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Lights! Camera! Conlang?

An investigation of the indexical relationship between constructed languages and characterisation in science-fiction and fantasy telecinematic media

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Declaration

‘Lights! Camera! Conlang?: An investigation of the indexical relationship between constructed languages and characterisation in science-fiction and fantasy telecinematic media’, is a thesis prepared by Bridget Moloney in partial fulfillment of the requirements for the Bachelor of Arts/Bachelor of Advanced Studies degree in the Department of Linguistics. I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Bridget Moloney

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Chapter 1 Introduction

This thesis investigates the use of constructed languages in science-fiction and fantasy telecinematic narratives (film and television), with particular focus on the relationship between speech sounds and characterisation.

Constructed languages are the intentional creation of either an individual or larger group, which utilise many recognisable properties of human language, and also act as symbolic systems whose purpose is communication (Okrent, 2009; Adams, 2011; Ball, 2015). Across academic literature pertaining to the subject, constructed languages are referred to by a variety of terms including invented languages, artificial languages, glossopoeia, model languages, and planned languages. However, among enthusiasts (and increasingly in public discourse as well), they are more commonly referred to by their portmanteau, '**conlangs**' (which was added to the Oxford English Dictionary in 2014).

Conlangs differ from natural or naturalistic languages – including pidgins and creoles – in that their creation and development is a conscious and deliberate act (Ball, 2015), marked by intention, rather than evolution (Chiorean, 2021). Furthermore, this direct governance over features from its very genesis, not later, is the core facet by which constructed languages are differentiated from natural languages (Ball, 2015). Invented languages have been pervasive and prevalent phenomena throughout history – if a typically secretive one (Okrent, 2009; Tolkien, 1931/1997). However, their increasingly conspicuous presence in telecinematic media – and consequently, popular culture and wider social discourse – has outpaced their already quite limited examination in linguistic scholarship.

1.1 Motivations and significance

The deficit in linguistic scholarship on fictional conlangs in visual media is concerning, given the saliency of film and television narratives within contemporary society and the operation of these as 'the primary channel of public performance' (Bell & Gibson, 2011, p.558). This channel has a significant

role in modulating social perceptions of language; it is capable of 'establishing, reflecting, recycling, and changing language ideologies, language attitudes, and sociocultural values and norms' and furthermore 'may temporarily challenge, destabilise, and reconstruct linguistic realities and categories' (Bednarek, 2018, p.28). Thus, therein lies the potential for conlangs to function in similar ways; that is, to become a new form of linguistic variation which production companies, writers and creators can draw upon in the construction of visual media narratives.

New techniques are not unusual in the visual storytelling mediums of television and cinema. The fact that they incite wonder in audiences for the apparatus and capabilities of narrative mechanics has been posited as a key element in the mediums' entertainment value; and furthermore, can become an expected feature (Mittell, 2015). It remains to be questioned however, whether the novelty and newness of conlangs as a feature of telecinematic narratives, combined with the lack of research and understanding around it, means that audiences do not have the education and awareness to critique its usage and presence in their entertainment.

While linguistic scholarship has taken a great degree of interest in the narrative mass media generally (due to its many aforementioned effects on people's perceptions of language), fictional languages in particular have not received the same degree of attention. They are typically only touched upon briefly in wider considerations of dialogue and broader narrative functions (Queen, 2015; Bednarek, 2019).

In that research which does specifically exist on the role of fictional conlangs in narratives, their marked usage, form, and features have been understood as conveying pragmatic meaning (Adams, 2017). To understand this relationship between form, usage and meaning, this thesis employs Silverstein's (2003; 2006) concept of **indexicality,** (see Bell & Gibson, 2011). Indexicality denotes a process of meaning making through the association and co-occurrence of certain linguistic variants with particular 'perceived categories of speakers or genres of speech events' (Bell & Gibson, 2011, p.560). It has additionally been used to understand language in modes of staged performance other than films and television (Bell & Gibson, 2011, p.560).

Such was the case of Dothraki, the constructed language developed for use in the fantasy television show, *Game of Thrones* (2011-2019). The language's phonetic and phonological features

have been criticised for their similarities to Modern Standard Arabic – not for any dislike of these features inherently, but for the ascription of them to a language spoken by a fictional group of peoples described as 'brutal' and 'primitive' (Katz, 2019). In this case, the use of conlangs has been labelled as a kind of 'linguistic Orientalism', which creates the association in audience's minds between the characterisation of the Dothraki and non-Western peoples (Katz, 2019).

The scholastic neglect of constructed languages has meant that it is unknown how many other conlangs are being used to achieve a similar feat, or whether their exists similarities in the overall characterisation of conlang speakers. As such, this thesis targets the telecinematic characterisation of conlang speakers to uncover trends that may inform how involved their conlangs are in the overall construction of such.

Of additional concern to this thesis are the features and linguistic processes being targeted by these indexical relationships. The focus is on the domain of phonetics and phonology for two primary reasons; firstly, their identification by linguists as a key locus by which to index social meaning (Bell & Gibson, 2011); and secondly, their prominence, according to conlang creators, as the typical first point of language development (Rosenfelder, 2010; Peterson, 2015a).

Drawing on phonetic and phonological research, however, also opens up opportunities to explore alternative – or complementary – mechanisms to indexicality that may be involved in the language choices of creators. Sound symbolism and iconicity also deal in the relationship between speech features and meaning, but for sound. It therefore provides a key opportunity to explore the role of the acoustic properties of language in inspiring an affective response in audiences – that is, the use of particular speech sounds to affect the moods, feelings, and attitudes of audiences, much like how other aesthetic/stylistic devices are used in literature.

1.2 Research aims

This thesis will address two research aims:

RA1: To provide a better, linguistically informed understanding of the use of constructed languages in contemporary television and film, including relevant production variables, such as the creator(s)'s design intentions, motivations, and goals, as well as potential trends regarding linguistic features of conlangs and their association with character attributes/narrative roles.

RA2: To investigate the role of speech sounds in indexing elements of telecinematic characterisation, identifying potential trends at the basic phonological level of consonant inventories.

1.3 Research approach

To fulfil the research aims of this thesis, a multi-method approach is used, including a survey of the state of the art (Chapter 3) and a case study (Chapter 4). The survey helps to answer RA1, conducting a systematic review of conlangs in contemporary television and film, with different parameters taken into consideration, including relevant production variables as well as recurrent character attributes. In addition, the survey will help to contextualise, justify, and inform the research design of the case study, which analyses the phonemic inventories of a small sample of relevant conlangs. The analysis identifies trends in relation to the potential indexication of characters by the most prominent trait identified through the survey (antagonism). The analysis of phonological inventories specifically targets consonants, with frequency analysis used to gauge the degree of usage for each attested phone and what purpose this serves in characterisation. This in turn contributes to answering RA2.

1.4 Thesis overview

Chapter 2 provides a summary of the literature on constructed languages, including that on the topic's difficult standing in academia, the creators and the production companies which employ them, and

lastly, the functions that these conlangs perform in visual narratives. These four key topics target the major aspects that affect conlang development, and further demonstrate the necessity of this thesis' investigation. Chapter 3 details the survey on conlangs and discusses its findings in regard to their implications for both understand the phenomena and informing future research. Chapter 4 follows with the case study on the consonant inventories of constructed languages in a practical investigation of the potential linguistic means by which they are capable of indexing character and other meanings. Chapter 5 summarises the findings of the two studies and discusses their potential implications for how conlangs should be approached and understood by academics and production companies alike in the future.

Chapter 2 Literature Review

This chapter summaries the literature on constructed languages, especially in relation to those of the fictional and artistic sub-types. In Section 2.1, I provide a brief overview of the current state of constructed languages as a research focus in academia, highlighting the prevalence of difficulties in mitigating bias, misdirected research foci, and over-reliance on anecdotal observations in place of empirical testing, to emphasise the necessity of this thesis' subsequent studies in Chapters 3 and 4 in supporting the validity and growth of the research area. Section 2.2 looks at the creators of conlangs, particularly their linguistic training and awareness, motivations, and relationships with other creative parties in the film and television industry. This serves to develop an understanding of the linguistic conditions within which conlangs are created. Following on from this, Section 2.3 addresses the act of creation more closely, with a specific focus on how it is impacted and influenced by the telecinematic production process, to recognise the technical considerations that affect a conlang's features and form. Section 2.4 targets the functions of constructed languages in visual media, concentrating on characterisation and aesthetic signalling, due to the primacy of their role in indexicality. Lastly in Section 2.5, I summarise the findings of this review and indicated how this study fills the current gap in the literature regarding the mechanisms by which indexicality is achieved with respect to conlangs and characterisation.

2.1 Constructed languages in academia

Constructed languages historically have not been widely considered a valid area of scholastic pursuit, the pervasive view being that they are an act of creative folly and not to be taken seriously (Okrent, 2009). More specifically, the limited linguistic work that has been published to date neglects invented

languages with artistic and fictional sub-types. Overall, very little empirical research on the phenomenon of constructed languages has been undertaken.

Whilst this research deficit is changing with the current rise in academic inquiry into language invention phenomena, current research trends show evidence of a proclivity towards framing the value of conlang-focussed research as possessing advantageous potential for other areas of linguistic concern. These predominantly include; how the popularisation of conlangs can inform language revitalisation efforts (see Schreyer, 2011; 2015) or their value as a pedagogical resource for the discipline of linguistics (Adger & Van Urk, 2020; Coon, 2020; Schreyer, 2021). What appears to be underpinning these efforts is a desire to argue for the validity of conlangs as a legitimate area of academic focus. Authors supporting such arguments make up the majority of current linguistic scholarship on conlangs, and additionally, are also invested to some degree in the activity of language invention; many papers and studies disclose that the authors themselves have worked on conlangs, whether as a hobby or as a professional hired for their linguistic expertise across various media production industries (examples include, Adger & Van Urk, 2020; Coon, 2020; Sanders & Schreyer, 2020). One key issue with this overarching aim of validating the study of conlangs, and the majority of authors being invested in the activity, is the extant literature's resulting partiality for constructed languages often being at the expense of critical engagement with, and robust approaches to understandings of, the full potential valency of conlangs – that is, the full spectrum of cultural, social, psychological, and ideological facets encompassed in the phenomena of language invention.

Linguists and historians who have touched upon invented languages from a less involved standpoint have nevertheless neglected the sub-type of fictional languages, and moreover, used methods incapable of investigating the polyvalent facets of invented languages (Cheyne, 2008). In her discussion on the study of conlangs in science fiction, Chenye (2008) argues that academics fail to recognise the full faculties of conlangs due to their restricted focus on descriptive features, rather than their functionality within texts. While Chenye is among the first to suggest a paradigm of the functions of conlangs in science fiction, this understanding of the phenomena is nevertheless restricted to the medium of textual sources – a trend common across the literature (Stockwell, 2006). A significant implication resulting from the absence of inclusive conlang coverage across all narrative modes (visual,

textual, performative) means that there remains not just an incomplete understanding of the potentiality of conlangs, but also about the mechanisms by which they fulfill their various functions.

Nevertheless, research efforts are increasing, with the recent developments in academia correlating with a growing public awareness of conlangs. A major facilitator of information and community connection about and around conlangs has been the internet (Okrent, 2009; Peterson, 2015a). Not only has this exposed conlangs as a common and unexpectedly popular pastime, but has subsequently increased the publication of information by actual language creators, particularly in places such as personal blogs, internet forums, and online interviews. The availability of so much data has also enabled newer research efforts, such as that by Wahlgren (2021), who drew upon these more informal sources in an expository compendium of constructed languages. Nevertheless, works such as this are typically designed for wider public consumption and to be informative, rather than as actual studies or academic texts.

2.2 Creators

Despite the current issues in academic work on invented languages, the literature is patently clear on one thing: anyone can create a language. Formal linguistic education and training is not a prerequisite to be able to construct a language, despite the degree of complexity and effort required. Many novelists, who themselves are not linguists, have successfully developed fictional languages – though to varying extents (Stockwell, 2006). Creators recognise language as being governed by specific patterns or rules, having a distinct character or style, and being regular and consistent (Burtt, 2001; Le Guin, 2006).

While a creator's degree of linguistics knowledge and or education does not dictate their ability to create a language, there is evidence to suggest that the extent to which a conlang adheres to standard linguistic conventions is directly linked to the degree of formal education in linguistics. Ball (2015) goes as far as to suggest that a better adherence to realism – that is, the likelihood of a conlang 'passing' as a natural language – is in fact dependent on a high level of linguistic proficiency. Further implicating this idea are the comments by creators themselves in self-produced guides and manuals on conlang development. They allude to a creator's level of proficiency directly correlating with the standard to

which a conlang is developed, through their assertions that languages need only be created insofar as it meets its intended purpose – for example, if it is only to be used for naming items in a novel, a creator need not possess an in-depth understanding of syntax (Rosenfelder, 2010; Peterson, 2015a).

While a linguistic education may ensure a more robust constructed language, it does not necessarily correlate with a high level of linguistic awareness. There are suggestions that a creator's interests, goals, and motivations typically predispose them towards certain conlang types (Okrent, 2013; Carpenter, 2020). By their very nature, the sub-types of artistic and fictional conlangs are formed predominantly by the aesthetic aims and or personal preferences of their creators (Okrent, 2009). Creators, regardless of their level of linguistic knowledge or training, explain away these proclivities as arbitrary (see Peterson, 2015a). Tolkien (1931/1997) remains one of the few creators to entertain the potential degree to which 'interior causes' and 'external influences' effect a creator's linguistic preferences. Such a matter is of course difficult to test, however should not be ignored in studies on fictional languages.

Results from an online rating experiment of fictional constructed languages by Bobeck et al. (2022) noted that linguists typically rated languages more neutrally than non-linguists. However, these results are in the context of language perception. Much research into conlangs and their phonology in particular has been in this domain of perception, rather than intention. The trend identified by Bobeck et al. does not suggest that linguistic training precludes an individual from holding false or learned beliefs and ideologies about language, nor that a linguist will conduct themselves more neutrally in a situation of competing influences and interests like that of being hired to develop a language for a film.

2.2.1 Language creators in film and television

For film and television productions, the scale and degree of difficulty involved in language construction has promoted the employment of 'skilled' creators. In the literature, 'skilled' is typically used in reference to linguists. The employment of skilled creators ensures that production companies and their visual product will not suffer negative repercussions as a result of having a language that is inconsistent, inaccurate and or inappropriate (Peterson, 2015a). However, this suggests only a technical degree of

concern, and again does not appear to acknowledge the potential influence of language prejudice and ideologies.

The Survey in Chapter 3 was developed to address the apparent lack of concern demonstrated by both conlang creators and the production teams who hire them towards their preferences, opinions, and ideologies around language and their potential effects. This was achieved through series of queries about the sources of inspiration for each conlang, as well as any guidelines/parameters. Data collected from this effort will aid in identifying the major concerns held by the relevant parties involved and reveal the effects this has on how conlangs are designed.

No dedicated research has of yet approached the relationship between conlang creators and larger entities like production companies, however, academics who have worked with these companies have discussed their experiences, with apparent disparities in the goals and motivations held by each party relative to their personal and professional duties.

For example, Jessica Coon (2020) worked as the linguistic consultant for the 2016 film *Arrival*. In an anecdote about her experience on the film, she revealed her repeated offers to improve the realism of scripted elements related to the discipline of linguistics were ultimately turned down. She was informed that 'in the end, linguists are not Hollywood's main audience' (p.44). Her experience exemplifies how a production company's degree of linguistic consideration appears to extend only insofar as the language is functional and adequately performs its narrative functions, while a creator may possess a different or grander design.

What this relationship furthermore highlights, is the uniqueness of the creation process when multiple invested and differently skilled parties are involved.

2.3 Creation process

Conlangs have historically been a solitary effort, driven solely by the goals and interests of their creators. However, the process of developing a language for a telecinematic production is one conducted in collaboration, with creators balancing the expectations, tasks, and desires of their employers with their own linguistic knowledge and integrity. Those conlang creators who have recounted their experiences

working for production companies have cited various production variables arising from this collaborative and technical environment, influencing the conlang's form in all stages of pre-production, production (filming) and post-production. These influences include time constraints, actor abilities, compliance with the narrative's canon, lack of knowledge on linguistic principals and formats (such as glossing), time constraints, prosthetics and effects, editing choices, and creative direction/vision, as having major influence over the final form that a constructed language takes (Frommer, 2009; Peterson, 2015a; Peterson 2015b; Adger & Van Urk, 2020; Carpenter, 2020).

These influences on a creator's process suggests that, in the case of telecinematic fictional languages, the primary degree of control does not truly lie with these creators, but with the film or show's production crew (the term here used to refer to any members involved in a film or television show, in particular the producers, director and editor(s), but excluding the conlang creator and actors). The director and producers in particular set the parameters to which the primary conlang creator must adhere; this comes in the form of not only the original concept, but also subsequent descriptions, directives, and feedback (see Peterson, 2015b; Adger & Van Urk, 2020; Frommer, 2009). The complex and collaborative origins of telecinematic conlangs thus necessitate a different understanding and approach to their study than other sub-types of conlangs to account for these various involved facets.

