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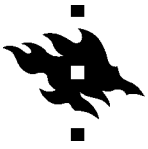
# “Niin mut se yrittää kikkailla tiätsä ittesä low hoo pee”

English influence on Finnish-Matrix  
Computer-Mediated Discourse During a  
Multi-Player Computer Game

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Tiivistelmä – Referat – Abstract <p>Tutkielma käsittelee suomen ja englannin välistä kielikontaktia nuorten aikuisten keskustelussa monen pelaajan videopeliä pelattaessa. Aineistona käytetään neljän Dota 2 -videopelin ottelun aikana käytyjä keskusteluja, jotka on taltioitu ja translitteroitu. Lisäksi tutkimukseen osallistujia haastateltiin tutkimuksen aikana. Ääniteaineisto jakautuu kahteen tyyppiin: kaksi äänitteistä on pelimuodosta, jossa peli tallentaa sijoitustietoja ja jossa sijoituksissa liian kaukana toisistaan olevat pelaajat eivät voi pelata samassa joukkueessa, kaksi muuta taas pelimuodosta jossa pelaajat voivat vapaasti pelata kenen tahansa kanssa.</p> <p>Tutkimus eroaa lähestymistavaltaan aikaisemmista pelitutkimuksesta, jotka ovat pääasiassa tutkineet erilaista videoaineistoa mm. keskusteluanalyysin ja multimodaalisuuden keinoin. Teoreettinen lähestymistapa perustuu etnografiaan ja autoetnografiaan, jotka korostavat osallistujien kokemusta ja tutkijan osallisuutta tutkimustilanteeseen ja -kohteeseen. Etnografinen lähestymistapa helpotti myös ääniteaineiston tutkimusta ilman peliä tai pelitilannetta kuvaavan video tarjoamaa kontekstia – kontekstia ja paikallisia merkityksiä selvitetiin tarvittaessa osallistujien haastatteluilla. Etnografisen metodologian ansiosta tutkimuksessa saatettiin lisäksi hyödyntää tutkijan olemassaolevaa tietämystä videopelitalanteista ja Dota 2:sta.</p> <p>Suuri osa kielikontakteista aineistossani koostuu koodinvaihdosta. Tutkimuksessa koodinvaihdon määritelmänä käytetty Myers-Scottonin matriisikielikehysmalli (engl. <i>Matrix Language Frame model</i>) osoittautui selitysvoimaisemmaksi kuin aikaisemmissa pelitutkimuksissa käytetyt (esim. Auerin ja Poplackin) mallit. Tutkimus osoittaa, että suomen ja englannin lisäksi kielikontaktia esiintyy myös esim. suomen ja saksan sekä venäjän välillä. Vieraskielisten sanojen käytön lisäksi aineistossa esiintyi niin suomenkielisten kuin vieraskielistenkin sanojen muuntelua ryhmän sisäiseksi erikoissanastoksi sekä Dota 2:n kansainvälisessä pelaajakunnassa vakiintunutta muunneltua erikoissanastoa. Aineistossa esiintyvät keskustelutilanteet ovat varsin samankaltaisia kuin aiemmissa työetnografisissa tutkimuksissa lennonjohdon ja lentokapteenien toiminnasta. Etenkin erikoissanaston jakauma osoittautui hyvin samankaltaiseksi kuin reittilennon laskeutumista edeltävässä tilanteessa.</p>			
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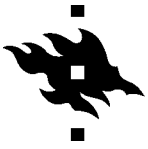


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## 1 Introduction

As with the overwhelming majority of international entertainment, computer games are primarily produced in English. For this reason, most non-Anglophone players need to understand the game, or the jargon of the particular game's community, in English (cf. Siitonen 2007, p. 67 – 70). This is especially true in competitive multiplayer games, where on the one hand, players may not share a common mother tongue, and on the other, a player needs to stay informed of the current state of the game to stay competitive. This information, be it a list of changes in the newest version (a *changelog*) or a strategic innovation in a tournament, for example, is likely to be in English and not the player's native tongue. In multiplayer games, it is usually impossible for a player to only play with players they share a language with, even if they tried to. For example, in Dota 2 (Valve, 2013), the game the current thesis is concerned with, has two servers for eastern Europe, two for western Europe and two for Russia. Each of these areas already contain speakers of several languages, and anyone is free to join any server they wish<sup>1</sup>. This creates a juxtaposition of English in the game, a non-anglophone player's mother tongue, as well as possibly other languages spoken by other players.

