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**THE USE OF GESTURES IN A CONSTRUCTED CREOLE IN
THE EXPANSE
BA thesis**

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ABSTRACT

This thesis explores the use of gestures in Belter Creole, a constructed creole language created for the science fiction series *The Expanse*. Belter Creole provides an opportunity to analyze the use of the resources of the English language within popular media and culture, as well as its connections to language politics and ideology. After establishing the necessary context through an overview of creole languages, constructed languages, and gesture theory, the gestures were then analyzed with a focus on gesture space, handshape, palm orientation, and co-occurrence with speech, if applicable. Although some gestures were difficult to analyze due to camera angles, the majority could be connected to comparable gestures in English-speaking cultures or known sign languages. The findings indicate that the gesture system of Belter Creole draws on existing practices, and thus contributes to the authenticity and immersion of the fictional universe of *The Expanse*.

Keywords: gesture, constructed language, creole language, English-speaking cultures

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INTRODUCTION

The study of constructed languages, or conlangs, has been steadily gaining attention in the last two decades, among other things, due to the rising popularity of fantasy and science-fiction media, where such languages are employed to enhance the credibility of fictional universes. The focus of this thesis lies on the constructed Belter Creole, which was developed by linguist and polyglot Nick Farmer with the help of dialect coach Eric Armstrong for the science fiction television series *The Expanse* (Sadrai et al 2023: 22). The gestures of Belter Creole were created by choreographer Roberto Campanella (La Soga 2016: para. 8).

The Belter language featured in the book series by James S. A. Corey – the joint pseudonym of Daniel Abraham and Ty Franck – on which the television adaptation is based, was mostly developed with a focus on aesthetics and immersive world-building (Abraham 2017). The Belter Creole of the television series adaptation (2015–2022), however, is a meticulously constructed creole with English as its superstrate language (a language imposed on a population, supplying the largest share of the lexicon of the resulting creole language; also called the lexifier or the lexifier language) and “Chinese, Romance [languages], Hindi[,] Slavic [languages], Bantu [languages]” as its predominant substrate languages (Farmer 2016)¹. The study of such constructed creole languages is relevant in English studies because it explores the use of the resources of the English language in popular culture. It is also linked to the topics of language politics and ideology. Although gestures are often overlooked in the context of studying popular culture, they play a crucial role in intercultural communication, and their use in popular culture helps bring it into focus. A better understanding of their function in a specific popular culture text can help develop a stronger grasp of the communicative role of gestures in other contexts as well.

¹ The original post on X by Nick Farmer is no longer publicly accessible. It was briefly available via Google Webcache, but it has since been discontinued.

The present thesis aims to explore the role of gestures in Belter Creole, specifically their role in conveying information and meaning, and to compare and contrast them with gestures common in English-speaking cultures. This will be achieved by examining the types and functions of gestures used and how the gestures interact with speech or act as an alternative to it. To reach this aim, the thesis will begin with a literature review of existing research into creoles and constructed languages, providing the context for the creation of a creole language for this series. This will be followed by a discussion of gesture theory, which will form the methodological basis for studying gestures in this thesis. The empirical section will examine the use of constructed gestures in the series and the possible connections to the gestures widespread in English-speaking countries. The results will hopefully contribute to the understanding of the importance of gestures in communication.

1. HISTORICAL CONTEXT AND PREVIOUS RESEARCH ON CREOLES AND GESTURES

1.1 Creole and pidgin languages

Most of the known creole and pidgin languages arose after the Western European colonial expansion in the fifteenth century and are connected to the transatlantic slave trade (Mufwene 2020, Muysken 2016: para. 6). The expansion of the European colonial regimes brought with it exploitation of the local population, forced labor and removal, slavery, slave trade, colonial massacres, and an influx of diseases unfamiliar to the immune system of the Indigenous populations (Cook 1998: 18, 37, 88). While language contacts occurred before the 15th century, such interactions intensified greatly as a result of colonial expansion. The sustained contact between the speakers of numerous Indigenous languages and the European colonizers engendered a need for communication across their language barriers. This led to the emergence of various creole and pidgin languages.

The historical documentation of these older creole and pidgin languages is limited, extremely so in the case of creoles and pidgins with non-European lexifiers. This has been attributed to their extinct or virtually extinct status, but more importantly, to the lack of knowledge regarding both the lexifier languages and the substrate languages. Historically, the expertise of the researchers was often centered on languages based on European lexifiers (Drechsel 2014: 7-8). Thus, it is highly likely that besides the first documented pidgin languages, *Lingua Franca* and *Pidgin Arabic*, more pidgins and creoles existed in earlier times. The colonial expansion of the ancient empires spanning from China to Mesopotamia, as well as the territorial acquisitions of the Greeks, Phoenicians, Carthaginians, and Romans, were probably accompanied by contact varieties, and perhaps reasonably stable pidgins (Holm 2000: 14-15).

The earliest known account of any pidgin language is a short text of restructured Arabic from 1068 AD, ostensibly used along a trading route in central Mauritania, or possibly in Egypt

and Sudan; it features the historian and geographer al-Bakrī's citation of a traveler's complaint regarding the alleged "mutilation" of their language in the town of Maridi, and a sample of ten sentences to exemplify it (Owens 1996: 131-132, Thomason and Elgibali 1986). (Mediterranean) Lingua Franca or Sabir was a pidgin language used along the eastern and southern coasts of the Mediterranean Sea from the 11th century to the beginning of the 20th century. Its lexicon is derived mostly from various Italian languages (such as Venetian and Ligurian or Genoese), Catalan, Occitan, later Spanish, and Portuguese. The main purpose of Sabir was to facilitate the communication between Europeans, Arabs, and Turks. The first known written work in Sabir is from Tunisia, 1353 (Holm 2000: 14-15).

The earliest documented use of the term *creole* is the Spanish *criollo* from 1590 (translated to English as *Crollo* [*sic*] in 1604, referring to the Spanish people born in North and South America. Its meaning widened to both Black and white people born in the Americas, and eventually also their language and customs. The earliest known account of *creole* to describe language and customs is from 1685, used by the French navigator Le Courbe as *langue créole* in his diary to denote a restructured variety of Portuguese that Senegalese traders used. (Holm 2000: 16)

The earliest known account of any creole language comes from Martinique, 1671 (McWhorter 1998: 800). The first systematic grammar of a creole language was published in 1770 by Joachim [Jochum] Melchior Magens, a Danish colonial officer. Magens focused on what he called Negerhollands, a Dutch-lexifier creole language spoken on the islands of St. John, St. Croix, and St. Thomas² (Moreira de Sousa et al 2019: para. 12, Reinecke 1975: 25). Few of the earlier observers and even researchers had any linguistic training – the accounts of creole languages from the 17th and 18th century were mainly written by missionary scholars or European travelers in colonial contexts, while the data from the first half of the 19th century

² Then part of the Danish West Indies, currently the United States Virgin Islands.

was mostly gathered by physicians, teachers and colonial administrators (McElvenny 2022, Moreira de Sousa et al 2019: para. 7, Tsuzaki and Reinecke 1966: vii).