An element of consideration that is notably absent from any discussion on fictional languages in film and television is the degree of influence that an actor has on conlang development. While the totality of visual media performance is the result of the whole production team's efforts, actors are nevertheless the most visible entities to audiences with regard to dialogue (Durham, 2002, referenced in Bednarek, 2012, p. 15-16). Thus, for conlangs – as a form of dialogue – it is the actors who situate and represent it within the narrative as consumed by audiences. Concern is clearly held by both the primary creator and production crews for actors and their ability to faithfully reproduce conlang(s), since they place restrictions on phonemic and phonological diversity (Adger & Van Urk, 2020; Frommer, 2012; Peterson, 2015b). At this time, however, no research exists related to what effect the prosodic and paralinguistic features of a person's linguistic repertoire have on their reproduction of conlangs, nor on the reverse of how those of the conlang are affected by the intentions/desired performance of the actor speaking it.

2.4 Functions of conlangs

This section outlines the primary functions of invented languages in fictional narratives, in addition to the mechanism by which these functions are achieved. I draw upon research focused on the literary genres of science fiction and fantasy—where conlangs are most prevalent—as well as research on fiction more generally across various mediums, including novels, comics, role-play games, video games, and film and television. The functions listed below are not medium-specific, and it is beyond the scope of this study to compare similarities and differences; the underlying focus is on what function conlangs serve more generally across fictional narratives. Nevertheless, the following sections are structured according to the functions of dialogue in television series suggested in Bednarek (2018) (which build on those developed by Kozloff, 2000), with the assumption that these functions are identical, or at least similarly applicable, to the related visual medium of film. The two functions most relevant to this thesis are characterisation and aesthetic appeal, but other relevant functions will also be summarised.

2.4.1 Characterisation

The primary function of constructed languages in telecinematic narratives is to aid characterisation. In both formal and informal literature sources, scholars and conlang creators alike indicate that there is a strong belief in the capacity of conlangs to convey meaning about those who speak them and embody their intended character (Burtt, 2001; Chenye, 2008; Wahlgren, 2021). This delineation of character serves to set them apart from other characters and make them uniquely identifiable (Burtt, 2001; Chenye, 2008). Even so, these observations and assertions lack acknowledgement of the linguistic mechanisms by which such characterisation is achieved, restricted to coverall statements about how the ‘sound’ in particular is important. Nevertheless, even without a well-informed understanding of it, their observation itself is supported.

Results from a recent, online conlang rating experiment by Bobeck et al. (2022) have affirmed that many constructed languages are successful in indexing the intended character of its speaker(s), but

that this success appears to be context dependant. The researchers compared English and German speakers' rating of a sample of spoken conlangs to see how well each group's responses reflected the known characterological features the creators intended to convey. The English speakers' ratings, more so than those of the German speakers, were found to reflect the intended characterisation – that is, conlang speakers who, in their narrative, were positioned as unpleasant or villainous were more likely to be rated negatively, and vice versa. The researchers posited that this trend was dependant on whether the conlang contained phonemes that were present in the speaker's native sound inventory. This relationship between the learned assumptions and mother tongue of the audience, and conlangs and their use in successful characterisation, is like that identified in the study of language in performance (as summarised by Bell & Gibson, 2011); the effectiveness of language choices in indexing certain qualities is dependent on performers/creators knowing and accessing the linguistic features associated with those qualities and attributes in the minds of the intended audience.

Such processes are exemplified in the only element of characterisation discussed throughout the literature in relation to all fictional conlang speakers; the use of invented languages to exoticize its speakers or delineate them as 'other'. Constructed languages are grouped together with accent and dialect in Queen's (2015) discussion on how language variation in visual media is used to represent difference and sameness; notably, Queen highlights that this variation occurs in the sound system. Evidently, efforts to exoticise these worlds and or the groups and cultures within them rely on human understandings of the real world (Stockwell, 2006), since the effect of otherness appears to be achieved primarily through the use of elements and features not found in English (or rather combinations that do not occur in English) (Ball, 2015; Wahlgren, 2021), in addition to physiological differences (Noletto & Lopes, 2022).[1] These strategies produce a language which is unfamiliar, and therefore has an 'other', 'exotic' or 'not from around here' sound (Tolkien, 1931/1997; Okrent, 2009; Ball, 2015; Peterson, 2015a). The centrality of sound in achieving such characterisation is evident in these assertions; however, like much of the research on fictional languages, the claims are supported only anecdotally.

[1] For example, Noletto & Lopes (2022) pointed out that the conlang of an alien race with a substantially different biological form could not plausibly be reproduced by humans.

Furthermore, the total effect of any conlang is asserted by linguistically trained creators to be the result of the *entirety* of its sound system (Tolkien, 1931/1997; Peterson, 2015a). Mechanisms for producing certain effects that are cited in the literature include; combining phonemes in uncommon or unusual ways, such as violating common consonant cluster patterns (Tolkien, 1931/1997; Okrent, 2009; Peterson, 2015a, Fimi & Higgins, 2017); syllable structure, vowel length and ratio of choices from certain sound classes (Ball, 2015); and prosodic features such as tone, intonation, stress and rate of speech (Peterson, 2015a; 2015b). Notably, single phonemes are asserted to not be individually responsible for creating the character of a language (Peterson, 2015a). While this may be true for phonemes individually, a complete, multifaceted characterisation in visual media is achieved through the building of linguistic features 'working together to create an indexical package' (p. 127). Thus, it does not preclude a *series* of phonemes from indexing certain character traits, especially if they frequently co-occur.

2.4.2 Aesthetic signalling

The other function of conlangs in telecinematic media relates to their aesthetic signalling, with audio and visual senses employed simultaneously to construct meaning (Chiorean, 2021). Artistic and fictional conlangs in particular are often treated as malleable aesthetic or even stylistic devices – that is, 'adornments' and 'sound effects' for the sake of entertainment (Burtt, 2001), that 'attract attention' or 'produce a special effect' (Chiorean, 2021).

While limited research on the aesthetic and affective value of conlangs exists, that which does draws from the literature on sound symbolism and iconicity in natural languages; one such example is Robinson (2013; they drawn on the work of Jespersen, 1964; Genette, 1974; and Lakoff & Johnson, 1980). Robinson (2013) surveyed conlang creators about what considerations they took into account when developing their languages. Almost half of respondents mentioned Aesthetics/Beauty as a motivation for their choice of phonological inventory, the majority of which linked these choices to their personal perception, and or preference. Robinson's findings did not provide any explanations or evidence for why these personal preferences exist; however, an explanation may exist. Neuroscientific

studies into the practice in poetics and the arts of choosing of words for their specific sound patterns to evoke affective and aesthetic responses indicates that all phonological features, down to even individual phonemes, possess aesthetic and affective potential (Aryani et al., 2018)

Interestingly, research on sound symbolism and iconicity is similarly reliant on the mechanism of language invention; many of the experimental studies use specially designed pseudo or nonsense words to test the form-meaning association (Davis et al. 2019; Ćwiek, et al. 2021). Current research into the phenomena indicates that it is grounded in human bodily awareness and sensory interaction with the world (Johansson et al. 2020). Dingemanse et al. (2015) describe iconicity as 'perceptuomotor analogies' created by articulatory gestures (p. 610). These perceptuomotor analogies involve a resemblance between speech sounds and sensory impressions – the latter of which spans various modalities like audio, visual and tactile properties (Ćwiek, et al. 2021).

2.4.3 Other functions

Beyond characterisation and aesthetic functions, constructed languages possess a number of other utilities, including world building, supporting realism and plausibility, and metadiscursive functions relating to the narrative.

Conlangs are an element that aids in the construction of alternative worlds, enhance richness and detail, much like that which exists in the real world where multilingual environments are the norm, giving the fictional landscape an overall sense of realism and plausibility (Mandala, 2010).

Moreover, these conlangs have to also reflect the tenants of natural languages observable by all – that is, they have to reflect a consistent and set system. Audiences are both capable and very willing to note when a set system is implausible or violated (Burtt 2001), with inventiveness and creativity not likely to be accepted without a satisfactory explanation (Meyers, 1980). However, the features used in scripted dialogue to reflect realism/authenticity must be selectively chosen so as to not alienate viewers (Bednarek, 2018). It is vital for a narrative to retain the audience's suspension of disbelief – that is, the willing rejection of one's own critical awareness for the benefit of immersion and entertainment (Smith,

2022). If the threshold of what audiences are willing to disregard is reached, disbelief resumes and audience engagement is interrupted (Smith, 2022).

Constructed languages possesses metadiscursive functions – that is, they perform functions above the level of internal narrative dynamics, particularly those related to plot, and those of thematic and ideological messaging. These functions are typically interrelated through their capacity for exploration as a narratological device; a popular conlang-dependent device in science fiction is to have the Sapir-Whorf hypothesis (linguistic determinism) used as a primary narrative framework upon which the whole story is constructed (Noletto & Lopes, 2020).

Constructed languages are also used to represent and extrapolate ideas, particularly in regard to questions of power, control, free will, society, culture, the nature of reality, morality, and science (Noletto & Lopes, 2019; Noletto & Lopes, 2020). This most commonly occurs in science fiction where language is treated as a tool, much like the science and technology after which the genre is named (Noletto & Lopes, 2020). Meyers (1980) suggests that unlike science and technology however, the average layman does not receive the same linguistic education as they do scientific; thus, they are more likely to rely on their own understanding of language and its faculties as gained through their experiences and interaction with the world. This suggestion highlights the susceptibility of constructed languages to being used as a means of reflecting false, misguided, or even damaging beliefs or assumptions about language.

2.5 Summary

This chapter has outlined what current research exists for artistic and fictional constructed languages, particularly those which occur in narratives and televisual programs. While there is growing recognition in linguistic scholarship for the phenomena, conlangs overarchingly remain an under-researched and often misrepresented phenomena. This is especially the case not only across narrative modes – with a distinct lack of research on conlangs and their use in film and television media – but also genres. I have demonstrated that while the partiality of the speculative genres of science-fiction and fantasy towards constructed languages is clearly recognised, this observation and related claims lack empirical,

evidentiary support, and an understanding of the mechanisms by which this is occurring. Despite this, there is clear consensus among creators and academics alike about the potential of sound as the primary linguistic means by which characterisation is indexed. While research has touched on this from the domain of perception, it has not yet targeted constructed language as a form of linguistic variation intentionally deployed by narrative creators.

I endeavour to fill these critical gaps in current research efforts by treating constructed languages as a valid and distinct phenomenon, separate to how it can inform other scholastic areas. The survey in Chapter 3 systematically reviews the current state of constructed languages in science fiction and fantasy telecinematic media to concretely contextualise and identify the relevant trends and facets of the process, use and features of conlangs specific to these narrative modes and genres.

Furthermore, in this formal research effort, I use various online sources of information regarding conlangs and their development published by their creators, rectifying their previous dismissal in formal research efforts. The findings from this survey are used not only to inform the subsequent case study in Chapter 4, but are also vital to laying a foundation for future research efforts regarding fictional constructed languages.

The case study fills some of the current deficit in understanding of the mechanisms by which conlangs are successful in achieving the primary, interrelated functions of characterisation and aesthetic signalling in this visual narrative mode. Due to the sound of conlangs being the most accessible and salient element for audiences, the case study will target the phonetic and phonological domain of their consonant inventories.

It is important to note, however, that indexicalities in performance are highly context-sensitive, depending on the unique facets of its sociocultural setting, and the core-audience to whom the intertextual features are being targeted (Bell & Gibson, 2011). As such, this thesis proceeds on the assumption that for the conlangs/narratives being studied, the target audience are the United States and the United Kingdom, since these were the countries in which the film and television programs were produced. Prevalent in these majority English-speaking nations is the notion of monolingualism as the norm, and the additional myth of standardised language forms (Lippi-Green, 2011). As such, Standard

American English, and British Received Pronunciation[2] will be the language varieties against which conlangs with by compared. The acronym 'NE' will subsequently be used in place of 'non-English', to refer to features which are not generally attested in these standardised varieties.

[2] While language forms are always changing, the consonant inventories of Standard American English and British Received Pronunciation used for this thesis will be those outlined by Musk (2010) (The full list of which can be found in Appendix A).

Chapter 3 Survey

This chapter outlines a survey conducted on the state of the art of constructed languages and the characters who speak them in contemporary science-fiction and fantasy telecinematic media. Section 3.1 explains the methodological and data collection processes that underpin the survey. This is followed by Section 3.2 which elucidates the survey parameters themselves and process. Section 3.3 presents the results of the survey, with the discussion of these results following in Section 3.4.

3.1 Methodology

It is important to note that this investigation is surveying the state of the art, *not* the participant research method for which the term 'survey' is typically applied. This survey was intended to create an overview more generally of the current state of conlangs in science-fiction and fantasy film and television.

Data for the survey was predominantly collected from blogs, Internet forums and fandom wikis. Given that these forums are not what would be typically considered formal, peer-reviewed sources, such a decision may appear academically problematic; however, such information channels are in fact valuable resources from which to gage a collective consensus on narrative matters (Mittell, 2012). Film and media scholar Mittell (2012) has highlighted the role of wikis in participatory fan culture – some wiki entries are composed with such a high degree of elaboration and detailed analysis of the narrative and invented world that they are clearly the product of sustained, collective effort, approaching a kind of informal peer review. Mittell also highlights wikis as an alternative form, and extension of, transmedial storytelling, much in the same vein as annotated versions, synopses, and reference books which accompany and serve to clarify elements of traditional narratives that may have been missed or unclear. Other sources such as internet forums and blogs were a primary resource in the case of entries having been written by conlang creators themselves. Moreover, only those accounts which could be

verified as belonging to the creator were considered valid. Inasmuch as the information provided in these wikis, blogs, and forums was clear, simple, could be deducible via any person's logical analysis, or supported with reference to external material, it was deemed appropriate to include as data within the survey (the full list sources can be found in Appendix B).

3.2 Process

In this section, I elucidate the two primary processes undergone for the survey. Section 3.2.1 outlines the selection of conlangs for the survey sample. Section 3.2.2 lists and explains the queries designed for the survey, focussing on the four primary areas of: creators, visual media, conlangs, and characterisation.

3.2.1 Survey sampling

A number of parameters and guidelines were set to inform the selection of constructed languages for the survey's sample. Using these controls rather than a random selection process was to account for the complications of the speculative genres' reality defying facets, especially in regards to the presence of non-human entities like alien or foreign species. To be able to perform an analysis on constructed languages using linguistic knowledge that was gained in the study of natural languages, then these speakers and their languages must reflect, at least to a major degree, those forms and features of natural languages and their speakers. The controls outlined in Table 3.1 account for the variables of mode of language production, species of speakers, and narrative modes, with examples given of what this would eliminate.

Table 3.1 *Guidelines for survey sample constructed language selection*

Guidelines	Exclusions
1. Must be spoken	Sign languages, and or orthographic/symbolistic languages.
2. Speakers must be human or humanoid	Conlangs spoken by an alien/fantastical creature whose communicative faculties, including their speech organs, do not closely reflect or emulate that used by humans.
3. Focus to be only on the conlang's forms and features as they appear in the context of one narrative	Content from other related narrative modes (e.g., adaptations, transmedial storytelling) **not** explicitly referenced as an inspiration/relevant to the form and features of the conlang in the relevant film or television show.
4. Must be a *primarily* English language production	Film and television shows created by a non-English language company and/or those whose primary intended audience are non-English speakers.

Table 3.1 lists the four guidelines used in the selection of conlangs for the survey sample. The first and second guidelines (*languages must be spoken*, and *languages used by human or humanoid speakers*) are the result of needing the conlangs to reflect current linguistic understandings in phonetics and phonology. A natural consequence of speculative fiction genres like science fiction and fantasy is the taking of creative liberties – especially in regard to the form and manner of language production. However, to answer the research aims of this thesis, only those conlangs whose form was comparable with research which focuses on spoken languages were considered appropriate. Moreover, it was necessary for the speakers of these conlangs to possess a physical form that was similar to humans in order to ensure the applicability of current linguistic understandings drawn from the study of the human vocal organ.

The third and fourth guidelines relate to the narrative itself—specifically the content (*language must come from the primary narrative*) and the production (*English-language company*) respectively. While this study focuses on constructed languages in telecinematic narratives, it is important to note that many of these are adaptations or extensions of other media – such as novels, video games or comic

books; as such, examples of a constructed language's usage and linguistic forms exist beyond the film or television show being surveyed. However, only that which occurs in telecinematic form were deemed appropriate for consideration. Attention was also paid to contexts outside the narrative by controlling for the language of the production. By ensuring that English was the language of production, all findings can be firmly attributed to social conditions and norms in the English-speaking West. Furthermore, all constructed languages are ensured to occur against the backdrop of the same primary natural language used in the narrative, i.e. English. Using these four guidelines, twenty-seven conlangs were selected for the survey sample.

3.2.2 Survey queries

For the survey, a total of eighteen queries were developed which focused on four main areas: Conlangs, Visual Media, Creator(s), and Characterisation. I conducted a pilot survey during the initial engagement with data sources, targeting these four relevant domains. From this preliminary work, the final list of eighteen queries shown in Table 3.2 were established.

Table 3.2 *Survey queries*

Topic	Queries
Creator(s)	• Creator(s) (for show/film) • [Are they a] Trained Linguist? • How did [the creator(s)] come to work for the production? • Original Creator? (in cases such as adaptations etc.) • Other involved creators (i.e., Production crew)
Visual Media	• Title • Year (start of franchise and release of first film/show to feature the conlang) • Medium (Film or Show) • Genre • Narrative and conlang sourced from other media?
Conlang	• Name [of conlang] • Parameters/Guidelines/Notes for development • *a priori* or *a posteriori*? • Sources of inspiration/Features of note • Other [items of note] • Degree of existent material
Characterisation	• Speakers • Species • Role in Narrative • Speaker Group Attributes

3.2.2.1 Creator(s)

A number of basic queries targeted the creator(s) of each conlang. The basic queries regarding the *name of the creator*, whether they are a *trained linguist* and *by what means they came to work* for the telecinematic production were intended to contextualise their involvement in both language creation and their respective visual narrative productions.