The present thesis is a case study of the discourse of seven players over four matches of Dota 2. English influence was found to chiefly consist of insertional code-switching between Finnish and English, Finnish being the matrix language. However, several different processes were observed by which words from English, Finnish and other languages were transformed into specialized Dota 2 terms. The code-switching in the data was found to be most satisfyingly explained by Carol Myers-Scotton's Matrix Language Frame (MLF) model (1992, expanded in 1997 and 2002). The accuracy of MLF was compared to that of two other theories that have been used in earlier game studies both in Finland and abroad. The discourse in the present study was also compared to that of ethnographies on the work of airline operations room employees (Goodwin & Goodwin 1996), commercial pilots (Neville, 2004) and police officers (Van Maanen, 1982).

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<sup>1</sup> Game servers are usually either for a large demographic such as a continent or a major portion of one, or free for all to join. Some private servers in some games are targeted to nationals of a given country, but even then, English is usually a permitted language in addition to those spoken in the given country. Such is the case with e.g. Pelipurkki.fi, with Finnish(-language) servers for games such as Team Fortress 2 (Valve, 2007). Often, progress on private servers does not count towards goals in a multiplayer game the same way as that on public servers provided by the publisher.

Dota 2<sup>2</sup> is a game which can draw a crowd of over ten thousand to tournaments with a prize pool of millions of dollars (Wingfield 2014). Dota 2 shares common ancestry with *League of Legends* (LoL), one of the most popular games in the world with 22 million monthly players as of 2013 (Funk 2013). League of Legends was also the first game for which a university scholarship in e-sports was offered (Tassi 2014). Both are games in the genre variably known as *multiplayer online battle arena* (MOBA) or *action real-time strategy* (ARTS), descending from the same *mods*, user modifications to existing games (Funk 2013).

The data analyzed consists of recordings of the discourse of a group of friends playing a match of Dota 2 over the Voice-Over-IP (VOIP) program Mumble. The data gathered is thus highly naturalistic, as this is how the subjects play Dota 2 on their own. The naturalistic setting not only makes the data interesting, but could shed light on similar language phenomena in other stressful situations that rely on co-operation perhaps ones that can not be recorded with high fidelity due to ethical, practical or legal concerns. Such situations include those in the aforementioned ethnographies on airline operations room employees and pilots. The language distribution of specialist jargon was found to be roughly similar at least in the data of Nevile (2004), and the current thesis. However, the register was markedly less official, and the jargon more technical.

The discourse of gaming has been researched before, both in Finland and abroad. Adolescents playing a single-player game together, adults playing a (by definition, multiplayer) tabletop role-playing game, Youtube gaming videos, the language of gaming in general, and communication in a multiplayer videogame community in particular have been studied in Finland before, but the discourse of adults during a multiplayer match has not. This is a significant research gap, as adult gamers are a large and growing modern demographic. The studies conducted on adults either feature a different kind of game (either a board game or a single-player game) or study the discourse on a more general level. The simultaneous play in a multiplayer game like Dota 2 makes the situation vastly different. Unlike in studies like Piirainen-Marsh (2010), on gaming situations where one participant plays and another watches and comments, in the present study, all participants must divide their attention between discourse and play.

I find that previous studies on gaming, especially in Finland, have focused overly on the influence of gaming on language learning. This may be due to

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<sup>2</sup>sic., but named after the acronym for Defence of the Ancients, an earlier player modification (*mod*) for Warcraft 3: Reign of Chaos (Blizzard, 2002) that Dota 2 is one of the spiritual successors of.

the fact that many earlier Finnish game studies have studied minors who are still in school. In the present study, I approach gaming as a leisure activity like any other. Defending its usefulness to my adult participants is beyond the scope of the current study, and implicitly unnecessary.