1.2 Creole studies

Creole studies or creolistics³ have been of scholarly interest since the second half of the 19th century (Horvath and Wexler 1997: 11, McElvenny 2022, Tsuzaki and Reinecke 1966). Some of the first research was carried out by Francisco Adolfo Coelho, Hugo Schuchardt (often considered one of the most influential pioneers in creole and pidgin studies) and William Dwight Whitney⁴ (De Bot and Bülow 2020: 169, Mufwene 2020: 309, 316, Reinecke 1975: 31). While creolistics as a field of study has been expanding since the second half of the 20th century (Moreira de Sousa et al 2019: para. 1), a clear, concise, and universally accepted definition of ‘creole’ does not yet exist, nor do criteria for determining whether a language is or is not a creole. One of the key issues pertains to the boundary between pidgin and creole languages (Akmajian et al 2017: 280-281, Muysken 2016). Linguists essentially only agree upon the fact that both pidgin languages and creole languages are formed as a result of language contact, that creoles are fully developed and that both consist of a lexifier language and a substrate language or languages (Akmajian 2017: 281-282, Lefebvre 1998: 33-40, 46).

Historically, creole languages have been stigmatized as “corrupt” and “bastard”, and are often treated as inferior versions of their lexifiers (for further discussion, see e.g., Holm 2000, Mufwene 2020, Muysken 2016, Winford 1997). Negative attitudes towards creole and pidgin languages are still prevalent, either implicitly or explicitly; pidgin languages are especially often associated with low levels of education, illiteracy, and a non-white-collar workforce

³ The *Atlas of Pidgin and Creole Language Structures (APiCS)* provides in-depth information about the grammatical and lexical features as well as the sociohistorical context of up to 76 creole and pidgin languages (Michaelis et al 2013). *A Bibliography of Pidgin and Creole Languages* (Reinecke 1975) is a broadly representative bibliography of both published and unpublished older material.

⁴ Coelho’s most important works were published in 1880-1886, Schuchardt’s in e.g., 1882, 1885, 1909, 1914, and Whitney’s in 1881 (De Bot and Bülow 2020: 169, Mufwene 2020: 309-310).

(Anchimbe 2018, Hancock 1992, Moreira de Sousa et al 2019, Muysken 2016). The stigmatization is blatant in the early observations. One of the earliest theories of creole genesis is the foreigner or “baby-talk” theory (Leland 1876: 8-9), though there seems to be confusion in distinguishing between the language used *by* foreigners and/or babies and the language used by the adult native speakers *addressing* those groups (Mühlhäusler 1986: 99-100).

Pidgin languages are generally agreed to have the following characteristics:

1. No native speakers: used as a medium of communication between people who do not share a common language.
2. Derived from the linguistic features of one or multiple other languages: simplified, the vocabulary and grammatical structure are reduced.
3. Extremely unstable, susceptible to radical changes and show vast differences in lexicon and phonology (“often dependent on the languages known to the speakers”) (Akmajian et al 2017: 279).

That being the case, it is crucial to remember that languages with isolating morphosyntax⁵ should not be misinterpreted as “less complex” than languages with “rich” morphosyntax, such as Finnish or Turkish (Haspelmath 2011: 66-67, Mufwene 2020: 305). The reduced structure and vocabulary of a pidgin language do not prevent speakers from expressing complex and serious thought (Akmajian et al 2017: 281).

Theories of creole formation generally attempt to factor in the following aspects:

1. Historical data concerning the societies where creoles emerged
2. The observation that the studied creoles exhibit striking similarities in their morphology, syntax, and even certain phonological aspects

⁵ A language with isolating morphosyntax has little to no inflection; its grammatical relationships are generally indicated by particles or auxiliary verbs (rather than affixes). Words largely consist of a single morpheme; the word order is often fixed (Haspelmath 2011: 66-67).

3. Data concerning both child first language acquisition and adult second language acquisition
4. The language continuum that frequently connects a creole with its source, lexifier language (Akmajian et al 2017: 281-282).

One of the most prevalent groups of theories of creole formation regards creole and pidgin languages as linked concepts, with two main theories disputing over whether creole genesis is the result of children's first language acquisition (L1A) or adult second language acquisition (L2A) (Karlsson 2002: 309-310, Siegel 2008). According to Bickerton (1984: 173-176, 185-186), a prominent advocate for the *theory of abrupt creole formation via L1A*, creole genesis occurs as a result of children applying their natural “bioprogram” during L1A, due to lacking a wholly developed linguistic model to draw upon. According to the *theory of imperfect L2 acquisition*⁶, the (so-called) failed efforts of enslaved peoples to learn colonial European languages induced the genesis of new and simplified versions of these languages (Akmajian 2017: 282, Bloomfield 1933: 472-474, Lefebvre 1998: 29-40).

It has been argued that creole and pidgin languages nativize because the community accepts the pidgin as a valid vernacular; this process is not linked to simplified languages “restricting” the speakers. According to this theory, children of adult second language (L2) speakers are exposed to the pidgin simultaneously to other languages of the community, which allows the pidgin to gradually evolve into a first language (L1). This process involves interaction between adult second language speakers, early second language bilinguals, and simultaneous first language bilinguals, or a “cascade” relationship between L2-acquisition and L1-acquisition (Aboh 2016: 402, DeGraff 1999: 497).

Some creolists argue that creoles are defined by distinct linguistic features and that the processes of change and restructuring involved in their genesis are unique. This approach is

⁶ Also called “imperfect learning theory” or “imperfect second language learning theory” (Siegel 2008: 190).

generally known as Creole Exceptionalism (see Bakker et al 2011, Bakker 2014, McWhorter 1998, 2018, McWhorter and Good 2018, Parkvall 2008, Parkvall et al 2018). Linguists opposing this theory state that the absence of detailed documentation and explanation regarding pidgins and creoles as linked concepts in a linguistic cycle calls this theory of Creole formation into question (see Aboh 2016, Chaudenson 2001, Mufwene 2020, Winford 1997, 2000). It has also been proposed that the purely descriptive approach of Creole Exceptionalism may increase the detached attitude regarding the issue of linguistic inequality and, even if unintentionally, feed into the colonial idea of othering or exoticizing the object of research.