However, the initial pilot survey made clear that language creation is not a solo endeavour; in cases where the film or show was an adaptation, there existed an *original creator,* who conceptualised the language and its basic features. Moreover, as was clear from the literature in Chapter 2, other production crew members such as the director, producers or even dialect coaches, had input into the development and use of the conlang in the film or show itself.

As such, the query about *other involved creators* covered these other involved, influential figures.

3.2.2.2 Visual media

Queries about visual media were designed to encapsulate basic, functional information about the film or television show such as the *title*, *year of release*, *medium*, *genre*, and whether or not the media (and its conlang) were sourced or adapted from a pre-existing narrative. In cases where the first three of these queries were complicated the existence of multiple iterations as a result of transmedial storytelling, or reboots and revivals, then the details for both the initial program and the program which featured the first use of the conlang were noted respectively.

3.2.2.3 Conlangs

Each conlang in the survey is noted as the name by which it was primarily referred to in both the narrative itself and subsequent other media. If an alternative name existed – for example, the name given to the language by its fictional speakers – then this was also noted.

Data on the languages' design origins was targeted through the queries relating to the *parameters/guidelines/notes for development*, the classification as *a priori* or *a posteriori*, and *sources of inspiration*. These three queries were designed to target the underlying preconceptions that telecinematic creatives may possess towards natural languages and certain linguistic features; and moreover why, if there is indeed a correlation between conlangs and character traits, that conlangs are so successful in achieving this.

Parameters/guidelines/notes for development refers to those items given to the language creators by the creative head(s) of production. By knowing what boundaries were placed on a conlang's design, they can be contextualised within not only their respective narratives, but can also reveal what is considered the most important variables by heads of the narrative, and to what extent the creators were able to make independent linguistic choices.

Further queries were needed to better explore the conlangs and their features, however; the classification system of *a priori/a posteriori* was deployed not just because of its frequent

use in academia, but also as a means of succinctly delineating for the sake of latter analysis whether the conlang was based predominantly on any natural language(s). A more detailed inquiry into the *sources of inspiration* for each conlang was undertaken concurrently. Data included any natural languages and or their specific features that were cited by the creators or other involved production crew as influencing the development and final form of the conlang.

Lastly, two queries targeted information that was not as central to meeting the research aims, but was nevertheless important to inform further research efforts. The first, *Other [items of note]*, was included so as to record any information which seemed important but was not available for all conlangs surveyed and/or did not have the same degree of relevance to the research aims. Such items included: comments creators made about their conlangs, how actors learnt/were taught their conlang/dialogue, production elements, and other notes about the wider story/narrative.

The second query to support further research efforts was *Degree of existent material*. Given that the survey's secondary function was to inform the direction of the case study in Chapter 4, this query created a record of the availability of specific linguistic material for each conlang – in particular, how much of the conlang was spoken in each production. This information helped highlight which conlangs were most suitable for the phonological case study.

3.2.2.4 Characterisation

The most complex and vital part of the survey were the queries related to characterisation. For the survey, this characterisation refers to the collective characterisation of speaker groups, rather than for individuals. Since conlangs are designed upon natural language forms and functions to enrich and enhance the realism of their fictional worlds, conlangs can be understood as holding the same weight as natural languages in terms of their association with a culturally, socially, and historically coded group. As such, surveying conlang speakers as a collective group was prioritised. The characterisation of speaker groups was examined across

three areas: *who the speakers were* (their name and species), their *role within the narrative*, and lastly, their *most salient character traits*.

Conlang speakers were surveyed to determine their species as human or non-human – examples of non-human entities include aliens, or mythical creatures (like orcs or elves). The species the Protagonist/main character was not noted; preliminary and subsequent survey efforts revealed that in almost every case, the protagonist was human. As such, the status of the protagonist in each narrative being human was considered a basic assumption and the standard by which conlang speakers are compared against.

Other elements of characterisation, however, were not as easily deduced as species. Researchers of different narrative mediums have noted the difficulties in creating a theory of character that is 'systematic, non-reductive but also non-impressionistic' (Rimmon-Kenan, 2002: 29). Similar difficulties have been encountered by linguists engaging with the area but, as pointed out by Culpeper and Fernandez-Quintanilla (2017) in their review of fictional characterisation in stylistics, linguistics researchers have begun to use multidisciplinary approaches – especially in the case of performed narratives – in a move away from the limited approach of a single mode that has left out any consideration towards visual and oral/aural features. Bednarek (2018) is one such researcher, who in her linguistic examinations of television dialogue also draws supplementarily upon work from professional practice, and film and media studies. I draw upon two elements from Bednarek's (2018) model of televisual characterisation, namely: character *traits* and character *roles*. These two elements encompass the basic characterisation binary of being versus doing (Toolan, 2001) – that is, traits versus actions/behaviours.

To specify what exactly was encompassed under traits and roles, I established classification schemas for traits and roles respectively – the particularisation of which was developed from drawing upon scholarship on screenwriting in the Western tradition in a further effort to keep with the new linguistic approach to characterisation through a combination of multidisciplinary modes. For traits, I draw upon work by Price (2018), and for roles, that of Tabb (2018).

3.2.2.4.1 Roles

Models and understandings of character roles in narratives developed by linguists are typically based upon the work of Propp (1958) and Greimas (1966).[3] A critical examination of how linguists typically draw upon these models reveals that they are always adjusted to suit their own research area and scholastic aims. Therefore, existing models were useful as sources of inspiration, but were inadequate with respect to answering the key research aims of this thesis without adjustments. Thus, in developing a model of character roles for this thesis, I supplemented drawing upon Propp and Greimas' work with Tabb's (2018) conceptualisation of character types in screenwriting practice. Tabb's model is tailored to the unique structures and features of telecinematic media, and thus enabled better consideration of how character may manifest differently within this narrative mode.

Table 3.3 *Position of characters (conlang speakers) in plot*

Role	Definition
Protagonist	The most central character whom the premise and theme of the story is explored.
Antagonist	Embodies the counterargument (antithesis) to the protagonist (premise).
Deuteragonist	Occupies a secondary degree of relevance compared to the protagonist/antagonist; possesses a greater degree of relevance to the plot than a minor or tertiary position. (Includes love interests, foils, mentors etc.)
Minor	Some degree of relevance on plot or more central characters; less than deuteragonists, but more than tertiary.
Tertiary	Only populates the world of the story; little to no direct bearing on the main plot.

[3]See Toolan (2001) for an overview of a critical linguistic perspective on narrative; and Sorlin (2016) for an example of how these models of characterisation have informed linguistic analysis of character construction in the television show *House of Cards*.

Table 3.3 outlines the five roles used to demarcate conlang speakers in the survey. It is important to note that all character roles centre upon the **Protagonist**. The Protagonist is not only the most central character, but also the primary vehicle through which the premise/theme of the story is explored (Tabb, 2018). This is traditionally the role through which audience engagement with plot is directed and whose perspective audiences are invited to share. As such, all other roles are considered in relation to the Protagonist.

The next most central role is that of the **Antagonist**. This character is the embodiment of the counterargument – the antithesis – to the Protagonist and the premise they represent; in essence, they are in direct opposition to the Protagonist. Antagonist is preferable to 'villain' or any another commonly understood archetype since it refers to the positioning of the character(s) in the narrative, rather than any judgments of a fictional people's character or their actions which connotes additional meanings or feelings.

The **Deuteragonist** is secondary to the main roles of Protagonist and Antagonist. In their models character roles, both Propp and Tabb include a variety of roles which bare prominent effect on the Protagonist, such as a love interest or mentor. Irrespective of whether these characters support or challenge the Protagonist in some way, the intention behind their function is focussed on encouraging change in the Protagonist; this is important as it subsequently furthers and helps achieve the goals of the narrative. Since the purpose of noting the roles in this survey is to provide a more general review of the current state of the art, a single term to encompass the various more specialised terms was preferred.

Minor and **Tertiary** characters are those which hold the least degree of relevance to the plot. Minor characters have a lesser degree of input in the narrative, but their function is not restricted to solely serving the Protagonist; they may also be involved with the Antagonist. Tertiary characters are those whose role is to populate the world of the narrative and possess little to no direct bearing on the plot itself. Much like conlangs, the function of tertiary characters relates more to realism and world-building.

Considering that some speaker groups have been present (or even reconceptualised) across different seasons, shows and/or films (as is common in the case of franchises), the

decision about which role to classify them as was made based upon that which they most frequently occupied across various stories, and that which they play in their most popular or culturally salient story.

An additional complication to coding character roles is the group/individual dynamic – for example, a single member of a Minor group occupying the Protagonist role. Nevertheless, regardless of the hierarchical prominence scale, a key feature in all scholastic understanding of character formation is that it is relational (Pearson, 2007); characters are constructed in relation to each other (and plot/narrative elements). Thus, even if a key speaker were to behaviour differently to the overarching presentation of their origin group, the characterisation of the group would only be reinforced by this juxtaposition. Nevertheless, to account for this dynamic the designation of Mixed was added to the list of potential roles to encompass this divergent role dynamic amongst a single speaker group.

3.2.2.4.2 Sub-roles

The five roles above and their coding is in relation to the overall function each group of characters has in the realisation of the narrative's plot; however, the plot itself is composed of smaller scenes and interactions which work to build up to the overall role. The sub-roles that characters occupy within these smaller narrative constituents are important, because they are used as behavioural examples by which the writers help build overall characterisation through the reflection and embodiment of more internal and intangible traits (Tabb, 2018). Additionally, they support the framing of a speaker group by the story creator(s) relative to the Protagonist. In fact, one of the notable strengths of Greimas' actant model is its applicability to such interactions (Toolan, 2001). As such, a similar consideration was performed for this survey in the form of sub-roles.

Keeping in the vein of considering a character'(s) actions and behaviours relative to the Protagonist, these actions are coded as either **Antagonistic** or **Congruent**. The first code (Antagonistic) is for behaviours that are in direct opposition/disruptive, and either pose the

threat of, or actuate in, physiological and or psychological harm to the protagonist and their allies. Congruent is used when the actions of characters are in favour/agreement with the goals, morals, ideals and or actions of the protagonist.

3.2.2.4.3 Traits

The roles of characters are but one element of their characterisation; their traits are the means by which they are fully realised as unique. Thus, particular traits must be appropriate to not only the needs of the story, but also the expectations audiences have in regard to their experiences and interactions with people in the real world (Price, 2018). Given the amount and degree of diversity, I developed a model for organising the characteristics extracted from the survey's data sources. I drew primarily on Price's (2018) work on what constitutes successful screenwriting in the Western narrative tradition due the alignment in our epistemological grounding and examination of character traits from the perspective of a narrative creator.

Price conceptualises character attributes into five general categories: Physical presence, Persona, Psyche, Personality, and Primary Motivating Factor. This categorisation system, however, was deemed insufficient for meeting the specific aims of this study due to its view of characters as individuals and the high narrative specificity of some categories.[4] In my adaption of Price's system, Psyche, Personality and Primary Motivating Factor were removed. Personality was instead reconceived as **Persona** to better encapsulate the judgement of the whole group – that is, how they are perceived by the other characters in the narrative in their totality. From Price's conception of Persona, I drew two general areas: **Governance** and **Belief Systems**, due to the saliency of these features in the initial survey of the data. Lastly, **Cultural Values** was designed to encapsulate the main ideas of Price's Psyche and Primary Motivating Factor, which were the qualities related to the more intimate innerworkings of individuals. These better encapsulated the array of traits relevant to group characterisation. Table 3.4 outlines the full, adapted trait categorisation system.

[4] For example, a character's Primary Motivating Factor is typically individual and narrative specific.

Table 3.4 *Character trait categories*

Traits	Definition
Governance	The form of government the group functions under/occupies
Belief System	The belief system, spirituality and or religion held by the group.
Physicality	Physical traits *E.g., appearance, age*
Persona	Presentation to the outside world; demeanour. *E.g., perception of group by outsiders, skills they're known for, prominent features*
Cultural Values	Shared core ideals, values, and beliefs of a group.

It should be noted also that, for some attributes, they were originally dictated in units longer than one or two words in their source; for data management and analysis purposes, information such as this was encompassed through a single, representative term. For example, 'keep themselves and their culture separate from the rest of society' was entered in the database as 'separatist'.

3.3 Results

This section presents the results of the survey on conlangs in science-fiction and fantasy film and television. Information presented in blogs, internet forums and fandom wikis were examined to develop a comprehensive view of the current state of the art from the domain of intention – that is, the objectives and underlying practices of the members of this creative partnership: the language creators and production team – in addition to trends in conlang form and their speakers' characterisation. The data was subsequently analysed according to the methodological bounds of each unique query as outlined in Section 3.2. The results as follows are presented according to the four main topic of interest; creators (§3.3.1), visual media (§3.3.2), conlangs (§3.3.3), and characterisation (§3.3.4).

3.3.1 Creators

The topic of conlang creators focused on who developed these languages, their degree of linguistic training and awareness, their employment by production companies, and the involvement of other creators in the language construction process. Across the twenty-seven conlangs surveyed, there were a total of ten creators. In a notable number of cases, the same creator developed multiple conlangs for the same production.

Table 3.5 *Constructed language creators*

Creator(s)	Title (Show/Film)	Constructed Language
David J. Peterson	*Bright*	**Bodzvokhan**
		Övüsi Kieru
	Defiance	**Castithan**
		Irathien
	Dune	**Fremen**
	Emerald City	**Munja'kin**
	Game of Thrones	**Dothraki**
		Valyrian
	Shadow and Bone	**Old Ravkan**
	The 100	**Trigedasleng**
	The Witcher	**Hen Linge/Elder Speech**
	Thor: The Dark World	**Shiväisith**
David J. Peterson, Carl Buck	*Halo: The Series*	**Sangheili**
David J. Peterson, Christian Thalmann	*Shadow and Bone*	**Fjerdan**
David J. Peterson, Jessie Sams	*Motherland: Fort Salem*	**Méníshè**
David Salo	*Lord of the Rings, The Hobbit*	**Khuzdul**
		Quenya
		Sindarin
		Black Speech
Marc Okrand	*Atlantis: The Lost Empire*	**Atlantean**
	Star Trek	**Klingon**
		Vulcan
Paul Frommer	*Avatar*	**Na'vi**
	John Carter	**Barsoomian**
Matt Pearson	*Dark Skies*	**Hivespeak/Thhtmaa**
Trent Pehrson	*Star Trek: Pickard*	**Romulan**
Victoria Fromkin	*The Land of the Lost*	**Pakuni**

Table 3.5 outlines each of the ten creators relative to the film, show or transmedial franchise they provided constructed languages for, as well as the names of these conlangs. The most prolific creator was David Peterson, who worked on twelve distinct conlangs for nine different telecinematic productions and was the co-creator of a further three conlangs for three separate productions. Second to Peterson with regard to highest number of conlangs was David Salo; however, his conlangs were all developed for the same transmedial franchise, *Lord of the Rings*. For the majority of these constructed languages, Salo had great wealth of both linguistic material from the original creator (J.R.R Tolkien) and scholarship to refer to. Next was Marc Okrand (three conlangs) and Paul Frommer (two conlangs), who each respectively provided languages for two productions. The six remaining creators all only developed one language for one production—three of which were as co-creators with Peterson.

All of the creators were trained linguists with the exception of Christian Thalmann, who co-created Fjerdan. However, Thalmann is heavily involved in online language construction communities and has had work published by the Language Construction Society. Thus, in absence of a formal education, it is clear that Thalmann does have a higher than average knowledge of linguistics.

In every instance, the creator was recruited by a production company to develop the conlang(s). For most, their recruitment came about not because of any known affinity for language creation, but as a result of production seeking out any linguist willing to perform the task. The only acceptation to this was Peterson, whose fame and prevalence as a language creator has led to productions sourcing him specifically by his unique résumé.

These linguists were often not even the original creators of the language; eleven conlangs (40.74%) existed to some degree in novels by six different authors, which were subsequently adapted into telecinematic form. Of these original creators, only Tolkien had linguistic training. However, Bardugo was aided by Peterson in her initial development for of Fjerdan and Ravkan for her *Shadow and Bone* novels; they were friends prior to his being hired again to work on the narrative's television adaptation.

Other involved creators (where they were evident) were typically the directors – who were responsible for the concept and vetoing power during the conlang's development – and dialect coaches; however, only four out of twenty-one productions had dialect coaches work with the actors.

3.3.2 Visual Media

The topic of visual media and its related queries were intended primarily for the benefit of record keeping purposes. This involved keeping track of the telecinematic narratives' title, year of release, medium, genre, and original narrative mode. The twenty-seven constructed languages surveyed were evenly dispersed across genres, as well as mediums, with twelve shows (60%) and eight films (40%). However, in the case of films, only the first film in which it appeared was counted; thus, these results are limited in that they do not account for the true number of films in which each conlang has been used. The majority of conlangs in the sample were published in the twenty-first century.