The present study employs processes of ethnography and autoethnography to study naturalistic data of a little-researched niche of game studies; adults playing a multiplayer game. The data is described using a loose taxonomy of various processes through which words receive specialist Dota 2 functions, and compared to that in other games studies, as well as other ethnographic studies. The chosen definition of code-switching is also found to accurately describe the code-switching present in the data, which two other definitions used some of the games studies discussed fail to do.

## **2 Background**

In this section, I introduce my analytic approach, based on ethnography and autoethnography, as well as various definitions of code-switching. I then go on to describe the role English has in Finnish society, especially in schooling. An overview of the history, gameplay and gameplay-external elements, especially the matchmaking, of Dota 2 follows. The section on the game is quite detailed so as to provide readers unfamiliar with videogames in general or Dota 2 in particular with the basics in one place so that prolonged discussion of the game and its features would not be necessary in the following sections. Finally, I give an overview of games studies and studies of gaming with a linguistic focus. Some special attention is paid to Finnish studies, as well as studies in some way similar to the present thesis.

The present thesis is concerned with a discourse situation that contains language contact that various approaches, such as the three I cover in this section, classify either as code-switching or borrowing. Having conducted my bachelor's thesis on one match of the same game, as well as personal experience of the game, I know that no definition of code-switching and borrowing would encompass all of the language contact present in the data. I also noticed in my research for the present thesis that the definition of code-switching, and framing a study strictly as a study of code-switching following a given definition is problematic. Pro gradus such as Vuorinen (2008) and Suominen (2014), for example, found that the theory they chose ruled out some of their data, or failed to accurately describe the language



contact in it.

Code-switching is an especially perilous subject of study in this sense, as there has been much disagreement on the exact definition of the term in the field (see Section 2.2.2). Most importantly, earlier research tended to define code-switching as a process distinct from borrowing, while later research (e.g. by Peter Auer 1999 and Carol Myers-Scotton) tends to see them as more similar, or opposite ends of the same spectrum, and place much of what earlier approaches consider borrowing closer to the codeswitching end of that spectrum (Myers-Scotton 1992, 1997, 2002).

While there is research merit in a negative finding, that a given theory does not explain something, I did not wish to constrain myself similarly. Instead, I was interested in all of the language contact present in my data. This is what prompted me to approach my data through naturalistic inquiry, or, more precisely, ethnography and autoethnography. Modern ethnography and autoethnography especially emphasizes the objectivity and role of the researcher, as well as the views of the research participants in shaping the findings. This was especially useful because unlike most of the game studies I discuss later on in this section, I had no access to video in my data. Close contact with informants was thus instrumental not only to solicit their views on the situation, but also to resolve ambiguities working with audio alone with the help of someone who was present in the original situation. Indeed, one of the goals of this study is simply to catalogue the language contact present in the data and the meanings the participants attribute to them.

## 2.1 Ethnography and Autoethnography

Frey et al (2000) places Ethnography and Autoethnography, alongside ethnomethodology and critical ethnography, under a broader term, Naturalistic inquiry (Frey et al. 2000, p. 259). They set forth three characteristics as fundamental to naturalistic inquiry: naturalism, phenomenology and interpretiveness<sup>3</sup>. *Naturalism* is a belief that phenomena should be studied in their natural context – understanding how and why people do what they in everyday situations. *Phenomenology* is the assumption that the subject of study should be examined without preconceived notions or a priori expectations, and *interpretiveness*, or the *interpretive nature* of the

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<sup>3</sup>Frey et al. Attribute these fundamentals to Potter 1996, who lists these among others as important disciplines for humanistic or naturalistic research, but does not raise these above the others.

research means taking into account the fact that the researcher, when conducting naturalistic research, cannot help making their own interpretations, and the resulting description is not simply an objective account of what happened, but an interplay of the researcher's and the research participants' interpretations of the situation. (Frey et al. 2000, p. 258). Lincoln & Guba (1985) list five axioms of naturalistic research (contrasted against the positivist counterparts), which encompass the three fundamentals listed by Frey et al. and more. The axioms on the nature of reality, the relationship of knower and known, the possibility of generalization, the possibility of causal linkages and the role of values are, respectively, 1. realities are multiple, constructed and holistic, 2. knower and known are interactive, inseparable, 3. only time- and context-bound working hypotheses (idiographic statements) are possible, 4. all entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish causes from effects, and 5. inquiry is value-bound (p. 37). Lincoln & Guba go on to list 14 characteristics stemming from these axioms, including 1. natural setting, which corresponds more directly with naturalism in Frey et al.<sup>4</sup> (p. 39).