A suitable preventive measure might greater flexibility in conceptualizing creole languages. The approaches to the standardization process in Mauritius and Cape Verde have been cited as “relatively successful” examples (McElvenny 2022). On the other hand, a common criticism towards linguists who oppose Creole Exceptionalism – sometimes dubbed the universalists⁷ after Chomsky’s Universal Grammar (UG) – is the lack of explicit definitions and characterization (Clements 2001: 125, Parkvall et al 2018) and the tendency to favor “exposition in prose” over data (McWhorter 2018: chapter 2, Parkvall et al 2018: 227).

1.3. Constructed languages

While creole and pidgin languages evolve naturally as a result of language contact, constructed languages or conlangs are created intentionally, typically by a single individual, occasionally a small group. These languages can be classified according to the etymology of their vocabulary: whether they are modeled on a known language or are original. The distinction is less rigid in the case of morphological structure and syntax, since the majority of constructed languages include grammatical features of known languages, and certain similarities are often unavoidable, such as the ordering of subject, verb, and object. Languages with vocabulary

⁷ The name is misleading; not all creolists who do not agree with Creole Exceptionalism agree with UG-based theories.

derived from existing languages are named *a posteriori* languages, such as Nick Farmer's Belter Creole and Frank Herbert's Fremen. In contrast, languages created from scratch, such as Klingon, are called *a priori* languages (Sanders 2020: 23-24). Constructed languages with mixed systems also exist (Smith 2011: 20). At first glance, the lexicon of some *a posteriori* languages may closely resemble that of pidgin or creole languages (sometimes intentionally so) (Ball 2016: 145-146). The conscious and deliberate nature of constructed languages allows for an analogy to language games (such as Pig Latin or Ubbi dubbi), where the letters of the words of an existing language are reorganized to produce a code that is difficult for outsiders to understand. The rules of these games are usually straightforward but may vary regionally (Okrent 2015).

The earliest known constructed language is likely the 12th-century *lingua ignota* (Lat. 'unknown language') created by the Benedictine abbess Hildegard of Bingen. Only its 23-letter alphabet and a glossary of 1010 nouns in the nominative case have survived (Okrent 2009: 14-15, Schnapp 1991: 270, 284, 289). However, some scholars argue that *lingua ignota* may not be a true constructed language, but rather a partial relexification of Latin (Sanders 2020: 9). As the importance of Latin was in steady decline by the 1600s, numerous efforts were made to create a suitable universal language to succeed it. These constructed languages, widely referred to as philosophical languages, were to provide precision and clarity to rational expression and, through that, even thought (Sanders 2020: 10-11).

One of the earliest constructed languages created for artistic purposes, also known as an artlang, was the language of the country Utopia in Thomas More's 1516 *Utopia*⁸. Although still a relexification of Latin, the Utopian language was more complex than a naming language. Other noteworthy early artistic languages include those of Brobdingnagian, Laputan, and

⁸ The original title of *Utopia* was *De optimo reipublicae statu, deque nova insula Utopia, libellus vere aureus, nec minus salutaris quàm festivus, clarissimi disertissimique viri Thomae Mori inclutae civitatis Londinensis civis & Vicecomitis*.

Houyhnhnm from Jonathan Swift's 1726 satirical novel *Gulliver's Travels*⁹ (Sanders 2020: 12). Swift introduced a few Brobdingnagian words and phrases and even fewer Laputan. Comparatively, the presence of Houyhnhnm is greater, including attempts at grammar.

A constructed language created to act as a *lingua franca* among people who do not share a language is called an auxiliary language, or an auxlang for short. The earliest known fully formulated international auxiliary language is Solresol, constructed by the French music teacher Jean-François Sudre in the early 19th century. Sudre based Solresol on the seven tonic notes of solfège: *do, re, mi, fa, sol, la, si*, with the frequency of use correlating to word length. For example, *re* means 'and', while *la-mi-la-fa* means 'merchandise'. In grammar, repetition can be used to mark tense and mood (e.g., *fa-fa* preceding a verb expresses the conditional mood). Solresol can also be mapped to colors, numbers, finger gestures, and abstract lines, making it, despite its limited vocabulary, quite a flexible language (Devlin 2022: para. 6, 10-17, Kameny 2019, Okrent 2009: 78-79).

Esperanto, created by Polish physician Ludwik Lejzer Zamenhof in 1887, is the most widely recognized and spoken international auxiliary language. Zamenhof's aim was to construct a simple, politically neutral language that is easy to learn and devoid of cultural bias. Esperanto, meaning 'one who hopes', was created to overcome communication barriers. Before Esperanto gained popularity, Volapük – created in 1880 by Johann Martin Schleyer – was the most promising international auxiliary language (Sanders 2020: 14). By 1889, there existed 268 Volapük clubs, and approximately a thousand people had qualified as Volapük teachers. However, by Schleyer's death in 1911, all clubs had disbanded, and the number of speakers was negligible (Smith 2011: 29-30).

⁹ The original title of *Gulliver's Travels* was *Travels into Several Remote Nations of the World. In Four Parts. By Lemuel Gulliver, First a Surgeon, and then a Captain of Several Ships.*

The roots of modern language invention lie in the dozens of languages created by J.R.R. Tolkien. Language creation, or glossopoeia, as he referred to it, was Tolkien's lifelong hobby. Unlike most creators of artistic languages, Tolkien had already constructed a comprehensive language family, including histories and a substantial lexicon, years before writing his first book set in Middle-earth (C. Tolkien 1997: 3, J.R.R. Tolkien 1997: 198-223).

Since the release of James Cameron's *Avatar* (2009) – the second highest-grossing film of all time by theatrical revenue – interest in constructed languages has surged in popular culture, possibly inspired by Paul Frommer's constructed language Na'vi, which featured in the movie. Previously, language construction was regarded at most as a hobby, even by language creators themselves¹⁰, and frequently a counterproductive and bizarre practice by outsiders (Peterson 2015a: 15-16, Peterson 2020: 251).

The economic incentives behind creating a language vary. David J. Peterson, creator of the Dothraki and Valyrian languages for *Game of Thrones*, estimates that around 45% of science fiction works and nearly 100% of fantasy works would financially benefit from the addition of one – or more – constructed languages. However, he notes that in all films and television, the percentage drops to “probably 0.001 percent” (Peterson 2015a: 262). Additionally, while language creation has some commercial value at present, there is a difference between potential and expectation. The main issue lies in the high competition for opportunities in the movie and television industry, where being hired for the specific purpose of language creation may take over ten years – or it might not happen at all (Peterson 2015a: 262, Peterson 2020: 258). Language creators may also be offered alternative methods of compensation, such as a percentage of the royalties, shared authorship, or, as Peterson (2015a: 262) jokingly describes his own experience, a character named after their cat. Punske et al

¹⁰ Even Tolkien believed the languages he had constructed would not be taken seriously as a standalone project (Sanders 2020: 17).