Figure 3.1 *Conlangs Released Per Year*

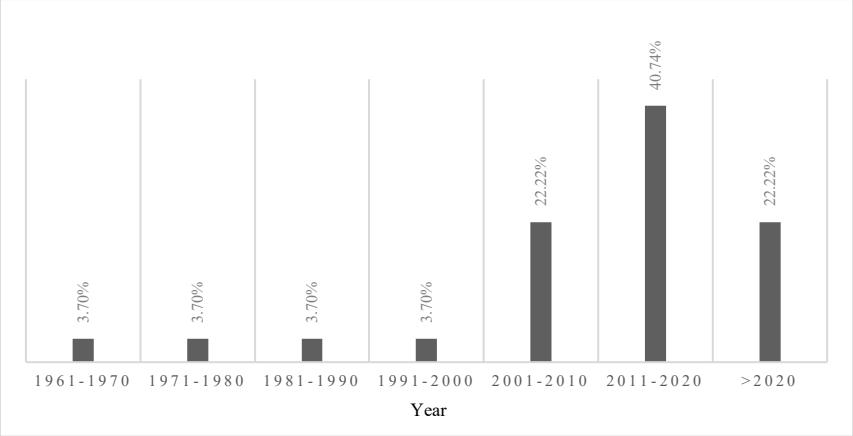

Figure 3.1 demonstrates that the overwhelming majority of conlangs sampled (85%) were developed for their first appearance in a telecinematic production[5] within the last two decades. Combined, almost five times as many conlangs appeared in the most recent twenty-two years than the four decades prior – a 475% increase in languages. While it appears as though there has been a sharp decline in conlangs released after the year 2020, this is misleading; already the same number of conlangs have been release in the two-year period between 2021-2022 (the time of writing this thesis) as the whole decade between 2001-2010.

[5]The conlang's first appearance in a telecinematic production is not the first time it is mentioned by name, but the first time it where its form was identifiably that of a full constructed language.

3.3.3 Conlangs

Conlangs are one of the more substantial topics surveyed, targeting the parameters set by production companies (§3.3.3.1) and the conlangs' design inspiration (§3.3.3.2) (encompassing both their classification as *a priori/a posteriori* and a more detailed inquiry into the matter). While the queries about degree of existent source material and other items of notes were subsumed under the broader conlangs topic in the methodology, their data is applicable across multiple topics and thus the following sections does not include a specific one dedicated to them.

3.3.3.1 Parameters, guidelines, and notes for creators

Production teams had at least one requirement for each conlang, the two most frequent of which related to: ease of pronunciation for the actors; and for the conlang to align with any pre-existing source material in cases where the film or show was an adaptation. Other requests were also made, and collectively the results of the survey could be organised into the four identifiable themes shown in Table 3.6.

Table 3.6 *Survey Themes: Parameters, Guidelines and Notes*

Theme	Parameters, Guidelines, and Notes
Practicality	easily pronounceable/reproducible by actors match lip movements of pre-recorded scenes
Alignment	with original material with director vision
Function	plausible: given temporal location narrative is set it realistic: mimics human faculties of language point of differentiation: maximally differentiated from another language (same narrative) reflect magic system (magic produced with vocal cords, thus tone)
Characterisation	Examples: 'menacing, ugly, inhumane' (Hivespeak) 'harsh, guttural; unusual' (Klingon) 'pleasant; friendly; appealing' (Na'vi) Russian/Slavic inspired culture (Ravkan)

Practicality and *Alignment* both hinge upon extra-narrative considerations, while *Function* and *Characterisation* are solely involved in the construction of the narrative itself. Regarding *Characterisation,* in some cases the request by production teams that a conlang insinuate more negative characteristics was met with hesitation by creators, who instead aimed for a more neutral theme in their design that still met the task parameters. For example, Marc Okrand chose to aim for an 'unusual' sound, rather than the instruction of 'harsh and guttural' for the alien language, Klingon (Okrent, 2009).

3.3.3.2 Design and inspiration

For the design origins of the conlangs, the majority surveyed were *a priori* (51.9%), meaning they were designed to not resemble any known human language; conversely five languages (18.52%) were *a posteriori*, and their being based on known languages was due to a functional requirement for the narrative itself. For example, the conlangs Fjerdan and Old Ravkan are spoken by fictional peoples' whose cultures are based on Scandinavia and Tsarist-era Russia respectively, and as such, were designed as a further reflection of these cultures.

For eight (29.6%) conlangs, their status was unable to be determined, as any potential sources of inspiration or reference remain unknown. For those conlangs whose languages of inspiration were known, there were no correlations regarding geographical location, cultural groups, or language families. The only exceptions to this lack of correlation were those conlangs whose speakers were of the mythical species, elves. Five elvish languages appeared in the survey from four different film and television productions; all five conlangs drew inspiration from Celtic, Finno-Ugric, and Scandinavian languages. Two of these languages were originally created by author J.R.R. Tolkien and developed for film by David Salo. The three non-Tolkien conlangs were similarly inspired by the same language sources as Tolkien's, however possessed vastly more negatively coded character traits and roles.

3.3.4 Characterisation

The primary aim of this survey was to identify potential recurrent trends in the characterisation of conlang speakers in science-fiction and fantasy telecinematic media. The queries used to investigate

this targeted the primary aspects of the speaker groups: their species (§3.3.4.1); role and sub-role in the narrative (§3.3.4.2); and character attributes (§3.3.4.3).

3.3.4.1 Species

The first clear characterisation trend to emerge was in regards to the distribution of species across the sample, with an overwhelming tendency for speakers to be non-human. Overall, nineteen conlang speaker groups – 70.4% of the sample – were non-human, with the remaining 29.6% being human speakers.

3.3.4.2 Role in the narrative

For the role conlang speaker groups performed in their respective narratives, a key finding was that while speakers tended to occupy roles more central to the overall narrative, their behaviour at smaller narrative junctures largely designated them as antagonistic. The distribution of roles for speaker groups was split almost in half between Mixed (51.9%), and the roles of Deuteragonist, Antagonist, and Minor; collectively, these latter three roles made up the remaining 48.9% percent of the sample. Notably absent from the latter were any speaker groups who could solely be identified as the Protagonist(s) of the story. Protagonists were only ever identified in the context of Mixed roles, where speaker groups had members occupy a variety of different, but clearly identifiable, roles in the story.

Figure 3.2 *Comparing distribution of roles (as a percentage)*

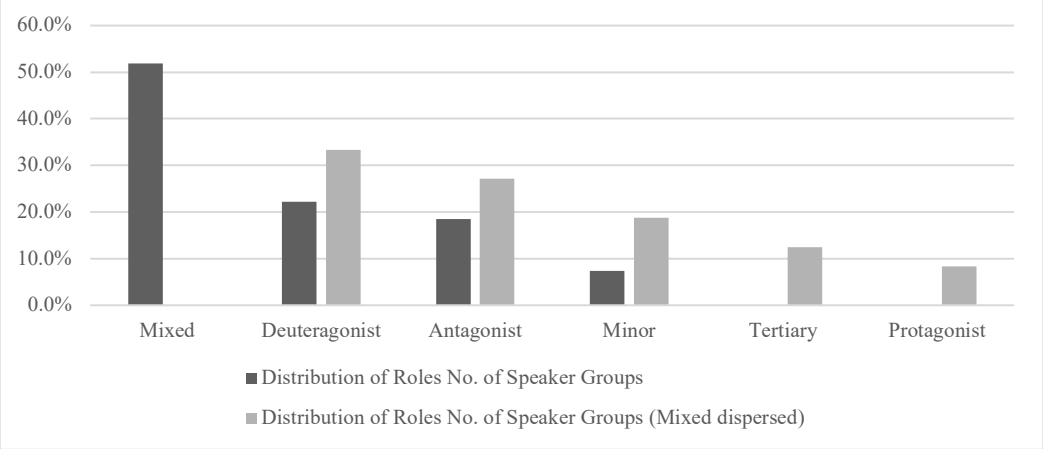

Figure 3.2 compares the distribution of roles when Mixed remains a distinct category, and when those roles encompassed by the code Mixed were instead incorporated individually (Mixed dispersed). It is clear that with both modes of coding, the same frequency order is still apparent. Therefore, speaker groups most frequently occupy the roles of Deuteragonists and Antagonists. Minor roles are more commonly held by members of a Mixed speaker group, while Tertiary and Protagonist roles are only ever held by characters who are members of a Mixed speaker group.

Additionally, while the query on the degree of existent material was intended to inform the case study featured in Chapter 4, it should be noted that it helped reveal there to be no evidence of a relationship between speaker roles and the extent to which a conlang was featured in the narrative – that is, the constructed languages were not used more frequently in films or television programs if their speaker occupied a more prominent role.

Speaker groups were additionally classified according to their occupying an antagonistic or congruent sub-role at the more micro-level of interaction between characters. These speakers were found to generally occupy the sub-role of antagonistic. In fact, twenty speaker groups (74.1%) were classed as antagonistic, meaning that these characters frequently behaved in a manner that was in direct opposition, and or disruptive, to the Protagonist and their allies (in any capacity) at some point in the narrative. Moreover, there was a tendency for speakers' antagonistic behaviour to simultaneously occur whilst they were speaking their conlang.

3.3.4.3 Speaker group attributes

The result for traits identified from the survey were analysed in four ways; firstly, according to their dispersion within the categorisation system outlined in §3.2.2.4.3 (which was adapted from that conceptualised by Price (2018)); secondly, with regard to the frequency of each trait; thirdly, these frequency rates were examined with respect to their distribution across trait categories; and lastly, the distribution of traits according to the antagonistic and congruent sub-roles. Overall, it was found that traits were weighted towards being identifiers of characters' unique elements of outward presentation,

and additionally, that the majority of traits were associated with characters who occupy the antagonistic sub-role.

From the data surveyed, a total of sixty-nine distinct character traits of conlang speakers were identified:

Table 3.7 *Distribution of character traits across category system (adapted from Price, 2018)*

Categories	Governance	Belief System	Physicality	Persona	Cultural Values
Traits	tribal	spiritual	immortal	aggressive	matriarchal
	autocratic	superstitious	strong	ambitious	loyalty
	aristocratic	nature	animalistic	barbaric	conservative
	colonialist	monotheistic	darkness (need for)	combative	communal
	hierarchical		large	conquerors	honour
	theocratic			cultured	separatism
	clan governance			gentry	emotional repression
	oligarchy			hunter-gatherers	privacy
	monarchist			indigenous	logic
				insular	patriarchal
				intelligent	warrior culture
				magical	xenophobic
				malevolent	change-aversion
				megalomaniac	strict gender roles
				militaristic	artisanship
				modern	nomadic
				old	eugenicist
				ostracised	pacifism
				parasitic	
				powerful	
				primitive	
				proud	
				racist	
				ritualistic	
				secretive	
				sexist	
				skilful	
				stubborn	
				technologically advanced	
				tyrannical	
				unloving	
				vain	
				violent	
TOTAL: 69	**9**	**4**	**5**	**33**	**18**
Percentage:	13.04%	5.80%	7.25%	47.85%	26.09%

As demonstrated by Table 3.7, traits were unevenly dispersed across the six-category system. Persona (how characters presented to others in the narrative) emerged as the category for which there was the greatest number of traits. The next most numerous category was Cultural Values; even so however, it only contained approximately half the number of traits encompassed by Persona. Table 3.7's tabular organisation of the data, however, does not account for the fact that some traits were

reoccurring. Even so, when organised by frequency, the dispersion of traits was similarly disproportional.

Table 3.8 *Frequency of Character Traits*

Frequency	Very frequent (6)	Frequent (4)	Average (3)	Infrequent (2)	Very Infrequent (1)
Total: 69	2	4	5	12	46
Percentage	*2.90%*	*5.80%*	*7.25%*	*17.39%*	*66.67%*
Total Tally: 113	12	16	15	24	46
Percentage	*10.62%*	*14.16%*	*13.27%*	*21.24%*	*40.71%*

Categorical labels have been used to represent the frequency of traits, which occurred between one and six times respectively (though no trait occurred exactly five times). The full table with traits included can be found in Appendix B).

The frequency distribution of character traits – both in terms of the total number of distinct traits, and the total tally of every occurrence of a trait – shown in Table 3.8 demonstrates an inverse correlation between an attribute's relative frequency, and the number of attributes that shared the same frequency. For example, forty-six traits (67% of the sample) occurred very infrequently (only once) and yet accounted for 40.71% of the total number of traits collected in the survey, the largest share of any frequency category.

The frequencies of traits were additionally broken-down further to examine what proportion[6] of traits from the five categories (Governance, Belief system, Physicality, Persona, and Cultural Values) were encompassed within each frequency category.

Table 3.9 *Proportion of trait categories across frequency rates*

	Governance	Belief System	Physicality	Persona	Cultural Values
very frequent		54.5%			18.2%
frequent	33.3%		36.4%	8.7%	12.1%
average		27.3%	27.3%	13.0%	9.1%
infrequent			18.2%	26.1%	30.3%
very infrequent	66.7%	18.2%	18.2%	52.2%	30.3%

[6] Percentages were used rather than the tally in this case, due to the discrepancies in the number of traits which fell under each category.

Table 3.9 reveals that for each category except Cultural Values, the percentages were organised in either descending (Governance and Persona) or ascending (Belief System and Physicality) order. For Cultural Values and the descendant groups of Governance and Persona, the largest share of their traits occurred *very infrequently*. The inverse was true of Belief systems and Physicality, which were *very frequent* and *frequent* respectively.

Lastly, to examine whether there was any link between certain attributes and sub-roles, the traits were organised according to the sub-role of their corresponding speaker group – that is, which traits occurred only in antagonistic or congruent speaker groups respectively, and which occurred in both.

Table 3.10 *Trait dispersion across character sub-roles*

Subtype		Governance	Belief System	Physicality	Persona	Cultural Values
Antagonistic	**Traits**	autocratic aristocratic colonialist hierarchical theocratic clan governance monarchist	monotheistic	darkness (need for) large	aggressive ambitious barbaric combative conquerors gentry hunter-gatherers intelligent malevolent megalomaniac militaristic modern old ostracised parasitic powerful proud racist sexist tyrannical unloving vain violent	matriarchal conservative communal honour separatism privacy warrior culture xenophobic change-aversion strict gender roles nomadic eugenicist
	TOTAL: 45 (65.2%)	7	1	2	24	12
Both	**Traits**	tribal	spiritual nature	strong animalistic	indigenous insular secretive	patriarchal artisanship
	TOTAL: 10 (14.5%)	1	2	2	3	2
Congruent	**Traits**	oligarchy	superstitious	immortal	cultured magical primitive ritualistic skilful stubborn technologically advanced	loyalty emotional repression logic pacifism
	TOTAL: 14 (20.3%)	1	1	1	7	4

Table 3.10 reveals that 65.2% of the sixty-nine traits identified in the survey were associated with only antagonistic speakers, while only 20.3% were associated with just congruent characters. The remaining 14.5% of traits were found for both types of sub-roles.

3.4 Discussion

The following section analyses and discusses the key findings from the survey. I discuss these according to according to the three main topics explored in the survey; Creators (§3.4.1), Visual Media (§3.4.2) and Characterisation (§3.4.3). Given that the fourth topic, Conlangs, is that upon which this whole investigation is based, the findings regarding their design parameters and inspiration were deemed better suited to a discussion within the purview of the other three topics for which each finding is most relevant.

3.4.1 Creators

The survey findings confirmed that the creators of languages for telecinematic media do possess a high degree of linguistic training, awareness, and proficiency; however, their degree of control over the conlang is very minimal, having no input on the narrative within which it is situated, nor the language's creative direction or future practical output. While creators are valued and hired for their linguistic skill set, the nature of the visual media production industry nevertheless prevents creators from sharing their full, extensive linguistic expertise; linguistic creativity is encouraged by production companies only in so far as the language better serves their own creative vision. While this finding is not new (reflecting the self-reports by linguists working for production companies as summarised in Chapter 2), it does highlight the extent to which production companies are not aware, and potentially unwilling, to critically reflect on the potential effects of using this type of linguistic variation.

Conlangs are being treated by production teams like an aesthetic narrative device, rather than as communicative speech acts, or an actual language. Such treatment of language is not uncommon in performed narratives – all visual media dialogue reflects and relies upon typical language norms, but never to the extent that dialogue is a full mimicry of natural speech. It only extends so far as to achieve the necessary realism and authenticity required for audiences to suspend their disbelief (Bednarek, 2018).

Nevertheless, the data demonstrated a clear hesitation on the part of creators about attempting to make strong judgments through their choice of linguistic features, such as in the case of Marc Okrand.

Such responses reflect Bobeck et al. (2022)'s suggestion that people are less willing to make strong, biased perceptual judgments about the character of a language. While the survey data was not able to uncover much about each creator's internal views on the capacity of language to embody and index character, what is clear is that the priority for them is language and its internal linguistic functioning, contrastive to the production companies, whose concern lies in how conlangs can best serve the narrative.

Furthermore, the survey revealed that the same individual (Peterson) is predominantly responsible for the majority of constructed languages in the sample. Given the nicheness of language creation, not only as a skill generally, but also with regards to the unique situation of there now being an individual with professional experience working in the film and television industry, it is unsurprising that Peterson continues to be responsible for a growing number of conlangs in America-based telecinematic media. This has significant implications for diversity amongst emerging conlangs given the potential for all the conlangs to be affected by the same beliefs, opinions, and feelings Peterson may hold around language, even if this is subconscious. If the frequency with which audiences are exposed to linguistic forms increases the learning of them, then there is the potential for audiences to absorb these ideas around language from Peterson's work. Future research efforts which further investigate this question of creator preferences and choices stand to make significant contributions to current understandings about the degree to which they are arbitrary and unrelated to any ideological goals, and or whether there are universal tendencies at play, and why these exist.