Ethnography has its roots in Western anthropology; upon realizing that other cultures do not do everything the researchers expected they would of "human nature". (ibid. p. 259). Prompted by this, the researchers began to study the differences in the ways their own culture and the target culture work. Frey et al go on to quote Gephart:

*Ethnography is the use of direct observation and extended field research to produce a **thick, naturalistic description** of people and their culture. Ethnography seeks to uncover the symbols and categories members of the given culture use to interpret their world and ethnography thus preserves the integrity and inherent properties of cultural phenomena* (1988, p. 16, emphasis mine)<sup>5</sup>

In the beginning of his "account of the manners and customs of an ethnographer in an American Police Department", *Fieldwork on the Beat*, Van Maanen (1982, p. 103) describes ethnography as seeking to "discover and disclose the socially acquired shared **understandings necessary to be a member** of a specified social unit" (emphasis mine). That is to say, the things to be taken as

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<sup>4</sup> I discuss the characteristics listed by Lincoln & Guba in more detail in the method section, as many of them are integral to the way the research was structured and the approach taken to the data and the informants.

<sup>5</sup> Frey et al. (2000) attribute this quote to Gephart, while he himself attributes the segment to Geertz (1973) and Knorr-Cetina (1983), referencing two separate works. It would thus appear that he is compounding the ideas of the two researchers in this segment.

obvious fact, such as the various streets and venues used for illicit purposes for Van Maanen's police officers. Similarly, to Dota 2 players, the fact that a given ability has a delay before it deals damage, or that the amount of damage or the length of the delay (for explanations of these terms, see section 2.4.2) was changed in the latest update, may be obvious. According to Van Maanen, "[the cultural description that results from ethnography] can emerge only from a lengthy period of intimate study and residence in a given social setting[, ] calls for the acquired knowledge of the always special language spoken in that setting, first-hand participation in some of the activities that take place there, and [...] a deep reliance on intensive work with a few informants drawn from the setting" (p.103-104).

Ethnography is not just about fieldwork and thick description of a phenomenon in a natural environment, however. Wolcott (1995) defines ethnography strictly as research that constitutes cultural analysis (p. 108) and is an interpretation of culture, not an explanation of it (p 86). *Culture* here refers to an abstraction of observed phenomena, not an objective truth (p. 86). Wolcott (1995) calls both the process and the product ethnography. Not only that, but only the process that produces *an ethnography* constitutes *ethnography* (p. 82). That is to say, studies whose aim is not cultural analysis (like the current study) do not "do ethnography", nor are they "ethnographies", while they may employ *ethnographic processes*.

Frey et al. (2000) introduce autoethnography as a solution to a common criticism of ethnography, that its researcher is portrayed as an omniscient, objective "normal" studying a "strange" and "other" subject (Frey et al. 2000, p. 261). As an example, they quote Bird (1992): "Ethnography, once seen as an objective, scientific exercise, is now seen as an interpretive, human enterprise, in which the **subjectivity of the researcher** is crucial in both the fieldwork and writing" (p. 252). It is noteworthy that Bird's article belongs firmly in the body of work criticizing earlier ethnography for privileging the author over those studied. It is not entirely clear whether she considers this a problem despite the change she describes in ethnography or not, or if she considers some of her contemporary ethnography as lacking in embracing that change. In fact, the only instance of the word autoethnography in it is one written in quotes, referring to John Fiske's (1990) methodology before criticizing it for "[being] within the spirit of 'mandating self-reflection' [...] [whose] consequence is to privilege Fiske as researcher/viewer above the various anonymous voices of other audience members".