(2020: 1), however, note an increasing trend in hiring linguists as language creators or linguistic advisors for film and television.

The lack of monetary motivation¹¹ does not deter people from constructing languages (Adelman 2014: 559-560). Language creators, particularly in the fantasy and science fiction landscape, are generally driven by the desire to appreciate and admire the systematicity and structure of language independently of its communicative function (Gillon et al 2020, Okrent 2020, Peterson 2020: 252-255, Wickström et al 2018: 12), community building (Adelman 2014: 561, Gillon et al 2020, Peterson 2015a: 12-15, Sanders 2020: 19-23), and the appreciation of the challenge that constructing a language provides as well as the enjoyment of the invention process (Gillon et al 2020, Peterson 2020: 252-253, Sanders 2020: 24-25).

For *The Expanse*, Nick Farmer constructed a language with different levels of creole usage: pure Belter, Belter with elements of English, and English with elements of Belter, based on how much the creators of the show wanted the audience to understand – or not understand. One of the reasons the producers opted for this approach and chose not to use subtitles was to avoid a storytelling distance – they intended the audience to experience only the usual distance of hearing a language one does not understand. Still, the majority of the dialogue remains understandable, simply feeling “foreign enough”, as pure Belter is rarely used in extended conversations (Hanselman 2016).

A popular critique of constructed languages is the limited amount of pragmatic information. This pertains, for instance, to the level of development of nonverbal communication: standard forms of nonverbal communication that are only occasionally included within the vocabulary of constructed languages involve gesture, facial expression, and the concept of personal space. Covering this level of detail may prove difficult, especially in

¹¹ For information about copyright laws regarding constructed languages, see, e.g., Adelman 2014, Grossman and D’Angelo 2017.

the case of developing a constructed language for a movie or a television series (Schreyer 2021: 337-338). Besides *The Expanse*, other fantasy and science fiction universes that feature constructed gesture systems or sign languages include Frank Herbert's *Dune* (1965), Patrick Rothfuss's *The Kingkiller Chronicle* (2007-...) and Robert Jordan's series *The Wheel of Time* (1990-2005¹²) (The Wheel of Time 2023).

1.4. Gesture theory

While gestures are not often introduced into constructed languages, when they are, they complement and enrich them. Gestures can be classified based on various characteristics, including shape, function, range of motion, information conveyed, and context of use. In terms of body parts involved, gestures have been defined as movements of the arms and hands (McNeill 1992: 1), hands, arms, and head (de Ruiter 2000: 295, 303, Efron 1941: 41-46), as well as arms, hands, shoulders, face and eyes (Kendon 2004, Müller 1998); de Jorio (1832/2000: 73) includes even feet. It is important to note that while the concept of sign languages has its origins in gesture, gestures are not the signs of sign languages (Abner et al 2015; Kendon 2004: 1).

Gestures vary across different cultures (Graziano and Gullberg 2024, Kita 2009, McNeill 1992: 151-163, 221-226, Müller 1998: 225-226, 232). Factors influencing these variations include culture-specific views on politeness, the importance of different elements of a conversation, the use of gesture space, especially gesture prominence, and gesture frequency (Kita 2009, McNeill and Duncan 2000). Human tendency to gesture, however, is universal (Özyürek and Kita 1999). A 2016 study found that the gestures of congenitally blind adult native speakers of Turkish and English strongly resemble the gestures of their sighted

¹² Continued by Brandon Sanderson after Jordan's death.

counterparts, that is, Turkish speakers and English speakers gesture differently from each other, regardless of any visual impairments (Özçalışkan et al 2016).

One of the very first large-scale systematic studies included 2,810 participants and examined the gesturing of East European Jews and Southern Italians in New York City¹³ during the late 1930s and early 1940s (Efron 1941: 40). The comparative study aimed to provide evidence against the anti-Semitic claims of Nazi theorists, demonstrating that assimilated Italians and Jews resembled one another significantly more than they did the members of their “traditional” communities (Glenn 2010: 69-70). The study found significant differences in the frequency and the manner of gestures, and the number of people gesturing between the non-assimilated East European Jews and non-assimilated Southern Italians, while the assimilated groups seemed to differ markedly from their respective traditional communities and resemble each other (Efron 1941). Efron studied the spatio-temporal aspects (e.g., radius, tempo, performed single-handed or double-handed), interlocutional aspects (e.g., contact gestures, simultaneous gesturing), and linguistic aspects of gesture (e.g., gestural emphasis, symbolic elements, pantomime).

For his analysis of linguistic aspects, Efron (1941: 69-71, 180) developed the following classification system:

- I. *Logical or discursive* gestures, which do not portray an object of reference but rather the process of ideation (e.g., logical pauses, intonation), and do not carry meaning independent of speech.
 - A. *Baton-like* gestures are simple, repetitive gestures that mark the successive stages of the referred activity.

¹³ The Jewish immigrants were from Lithuania and Poland, the Italian immigrants were from Naples and its surrounding areas, as well as Sicily. The study was primarily carried out in New York City, but parts of it were carried out in summer resorts in the state of New York (Efron 1941: 40).

- B. *Ideographic* gestures sketch or trace (in the air) the “directions” and “paths” of the thought patterns.
- II. *Objective* gestures carry independent meaning and may or may not accompany speech.
- A. *Deictic* gestures are used for indicating, pointing (to an object visually present).
 - B. *Physiographic* gestures represent the referent.
 - 1. *Iconographic* gestures depict the form of a visual object or a spatial relationship (e.g., shape, structure, position).
 - 2. *Kinetographic* gestures depict bodily actions (e.g., brushing teeth, pouring a drink, buttering a piece of toast).
 - C. *Symbolic* gestures have a “purely emblematic” character; they represent a visual or logical object through the use of a pictorial form or a non-pictorial form (the movements differ in form but are referentially identical), with no morphological relationship to the referent.

Gestures can also be categorized by orientation (axis): *lateral* (left/right), *frontal* (forwards/backwards), *vertical* (up/down), and *diagonal* (*vertical diagonal*, where movement travels from one upper side of the body to the lower part on the opposite side, and vice versa, and *horizontal diagonal*, where movement travels from one side closer to the body to the opposite side, moving away from it, and vice versa) (Özyürek 2000: 71).

The gesture space of a speaker has been schematized in various ways. As shown in Figure 1, McNeill (1992: 89) divides the gesture space of an adult speaker into four sectors:

- I. Center-Center
- II. Center
- III. Periphery
- IV. Extreme Periphery

The Periphery and the Extreme Periphery are subdivided into upper, upper left, left, lower left, lower, lower right, right, and upper right.