Nonetheless, the apparent lack of consideration for constructed languages on the part of production teams beyond achieving their own desired goals for the narrative is concerning, since it displays a lack of regard for the ideological implications of language usage and the power of visual media in modulating public understandings and usage of language.

3.4.2 Visual Media

The analysis of features in the data related to the topic of visual media illustrated a sharp increase in the use of conlangs in telecinematic media. Based on the current trend of three conlangs

being released per year, by extrapolation the production of twenty-four conlangs could be expected in the current decade of 2021 to 2030; a 118% increase from the decade prior. This projection suggests that conlangs have become a staple feature of the telecinematic science-fiction and fantasy genres. Such a result is not unsurprising, given that once audiences accept the introduction of new technologies in visual media, they come to expect them as given feature of the medium (Bednarek, 2018). Nevertheless, this only further supports the necessity of research into the use of conlangs.

As was identified in Chapter 2, constructed languages are treated in much the same way as other forms of linguistic variation. Audiences have become increasingly aware of the role of variations like accent and dialect in perpetuating stereotypical and harmful characterisation in televisual narratives (Bell & Gibson 2011; Wahlgren, 2021), but nevertheless the average layperson has not received the amount of linguistic teaching and knowledge necessary to critique language use in fictional narratives to high degree (Meyers, 1980). If constructed languages are performing their characterisation function through the same mechanism (indexicality) as these other linguistic varieties, but are going unrecognised as another linguistic variation due to their novel form removing the immediate connection audiences have to it (like they have with accent and dialect, whose exact features and form they experience in real life and thus can recognise), then this evolution in telecinematic linguistic techniques may be able to subvert the critical response and reaction of audiences. In essence, conlangs can be performing the same indexical function of other language varieties, but their newness and novelty makes it harder for audiences to detect this.

Thus, if indeed constructed languages are being used to support characterisation efforts in this way by writers and telecinematic production teams, then this will only become more potent in coming years, necessitating more scrutiny and research in these early stages.

3.4.3 Characterisation

The survey findings support the literature's assertion that conlangs are used a means to fulfill the characterisation function of demarcating their speakers as 'other' (Chapter 2), primarily though their being a non-human species, rarely filling the role of Protagonist, and frequent antagonistic behaviour.

In the narrative genres of science-fiction and fantasy, the presence of non-human entities is expected; however, the survey revealed that not only were the overwhelming majority of conlang speakers of a non-human species, but that the Protagonist of their narratives – the role to which all others compared relationality – were human. The prevalence of this juxtaposition in species supports the literature's observation that the physiological differences of conlang speakers are used to signify their being different to the audience (Noletto & Lopes, 2022) and furthermore to emphasise the disparity between groups within the diegesis on the narrative itself (Queen, 2015). This aspect of reinforcement is especially relevant to visual media; linguists studying performed language are now pushing for all multimodal facets of a performance and not just language to be considered in linguistic analyses, due to their recognition of these various modalities as working together to develop the whole product (Bell & Gibson, 2011).

Furthermore, the sources of inspiration used in the construction of each language were revealed by the survey to be overwhelmingly languages other than English. While the survey was not able to deduce what exact features were drawn from these natural languages, previous work suggests these would be those not found in English (Ball, 2015; Wahlgren, 2021). Nevertheless, this finding further supports the understanding of NE linguistic variation being deployed as a mechanism by which to designate 'otherness' (Queen, 2015) by evidencing constructed languages as not being exempt.

The survey findings furthermore demonstrate that, in addition to the unlikelihood of a conlang's speakers being human, they are also highly unlikely to fill the narrative role of Protagonist. They are not, however, in turn relegated to more minor roles; speakers were more likely to be Antagonists or Deuteragonists – roles secondary in narrative prominence. This trend in the assignment of roles evidences a correlation between the degree of relevance/impact a character has on the story, and their being a conlang speaker. While there is no scholastic work directly addressing this topic, there do exist the testimonies of creators (which were explored in §2.2) about the degree of difficulty, time and effort involved in language creation process, experienced by both themselves and the rest of production. From these assertions, it can be deduced that the injection of such resources would necessitate the endeavour to have not only a relevant purpose, but a utility that could be expended to the highest degree.

This dispensation of utility, however, is not in regard to the frequency of the conlang's use, since the survey data showed no correlation between a speaker's role and the amount their conlang was featured in the narrative. High frequency may be relevant for language learning purposes, but it is not the primary determining factor in attentional saliency for audiences. In the case of constructed language use, the concept of markedness is more appropriate, and is already regularly applied to analyses of dramatic dialogue to explain how shifts in speech styles are a means by which to develop the narrative (see Queen, 2015). Furthermore, by understanding the intended role of characters, audiences can 'attribute particular significance to the words or actions of a character' (Culpeper, 2001; in Bednarek, 2010). Thus, by establishing the centrality and relevance of conlang speakers to the narrative, their use of the language can be subsequently interpreted as more potent/salient to audiences. As such, regardless of how frequently they are spoken, conlangs nevertheless serve a distinct purpose, relative to their narrative's unique context and plot needs.

Previous research on characterisation has looked at both the roles and attributes of characters; however, this thesis sought to investigate the result of their interplay at the level of micro-interactions (scenes): the place where a character's actions are always in alignment with their primary narrative role, but their behaviour is more specifically the manifestation of their traits. According to the survey results, the majority of conlang speakers behaved antagonistically. This finding is reinforced by the often-simultaneous use of the conlang at the same narrative juncture. Such a strong correlation emphasises the potential degree of relevance conlangs have in their speakers' characterisation; and furthermore, brings into question, firstly, whether there are other similarities in their characterisation used to embody this antagonism, and secondly, whether their conlangs share similar phonological features.

The survey's data on character traits also aligns with the prominence of antagonistic groups in this sample; the largest share of traits are associated with them as opposed to congruent characters. However, it was difficult to identify overall trends or commonalities between these traits beyond their categorisation and links to the sub-roles.

This difficulty in analysing traits emerged as the primary limitation of this survey. A large number of traits were identified through the survey, however the majority of which occurred very infrequently across the speaker sample, especially those under the categories Persona and Cultural

Values. The large degree of singularly occurring attributes can be explained through the need for diversity and uniqueness not just between characters of the same narrative, but also between stories to ensure each feels unique and novel to audiences (Bednarek, 2018). Furthermore, the degree in variation between characters at the level of their unique combination of attributes found in this survey is indicative of the difficulties in developing a fully comprehensive model of character. It may just be the case that character trait analysis is too varied to be able to draw generalisations, suggesting that for future research, the topic be explored through methodologies better suited to such complex phenomena, such as a case-study.

3.5 Summary

This chapter has detailed the survey I designed to develop a better, linguistically informed understanding of fictional languages in contemporary fantasy and science-fiction telecinematic visual media, particularly in regard to creator involvement, media trends, production variables, and the characterisation of their speakers. The key findings indicate that that conlangs are being treated by production companies in much the same way as other linguistic variation, despite their uniquely planned origins. While linguists appear to be using their skills and awareness to temper the misrepresentation of linguistic features, they nevertheless do not possess control beyond the structural design of the language. Furthermore, the data suggests that conlangs are becoming an increasingly prominent feature of film and television in the speculative genres, thus confirming the necessity for more research to be conducted on the subject, especially with regard to characterisation.

The most prominent key findings of the survey indicated that while conlangs are being spoken by characters highly central to their respective narratives, their overall characterisation affirms the literature's assertion that conlangs are used as a means of demarcating its speakers as 'other' through the juxtaposition with a Protagonist who better reflects the reality of the intended English-speaking audience. I have additionally provided evidence for the mechanisms by which this othering is tangibly actuating in telecinematic narratives.

3.5.1 Informing the case study

The survey has supported the notion of conlangs being a prominent resource in the characterisation of their speakers in science fiction and fantasy telecinematic narratives. However, while the survey's findings demonstrated how conlangs are involved in indexing antagonistic behaviour, it was unable to reveal the specific linguistic features by which this is achieved. As such, the case study in the following chapter uses this antagonistic sub-role as the independent variable according to which the consonant inventories of conlangs are examined. This case study seeks to identify commonalities across the various conlangs, to determine whether there are particular phonological associations and understandings held in the minds of English-speaking audiences that production teams and creators are trying to access in order to successfully index characters as antagonistic.

Chapter 4 Case Study

This chapter details the case study performed on a of sample conlangs whose fictional speakers were identified as being *antagonistic* through the survey in Chapter 3. The aim of this study was to detect trends in consonant inventories to indicate which features are potentially involved in indexing this antagonistic sub-role. Analytical approaches identified any existing trends across these consonant inventories, focussing on whether certain speech sounds - specifically consonants - are being selected for the indexation of antagonism. Antagonistic behaviour in this thesis is understood to be that which is oppositional and disruptive (to the Protagonist and their allies). In keeping with this perceptual experience of interference, the most likely class of speech sounds for which there could be a perceptuomotor association was obstruents, since their articulation involves the obstruction of airflow in the vocal tract (Zsiga, 2012). In accordance with the reviewed literature in Chapter 2, it was hypothesised that:

(1) these inventories would be comprised of a high proportion of obstruents and consonants not found in English; and that
(2) these consonants would also have a high relative frequency.

Section 4.1 outlines the methodological approach and research design of the study. Section 4.2 introduces the five conlangs being investigated and summaries their relevant contexts and features. Section 4.3 details the process undergone in annotating the languages. Section 4.4 illustrates the results of the case study, the key findings of which are then analysed and discussed in Section 4.5.

4.1 Methodology

This section outlines the methodology and research design employed in this case study. The case study involved the annotation and analysis of each conlang – as spoken in their respective narrative contexts

– in order to deduce their consonant inventories, and the relative frequency of each consonant. Since indexicality is dependent on contiguity, frequency analysis was identified as the most appropriate method. Frequency is recognised as the most fundamental factor in language learning, and furthermore, the key determinant in the degree of intrenchment of the acquired rules and knowledge involved in the sequentially strengthened areas of learning, memory, and perception (Divjak 2019). This research on the role of frequency in linguistic learning suggests that a consonant's indexical potential would be directly linked to their degree of prevalence, and thus saliency, in the minds of audiences.

4.1.1 Sample selection

Five constructed languages whose speakers were identified as antagonistic were selected from the survey sample of conlangs in Chapter 3. A sample size of five was deemed appropriately large enough to ensure representativeness of the phenomena being observed, but still small enough for the research to be feasible within the time constraints of the study. The selection of conlangs for the sample was not random, with consideration given to **the degree** to which the speakers were demarcated as antagonistic by additional narrative elements (such as the content of dialogue and scenes), and representativeness of different speakers. In comparative language research (such as typological analysis), standard practise is to ensure samples are representative of various language families and genus (Song, 2018). While such a distinction does not exist for fictional languages, a reflection of this kind of diversity was achieved through ensuring conlangs were representative of both mediums (television and film), genres (science-fiction and fantasy), and a variety of creators. A large portion of the conlangs surveyed, however, were shown to share the same prolific creator (Peterson). While this complicated efforts to diversify creator selection, conlangs developed by Peterson alongside a co-creator were given preference.

Table 4.1 *Case study constructed languages sample*

Conlang	Film/Television Show	Creator(s)
Barsoomian	*John Carter (2013)*	Paul Frommer
Dothraki	*Game of Thrones (2011-2019)*	David J. Peterson
Fjerdan	*Shadow and Bone (2021)*	David J. Peterson & Christian Thalmann
Klingon	*Star Trek: Into Darkness (2013)*	Marc Okrand
Sangheili	*Halo: The Series (2022)*	David J. Peterson & Carl Buck

Table 4.1 lists the conlangs selected for the case study based on these considerations: the sample covers two films, and three television shows, as well as five different creators (with the exception of Peterson, who appears as a co-creator for the conlangs Fjerdan and Sangheili).

4.1.2 Data collection, sanitisation, and annotation

Audio of the conlang was sourced from only one film or television program per language to ensure its narrative context was stable. To select each audio clip, I considered the narrative juncture at which it occurred, the speakers present in the interaction, and the length of speaking time.

Clips were sourced from amongst the latter most chronological instances where it was spoken – that is, from later seasons of shows, and from the latter most instances in films. Although film and television programs are shot out of sequential order during production, this selection choice was made to reflect the likely assumption of viewers that over the course of the narrative chronology, any non-native speakers would improve in fluency and thus be more proficient and native-like in their pronunciation. In the case of television shows, this same improvement would be tangibly reflected through the degree of practise and familiarity with the conlang gained by the actors over the course of many episodes and seasons. The only exceptions to this were the languages Klingon and Fjerdan, which were only featured at one or two narrative junctures respectively.

In addition to the narrative timeline, the speakers present in each interaction were also considered to ensure representativeness of gender and language ability. Each clip accounted for male and female speakers; however, the dispersion of gender was not always equal across speaking duration,

nor the total number of speakers. For language ability, non-native speakers (according to the narrative) were included so long as there was overt recognition of their language competence in the content of the dialogue. Since one of the functions of dialogue is to convey diegetic information to audiences (Bednarek, 2018), this contextual dialogic information was presumed to indicate their pronunciation as valid.

The final primary consideration was the length of each clip. The longest continuous interchange was sought for each language; however, due to the different narrative-specific uses of each conlang, variation in clip lengths was unavoidable. To account for this, the relative frequency of each consonant tally was calculated to enable comparisons between the sample languages. In cases where a single clip was significantly shorter – relative to the rest of the sample clips – a second clip was added for the language.

Table 4.2 *Conlang clips*

	Actual Speaking Time (seconds approx.)	**Consonants**	**Phonemes per second**
Barsoomian	52	287	0.26
Dothraki	150	615	0.24
Fjerdan	25	77	0.32
Klingon	17	79	0.22
Sangheili	46	140	0.33

Table 4.2 demonstrates that while there was still significant variation between clips in spite of these efforts, the number of phonemes per second had a standard deviation of 0.05 – indicating that the differences in speaking time are not significant. Moreover, the number of phonemes per second was not found to correlate with speaking time, nor the total consonant tally from each sample. As such, these deviations in audio length were presumed unlikely to have a meaningful effect on the frequency distribution percentages of consonants.

Each clip was obtained from the streaming service the program was licensed to at the time of recording; these included Amazon Prime, Netflix, and Disney+. The clips were recorded using the program Quick Time Player, then converted to WAV audio files, as this format is known to preserve data and audio quality and is the standard for sociophonetic research (Di Paolo & Yaeger-Dror, 2011).

Some of the clips were edited prior to their annotation, but only in situations where other unrelated scenes were intercut with the one in focus, or where the background music was at such a disruptive volume that small adjustments to dampen it were made (this last accommodation was made only for Klingon and Sangheili).

To perform the analysis of each audio recording, I used the phonetic speech analysis software, Praat. In pilot analyses of the clips' conlang inventories, clips were played and paused at short intervals to allow the consonants heard in the short section to be tallied. However, many problems were encountered with this method; phonemes were frequently cut off mid-articulation, misheard or missing altogether in the tally. Due to the unreliability of the pilot method, Praat was instead adopted, with the expectation that its sophisticated annotation system would prove more accurate and user-friendly. This did actuate, with the software indeed proving more reliable in allowing short and ambiguous sounds to be isolated and replayed, consonants to be annotated relative to their articulation in the clip, and headnotes to be concurrently logged. The spectrogram generation also assisted in my judgments through its visual cues; however, due to the clips frequently featuring music and other sound effects that distorted the spectrograms, they were not an infallible resource.

4.1.3 Establishment of consonant inventories

A variety of challenges are involved in establishing a sound inventory of a natural language, notably: perception; underdetermination; the representation of each consonant with phonemic symbols; and the potential overdetermination of inventories, sequences, and variation (Rice, 2019). Ideally, each of these facets would be accounted for through the involvement of multiple parties performing the analysis, with results drawn from collating this work. Unfortunately, such an effort was unfeasible within the time scope of this thesis. Moreover, constructed languages lack native speakers, meaning there are also no ways to determine what language-specific phonological constraints exist. Nevertheless, to account for the effects of my own bias in the annotation process and the lack of information regarding language-specific constraints, well-attested typological trends and phonological processes were considered in the annotation and establishment (phonemicisation) of each inventory.

A key source of guidance for the establishment of the conlang's consonant inventories were those processes used by Maddieson (1984) in the creation of the UPSID database for typological analyses – particularly those in relation to phonological alternation and treatment of phones as individual units or segments (e.g., affricates). All speech sounds were considered broadly as phonemes; information that would inform the presence of allophones, consonant pairs, and other language behaviours was considered above this segmental level. Nevertheless, some atypical cases emerged where consonants did not appear to function as a meaningful contrast; for example, in the Sangheili sample, /d͡ʒ/ became [d͡z] in the environment of a high front vowel (this pattern was attested by all speakers). In cases of phonological alternations such as this, where the degree of similarity between consonants strongly suggested a simple pronunciation variation, Maddieson's guideline of selecting the most 'characteristic' allophone was followed, with 'characteristic' taken here to be the phoneme with the highest distributional frequency. In cases where a dialect coach is known to have worked with an actor, consonants that occurred infrequently were cross-referenced with the creator's designed phonological inventory if one was available. If the consonant was present in the inventory, it was considered intentional, and included in the inventory. The inventories use the International Phonetic Alphabet (IPA; revised to 2020) convention for notation.