Fiske (1990) calls for an extension (p. 91) of the methodology of

autoethnography to include “data [in] which the ethnographer is both producer and product” (p. 90), which would allow it to “open up the realm of the interior and the personal, and to articulate that which, in the practices of everyday life, lies below any conscious articulation” (p. 90). In other words, what Fiske means by autoethnography is including the researcher as part of the studied phenomenon, and being conscious of this while studying a phenomenon where this is the case. Fiske (1990) aims to achieve this by studying himself as one of three audiences in a study on the viewership of a TV show he watches (p. 85).

Crawford (1996) seems to marry these two views. Like Bird, she questions the ethics of fieldwork in general: how it is impossible to look for truths in a foreign culture without, to some extent, abusing their trust in providing this information and claiming to have found truths in their life that they have no access to. To illustrate this, she tells an anecdote from the end of an immersive period in the field in a Taoist commune in Colorado, in which the leader of the commune tells her that he feels he has failed as his teacher, as she has not been able to “touch her” (p. 164). By the time of writing “Personal ethnography”, she has come to regret this, and feels that by not “entering fully” into commune life, she has failed to do the same for ethnography. She attributes this aversion to “too many ‘received ideas’ about the procedures of ‘legitimate’ fieldwork” and a “ubiquitous caution against ‘going native.’” (p. 165)

In Crawford’s (1996) view, “[a]utoethnography epitomizes the reflexive turn of fieldwork for human study by (re)positioning the **researcher as an object of inquiry** who depicts a site of interest in terms of personal awareness and experience [...] [and] orchestrates fragments of awareness [...] into narratives and alternative text forms which (re)present events and other social actors as they are evoked from a changeable and contestable self.” (p. 167, emphasis mine). In other words, autoethnography emphasizes both the researcher as a subject of study and the self-reflexivity necessary to represent the other objects of study fairly and not take advantage of them in studying them.

Reed-Danahay (1997) echoes this in the introduction to her book *Auto/Ethnography*. She divides autoethnography in three: “native anthropology”, in which members of a society that was formerly the subject of ethnography become authors and study their own group, “ethnic autoethnography”, which are personal narratives by members of minority groups (regardless of whether or not they have

been subject to prior ethnographies) and “autobiographical ethnography”, in which anthropologists interject personal experience into ethnographic writing (p. 2)

## 2.2 Codeswitching

From past experience both conducting my bachelor’s thesis on similar DotA 2 data, as well as in personal experience of similar discourse situations, I expect most of the language contact present in the data to be codeswitching (abbreviated CS in this thesis). In this subsection, I give a general overview of the various definitions of the term by comparing three of them, Poplack & associates (Sankoff & Poplack, 1981; Poplack et al. 1987 and Poplack, Sankoff & Miller 1988<sup>6</sup>), Auer (1999) and Myers-Scotton’s Matrix Language Frame model (MLF). The current thesis follows MLF, since it describes the language contact in the data best. It is also the most extensive methodology for studying CS that I encountered, is backed by quantitative evidence and is constructed to be universally applicable. E.g. Sankoff & Poplack’s (1981) theory, on the other hand, is based on qualitative, even anecdotal findings on a single corpus of English-Spanish language contact in Puerto Rican communities in the USA (Myers-Scotton 1997 p. 25)<sup>7</sup>. Auer (1999), on the other hand, gives examples from many language pairs, although there is an emphasis on Italian-German, and Myers-Scotton (1992 and 1997) mainly gives examples of language contact between Bantu languages and English in Africa. The other models to compare MLF against were chosen because Myers-Scotton herself explicitly sets her model against the body of work that Sankoff & Poplack’s (1981) theory represents, and Auer’s (1999) model is a close contemporary to MLF, as well as being the definition used by one of the game studies discussed in the subsection on game studies, Suominen (2014).

### 2.2.1 The Matrix Language Frame Model (MLF)

I first introduce the terminology of MLF. The terms used later on in the study are

<sup>6</sup>While not explicitly stated to contribute to the same framework, the two later works interfere with the earlier as well as each other. Note, that Poplack et al. (1987) refers to Poplack, Sankoff & Miller (1988) as an unpublished 1987 manuscript of the same name.

