptake beyond the languages of Western Europe, challenging the original proposal for this emoji that the Vulcan salute is “universally recognized” (Unicode 2012: 7).

### 3.3 Discussion

The Vulcan salute is used as much in reference to the media franchise and nerd culture as it is for the in-world emblem function. We do not segment out by skin tone in this paper, but note that 1,256 tokens used the unmodified yellow skin tone (🙌), and there were more tweets using the two lightest skin tones (🙌🏻, 405 emoji) than the two darkest skin tones (🙌🏿, 167 emoji). People’s use of skin tone emoji generally aligns with their real-world identity (Robertson 2022). Using a Twitter corpus of emoji may also provide insight into the intersection of fandom and race. The use of the emoji skews towards lighter skin tones and Western- or European-language Twitter users. Despite the promise made by *Star Trek* of a post-racial future Earth, this data speaks to the ongoing whiteness of *performing* media fandom (Woo 2017), which is also reflected in the makeup and preoccupations of fandom studies itself (Stanfill 2018).

## 4 The *Hunger Games* salute: use in global protests

The “three-finger salute” is used in the *Hunger Games* books (Collins 2008, 2009, 2010) and films. The gesture is initially performed with index, middle, and ring fingers extended and held together. In the *Hunger Games* universe, the emblem gesture’s first use occurs after the inciting incident, when Katniss volunteers as tribute to save her sister, and the crowd reacts: “almost every member of the crowd touches the three middle fingers of their left hand to their lips and holds it out to me. It is an old and rarely used gesture of our district, occasionally seen at funerals. It means thanks, it means admiration, it means goodbye to someone you love” (Collins 2008: 24). Over the course of the books and films, the emblem’s use evolves from a gesture of respect and poignant farewell, to one of resistance against the fictional world’s centralized government, with the touch to the lips dropped. In the narrative, the emblem moves from one noted emblem function (leave-taking) to another (protest gesture). This use has been taken up in recent years by real-world protesters in Hong Kong, Thailand, and Myanmar.

The three-finger salute is commonly recognized as having the same form as a sign of Scout and Guide organizations internationally (Baden-Powell Scouts’ Association 2012: 9). The gesture has a different form from the Serbian three-finger salute but an associated meaning, and it is not unreasonable to consider that Collins was inspired by the broad history of protest gestures when writing *The Hunger Games*. We have not been able to locate anywhere that Collins has publicly discussed her inspiration for the gesture. The three-finger salute has been proposed as an emoji at least twice,<sup>4</sup> but never encoded.

### 4.1 Corpus

We used Access Global NewsBank as our corpus, given its global scope. We performed a search for all mentions of *three-finger salute*, the most common name for the emblem, in English-medium articles published from 2012 to 2021. While the *Hunger Games* books were released from 2008 to 2010, newspaper mentions of the franchise name increased

<sup>4</sup> <http://unicode.org/emoji/emoji-requests.html> (accessed 9 November 2022).

dramatically with the release of the films in 2012–2015 (71,781 articles published in 2012–2015 mention *The Hunger Games*, compared with only 3,358 articles in 2008–2011). This suggests that popular recognition of the series, including its now famous gesture, came after the release of the first film. Our search was limited to articles published in English, with the aim of analysing the emblem's use and meaning across diverse contexts. Local-language news corpora may provide more context-specific insight.

## 4.2 Analysis

### 4.2.1 Frequency analysis

We found 1,030 of the 1,516 articles that included *three-finger salute* did not reference *The Hunger Games*. That approximately a third of the articles linked the franchise and the name of the emblem indicates the global upswing in the use of the gesture was connected to this. We focused on articles that did not include reference to *The Hunger Games*, because they indicated that use of the emblem was moving away from its science fiction context.

From the 1,030 articles, 51 were randomly selected for analysis. To avoid analysing duplicates (of which there were many, with local publications drawing from the Associated Press), we organized all 1,030 articles by date of publication and selected every twentieth article in the data set for analysis. If a given article was identified as a duplicate of one previously selected, we selected the next consecutive article until a non-duplicate article was observed. The set of 51 articles and data that we coded are available as a spreadsheet on Figshare (Kruk et al. 2022). The topics of the 51 selected articles are detailed in Table 3.