For the tally of consonants itself, speech acts such as commands emerged as having a high rate of repetition. Tallying each consonant reiterated in the same repetitive command had the potential to distort the sample, and since this study did not have the ability to account for the effects of word frequencies on consonant frequency[7], such speech acts and their consonants were only counted once.

4.1.4 Limitations

Other elements are vital in constructing a language's phonology for a grammar, such as: features above the segmental level (phonotactic and suprasegmental features); phonetic granularity; and prosody (Rice, 2019). Additionally, current research into sound symbolism suggests that certain pairings of sounds and features are important in creating particular associations (Johansson et al., 2020). However, much of

[7] For example, the voiceless dental fricative [θ] is relatively uncommon in English but occurs in a number of high frequency words (Peterson, 2015a).

this was indeterminable due to time limitations and insufficient information about the conlangs. Nevertheless, the effect of prosodic variables on speech perception is well attested – emotion in particular causes changes in affective prosody, which in turn impacts speech perception (Kim & Sumner, 2017). As such, clips, or parts of clips with strong displays of emotion (such as shouting in anger) were removed from consideration.

4.2 Languages

In this section, details for the sample's invented languages are given, focussing on: the context of the conlang's creation; production variables (including relevant limitations and considerations that had some bearing on phonological decisions made by the creator); and the overall characterisation of the language's speakers.

4.2.1 Barsoomian

Barsoomian was developed by linguist Paul Frommer for the Disney studios film *John Carter* (2013). Frommer is better known as the creator of Na'vi for the 2009 film *Avatar* and was hired by a producer who worked on both films, Colin Wilson (Frommer, 2012).

John Carter was based on the nineteenth-century Barsoom series of adventure novels by Edgar Rice Burroughs. The novels contain over 400 lexical items for the 'Martian language,' described in the series as simplistic, easily learnable, and spoken by all inhabitants of Barsoom – a fictional version of the planet Mars (Burroughs, 1912/2008). Frommer (2012) stated that he intended to align his creation with the wealth of material in the novels, and subsequently, with the original author's vision.

In spite of – or perhaps due to – the amount of linguistic material within Burroughs' sprawling, multi-volume narrative, his Barsoomian included many discrepancies and unknowns regarding grammar and spelling. As such, Frommer (2012) claims he had to make independent decisions regarding the phonetic and phonological details of the conlang. No official grammar or dictionary of the conlang as spoken in the 2013 film exists, but Frommer has confirmed the existence of consonant length as a distinctive feature, the presence of different vowel lengths (although it is unclear if this is

dependent on gemination or contrastive), and the use of consonants that exist in human languages. Only the voiced velar fricative [ɣ] has been confirmed by Frommer as being drawn directly from the source material.

The speakers of Barsoomian in *John Carter* are a tribe of Green Martians called the Tharks. They are shown to be very tall, green, humanoid aliens who are native to the planet Barsoom, and whose society is nomadic and highly communal, but governed as an autocracy. It is a warrior culture where physical strength is highly valued. Their introduction comes when the titular character and Protagonist of the film, John Carter, is transported to Barsoom accidentally and captured by the Tharks. However, as the narrative progresses, this antagonistic role is complicated and gradually diminishes as Carter becomes better situated in his environment, and subsequently, more familiar with the Tharks and their culture. Nevertheless, the first introduction – of both Carter and, through his perspective, the film's audience – to these conlang speakers is antagonistic, with the subsequent abandonment of characters speaking the conlang in favour of speaking in English paralleling the transition from their characterisation as antagonistic to a more positive role. Thus, the antagonism of the characters directly correlates with their use of Barsoomian. The clip of the Barsoomian features two male, and one female native speaker involved in a disagreement amongst themselves, with Carter present as their captive.

4.2.2 Dothraki

Dothraki, spoken by peoples of the same name, was developed by David Peterson for the show *Game of Thrones* (2011-2019) – a television adaptation of the book series *A Song of Ice and Fire* (1996-present) by George R.R. Martin. Peterson quite literally won the role as the production's language creator; Dothraki was the subject of a conlang design contest held by the producers of its screen adaptation (Peterson, 2015a).

In the novels, Dothraki has thus far been limited to a few scattered words and phrases. Entrants were required to adhere faithfully to Martin's source material, although the author himself was not involved in the development of the conlang (Peterson, 2015a). The conlang features extensively in all series of *Game of Thrones* and has been further popularised by Peterson himself.

Peterson has written, spoken, and published extensively about Dothraki and his method/process for conlang creation in general. Given the mostly consistent spellings, Peterson decided that in his Dothraki, 'most consonants would be pronounced just how they looked—or, at least, to an English speaker' (2015a, p.91). Not only did producers require Dothraki to adhere to the existent source material, but also requested it be made to sound 'harsh'; Peterson achieved this by designing high frequency words to include maximally 'harsh' and 'foreign' sounds, and for the prosodic features to also align with 'foreign' sounds – that is, those sounds rarely found in English (Peterson, 2015a, p.94).

Prior to filming, actors were supplied with scripted dialogue (which was written and phonetically transcribed by Peterson, though with his own system designed to make the actors intuitively reproduce particular sounds), and audio recordings of Peterson speaking the dialogue (Peterson, 2015a).

The Dothraki are nomadic warriors whose whole society centres around horses. Their culture is presented as insular, extremely violent, and antagonistic to all outsiders; many characters in the show repeatedly opine that they are a wild and barbarous people. Author of the books, Martin, stated that the Dothraki are a mix of various plains tribes and nomadic, horse-riding peoples living on the open steppe (such as the Mongols, Huns, Alans, Turks, and Native Americans) (2012).

The clip analysed was taken from season 6, episode 4 of *Game of Thrones* (2016) and was the longest examined in this case study. Multiple native, male speakers have lines; however, one character – Khal Moro – does the majority of speaking. The other character with the most dialogue is a female, non-native speaker. It is important to note, however, that this character – Daenerys Targaryen (played by Emilia Clarke) – is one of the series' chief Protagonists, appearing in every season and almost every episode. This creates an interesting paradox for the conlang; the native Dothraki speakers are played by actors who are presumably novices in speaking Dothraki, whereas the non-native Dothraki character is played by an actress, who at the point of filming, had enjoyed several years' practice in delivering lines in the conlang. This dichotomy of experienced actor/non-native speaker and new learner/native speaker is common in many productions and a potential complication of any narrative featuring conlangs.

4.2.3 Fjerdan

Fjerdan is an *a posteriori* conlang developed by linguist David J. Peterson and conlang enthusiast Christian Thalmann for *Shadow and Bone* (2021 and forthcoming), the television adaption of the 'Grishaverse' novels by author Leigh Bardugo. Prior to the adaptation, Bardugo was assisted by Peterson in the development of at least two conlangs for her novels. Hired by Netflix to develop the languages further for their adaptation, Peterson brought on fellow conlang enthusiast Thalmann as a collaborator.

Fjerdan is explicitly based on Scandinavian languages, especially Swedish, Norwegian, and Danish, with additional Germanic and Icelandic influences (Peterson & Thalmann, 2021). The primary basis for the conlang was Bardugo's published material, but her own intended pronunciation – as expressed in conversation with Thalmann and Peterson – took precedence over the spelling of lexemes, which was noted as inconsistent in the novels (Peterson & Thalmann, 2021). Members of the cast were not given dialect coaching, but rather provided with written transcriptions in their scripts and audio recordings by the creators (Peterson & Thalmann, 2021).

The televisual characterisation of the Fjerdan people includes the traits of brutality, militarism, sexism, and moral conservatism. While they also exhibit strength and endurance, they are nonetheless positioned as fundamentally antagonistic to the Grisha, a race of people with supernatural powers to which the Protagonist of the narrative (Alina Starkov) belongs. As the story proceeds, examples of more positive attributes emerge, correlating with the redemptive narrative arc of one prominent Fjerdan character (Matthias Helvar). Significantly however, when Helvar speaks Fjerdan, it is exclusively at a narrative juncture where he is clearly demarcated as being *antagonistic* – evidenced by both the timing in the narrative and the content of his speech.

With only one season of *Shadow and Bone* yet broadcast at the time of this case study, two clips totalling approximately 24 seconds of speaking time were taken from episodes 3 and 6. Clip One features only one male, middle-aged native speaker, while Clip Two features one young, male native speaker and one young, non-native female speaker (though it is stated in the scene that she speaks 'like a native').

4.2.4 Klingon

Klingon is the language of a fictional alien race of the same name from the transmedial franchise, *Star Trek.* Of those fictional languages investigated in the course of this research, it is the most widely known fictional language in popular culture.

Originally in the long running series, the Klingons were depicted speaking English, with some minor efforts conducted later towards creating a conlang. Linguist Marc Okrand was eventually hired to elaborate it into a fully functional language for the film *Star Trek III: The Search for Spock* (1984), in which Klingons took the part of the principal Antagonists (Okrent, 2009). Okrand had previously worked for the franchise, helping to develop another conlang in the series, Vulcan.

The sound of Klingon has been consistently described as 'harsh, guttural and alien' (Okrent, 2009, p.266). Okrand endeavoured to make Klingon interesting by ensuring it was maximally different to any known human languages, particularly English (Okrent, 2009). He achieved this differentiation through the inclusion of typologically uncommon phonemes and the subversion of expected phonotactics – that is, he combined sounds that would not be expected to co-occur in any human language (Okrent, 2009). Okrand closely monitored his own work to ensure Klingon did not become too reflective of any existing language (Okrent, 2009).

Klingon has been spoken in various Star Trek telecinematic productions, by characters of both human and alien origin. The iteration of Klingon examined in this case study comes from a recent film in the franchise, *Star Trek: Into Darkness* (2013), directed by J.J. Abrams. The Klingon are a warrior-culture, alien species who are characteristically combative and tyrannical. In *Into Darkness*, they are firmly enshrined as antagonistic, through their being a historical adversary and still recent threat to the Protagonists and their mission.

While Klingon is only spoken in one scene during *Into Darkness*, a substantial dialogue takes place; the actual speaking time totalled approximately seventeen seconds. It features two characters: Uhura, a female, non-native speaker of Klingon (but who is a known expert in alien languages) and one unnamed, male Klingon native speaker. The actress playing Uhura, Zoe Saldaña, was coached by Okrand himself, while Sean Blakemore, playing the Klingon, was not.

4.2.5 Sangheili

Sangheili was developed jointly by David Peterson and Carl Buck for the television show *Halo* (2022-ongoing). The show is based upon the video game franchise of the same name, within which various iterations of 'the Covenant language' (renamed Sangheili in the Paramount Plus production) exist, though these are incomplete or fragmentary ("Sangheili (language)", 2017). During the development of Sangheili, creators Peterson and Buck were given access to the wealth of well documented material about the game, both by the games' creator (the company 343) and from fan sources (Paramount Plus, 2022). It is unclear, however, how far their iteration of Sangheili aligns with this material. The creators have also not cited any other design parameters set by the show's production company, nor any natural languages that were used as inspiration.

Sangheili is a full conlang, with a basic grammar, fully developed sound system, and a lexicon of allegedly 250 words (Paramount Plus, 2022). Actors do not appear to have received dialect coaching, but rather learned pronunciation of the conlang through phonetics and recordings made by Peterson (Paramount Plus, 2022).

In the context of Halo, Sangheili functions as a lingua franca of the Covenant, a theocratic hegemony of various alien species dominated by the Sangheili and San'Shyuum species ("Covenant Languages", 2017). They are collectively shown to be imperialistic, militaristic, brutal warriors, and are not only categorically antagonistic, but also occupy the Antagonist role in the narrative.

The clip used for this case study had a speaking duration of approximately forty-six seconds. The main speakers are a female, human native speaker and multiple male, alien native speakers.

4.3 Process

Whilst Section 4.1 discussed the methodological consideration involved in the case study, this section summaries the actual annotation and analysis process that was followed for each constructed language. Following the viewing, location, recording and file conversion of each conlang's audio (using the parameters outlined in §4.1.1 and §4.1.2), the WAV file was uploaded to Praat. Using the program, each clip was annotated on three levels; the first was for the consonants as heard; the second, for items

such as sections of music, pauses in speech, or research notes; and the third, for indicting which speakers were responsible for each consonant (to provide context for any phonemes that only occurred with the one speaker).

On completing the first round of annotation, the file was left and later returned to, with the process conducted again. The repetition of the analysis was intended to mitigate any misperceptions, errors, or mistakes made during the first annotation. Following the second annotation, the List function in Praat was used to tabulate each consonant and the frequency (number of times) at which it occurred. The consonants and their tallies were recorded in an Excel spreadsheet, where the total and relative frequencies were then calculated. These tables will be displayed in the following Results section (§4.4).

4.4 Results

This section presents the results of the frequency analysis conducted on the samples five conlangs; Barsoomian, Dothraki, Fjerdan, Klingon, and Sangheili. Overall, no one consonant, nor group of consonants, emerged from the data as being used to the same degree in all conlangs. Despite this variation, the findings did reveal that the consonant inventories of the conlangs actually had a high proportion of English consonants. NE consonants accounted only for a low proportion of consonant inventories, and consistently had low relative frequencies. Conversely, the conlangs' consonant inventories were composed of a large proportion of obstruents, which also had high relative frequencies.

Sections 4.4.1–4.4.5 present the individual findings for each language respectively, followed by the demonstration of cross-conlang findings in Section 4.4.6.

4.4.1 Barsoomian

Table 4.3 *Barsoomian – consonant inventory and relative frequencies*

Consonant	Tally	Percentage	Percentile
s	20	**9.95%**	*100th Percentile*
l	19	**9.45%**	
g	19	**9.45%**	*75th Percentile*
k	17	**8.46%**	
n	15	**7.46%**	
h	13	**6.47%**	
ɾ	12	**5.97%**	*50 Percentile*
t	12	**5.97%**	
v	11	**5.47%**	
d	10	**4.98%**	
d͡ʒ	8	**3.98%**	*25 Percentile*
b	8	**3.98%**	
m	7	**3.48%**	
p	6	**2.99%**	
t͡ʃ	4	**1.99%**	
θ	4	**1.99%**	
z	3	**1.49%**	
w	3	**1.49%**	
r	2	**1.00%**	
ʃ	2	**1.00%**	
ŋ	2	**1.00%**	
χ	1	**0.50%**	
k͡x	1	**0.50%**	
j	1	**0.50%**	
ð	1	**0.50%**	
TOTAL	**201**		

The consonant inventory of Barsoomian consisted of twenty-five consonants, with an average relative frequency of 4.00%. The lowest relative frequency Percentile covered almost two-thirds (60.00%) of the consonant inventory.

Barsoomian had only four consonants not found in English; the alveolar tap/flap [ɾ], the alveolar trill [r] and the voiceless uvular fricative [χ], and a voiceless velar affricate [k͡x], all of which – with the exception of [ɾ] – fell in the lowest relative frequency percentile.

Over two-thirds (68.00%) of the consonant inventory were obstruents; these were found in every relative frequency percentile – the combined total of which for obstruents was 69.65%.

4.4.2 Dothraki

Table 4.4 *Dothraki – consonant inventory and relative frequencies*

Consonant	Tally	Percentage	Percentile
n	73	**11.87%**	
v	47	**7.64%**	*100th Percentile*
ɾ	45	**7.32%**	
l	38	**6.18%**	
s	37	**6.02%**	*75th Percentile*
m	37	**6.02%**	
d	36	**5.85%**	
k	33	**5.37%**	
h	32	**5.20%**	*50 Percentile*
j	31	**5.04%**	
ʃ	30	**4.88%**	
g	29	**4.72%**	
z	23	**3.74%**	
f	23	**3.74%**	
r	22	**3.58%**	
ʒ	18	**2.93%**	
χ	14	**2.28%**	
t	13	**2.11%**	
θ	11	**1.79%**	
w	9	**1.46%**	*25 Percentile*
x	6	**0.98%**	
ʧ	2	**0.33%**	
q	2	**0.33%**	
p	1	**0.16%**	
d͡ʒ	1	**0.16%**	
b	1	**0.16%**	
ð	1	**0.16%**	
Total	**615**		

For Dothraki, the inventory was composed of twenty-seven consonants, the most frequent of which was the alveolar nasal [n] at 11.87%. The remainder of the 100th percentile consisted of only two other consonants: the voiced labio-dental fricative [v], and the alveolar tap/flap [ɾ]. Over half the inventory (55.55%) accounted for just under a quarter (23.09%) of the total tally of consonants throughout the clip.

Only five consonants were those not found in English: the alveolar tap/flap [ɾ], the alveolar trill [r], the voiceless uvular fricative [χ], voiceless velar fricative [x], and the voiceless uvular plosive [q].

All of these consonants (with the exception of [ɾ]) fell within 25th percentile, and together only accounted for 14.47% of total tally.

The majority of the inventory was constructed of obstruents. These twenty consonants accounted for 58.54% of the total tally, consisting of 18.7% plosives, 0.49% affricates, and 39.35% fricatives.