<sup>7</sup>Sankoff & Poplack (1981) indeed quite explicitly deals with codeswitching in these particular communities. see e.g. p. 39. Other papers dealing with the same body of work, like Poplack et al. (1987) and Poplack, Sankoff & Miller (1988) do attempt to generalize the model to other language pairs, but the initial theory is very much based on this specific codeswitching community.

listed in appendix 7.1.2 Codeswitching along with a brief explanation and a reference to their introduction in the body text. The other approaches are discussed in relation to MLF, and using the terminology of MLF. Myers-Scotton (1992 and 1997<sup>8</sup>) introduces MLF explicitly to describe the constraints on intrasentential CS (1997 p. 5), but the model also describes intersentential CS, and it is expanded especially in Myers-Scotton (2002)<sup>9</sup> and the afterword to Myers-Scotton (1997). MLF posits that in *classic CS* (Myers-Scotton 2002 p.8)<sup>10</sup>, there is a Matrix Language (ML) and one or more Embedded Languages (EL). In classic CS, the speaker is proficient enough in the ML to produce well-formed monolingual utterances in it, although typically they have a similar proficiency in (one or more of) the EL(s) as well (2002 p. 8)<sup>11</sup>. The ML can also change both synchronically and diachronically; over the course of a conversation (or even a sentence), or the evolution of a particular community that regularly uses CS (1997 p. 70).

According to the *ML hypothesis*, the ML provides the *morphosyntactic frame*<sup>12</sup> of those sections of CS discourse containing both EL and ML content (1997 p. 82, 1992 p. 24). these are called *ML + EL constituents* (1997 p. 77-78) and can consist of any number of ML morphemes and, typically, only single-morpheme insertions of *EL content morphemes*. The *System Morpheme Principle* and *Morpheme-order principle* state that the ML typically provides *system morphemes* as well as word order (1992 p. 24, 1997 p. 83). The definition of system and content morphemes is thus essential to MLF. In Myers-Scotton (1992 and 1997), they are defined as generally analogous to *closed-class items* in other approaches to CS (1997 p. 99), and in more detail in terms of linguistic properties<sup>13</sup>. Myers-Scotton (2002) gives a simpler distinction: “content morphemes participate in the thematic grid of an utterance by either assigning or receiving thematic roles, but system morphemes do not” (p. 16). This is elaborated on with the *4-M model*.

<sup>8</sup>This thesis refers to the 1997 second edition of Myers-Scotton’s 1993 *Duelling Languages*.

<sup>9</sup>Myers-Scotton (1992) is a paper on MLF, whereas (1997) is a book on the subject, the first edition of which was published in 1993. The book makes no explicit mention of (1992), but does state that work on the model began in 1992. This thesis refers to both works, as sometimes definitions are given more concisely in (1992). Myers-Scotton (2002) refers explicitly to (1997) and acknowledges the clarifications from the 1993 first edition to (1997).

<sup>10</sup>MLF also describes the distribution of languages in other kinds of CS, which is discussed at length in the Myers-Scotton (1997) afterword as well as Myers-Scotton (2002). However, the focus is on classic CS.

<sup>11</sup>ML and EL are used by Myers-Scotton (1992, 1997, 2002) to refer to the respective codes even if they are not languages, but e.g. dialects.

<sup>12</sup>Myers-Scotton (1997) defines *frame* as “[consisting of] (a) specifications for morpheme order and (b) directions for the realization of system morphemes” (italics original) (p. 76)

<sup>13</sup>Discussing these at length is not pertinent to the current study as such a robust distinction is only necessary to make MLF universal across all language pairs. For a more in-depth discussion, see (1997 p. 99-102, ch. 5: p. 120-162, p. 254-257)