The majority of articles within this smaller corpus (28 or 55 %) were released in the year 2021. This trend was consistent with the larger corpus with 557 (54 %) articles produced in 2021, followed by 227 (22 %) in 2020, and, on average, only 28 articles published in each year from 2012 to 2019. This indicates that although the release of the *Hunger Games* films did trigger a dramatic increase in media reportage mentioning this franchise, it did not trigger significant uptake of the “three-finger salute”.

Only six articles from the smaller corpus (11 %) used the phrase *three-finger salute* to describe a gesture unrelated to Scouts or *The Hunger Games*. Two articles described a three-finger gesture, produced with the thumb and index and middle fingers extended, introduced in 2013 by Sheikh Mohammed bin Rashid Al Maktoum (vice president of The United Arab Emirates). There was also a “three-finger gesture” used by racing-car drivers to pay tribute to former driver Dale Earnhardt who drove the No. 3 car for the majority of his career. The gesture used in this context was performed using the same handshape as that of the three-finger salute we are studying, but with the palm oriented inward. Of the 51 articles in our smaller corpus that mentioned a three-finger salute, only four described how the gesture was performed. All four descriptions referenced gestures not connected to *The Hunger Games*. Nameability of emblems is a useful tool for finding corpus mentions, but when setting up the analysis, awareness is needed that emblems with different meanings can share a name and/or form.

### 4.2.2 Function analysis

Articles that mentioned the three-finger salute did so predominantly within the main text (34 of 51 total instances). A smaller number (12) only listed the three-finger salute in captions of images featuring the gesture in use, and

**Table 3:** Breakdown of articles that mention “three-finger salute” by year of publication and topic.

Year of publication	Number of articles	Topic
2012	1	Scouts
2013	1	Sheikh Mohammed bin Rashid
2014	2	Anti-coup protests in Thailand
2016	1	Wrestling
2017	1	Scouts
2018	4	Car racing (2); Thai pro-democracy protests (1); Sheikh Mohammed bin Rashid (1)
2019	1	Scouts
2020	12	Thai pro-democracy protests (10); Scouts (1); Cricket (1)
2021	28	Myanmar anti-coup protests (27); Thai pro-democracy protests (1)

several others (5) referred to the gesture in the main text *and* in an image caption. As such, in many cases, even if a description of the gesture was not provided, the gesture's form was visible in an image.

Descriptions of gesture function were more common than descriptions of gesture performance, appearing in 30 of the 51 articles in the corpus. This figure remained consistent within the collection of texts in the corpus that specifically referenced the three-finger salute originally derived from the *Hunger Games* universe, with 27 of 41 articles describing the meaning of this gesture. All of these descriptions appeared in articles that covered the Thai anti-coup protests in 2014, the pro-democracy protests in 2020–2021, and the Myanmar anti-coup protests in 2021–2022. Focusing on these 27 instances, Table 4 summarizes the meanings and the functions applied to the three-finger salute; two articles had different meanings in the main text and caption, leading to a total of 29 different categories in the table. Our categorization of meanings and functions directly corresponds to journalists' descriptions of the gesture. In doing so, we represent journalists' interpretations of the three-finger salute's meaning and function that they bring to their characterizations of its performance at anti-coup protests.

There was considerable consistency in the functions attributed to the three-finger salute through its use in both the Thai pro-democracy and Myanmar anti-coup protests. In articles covering either events, the most common function assigned to the gesture was also the most generic in the corpus – signalling protest or resistance. However, articles that detailed the Thai protests more often linked the gesture to the pro-democracy movement. This association was less common in the news data that focused on the Myanmar context, where articles frequently construed the gesture as a specific symbol of protest or resistance against the military junta. Examining the function and meaning attributed to the three-finger emblem helps illuminate the fact that emblems may have a core function, but this is part of more complex meanings and connotations, which gives them their lexeme-like function (Gawne and Cooperrider 2022; Payrató and Clemente 2020).