4.4.3 Fjerdan

Table 4.5 *Fjerdan – consonant inventory and relative frequencies*

Consonant	Tally	Percentage	Percentile
n	13	**16.88%**	*100 Percentile*
d	9	**11.69%**	
s	8	**10.39%**	*75 Percentile*
v	6	**7.79%**	
t	6	**7.79%**	
l	6	**7.79%**	*50 Percentile*
j	5	**6.49%**	
ɾ	5	**6.49%**	
k	4	**5.19%**	*25 Percentile*
ʃ	4	**5.19%**	
f	3	**3.90%**	
ɹ †	2	**2.60%**	
p *	2	**2.60%**	
w	2	**2.60%**	
ʒ *	1	**1.30%**	
ð	1	**1.30%**	
Total	**77**		

† = *found in Clip 1 only*

* = *found in Clip 2 only*

Fjerdan emerged with the smallest inventory of those in the five-language sample with only sixteen consonants. The most common was the alveolar nasal [n], with the remainder of the 100th percentile including only [d]. The lowest frequency percentile (25th) contained eight consonants, which was half of the total consonant inventory.

Over half the inventory were obstruents, though notably no affricates were present. Of the total tally, there were almost the same number of plosives (27.27%) as fricatives (29.87%), which together made up 57.14% of consonant tally. Only one NE phoneme was found – the alveolar tap/flap [ɾ].

4.4.4 Klingon

Table 4.6 *Klingon – consonant inventory and relative frequencies*

Consonant	Tally	Percentage	Percentile
d͡ʒ	8	**10.13%**	*100th Percentile*
v	7	**8.86%**	
d	6	**7.59%**	*75th Percentile*
ʔ	5	**6.33%**	
n	5	**6.33%**	
χ	5	**6.33%**	
m	5	**6.33%**	*50th Percentile*
t͡ʃ	4	**5.06%**	
p	4	**5.06%**	
b	4	**5.06%**	
x	3	**3.80%**	
t	3	**3.80%**	
k	3	**3.80%**	*25th Percentile*
w	2	**2.53%**	
l	2	**2.53%**	
q͡χ	2	**2.53%**	
h	2	**2.53%**	
ʃ	2	**2.53%**	
t͡ɬ	2	**2.53%**	
j	1	**1.27%**	
r	1	**1.27%**	
ʂ	1	**1.27%**	
ʁ	1	**1.27%**	
s	1	**1.27%**	
Total	**79**		

Klingon emerged with a similar total tally of consonants as Fjerdan but had a larger inventory of twenty-four consonants. The average relative frequency for its consonants was 4.17%. Almost half of the consonant inventory (46%) fell in the 25th percentile for relative frequency.

Consonants not found in English made up less than a third (29.17%) of the inventory, and even less of the total tally, with a combined relative frequency of only 18.99%. The most typologically uncommon of these consonants all fell within the lowest relative frequency Percentile; these included the voiceless retroflex fricative [ʂ], the voiced uvular fricative [ʁ], and the voiceless uvular [q͡χ] and alveolar lateral [t͡ɬ] affricates. Of Klingon's twenty-four consonants, 78.48% were obstruents; only seven were not.

4.4.5 Sangheili

Table 4.7 *Sangheili – consonant inventory and relative frequencies*

Consonant	Tally	Percentage	Percentile
n	18	**12.86%**	*100th Percentile*
h	11	**7.86%**	
ʒ	9	**6.43%**	*75th Percentile*
d͡ʒ	9	**6.43%**	
m	8	**5.71%**	
tˡ	8	**5.71%**	
b	7	**5.00%**	*50th Percentile*
kˡ	7	**5.00%**	
j	6	**4.29%**	
g	6	**4.29%**	
ɾ	5	**3.57%**	
t	5	**3.57%**	
ʃ	4	**2.86%**	*25th Percentile*
ŋ	4	**2.86%**	
ʔ	4	**2.86%**	
p	4	**2.86%**	
χ	3	**2.14%**	
t͡ʃˡ	3	**2.14%**	
d	3	**2.14%**	
ʀ	3	**2.14%**	
s	2	**1.43%**	
w	2	**1.43%**	
ǀ	2	**1.43%**	
t͡s	2	**1.43%**	
t͡ʃ	2	**1.43%**	
ð	1	**0.71%**	
p͡x	1	**0.71%**	
z	1	**0.71%**	
Total	**140**		

Sangheili had the largest consonant inventory of all five conlangs at twenty-eight. The average relative frequency of consonants was 3.57%. The 25th Percentile for relative frequency contained over half (57.14%) of the consonant inventory.

NE consonants account for 32.14% of the conlang's consonant inventory, with these having a combined relative frequency of 24.29%. Nonetheless, the majority (seven out of nine) were in the lowest frequency percentile.

Sangheili was the only conlang of the sample to contain non-pulmonic consonants, including one dental click, and three ejectives. Two of these ejectives – [k’] and [t’] – had above average frequencies relative to the other consonants in the sample.

A high proportion of obstruents were also observed in the conlang (twenty out of twenty-eight consonants: 71.43% of the inventory). However, they collectively accounted for only 65.71% of total tally.

4.4.6 Cross-conlang comparison

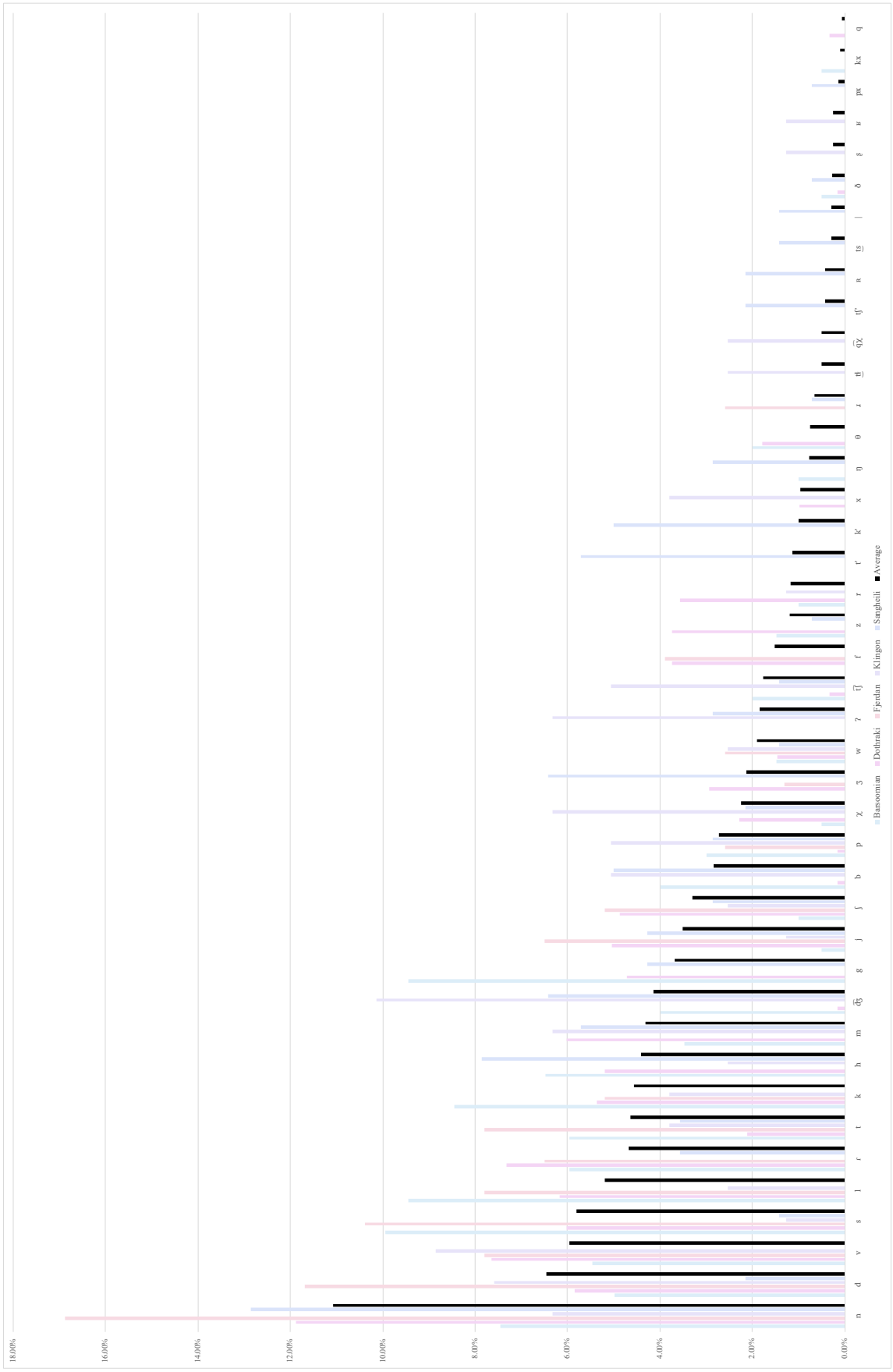

Figure 4.1 *Consonant relative frequency across constructed languages*

Figure 4.1 demonstrates that, for the majority of consonants found amongst the conlang sampled, there were large discrepancies in their relative frequency across the five constructed languages. While certain consonants may have had a high relative frequency in one conlang, it was low or non-existent for others.

The average relative frequencies of each consonant across the five-language sample revealed the alveolar nasal [n] as the most frequent consonant by a substantial margin; its average relative frequency was 11.08% compared to the next two most frequent consonants. These were the voiced alveolar plosive [d] at 6.45%, and voiced labio-dental fricative [v] at 5.95%. Together, these three consonants were found to compose the 100th frequency percentile. The 75th and 50th frequency percentiles were similarly found to be small, made up of only five and seven consonants respectively. The remaining two thirds of consonants composed the 25th percentile, meaning the majority of consonants found across the language samples were, on average, infrequently occurring.

Of those consonants whose average relative frequency placed them in lowest frequency percentile, over half (59.26%) were those not found in English. Additionally, the majority of these NE consonants were only attested in one conlang. The only NE consonant to not be in the lowest percentile was the alveolar tap [ɾ].

4.4.6.1 Non-English consonants

In total, seventeen of the forty-two consonants found across the five conlang sample were those not found in English (listed in Table 4.8).

Table 4.8 *List of NE consonants found in antagonistic conlangs*

χ	voiceless velar affricate
k͡x	voiceless velar affricate
r	voiced alveolar trill
ɾ	voiced alveolar tap
x	voiceless uvular fricative
q	voiceless uvular plosive
q͡χ	voiceless uvular affricate
t͡ɬ	voiceless alveolar lateral affricate
ʂ	voiceless retroflex fricative
ʁ	voiced uvular fricative
tˈ	voiceless alveolar ejective
kˈ	voiceless velar ejective
t͡ʃˈ	voiceless post-alveolar affricate/ejective
ʀ	uvular trill
ǀ	dental click
t͡s	voiceless alveolar affricate
p͡x	voiceless bilabial velar affricate

The only consonants that were attested in more than one language were the alveolar trill [r], the alveolar tap [ɾ], and the voiceless fricatives [x] and [χ]. On average, 22.31% of each languages' consonant inventory were NE consonants.

Table 4.9 *NE Consonant dispersion across constructed languages*

	Relative frequency					
	Barsoomian	**Dothraki**	**Fjerdan**	**Klingon**	**Sangheili**	**Average**
Relative Frequency (Portion of Total Tally)	7.96%	14.47%	6.49%	25.32%	24.29%	**15.71%**
	Consonant inventory					
Inventory Size	28	27	16	24	28	**5.8**
NE Consonants	7	4	1	8	9	**24.6**
Percentage	25.00%	14.81%	6.25%	33.33%	32.14%	**22.31%**

Further demonstrated by Table 4.9, is the finding that the conlangs with the highest portions of NE consonants were Barsoomian, Klingon and Sangheili – all which were above the average. However, for every language accept Fjerdan, the combined relative frequency of these consonants was lower than their percentage of inventory size.

4.4.6.2 Obstruents

Table 4.10 *Obstruent dispersion across constructed languages*

	Relative frequency					
	Barsoomian	**Dothraki**	**Fjerdan**	**Klingon**	**Sangheili**	**Average**
Ejective	0	0	0	0	12.86%	**2.57%**
Plosive	35.82%	18.70%	27.27%	31.65%	20.71%	**26.83%**
Affricate	6.47%	0.49%	0	20.25%	10.00%	**7.44%**
Fricative	27.36%	39.35%	29.87%	26.58%	22.14%	**29.06%**
Relative Frequency (Portion of Total Tally)	69.65%	58.54%	57.14%	78.48%	65.71%	**65.91%**
	Consonant inventory					
Portion of Consonant Inventory	68.00%	74.07%	62.50%	70.83%	67.86%	**68.65%**

Table 4.10 shows that across constructed languages, for both the total tally of consonants in each clip and their consonant inventories, the number of obstruents on average were double that of non-obstruents. Every conlang except Fjerdan was close to, or above, the average for the proportion of obstruents in their inventories. For relative frequency, the highest three conlangs were (in order from most to least), Klingon, Barsoomian and Sangheili. Additionally, these three languages had a higher relative frequency of Plosives than Fricatives (while this would not be true of Sangheili if Plosives were considered alone, the degree of articulatory similarity with Ejectives' – with the exception of their airstream mechanisms – in this case warrants their grouping with the Plosives).

4.5 Discussion

This section discusses the key findings of the case study, the aim of which was to identify trends between the consonant inventories of constructed languages, and the antagonistic characterisation of their fictional speakers. In accordance with the literature on conlangs, characterisation, and the phonological domains of sound symbolism and iconicity, it was hypothesised that the consonant inventories would be comprised of a high proportion of obstruents and consonants not found in English; and furthermore, that these consonants would also have a high relative frequency. The section will thus be structured according to the consonant findings' relationship to English (§4.5.1), and their acoustic properties (§4.5.2).

4.5.1 Relationship to English

It has been asserted that the othering of conlang speaking characters is achieved through audio and visual means – specifically, through the use of phonological features not existent in English (Ball, 2015; Wahlgren, 2021), and corporeal differences (Noletto & Lopes, 2022). The survey findings presented in Chapter 3 provided additional support to these claims. As such, it was hypothesised that this mechanism would materialise in consonant inventories through a high proportion of consonants not found in English, and additionally, a high relative frequency for these consonants. Conversely, however, the findings of the study were found to contradict this.

For the case study's conlangs, the consonants that had the highest average relative frequencies were those found in English. Such a trend is likely the result of practical considerations; the Chapter 3 survey findings indicated that production companies are greatly concerned with conlangs being designed in such a manner where their actors are still able to adequately reproduce it.

This consideration for actor abilities provides a possible explanation for the finding of the alveolar tap [ɾ] being the most frequently occurring NE consonant. In reality, [ɾ] is attested in English, but predominantly in non-standard varieties and found to be an index of education (Lippi-Green, 2011). Successful indexicality in performance depends on the creators and performers accessing and deploying features which the audience knows and can recognise (Bell & Gibson, 2011). Therefore, to the English

speaking-actors, [ɾ] is likely not only the easiest consonant for them to produce, but one whose affiliation with 'the other' through non-standard English varieties is familiar to the target audience.

The association between othering and NE consonant use is further supported by the coincidence of the three conlangs with the highest proportion of NE consonants in their inventories also being the same three whose speakers are non-human – specifically in this case, of an alien species. Conlangs have additionally been claimed to aid in othering through the physiological differences of its speakers (Noletto & Lopes, 2022). The importance of this can be attributed to the nature of film and television; as a visual medium, the multiple modalities involved in the construction and portrayal of the narrative are interdependent, amplifying the effects of the other involved modalities (Bell & Gibson, 2011). Thus, conlangs and their embodiment of linguistic variation is being used in conjunction with their speakers' physiological differences to emphasise the degree of otherness.

Physiological differences were not absent with regard to the languages Fjerdan and Dothraki, who had below average proportions of NE consonants. In the clips analysed for both languages, the native conlang speakers were large, male warriors who enacted the majority of antagonistic behaviour. However, between these two conlangs, Dothraki had a higher proportion on NE consonants than Fjerdan; notable, given that the Fjerdans were the only native conlang speakers in the whole case study who were Caucasian. Therefore, there is the potential for this linguistic mechanism of 'othering' to be one of gradation.

On average, only a fifth of the inventories were NE consonants, with these having an even lower average relative frequency. While this could be taken to weaken the claim to their transmitting meaning, in fact the low rate of occurrence may still be a strategy for success. Evidence has emerged from studies on iconicity to suggest that successfully conveying an intended form-meaning association with invented lexemes is dependent on their behaving according to the phonology and phonotactics of the target language (Styles & Gawne, 2017). Thus, too high a degree of NE consonants may actually hinder the indexical capacity for a conlang in terms of characterisation. Moreover, so many unfamiliar features and violations of language rules may be too much for audiences; the amalgamation of so many unknowns and so much unfamiliarity may make the conlang seem implausible, breaking their suspension of disbelief and alienating them from the story. A large amount of NE consonants is likely

not needed to produce the intended result; it is the markedness of their *inclusion* which makes them stand out to audiences. Thus, a high rate of NE consonants may not be necessary, in fact, just their existence may prove a strong enough message to convey the degree of otherness that the production teams intend for their narrative's characters.

4.5.2 Acoustic properties

I hypothesised that the consonant inventories would display a high proportion of obstruents, due to the articulation of such involving physiological actions which mimic antagonistic behaviour, making them as Dingemanse et al. (2015) phrase it, a 'perceptuomotor analogy' (p.610). Supporting this assumption are those previous findings that a less-favourable rating of conlangs is linked to a larger degree of obstruents (Bobeck, et al., 2022). This hypothesis was supported as true by the finding that a portion of between two-thirds to three-quarters of each conlangs' consonants inventories were obstruents. However, this high proportion could also be attributable to plosives and fricatives being the classes for which there exist the most consonants generally.