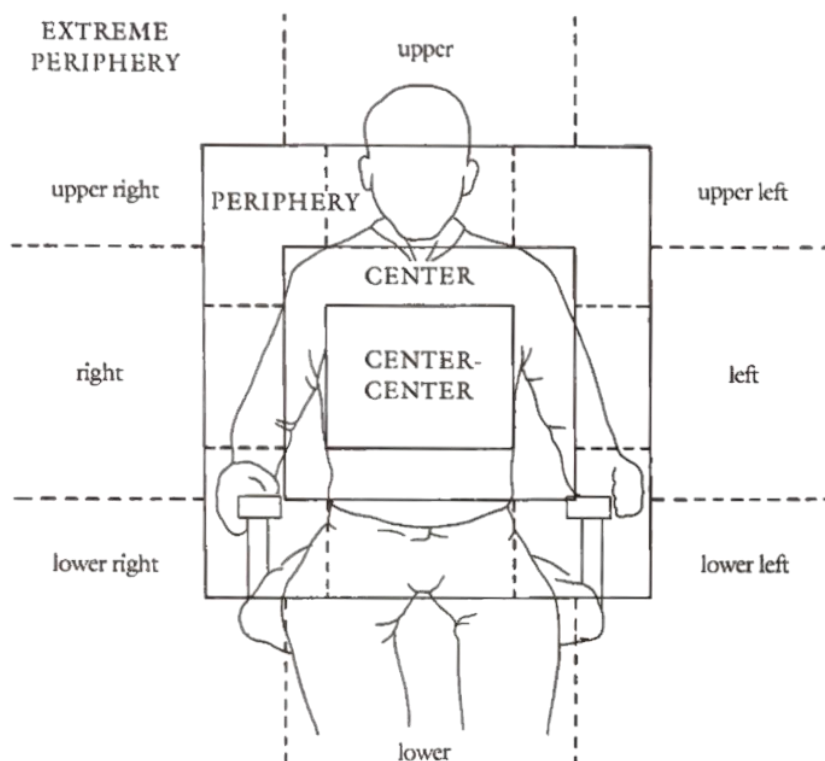


Figure 1. The typical gesture space of an adult (McNeill 1992: 89).

In her revised 2014 framework of systematics of gestural modes, Müller divides gestures into two fundamental categories: acting (*Agieren*) and representing (*Repräsentieren*). In the acting mode, the hand(s) re-enact(s) manual actions or movements, transforming real objects to symbolic through the omission of involved object(s) and original context. Examples include picking up a telephone receiver, holding and turning a steering wheel, and wiping away spilled milk. In the representing mode, the hand(s) become(s) a “manual sculpture” of an object, essentially miming it. The objects represented may often be in motion. Examples include holding the palm horizontally to depict a sheet of paper, and moving the vertically held arm from the elbow down slowly to a horizontal position to represent a falling tree (Müller 1998: 115-125, Müller 2014a: 1689-1694, 1696-1699).

Very little research has focused on gesturing in creole languages. A 2017 study into the figurative association between the body and emotional states in Kriol – an English-lexifier creole spoken in northern Australia – observed that even though not as prominent as in Dalabon, one of its substrate languages, the body/emotion association was still present in the creole. Notably, some of the metaphorical gestures in Kriol can be traced back to verbal metaphors in Dalabon (Ponsonnet 2017).

In the present analysis, the gestures were studied regarding the shape of the hand(s), palm orientation, location in gesture space, and co-occurrence with speech. In some instances, the camera angle obscures or distorts spatial orientation; thus, the location of a gesture in gesture space may not always be definitive. Spatial orientation analysis was based on McNeill's (1992: 89) gesture space. The handshapes were described using the positions of the fingers (extended, curled, bent, together, apart, closed), the rotation and flexion of the thumb, and, if relevant, its position as it relates to the side of the hand (radial edge, ulnar edge).

1.5. *The Expanse*: background

The opening title cards of the first episode of *The Expanse* (2015) read the following:

In the 23rd century, humans have colonized the Solar System. The U.N. controls Earth. Mars is an independent military power. The inner planets depend on the resources of the Asteroid Belt. Belters live and work in space. In the Belt, air & water are more precious than gold. For decades, tensions have been rising. Earth, Mars & the Belt are now on the brink of war. All it will take is a single spark.

In the fictional universe of *The Expanse*, Belters are the descendants of the first workers who stayed in outer space permanently, most likely due to the still unresolved economic exploitation. Belters are born and live in space stations in outer space, mainly in the Asteroid belt that lies roughly between the orbits of Mars and Jupiter, or on the moons of Jupiter, Saturn, Uranus, and Neptune (Hanselman 2016). A parallel may be drawn between the constructed situation of Belters and the historical situation of the company-owned mining communities of the late 19th- and early 20th-century United States. The constructed creole language Belters speak emerges from an extreme language contact situation similar to that of many pidgin

languages, in which people who do not share a common language have to communicate with each other while working together (Sadrai et al 2023: 24-26).

In the early stages of a contact language, gestures are frequently used to support communication (Parkvall 2017). It is possible that some of the gestures used by the first wave of workers were re-conventionalized for an alternative, non-verbal method of communication, as the often cheap communication devices that Belters use in the series are prone to malfunctioning, and the particles in the majority of space are spread too far apart to produce sound waves¹⁴ (Corey 2011: 15, 198, 378). This concept is not entirely fictional. For example, NASA astronauts use a standardized set of hand signals ranging from the ring gesture for, “Are you OK?” and “I am OK,” to vertical and horizontal finger counting gestures for numerical values assigned to various values of the space suit such as air pressure, water pressure, and temperature (VideoFromSpace 2022).

2. GESTURE ANALYSIS

The gestures analyzed were selected either because they were emblematic and constructed specifically for a particular context or because they accompanied, complemented, or replaced speech in ways that are atypical or uncommon in English-speaking cultures. However, they still resemble gestures recognizable within present-day English-speaking cultures, with the differences lying mainly in the location and context of use. The episodes selected for analysis were “Dulcinea” (S1E1) and “Nemesis Games” (S5E10) because they include a range of constructed gestures, both those present in everyday interactions and those designed for emergency situations. In total, fourteen separate gestures were analyzed. In order to examine whether the gestures of Belter Creole resemble those currently familiar in its lexifier

¹⁴The sound waves produced in gas and plasma clusters are out of the human hearing range; the credible sound clips found online are mostly the result of sonification (~ assigning pitch to color) (NASA 2024).

or substrate languages, gestures with similar forms and their meanings were analyzed. To support and extend this analysis, signs from existing sign languages used in English-speaking cultures, and whenever possible, sign languages of substrate cultures of the constructed creole were examined using the databases of Spreadthesign (administered by the European Sign Language Centre), the American Sign Language University, and the Indian Sign Language Portal.