### 4.3 Discussion

The similarities in functions attributed to the three-finger salute in Thailand and Myanmar suggest its meaning is not inherently tied to a particular political context or movement. The corpus shows a sense of dissent and

**Table 4:** Meanings and functions ascribed to three-finger salute in 27 articles covering protests.

Topic	Meaning/function	Instances
Thai pro-democracy protests (10 instances)	Protest/resistance (general)	3
	“A symbol of resistance”	
	“A protest trademark”	
	Protest/resistance against authority	1
	“Salute of resistance to authority”	
	Resistance against the coup/anti-coup	1
	“Anti-coup three finger salute”	
	Pro-democracy protesters	2
	“Salute adopted by pro-democracy protesters”	
	“The protesters’ now famous three-finger salute”	
Myanmar anti-coup protests (19 instances)	Pro-democracy movement	3
	“A defiant symbol of the anti-government movement”	
	“Their [pro-democracy] movement’s three finger salute”	
	Protest/resistance (general)	5
	“A symbol of resistance”	
	Protest/resistance against the military/junta	6
	“A symbol of resistance to the military rulers”	
	“Symbol of resistance against the junta”	
	Resistance against the coup/anti-coup	3
	“A symbol of protest against the coup”	
	Anti-coup protesters	2
	“The protesters’ three finger salute”	
	Anti-coup/Civil Disobedience Movement	3
	“Salute adopted by the anti-coup movement”	
	“Ethnic groups, occupations and niche subcultures all using the three-finger salute for the Civil Disobedience Movement”	



defiance, appearing in protests against a government, a monarchy, and a military junta. The core meaning of the emblem is essentially resistance. This function is clearly connected to that ascribed to the emblem in the fictional context from which it derived. As such, the function of the gesture has remained relatively constant across its appearance in fictional and real-world contexts. The increase in usage in the region is correlated with the release of the films, especially *Mockingjay Part 1* in Thailand in 2014 (Vary 2014). But, importantly, the emblem's meaning has come to exist independently to its origin in *The Hunger Games*, although people may be using it to connect to an identity as internationally-oriented youth, which is not overtly noted in the reporting.

Although the emblem is referenced in relation to the 2014 and 2019–2020 protests in Hong Kong (Kurtz 2017: 255; Solomon 2021), this was not captured in our corpus. Across the whole corpus of 1,030 articles, there was only one article that discussed the use of the gesture in Hong Kong in March 2021, linking to the protest movement in Myanmar. This could be because of the distribution of newspaper coverage in this corpus, or that English-language news reporting missed what was happening on the ground – both potential limitations of using corpora to assess the distribution of emblem gesture use.

## 5 Conclusion: science fiction emblems in the real world

This paper employed two different corpus methods that draw on secondary measures to analyse the use of two different emblems. The emoji data exploits the stable form/meaning nature of emblems and demonstrates that the Vulcan salute has come to stand in as a reference to both *Star Trek* and broader nerd culture – the gesture's meaning collapsing into rather than broadening beyond its originating media. In contrast, the *Hunger Games* three-finger salute has found an extension of its function to contexts beyond its fictional universe. The newspaper corpus exploits the fact that emblems often develop a conventional name, allowing for text search. The use of the three-finger salute in different protest movements allows us to watch the spread of a modern emblem to new contexts. Why it is the South East Asian or East Asian context where the three-finger salute has thrived is unclear, but it speaks to a more international uptake than the Vulcan salute. This wider usage of the three-finger salute, not tied to any one political context, means the emblem would be a good candidate for inclusion as an emoji. Currently, emoji proposals require evidence of usage in writing, which does not capture prevalence or popularity of gestures. This corpus data hopefully adds support to the need to consider alternative evidence in emoji proposals for gestures.

These methods are replicable for emblems with similar distribution, either as emoji or in news media. The replicability and use of public corpora is an important step forward in emblem research, but we acknowledge that each method does have its limitations. Emoji studies are limited to the subset of emblems with emoji forms. In news corpus or other text studies, the information gained about the meaning and distribution of the emblem provided a detailed picture across multiple sources, but in our study, the gesture was almost always non-central to the substantive content of the news piece. This corpus approach captured traces of reported meaning, compared to the emoji corpus method where there was substantial evidence of the gesture in use. Focusing on journalists' descriptions of emblems offers insight into how the meaning and function of such gestures is perceived by the general public, and avoids analyst-imposed interpretations. However, this method is also limited to emblems with clear names and a usage that generates news coverage. While each method has limitations, both have shown that corpus approaches support the study of emblem functions. This enriches the sociopolitical literature on emblems used in popular culture.