The 4-M model divides all morphemes in all languages into four groups. Content morphemes “are the only morphemes whose lemmas link them directly to speakers’ intentions” and are accessed directly from the *mental lexicon* of a language to convey their conceptual information (2002 p. 17-18). System morphemes, on the other hand, are accessed only when prompted by other morphemes, to add meaning to them. The first of these are *early system morphemes* which become salient as soon as content morphemes, but only in relation to them, such as the English articles. The two other groups, *bridges* and *outsiders* are *late system morphemes*. Bridges add meaning by e.g. relating content morphemes to each other, like the English “of”. Finally, the meaning of outsiders is defined in relation to elements further from them, an English example being verb number congruence (2002 p. 18)<sup>14</sup>

MLF does not, however, define the Matrix Language and Embedded language in terms of system and content morpheme distribution. The System Morpheme Principle can be flouted e.g. with *Double Morphology*, in which case system morphemes from an EL are stored in the same lemma address as a content morpheme, so as the content morpheme is called, the whole lemma is activated (1997, p. 110-112). For example, *Double Plurals* are common in Finnish-English language contact, e.g. the plural “*bootsit*”, [bu:tsit], is formed by affixing the Finnish plural postfix to the English plural as if it were the stem of a Finnish word. A similar process is described by Myers-Scotton (1997) in Bantu languages (p. 190). The same process, among others, can also flout the Morpheme Order Principle, if morphemes in an order that is ungrammatical in the ML are stored in the same lemma. Typically, however, accessing an EL system morpheme (in its own lemma address) or using EL word order results in an *EL island* (Myers-Scotton 1992, p. 23, 1997 p. 77-78). An EL island is a constituent whose morphosyntactic frame and morphemes are provided entirely by the EL. This is called the *EL Trigger Hypothesis*, Myers-Scotton 1992, p. 26. The *Blocking Hypothesis*, on the other hand, posits that Some EL content morphemes may also trigger an EL island. This can happen, for example, if they are realized as system morphemes in ML morphosyntax (1992 p. 25, 1997 p. 120-122). The third and final constituent is the *ML island*, which consists entirely of ML morphemes and, naturally, follows ML morphosyntax (Myers-Scotton 1992, p. 23, 1997, p. 77-78).

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<sup>14</sup>Here the discussion is simplified. In fact the morphemes point to lemmas which realize them, and those lemmas call the morphemes accessed later. For a more in-depth discussion, see Myers-Scotton (2002)

In the main text of Myers-Scotton (1997), she posits that *optional EL islands* may occur, and that the *EL Implicational Hierarchy hypothesis* (p. 144) would predict their relative frequency. In the 1997 second edition afterword, however, she goes back on this, hypothesizing that all EL islands are in fact obligatory, and caused by lack of congruence between the EL lemma and ML counterpart (p. 250-252)<sup>15</sup>. While most of the code-switching in the data of the current thesis is content morphemes from the EL, English, it is relevant to describe the restrictions MLF places on segmental switches for an accurate comparison to the other approaches covered.

As morpheme distribution is unreliable and circular as a definition of ML, Myers-Scotton (1992, 1997) argues that morpheme frequency is the only reliable criterion to ascertain the ML in CS discourse. The ML of a given segment of CS discourse is thus the one with the most morphemes, not counting “cultural borrowings for new objects and concepts”<sup>16</sup> (1997, p. 68). Frequency is also the only criterion that loans or borrowings, or at least *core loans* can be differentiated from *CS forms* in MLF (1997 p. 174-176).

Myers-Scotton (1992 and 1997) divides *Borrowed forms* into two groups. *Cultural loans* are material taken from another when there is a linguistic gap in a language; the recipient language has no term for a concept that a donor language does. *Core loans*, on the other hand, are loanwords that have synonyms in the recipient language. One motivation for such borrowings is connecting with a more prestigious language, which also motivates integrating the borrowing to the recipient language as little as possible (1997 p. 177-178). Myers-Scotton posits that the primary gateway for such borrowings is through use in CS mode. According to MLF, most EL content morphemes, as well as some EL system morphemes, are available alongside their ML counterparts in the construction of ML + EL constituents. Thus, words from the EL can be used in code-switching before they are established as loans in the ML. This is supported by the typically slower increase in frequency of core loans; they are first used only by small amounts of codeswitching bilinguals before entering the mental lexicon of the ML and monolingual ML speakers (1997 p. 174-176). This leads to a situation where the least morphosyntactically integrated established borrowed forms are less integrated than some CS forms. A CS form may, for example, receive bound ML morphemes, which may necessitate other ML

<sup>15</sup>This discussion is continued in Myers-Scotton (2002), but is beyond the scope of the current thesis.