The average relative frequency of these obstruents across conlangs, though, was lower than their average proportion of the inventories, meaning that their being more numerous does not necessarily correlate with them also having a high frequency of usage. A finding of interest with regard to the relative frequency of obstruents though, was that for the three alien conlangs, plosives had a higher relative frequency, with the opposite occurring for the two human conlangs whose highest relative frequency was for fricatives. The difference in species has previously been evidenced as a visual mechanism by which to index difference and otherness for characters, one which is amplified through its correspondence with linguistic variation. This finding provides further support to the notion of mitigating the degree of indexicality through the gradation of the form-meaning association. That is, there is a greater degree of obstruction involved in the production of plosives than fricatives – a total occlusion of the vocal tract, versus only a partial closure. For plosives then, it may seem a stronger perceptuomotor analogy. In this instance, however, it remains unclear if such an analogy would be more involved in the indexation of otherness, or of antagonism, since the two are so intertwined for these

conlangs. Nevertheless, the moderately high average relative frequency of obstruents supports the fact that these characters are intended to be viewed negatively by audiences.

There are other results to support the use of this analogy of articulatory obstruction to index antagonism. Two of Sangheili's three ejectives, [t'] and [k'], were found to have higher than average relative frequencies for the conlang. Contrastively, their typologically very common, pulmonic cousins, the plosives [t] and [k] (Ladefoged & Maddieson, 1996), were similarly as common across the other four conlangs. The articulation of ejectives involves two closures, which is a greater degree of obstruction in the vocal tract that what is required for just plosives (Zsiga, 2012). Furthermore, their occasional allophonic use in English is associated with sharper enunciation, due to the greater articulatory and perceptive strength involved (Lindsey, 2020). The findings suggest that their inclusion in Sangheili is also for the purpose of conveying this greater degree of obstruction. In their narrative, the Sangheili were not only antagonistic, but also the primary Antagonists; the other four groups of conlang speakers had relatively fewer central roles. Thus, there appears to be a parallel between the degree of articulatory obstruction and the relevance of antagonism to the speaker's character overarchingly. While further explorations of this trend with only conlangs who feature ejectives in their consonant inventory would be needed, this postulation is nevertheless finds support in the observation of ejectives being a common phonological feature of even English speaking villains in telecinematic productions (WIRED, 2017), suggesting it is a feature already indexically correlated with antagonism in the subconscious of audiences and regularly accessed by production; the presence of it in a conlang may serve to make it even more potent than in these circumstances.

4.5.3 Limitations

This case study targeted the consonants in conlang inventories and their relative frequencies to identify potential linguistic strategies being deployed to index the antagonistic sub-role. However, it was not able to examine these languages' phonology above the segmental level. The high specificity and various unknowns regarding conlangs and their phonotactic constraints meant that the consonants were unable to be examined in the context of their specific combinations; only their co-existence in the same inventory was able to be deduced. Nevertheless, the literature on conlangs is clear in their assertions

that the combinatory element of conlang phonology is vital in developing the overall sound of a language (Tolkien, 1931/1997; Peterson, 2015a). Future research must attempt to target these relationships to be able to make further comment of the ability of phonetic and phonological features to index antagonism, or any other element of characterisation.

Additionally, while all attempts possible were made in this case study to mitigate potential perceptual effects in the annotation of each audio clip, any future replications of the method would nevertheless benefit from the involvement of multiple persons to further ensure perceptual biases do not affect the output consonant inventories.

4.6 Summary

This case study targeted the consonants in conlang inventories and their relative frequencies to identify potential linguistic strategies being deployed to index the antagonistic sub-role. I have shown through the study's findings that linguistic forms are involved in the characterisation of conlang speakers at even the most basic phonological level of their consonant inventory. I have also found evidence to suggest two means by which this mechanism achieves such. The first, is through the use of consonants not found in the standard varieties of American and British English, and moreover the gradation of this use to index different degrees of otherness. Secondly, phonetic perceptuomotor analogies were used as a means to create a form-meaning link between speech sound and the characterisation of antagonism. Both these form-meaning relationships are dependent on the human experience; however, one is a learned association, while the other involves sensory phenomena. This suggests that constructed languages are a slightly different, and more unique kind of linguistic variation than those others related to sound like accent and dialect.

Since evidence of the link between sound and character has been found at the most basic level conlang phonology, then it is highly probable that other elements of a conlang's design are additionally working to strengthen this characterisation through the clustering of features. Future inquiries should target other phonetic and phonological elements, including the vocalic systems and prosody of conlangs. Of particular importance in the context of performances in telecinematic narratives should be the

suprasegmental features of intonation and stress, due to their significance in English in conveying affective information.

Chapter 5 Conclusion

This study has investigated the role of constructed languages in the characterisation of their fictional speakers in science-fiction and fantasy telecinematic media. A multi-method approach was used to achieve the two interrelated aims of this thesis. Chapter 3 detailed a survey of the current state of the art of conlangs in contemporary film and television. It was designed to contextualise conlangs and their development within visual media productions, and its various technical, creative, and practical considerations. This was intended to establish a firmer linguistic understanding of the specific features most intimately involved in the characterisation of conlang speakers. Chapter 4 entailed the practical evaluation of conlangs; frequency analysis was used to determine trends across consonant inventories, in turn informing understandings of the role of speech sounds in indexing facets of telecinematic characterisation, and the specific mechanism by which it does so.

5.1 Summary of key findings

Constructed languages were affirmed by the findings of this study as an increasingly prevalent feature of contemporary film and television. Nevertheless, the primary degree of control over their form and usage lies within the purview of production companies, not the more highly trained and linguistically aware creators who developed them. There is reason to find this concerning; the case study's findings support the notion that constructed languages are being treated much like other natural language variation, through the association of their form with the same array of real-world linguistic experiences, styles, and features that have accrued meaning within specific socio-cultural contexts. Thus, the characterisation of conlang speakers is likely based on real world perceptions of other linguistic groups.

Additionally, I identified mechanisms by which conlangs not only index character traits and roles, but also modulate the scale of this characterisation. Using the case study's findings, I produced empirical evidence to support consonant selection as a linguistic strategy in the demarcation of conlang

speakers as ‘other’. I demonstrated that the indexical association was achieved through consonants not found in standard varieties of English. Furthermore, I illustrated how degrees of nuance in characterisation, and the gradation in intensity of particular attributes, are realised through proportional dispersion of consonant types across an inventory. Findings from the case study revealed that the proportion of non-English consonants in a conlangs’ inventory was directly linked to how strongly they had been recognised as ‘other’.

Moreover, an additional two mechanisms were identified in relation to antagonistic characterisation. The first was iconicity, where obstruents acted as perceptuomotor analogies – that is, the obstruction of the vocal tract in the articulation of these consonants reflected the semantics of antagonism. The second mechanism was discovered through the correlation between the amount of obstruction caused in the vocal tract and the degree of antagonistic behaviour exhibited by conlang speakers. This finding indicates that in constructed languages, phonological features perform the function of character through both indexicality and iconicity.

Lastly, other visual narrative modes were found to be imperative to the full realisation of intended characterisation. The significance of certain phonological findings in the case study was not able to be ascertained until consideration was given to the contextual information about the narratives collected through the survey in Chapter 3; for example, the species and physicality of characters were of particular relevance to the ‘othering’ of conlang speakers. Additionally, the various modes appeared to modulate or amplify the degree of otherness of characters.

5.2 Potential implications for linguistics

This thesis provides substantial new understandings of constructed languages and how their form and features are manipulated to convey meaning about the fictional peoples who speak them. It intervenes with other linguistic analyses of telecinematic characterisation that have predominantly focused on dialogue’s textual elements and content, and advocates for constructed languages as a linguistic variety whose significant degree of relevance is only made apparent when *all* of the audio and visual modes involved in telecinematic narrative performances are taken into consideration.

Additionally, I have expanded the understanding of the utility of form-meaning relations for conlangs. The phonetic and phonological features of conlangs are not restricted to an indexical capacity, nor a solely aesthetic and affective role; both forms of non-arbitrariness are evidenced and thus should be dually considered in all subsequent research on the matter.

5.3 Potential implications for the film and television industries

This study has implicated conlangs as being treated much like other forms of naturally originating linguistic variation, implying that the different origins of languages – whether invented or naturally evolved – may not actually have much bearing in the domains of narrative and performance language. This has significant implications for the film and television industries – perhaps even more so than for the discipline of linguistics – since the treatment of conlangs as such is by their hand.

The high degree of overlap found by this study between the characterisation of conlang speakers as the 'other' and their prolific occupation of the antagonistic sub-role, denotes an underlying fear of the unknown, bordering on xenophobia, and brings into question how pervasive this feeling is among the wider public; and moreover, what effect the perpetuation of it through conlangs in film and television is having. The survey findings did not suggest that conlangs are also used to counterbalance this fear; production companies appear to have no investment in using conlangs as a means to positively represent and celebrate linguistic variation.

As such, the findings only emphasise the need for production companies to better consider their motivations for including a constructed language in their programs, and furthermore, why they think certain features appeal to them within the context of their goals and motivations for their narrative.

5.4 Limitations and recommendations for further research

While this thesis has only looked at conlangs in relation to the dialogic function of characterisation, in addition to touching on other functions of aesthetic signalling and ideological messaging, it has only been in regard to one facet of their sound system. To fully understand the role of sound in relation to

the function of conlangs in telecinematic media, future research must be conducted on other phonological components, like suprasegmental features and prosody, to enable a more comprehensive understand of the phenomena within conlangs, and identify whether they perform supplementary, or even yet unconsidered functions in the construction of characters.

Moreover, while this study identified both indexicality and iconicity as being mechanisms involved characterisation, considerations of non-arbitrariness in language subsequently raises consideration for arbitrary forms, and whether such a thing as arbitrariness could exist in a phenomenon where every feature was an intentional and informed choice. Such inquiries were beyond the capacity of this particular research work, but nevertheless would benefit from future exploration.

Such efforts are increasingly more feasible with every examination of constructed languages in academia affirming their importance and validity as a course of linguistic inquiry, as this thesis has done. Their investigation is increasingly necessary now days, with constructed languages and their prevalence in popular media. However, the man-made quality and novelty of conlangs may distract from the reality of it being just another form of linguistic variation. This poses a potential risk to the critical awareness of audiences and could perpetuate false and or damaging ideas and ideologies. As linguists, it is our job to approach language in whatever form with openness and curiosity, and to not dismiss any variety – especially on the basis of it being a seeming unserious, and niche bit of creative fun.

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Appendix A

Standardised English consonant inventory

Table A.1 *Consonant inventories of Standard American English and British Received Pronunciation as outlined by Musk (2010).*

CONSONANTS (PULMONIC)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d				k g			ʔ
Nasal	m			n				ŋ			
Trill											
Tap or Flap											
Fricative		f v	θ ð	s z	ʃ ʒ						h
Lateral fricative											
Approximant				l			j				
Lateral approximant				ɹ							

CONSONANTS (OTHER)

d͡ʒ	voiced postalveolar affricate
t͡ʃ	voiceless palato-alveolar affricate
w	labial-velar approximate

Appendix B

Survey data

Table 1.B *Survey data sources*

Language	Link/Source
Atlantean	https://en.wikipedia.org/wiki/Atlantean_language#Phonology https://disney.fandom.com/wiki/Atlantis:_The_Lost_Empire
Barsoomian	https://en.wikipedia.org/wiki/Barsoomian_language https://web.archive.org/web/20140222183300/http://emanuellevy.com/comment/john-carter-inventing-new-language/
Black Speech	https://www.youtube.com/watch?v=XTql5gYv-Ow Tolkien, J. R. R. (1996), Christopher Tolkien (ed.), The Peoples of Middle-earth, Boston: Houghton Mifflin, ISBN 978-0-395-82760-4
Bodzvokhan (*Bodzvokhan Dəzhn*	https://dedalvs.tumblr.com/post/168832459603/bodzvokhan-the-orcish-language-from-bright https://www.pcmag.com/news/inside-the-fantasy-languages-of-netflixs-bright
Castithan	https://fiatlingua.org/wp-content/uploads/2015/11/fl-000033-00.pdf
Dothraki	https://en.wikipedia.org/wiki/Dothraki_language https://gameofthrones.fandom.com/wiki/Dothraki
Fjerdan	https://www.fandom.com/articles/shadow-and-bone-netflix-language-locations https://twitter.com/lbardugo/status/634814401220993024?lang=en
Fremen	https://dune.fandom.com/wiki/Fremen_language https://www.reddit.com/r/dune/comments/gnmih6/all_of_the_dunespecific_questions_from_david_j/ https://nerdist.com/article/who-are-the-fremen-in-dune/
Hen Linge/Elder Speech	https://www.reddit.com/r/conlangs/comments/ek1wp9/david_j_peterson_hired_to_create_elder_speech_for/ https://gamerant.com/the-witcher-elves-problematic/
Hivespeak (Thhtmaa)	https://www.chicagotribune.com/news/ct-xpm-1997-04-07-9704070162-story.html
Irathien	https://defiance.fandom.com/wiki/Irathients
Khuzdul	https://en.wikipedia.org/wiki/Khuzdul
Klingon	https://en.wikipedia.org/wiki/Klingon_language https://usatoday30.usatoday.com/life/movies/2001-05-24-atlantis-lingo.htm https://stancarey.wordpress.com/2011/11/22/how-the-klingon-language-was-invented/ Okrent, A. book
Méníshè	https://motherland.fandom.com/wiki/M%C3%A9n%C3%ADsh%C3%A8 https://fleetoffandoms.com/2022/09/05/jessie-sams-and-menishe-the-creation-of-mother-tongue/ https://www.reddit.com/r/IAmA/comments/gnhs6x/keidmil_my_name_is_david_j_peterson_and_im_the/
Munja'kin	https://emeraldcity.fandom.com/wiki/Munja%27kin
Na'vi	https://usoproject.blogspot.com/2009/11/interview-with-paul-frommer-alien.html
Övüsi Kieru	https://dedalvs.tumblr.com/post/168836318637/%C3%B6v%C3%BCsi-the-elvish-language-from-bright

	https://bright.fandom.com/wiki/Elf https://www.pcmag.com/news/inside-the-fantasy-languages-of-netflixs-bright
Pakuni	https://www.frathwiki.com/Pakuni https://landofthelost.fandom.com/wiki/Cha-Ka https://landofthelost.fandom.com/wiki/Pakuni
Quenya	https://en.wikipedia.org/wiki/David_Salo https://www.elvish.org/gwaith/movie_intro.htm
Old Ravkan	https://www.fandom.com/articles/shadow-and-bone-netflix-language-locations https://thegrishaverse.fandom.com/wiki/Ravka
Romunlan	https://memory-alpha.fandom.com/wiki/Romulan_language https://michaelchabon.medium.com/some-notes-on-romulans-b1c7f30a383f
Sangheili	https://www.halopedia.org/Sangheili_(language) https://halo.fandom.com/wiki/Covenant_languages
Shiväisith	https://marvelcinematicuniverse.fandom.com/wiki/Shiv%C3%A4isith#:~:text=Shiv%C3%A4isith%20is%20the%20native%20language,as%20Todjydheenil%20(see%20below). https://marvelcinematicuniverse.fandom.com/wiki/Shiv%C3%A4isith https://marvelcinematicuniverse.fandom.com/wiki/Dark_Elves
Sindarin	https://en.wikipedia.org/wiki/David_Salo https://www.elvish.org/gwaith/movie_intro.htm https://en.wikipedia.org/wiki/Sindarin https://web.archive.org/web/20120728195314/http://www.phoenixnewtimes.com/2001-12-20/culture/talkin-tolkien/2/
Trigedasleng	https://the100.fandom.com/wiki/Trigedasleng https://the100.fandom.com/wiki/Trigedasleng/Linguistics https://dedalvs.tumblr.com/post/114599291472/dont-know-if-youve-talked-about-this-before-but
Valyrian	https://gameofthrones.fandom.com/wiki/Old_Valyria
Vulcan	https://www.omniglot.com/conscripts/vulcan.htm [Wise, Robert. Star Trek: The Motion Picture Directors Edition [Disc 1]. Special features: Commentary]

Table 1.B *Character Traits (Organised by frequency)*

Frequency	Very frequent (6)	Frequent (4)	Average (3)	Infrequent (2)	Very Infrequent (1)	
Traits	nature	tribal	spiritual	xenophobic	tyrannical	loyal
	warrior	strong	patriarchal	skilful	theocratic	logic
	culture	proud	insular	secretive	technologically	large
		artisanship	animalistic	separatism	advanced	intelligent
			militaristic	nomadic	stubborn	hunter-
				indigenous	strict gender	gatherer
				immortal	roles	honour
				cultured	superstitious	hierarchical
				communal	sexist	gentry
				change-	vain	violent
				aversion	ritualistic	monotheistic
				barbaric	racist	eugenicist
				aggressive	privacy	emotional
					primitive	repression
					powerful	darkness
					parasitic	conquerors
					pacifism	combative
					ostracised	colonialist
					oligarchy	clan
					monarchist	governance
					modern	autocratic
					old	aristocratic
					matriarchal	conservative
					malevolent	megalomaniac
					magical	unloving
						ambitious
TOTAL: 69	2	4	5	12	46	
PERCENTAGE	2.90%	5.80%	7.25%	17.39%	66.67%	
TOTAL TALLY: 113	12	16	15	24	46	
(PERCENTAGE)	10.62%	14.16%	13.27%	21.24%	40.71%	