Creative language use is one element of worldbuilding in science fiction, but how these languages and worlds live on is in the hands (pun intended) of their fans.

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## Appendix

Full set of emoji compared across 20 languages. Percentages are normed by language, and the stronger shading indicates this emoji is more common in this language compared to other languages.

Language	👍	❤️	👏	👉	👊	👋	👌	👍	👎	👏	👉	👊	👋	👌	👍	👎	👏	👉	👊	👋	👌	👍	👎	👏	Total tweets
English	1.60%	14.60%	0.00%	1.81%	5.73%	4.52%	14.49%	0.11%	1.14%	0.08%	0.09%	0.54%	0.17%	0.11%	28.20%	0.83%	21.79%	0.82%	1.03%	0.73%	0.67%	0.95%			44754104
Japanese	5.02%	13.97%	2.02%	0.44%	2.96%	2.16%	20.16%	0.19%	0.22%	0.02%	0.01%	0.15%	0.06%	0.08%	25.78%	3.87%	19.66%	0.13%	0.45%	0.28%	0.91%	1.47%			44580654
Arabic	0.62%	22.20%	0.00%	0.77%	0.47%	4.93%	5.47%	0.01%	0.23%	0.02%	0.00%	0.05%	0.01%	0.00%	52.27%	0.36%	7.22%	0.30%	0.02%	0.15%	0.03%	4.86%			24218946
Spanish; Castilian	1.19%	20.63%	0.00%	1.46%	6.32%	4.30%	8.79%	0.03%	0.35%	0.09%	0.01%	0.45%	0.11%	0.06%	37.27%	0.40%	14.81%	0.84%	0.63%	1.44%	0.63%	0.19%			14545305
Indonesian	0.60%	9.41%	0.00%	1.13%	1.91%	1.68%	15.42%	0.11%	0.87%	0.03%	0.01%	0.21%	0.04%	0.02%	33.86%	3.86%	25.00%	0.41%	0.36%	0.50%	0.56%	4.00%			12785107
Portuguese	0.80%	29.56%	0.00%	1.10%	2.05%	1.56%	8.56%	0.02%	0.29%	0.02%	0.01%	0.49%	0.06%	0.04%	29.48%	0.39%	22.41%	0.82%	0.35%	1.15%	0.42%	0.41%			9755494
Turkish	1.82%	11.91%	0.00%	1.33%	2.99%	1.75%	8.21%	0.02%	0.22%	0.07%	0.01%	0.10%	0.08%	0.02%	41.51%	0.21%	21.77%	0.33%	0.59%	0.24%	0.21%	6.61%			5645244
Hindi	0.91%	5.74%	0.00%	0.93%	2.67%	2.53%	3.37%	0.00%	0.03%	0.00%	0.00%	0.06%	0.01%	0.00%	25.03%	0.25%	57.68%	0.11%	0.12%	0.09%	0.11%	0.35%			5367802
French	0.80%	13.27%	0.00%	0.66%	4.92%	3.82%	10.57%	0.02%	0.13%	0.17%	0.01%	0.39%	0.07%	0.09%	49.02%	0.24%	12.86%	0.66%	0.26%	0.62%	0.22%	1.20%			4706155