A series of artistic renderings based on the reference material was commissioned for this thesis. Drawn by an independent artist, Rona Luug, they were included to visually support the analysis. Not all gestures are accompanied by illustrations, as some are easy to imagine based on the description alone; however, some simpler gestures are illustrated when they are components of a longer sequence.

At the beginning of “Dulcinea” (*The Expanse* 2015), a character dubbed the Gaunt Belter (Kyle Gatehouse) delivers a speech about the exploitation by Earth and Mars, stating, “/.../ in their eyes, we're not even human anymore. So, the next time you look in the mirror, say the word: *slave*.” As he says the word *slave*, he crosses his hands at the wrists in front of his neck. His fingers are together and curled into fists, with the palms facing his chest, thumbs opposed, and their pads held against the backs of the index and middle fingers. The full gesture is not visible on screen, but the stroke is performed in the Center and the Upper Periphery.

A gesture that has historically been used for centuries to designate enslaved people, deriving from the imitation of how they were sometimes tied up, resembles the Gaunt Belter's gesture quite closely (de Jorio 1832/2000: 348). A significant difference is the palm orientation: in de Jorio's description, the palms face downward, while the Gaunt Belter's palms face his chest. The gesture is nearly identical to the sign for “slave” in International Sign. Additionally, many sign languages, including American, Italian, and Polish Sign Languages, use crossed

hands or an “X” shape drawn in the air to represent “slave” or “slavery” (ESC n.d.i, n.d.k, n.d.l, Signs 2017).

At the end of his speech, the Gaunt Belter performs in quick succession two gestures known as OK or ring gestures. The first is held against his heart in the Center-Center, formed with the pad of the thumb resting on top of the nail of the index finger, creating a circle. The palm is facing his chest, while the rest of the fingers are extended and held together, angled toward his left shoulder. He then turns towards the public digital news display, reading “Water rationing remains in effect,” and performs a second ring gesture toward the board. This gesture is positioned between the Upper Periphery and the Upper Right Periphery, with the arm held straight at approximately a 40-degree angle. The exact point of contact between the thumb and the index finger is unclear, but the other fingers are held together and almost closed against the palm.

The ring gesture has multiple meanings: clarification, adequacy, perfection, and “It is OK,” but it may also be recognized as an obscene insult, an expression of scorn, or represent the number zero. Among Greek and Roman orators, the gesture had several different discursive meanings, including conveying certainty and delivering warnings and accusations, as well as expressing approval and praise. It was also regarded as an appropriate complement for both the beginning and the conclusion of an argument (de Jorio 1832/2000: 83-84, 191, Müller 2014b). In the context of the Gaunt Belter’s speech, the ring gesture is fairly obviously associated with negative connotations – possibly a combination of insult, scorn, accusation, and perhaps warning.

Having noticed Josephus Miller (Thomas Jane), a Belter detective working for an Earth-based private security firm, the Gaunt Belter calls him a *welwala*. The term *welwala* is a constructed in-universe derogatory term derived from *wel* ‘gravity well’ < English *well*, and the agentive suffix (‘one who does’) *-wala* < Hindi - *वाला* (-*vālā*). It signifies a Belter regarded as

loyal to Earth and Mars. Later, Miller translates *welwala* as “traitor to my people” (FORA.tv 2016, *The Expanse* 2015).

The gesture that accompanies this insult (see Fig. 2) is located on the border of the Upper Periphery and the Upper Extreme Periphery. The Gaunt Belter raises his right hand above his right eye, with his palm held vertically and facing left. The pads of the thumb and the index finger are touching; the middle finger is held together with the latter, the ring finger is loosely bent, and the little finger is extended. The shape he forms lies between a traditional ring gesture and the American Sign Language (ASL) sign Flat 9 (HKS n.d.: para. 14). He then raises his hand in a quick sweeping motion, the pads of the fingers separating as his hand enters the Upper Right Extreme Periphery. The hand returns to the resting position at the right side of his body.

The meaning of the gesture formed by the Gaunt Belter may be connected to its visual resemblance to a hole and thus be iconic in nature, referencing a gravity well. The location near the forehead may be analyzed as connected to the concepts of identity and intellect, or the perceived lack thereof (de Jorio 1832/2000: 316-317). Alternatively, a gesture performed above the eyes may mimic observing or targeting somebody. Within this fictional universe, the gesture may carry a general insulting meaning. Interestingly, the ASL sign for ‘clueless’ is similar: the hand shape for the letter *f* is performed near the forehead (Signs 2018).



Figure 2. The gesture accompanying the insult *welwala*.

Later, during the investigation of a debt collector's murder, Miller uses the phrase "forgotten arm" to describe the circumstances of the attack. Gia (Sara Mitich), a sex worker who witnessed the murder, agrees and performs an accompanying gesture. Miller later interprets "forgotten arm" to mean "something you never see coming" (*The Expanse* 2015). The "forgotten arm" gesture begins in the lower Center, with the left hand moving to the right side of the Center or the Center-Center, and the right hand moving toward the upper right area of the Center. Both arms are bent at the elbow: the right arm almost vertical and the left nearly horizontal. The index and middle fingers of the left hand are extended and together, with the other fingers and the thumb curled into a fist. The index and middle fingers tap twice on the side of the right forearm. The right hand is curled into a fist, palm facing the left side of the body, thumb opposed and touching against the backs of the index and middle fingers. Immediately after the taps, the index and the middle finger of the right hand extended and held together, with the other fingers and the thumb remaining curled into a fist. The right hand drops to the lower part of the Center, with the left hand still loosely held against the forearm. Unfortunately, no gestures with similar form and comparable meaning were identified. It is possible that the "forgotten arm" gesture is partially indexical and literal, as Belters seem to point with two fingers (Baban 2020: para. 1, *The Expanse* 2015).

At the end of the questioning, Miller urges Gia to inform him if the murderers return. When she agrees, Miller taps the index and middle fingers of his right hand twice against his left forearm, his palm facing downward in the lower left part of the Center, while Gia simultaneously taps the same fingers twice against her chest in the Center-Center, with the palm facing toward her. Determining the exact location of these gestures is difficult, as they are only seen from the side. Tapping the index and middle fingers against the chest – possibly over the heart – may signify respect and affection. In addition to love, gestures involving the hand tapping or resting on the heart are often also associated with gratitude, trust, and promise (de

Jorio 1832/2000: 79-80, Schneller 1992: 224, 226). The speakers of Kriol generally gesture towards their heart or chest when talking about a wide range of both positive and negative emotions (Ponsonnet 2017: 653-656).