Persian; Farsi	0.73%	6.35%	0.00%	1.42%	0.31%	4.70%	1.74%	0.00%	0.03%	0.00%	0.00%	0.14%	0.01%	0.22%	77.28%	0.10%	4.47%	1.39%	0.13%	0.12%	0.11%	0.75%			4648597
Tagalog	1.54%	15.20%	0.00%	2.43%	2.60%	1.43%	6.79%	0.03%	0.18%	0.01%	0.01%	0.34%	0.06%	0.01%	54.41%	0.97%	10.96%	0.50%	0.62%	0.50%	0.77%	0.66%			3407005
Thai	2.74%	20.16%	0.00%	1.87%	6.22%	1.56%	7.42%	0.09%	0.70%	0.07%	0.05%	0.10%	0.17%	0.03%	32.57%	0.97%	16.01%	0.45%	0.84%	0.19%	5.20%	2.58%			3061044
Korean	0.90%	42.82%	0.00%	1.26%	2.34%	0.76%	26.09%	0.02%	0.10%	0.01%	0.01%	0.18%	0.05%	0.07%	8.30%	2.57%	12.74%	0.05%	0.17%	0.53%	0.75%	0.26%			2296181
Italian	0.65%	28.65%	0.00%	0.57%	4.18%	1.14%	6.59%	0.01%	0.08%	0.16%	0.01%	0.26%	0.05%	0.07%	46.74%	0.25%	9.13%	0.32%	0.28%	0.36%	0.35%	0.15%			1761788
German	1.70%	12.30%	0.00%	1.24%	4.13%	2.88%	20.02%	0.02%	0.63%	0.17%	0.01%	0.60%	0.30%	0.20%	44.62%	0.23%	9.24%	0.27%	0.66%	0.33%	0.25%	0.19%			1542906
Hindi	0.88%	10.02%	0.00%	0.61%	0.57%	1.69%	3.67%	0.00%	0.03%	0.00%	0.00%	0.08%	0.01%	0.00%	53.49%	0.49%	26.97%	0.32%	0.13%	0.19%	0.14%	0.69%			1164153
Russian	2.12%	18.64%	0.00%	3.96%	5.25%	2.99%	13.68%	0.01%	0.13%	0.05%	0.01%	0.27%	0.09%	0.02%	35.62%	0.27%	8.29%	0.95%	0.68%	1.21%	0.97%	4.79%			1156106
Chinese	0.60%	13.92%	29.10%	0.59%	2.57%	2.28%	10.34%	0.04%	0.11%	0.02%	0.02%	0.37%	0.06%	0.13%	31.74%	0.16%	7.01%	0.19%	0.08%	0.21%	0.30%	0.17%			1053116
Polish	2.21%	22.73%	0.00%	1.04%	2.50%	2.62%	15.58%	0.01%	0.30%	0.06%	0.01%	0.51%	0.04%	0.02%	41.95%	0.87%	7.20%	0.36%	0.52%	0.75%	0.57%	0.16%			1001624
Dutch; Flemish	0.60%	14.56%	0.00%	0.52%	2.44%	4.05%	18.11%	0.02%	0.27%	0.10%	0.01%	0.50%	0.08%	0.04%	44.76%	0.32%	11.01%	0.22%	0.39%	0.31%	0.27%	1.42%			807547
Estonian	0.77%	13.70%	0.00%	1.07%	1.29%	2.59%	6.52%	0.02%	0.13%	0.02%	0.02%	0.26%	0.03%	0.02%	57.31%	1.11%	11.74%	0.44%	0.42%	1.18%	0.36%	1.01%			746222

## References

- Alalinarde, Marine. 2017. The popularization of space: Link between science, policy, and public perception *Star Trek* as an early mind-opener for space endeavors. *Space Policy* 41. 36–41.
- Ayers, John W., Theodore L. Caputi, Camille Nebeker & Mark Dredze. 2018. Don't quote me: Reverse identification of research participants in social media studies. *npj Digital Medicine* 1(1). 30.
- Baden-Powell Scouts' Association. 2012. *The Scout handbook*. [https://www.traditionalscouting.co.uk/documents/scout\\_handbook/The%20Scout%20Handbook.pdf](https://www.traditionalscouting.co.uk/documents/scout_handbook/The%20Scout%20Handbook.pdf) (accessed 22 June 2022).
- Collins, Suzanne. 2008. *The hunger games* (Hunger Games, book 1). New York: Scholastic.
- Collins, Suzanne. 2009. *Catching fire* (Hunger Games, book 2). New York: Scholastic.
- Collins, Suzanne. 2010. *Mockingjay* (Hunger Games, book 3). New York: Scholastic.
- Daniel, Jennifer. 2021. The most frequently used emoji of 2021. Unicode. <https://home.unicode.org/emoji/emoji-frequency/> (accessed 3 May 2022).
- Dellon, A. Lee & Shai Rozen. 2014. Origin of Spock's Vulcan salute: "Live long and prosper". *Journal of Hand Surgery* 10(39). 2061–2062.
- Ekman, Paul & Wallace V. Friesen. 1969. The repertoire of nonverbal behavior: Categories, origins, usage, and coding. *Semiotica* 1(1). 49–98.
- Gawne, Lauren & Kensy Cooperrider. 2022. Emblems: Gesture at the interface. Psyarxiv preprint. <https://doi.org/10.31234/osf.io/my5an>.
- Gawne, Lauren & Jennifer Daniel. 2021. The past and future of hand emoji. In "*Emoji2021*", *workshop proceedings of the 15th international AAAI conference on web and social media*. Virtual: ICWSM Workshop Proceedings. <https://workshop-proceedings.icwsml.org/index.php?year=2021> (accessed 28 October 2022).
- Gazi, Jeeshan. 2017. Race in the age of tribeless youth culture: Rick Famuyiwa's *Dope* (2015) and recent shifts in African-American pop culture. *Journal of Aesthetics & Culture* 9(1). 1404891.
- Kendon, Adam. 2004. *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press.
- Kim, Minso. 2018. Newly generated ritual in the age of digital technology. *Virtual Creativity* 8(2). 179–188.
- Kruk, Jessica, Pete M. Freestone & Lauren Gawne. 2022. *Access Global Newbank, three finger salute, 2012–2021*. Figshare. <https://doi.org/10.26181/21498606.v1>
- Kurtz, Malisa. 2017. "The dark side of hope": Genre and globalization in *The Hunger Games*. *Extrapolation* 58(2–3). 255–272.
- Leverette, Tru. 2021. Introduction. In Tru Leverette (ed.), *With fists raised: Radical art, contemporary activism, and the iconoclasm of the Black Arts Movement*. Liverpool: Liverpool University Press.
- Nimoy, Leonard. 1975. *I am not Spock*. Milbrae: Celestial Arts.
- Payrató, Lluís & Ignasi Clemente. 2020. *Gestures we live by: The pragmatics of emblematic gestures*. Berlin & Boston: De Gruyter Mouton.
- Robertson, Alexander. 2022. *Expression and perception of identity through skin-toned emoji*. Edinburgh: University of Edinburgh PhD thesis. <http://era.ed.ac.uk/handle/1842/39220> (accessed 28 October 2022).

- Solomon, Feliz. 2021. What *The Hunger Games* three-finger salute means to protesters across Asia. *Wall Street Journal (Online)*. Available at: <https://www.wsj.com/articles/what-the-hunger-games-three-finger-salute-means-to-protesters-across-asia-11613649604>.
- Stanfill, Mel. 2018. The unbearable Whiteness of fandom and fan studies. In Paul Booth (ed.), *A companion to media fandom and fan studies*, 305–317. Hoboken: John Wiley & Sons.
- Unicode. 2012. Summary of voting on SC 2 N 4228, ISO/IEC 10646: 2012/PDAM 2. <http://www.unicode.org/L2/L2012/12275-02n4223-sum-vote-pdam2.pdf> (accessed 28 October 2022).
- Vary, Adam B. 2014. “Mockingjay” filmmakers react to Thai protesters adopting “Hunger Games” salute. *Buzzfeed News*. <https://www.buzzfeednews.com/article/adambvary/hunger-games-thailand-protest-filmmakers-comment> (accessed 27 October 2022).
- Woo, Benjamin. 2017. The invisible bag of holding: Whiteness and media fandom. In Melissa A. Click & Suzanne Scott (eds.), *The Routledge companion to media fandom*, 66–74. New York: Routledge.
- Žikić, Bojan. 2004. Three-finger emblem: How did the Serbs gesture construct the visual image of their national identity in 20th century 90s. *EthnoAnthropoZoom/ЕтноАнтрополозиум* 4. 10–26.