While riding the metro, Miller accepts a regular bribe from a man with a criminal background – presumably in exchange for overlooking certain activities – on the condition that the man properly maintains the air filters. In response to Miller’s rhetorical threatening remark, “No need to pay a visit, then,” the man performs a quick gesture. He holds his left hand in front of his body in the Center-Center, palm facing downward, with the index and middle fingers of the left hand extended and held together, the other fingers curled into a fist, and the thumb held flat against the radial edge of the hand. The index, middle, and ring fingers of the right hand are extended and together, with the little finger bent toward the downward-facing palm. The man brushes his right hand across the fingertips of the left, moving away from the body. A similar gesture – brushing the fingers of the dominant hand over the extended index and middle fingers of the non-dominant hand – is one way of signing ‘correct’ in Czech Sign Language (ESC n.d.m). Interestingly, a Belter creole enthusiast, whom the language’s creator has said “speaks better Belter than [him]”, has interpreted the gesture as meaning “good to go” (Baban 2020: para. 9, Newitz and Farivar 2016).



Figure 3. Gesture performed in response to, “No need to pay a visit, then.”

In the episode “Nemesis Games” (*The Expanse* 2021), Naomi Nagata (Dominique Tipper), one of the main Belter characters, is forced to leap out of a spaceship that has been rigged to explode, while wearing a spacesuit without an oxygen tank and with a malfunctioning radio. She performs a series of gestures designed for emergency situations to inform and warn her rescuers. These gestures are interpreted for the audience by a non-native Belter speaker, but considering the context, it is likely that the interpretation did not omit vital information. The interpreted message reads as follows: “My radio is out. Low air. Ship. Explosion hazard. Do not approach.”

The first emergency gesture seen on screen involves both hands stretched horizontally in the Center, with the elbows slightly bent. The left hand is slightly out of frame, with its palm facing upwards, while the fingers of the right hand either touch or hover above the upturned palm of the left. The gesture possibly shifts into the Left Periphery. This gesture is later mimed by a non-Belter character and interpreted as ‘ship’. The gesture resembles an enclosed space, possibly depicting the vague shape of a spaceship. Curiously, similar handshapes feature in the sign for ‘float’ in Serbian Sign Language and the sign for ‘floating’ in British Sign Language, although only one hand with the palm facing upward is used in the latter (ESC n.d.f, n.d.j).



Figure 4. The gesture mimed by a non-Belter character, resembling the original in terms of the positions of the fingers and thumbs, but not spatially.

The second sign likely begins in the upper left area of the Center, with the hands slightly crossing each other: the right positioned over the left. Both hands are curled into fists, with the thumbs unopposed against the radial side of the index fingers. However, the exact position of the thumbs is uncertain, since the pressure inside the suit and the rigidity of the gloves may hinder full thumb rotation, flexion, and opposition. The fists are released almost immediately, and both hands move simultaneously through the Upper Periphery: the right hand moving toward the right side of the body, and the left hand toward the left. During this movement, the fingers and the thumbs are spread out and slightly flexed at all joints, with the thumbs still unopposed. The gesture ends with the right hand reaching the Upper Right Extreme Periphery and the left hand reaching the Upper Left Extreme Periphery. This gesture is later interpreted as “Explosion hazard. Do not approach.” It greatly resembles the common gesture for ‘explosion’. While the sign for ‘explode’ or ‘explosion’ is open-handed in some sign languages, such as Chinese Sign Language (ESC n.d.a), this could also be a combination of a closed-handed sign for ‘explosion’, such as in Spanish and French Sign Languages (ESC n.d.d, n.d.e), paired with the spread out hands indicating the concept of keeping a distance.

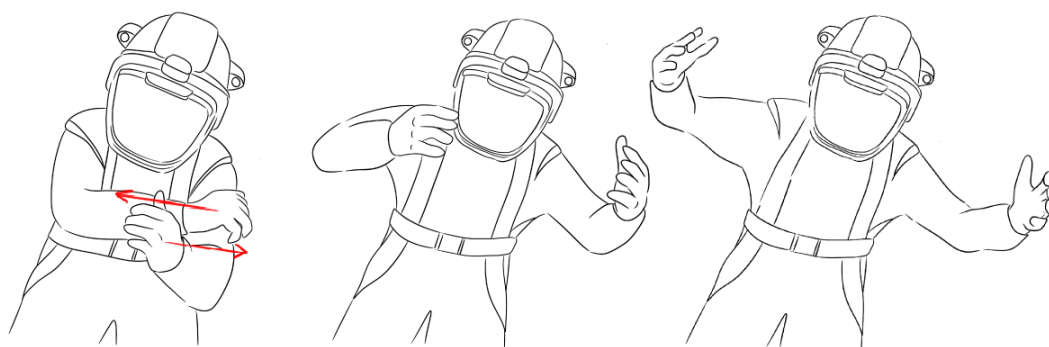


Figure 5. The gesture interpreted as ‘explosion.’

The starting point of the next gesture is unclear, but the left hand, curled into a fist, taps twice against the left side of the helmet in what appears to be the Upper Extreme Periphery. The right hand is likely not part of the gesture; it may be used for balance keeping. This gesture

presumably indicates the radio, but since the meaning of the following gesture is unclear, it is possible that this gesture also conveys communication malfunction. Tapping the microphone or earphone is a fairly common gesture in aviation that indicates radio failure, as seen in e.g., the U.S. Air Force and formation flying (DAF 2018: 16, The Squadron 2015: 39).



Figure 6. The gesture interpreted as ‘radio’ or possibly ‘radio malfunction.’

The following gesture is a two-handed, simultaneous one in which both hands are curled into fists, with palms facing each other. The left hand begins to move downward from the Upper Extreme Periphery, passing through the Center, the Center-Center, and possibly ending in the lower region of the Center. The right hand begins its movement in the Upper Periphery, moving through the Center and the Center-Center, and possibly ending in the lower area of the Center. Both hands move with a firm motion, resembling the tugging or tightening of invisible ropes. A number of sign languages feature a sign for ‘broken’ that includes a similar downward fist motion, but this similarity appears to be superficial. Interestingly, the signs for ‘cannot’ in German and Icelandic Sign Languages resemble this gesture in some regards (ESC n.d.g, n.d.h). Additionally, the ASL sign for the verb ‘can’ involves a similar motion in a similar location, though the palms are facing downward (Signs 2015).

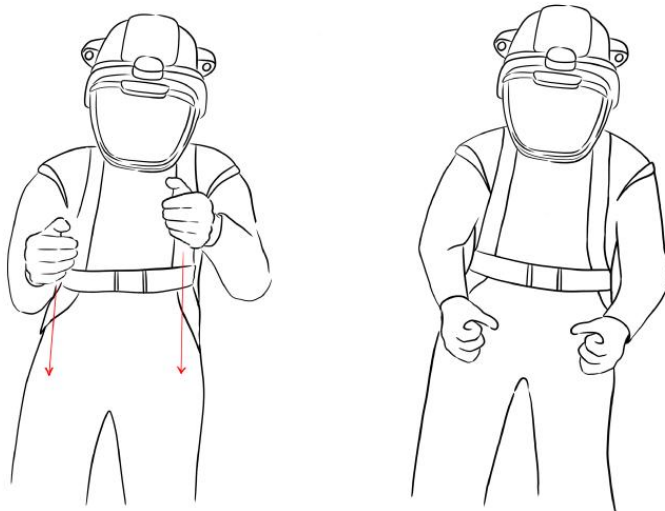


Figure 6. The gesture interpreted as ‘malfunctioning, broken.’

The next gesture likely begins with both hands crossing at the wrists in what seems to be the Center-Center. The fingers of both hands are extended and together. The fingers of the left hand are slightly bent at the knuckle joints, with the thumb extended outward, unopposed. The fingers of the right hand are extended and somewhat spread out, with the thumb nearly flat along the radial edge of the hand, leaving a small gap between the thumb and index finger. The hands cross again, moving towards the respective sides of the body, forming an “X” shape, visually resembling a slashing movement. A similar, somewhat common gesture could mean denial, distress, or discomfort. In Indian Sign Language, a sign resembling this gesture means ‘finish’ (RKMVERI 2011).



Figure 7. The gesture possibly meaning discomfort, distress. Perhaps combined with the gesture for ‘air.’

The final gesture begins with the hands placed on top of each other, the left hand above the right, just below the throat in the upper part of the Center. This hand position resembles a classical choking gesture, but also the gesture for ‘choke’ in French Sign Language and ‘choking’ in Australian Sign Language (ESC n.d.b, n.d.c). This gesture could be combined with the previous one to convey the lack of something, with the current gesture clarifying that it refers to air. However, this interpretation seems overly complicated, as signs used for low air or no air in contexts such as scuba diving generally involve simpler one-handed tapping or slashing gestures (Ghader et al 2024: 9311, Jarzabek 2015: 186).



Figure 8. The gesture interpreted as ‘air’ or ‘low air.’

CONCLUSION

The majority of the gestures analyzed, based on the handshape, palm orientation, spatial orientation (following McNeill 1992:89), and possible co-occurrence with speech, could be traced to familiar equivalents found in English-speaking cultures or present-day sign languages.

Out of the fourteen gestures analyzed, five resembled in both form and meaning signs found in American Sign Language (ASL), British Sign Language (BSL), and/or Australian Sign Language (Auslan). Three gestures were comparable to signs from Romance Sign Languages – French, Italian, and Spanish Sign Languages (with one of the gestures overlapping with ASL),

and three to signs from Slavic Sign Languages – Czech, Polish, and Serbian Sign Languages (including one overlap with ASL and one overlap with BSL). Two gestures had unclear origins. Remaining resemblances included one gesture each with Chinese Sign Language, Indian Sign Language, and International Sign, with the latter also overlapping with the ASL, Romance, and Slavic signs. Three gestures, one of which resembled a sign from ASL, were recognizable within English-speaking cultures, but were performed here with different connotations. Two gestures are fairly universally used in hobbies or specialized fields, such as diving or the military (one overlapping with French Sign Language and Auslan).

The empirical analysis of a small selection of gestures from a creole constructed for a television series demonstrates that the resources of the English language were combined with those of various other languages, including several sign languages. The findings suggest that the gesture system of Belter Creole draws on existing practices, and thus enhances both the authenticity and immersion of the fictional universe of *The Expanse*. Additionally, the gestures carry some ideological meanings, such as signaling the marginalized status of the Belter population and their strong sense of collective cultural identity. Using the constructed gesture system as a storytelling technique, the series draws a parallel between the fictional exploitation and subjugation of Belters and the real-world experiences of communities where contact languages emerged. In this context, the decision to develop a creole language for the Belter population is an effective and meaningful one, as it communicates the weight of historical oppression.

The limitations of this study include the impossibility of analyzing the large number of possible episodes thoroughly within the limited time frame of a BA thesis and the author's limited experience with sign languages. Future research could include more episodes for the analysis and expand the dataset of sign languages. Another possible approach could be using the input of native sign language speakers for the purpose of comparison. In addition, exploring

the political and ideological implications of the gestures could also be an area for future research.

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RESÜMEE

TARTU ÜLIKOOL
ANGLISTIKA OSAKOND

Kerstin Ots

The Use of Gestures in a Constructed Creole in *The Expanse*

Žestide kasutus tehiskreoolkeeles telesarjas „The Expanse“

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Käesolev bakalaureusetöö uurib žestide kasutust telesarja „The Expanse“ jaoks loodud tehiskreoolkeeles. Töö peamiseks fookuseks on žestide roll sõnumi ja tähenduse edastamises ning nende kõrvutamise ingliskeelsetes kultuurides levinud žestidega. Selleks analüüsitakse kasutatud žestide tüüpe ja otstarvet ning seda, kuidas need sõnalist suhtlust täiendavad või asendavad. Töö koosneb kahest osast: kirjanduse ülevaade, mis hõlmab lühikest läbilõiget kreoolkeeli, tehiskeeli, ja žeste käsitlevatest varasematest uurimustest, ning empiiriline osa, milles analüüsitakse žeste käevormide, moodustuskoha McNeill'i (1992: 89) žestiruumis, ning peopesa suuna kaudu; vajaduse korral uuritakse žesti ja sõnalise suhtluse koosinemist. Valdava osa žestide puhul on võimalik leida ingliskeelsetes kultuurides ja/või teadaolevates viipekeeltes levinud sarnaseid žeste või viipeid. Käesoleva töö tulemused näitavad, et uuritava tehiskreoolkeele žestid toetuvad eeldatavasti küllaltki suurel määral väljakujunenud suhtlustavadele, ning aitavad seeläbi luua sidusat ja köitvat loomaailma. Lisaks on töös uuritud žestidel ka ideoloogilisi tähendusi, näiteks väljendub neis telesarja väljamõeldud rahva marginaliseeritud staatus ning nende tugev kollektiivne kultuuriidentiteet. Žestide süsteemi narratiivi loomise tehnikana kasutades luuakse sarjas võrdlus kõnealuse rahva väljamõeldud ekspluateerimise ja rõhumise, ning nende kogukondade tõeliste kogemuste vahel, kus pidžin- ja kreoolkeeled tegelikult välja arenesid.

Märksõnad: žest, tehiskeel, kreoolkeel, ingliskeelsed kultuurid

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