<sup>16</sup>Myers-Scotton refers to Lüdi, Georges, 1983: Aspects énonciatifs et fonctionnels de la néologie lexicale, *Tranel* 5, p. 105-130 on neologisms. This is an interesting distinction given the data in the current thesis, but still results in Finnish as the ML.



features<sup>17</sup>. Single-lexeme CS forms almost necessarily undergo some integration because the grammar governing ML + EL constituents where they happen comes from the ML (*ibid.* p. 181).

Typically, however, CS forms are less integrated than borrowed forms from the same language (*morphological integration hypothesis*, 1992 p. 34, 1997 p. 190). Some CS forms even appear as *bare forms*, content morphemes without system morphemes from either the ML or EL, even if such would be used in the grammar of one or both of them. Myers-Scotton theorizes that this is due to a lack of congruence between the EL lemma and the corresponding lemma in the ML, which in turn locally blocks some of the grammatical instructions of the ML (*'bare form' hypothesis*, 1992. p. 33, also *strategy 3*, 1997 p. 92-98). EL grammar is already blocked by the principles of the ML hypothesis, so the forms appear with no grammar at all.

Even though CS forms *tend* to be less integrated than borrowed forms, the aforementioned processes make it possible for both a borrowed form and a CS form to be either maximally integrated or not integrated at all, or anything in between. CS and borrowed forms also often go through the same processes of morphosyntactic integration. As some borrowings also appear to enter the recipient language through CS, Myers-Scotton argues that borrowing and CS are not completely separate processes, but rather two ends of a spectrum (1992 p. 28), and that distinguishing between the two is not fruitful, especially so in the case of content morphemes (1997 p. 163). Even so, whether or not a form *is* a borrowing does affect its distribution in CS discourse, even as described by MLF. A borrowed form can be accessed as an ML lemma, and is therefore available even in ML islands, or in ML + EL constituents even if it is a system morpheme (1997 p. 182, 192, 205).

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<sup>17</sup>The Finnish *epenthetic i* on consonant-final loans (VISK § 151) is such a feature, which is used both to integrate the basic forms of foreign nouns in Finnish as well as facilitate their inflection even if their basic form does not have the final vowel. Even though VISK (§ 151) mentions only borrowings, the same happens also to borderline and clearly CS forms in the data, and the inclusion of a vowel in the stem of a consonant-final noun is almost always necessary for Finnish inflection to be possible. This follows the predictions MLF makes.

### 2.2.2 Other Approaches

Most research agrees on the general definition of codeswitching<sup>18</sup> as roughly the use of material from several languages in the same conversation<sup>19</sup>. However, the exact meaning of the term has undergone great change over the course of its history, and has been a subject of fairly recent debate<sup>20</sup>. One such change is described by Heller (1988) in the introduction to *Codeswitching : Anthropological and Sociolinguistic Perspectives*:

*The study of codeswitching has moved away from typological or deterministic models relating **form** and **function** to each other and to **context**, and towards a dynamic model in which codeswitching can be seen as a resource for indexing **situationally salient** aspects of context in speakers' attempts to accomplish interactional goals. The study of codeswitching, then, becomes a means of understanding how such verbal resources, through use, acquire **conventional** social, discourse or referential meaning. (p. 3-4, ephasis mine)*

Reading this decades later, we know that models of the form and function of CS, typological, deterministic or otherwise, such as Auer (1999) and Myers-Scotton's MLF (1992, 1997, 2002), have been studied since 1988. However, the above quote touches on some of the most enlightening divides in defining CS. Four distinctions, requirements that must be met to constitute CS, arose as pivotal in my comparison of the approaches of Poplach & associates, Myers-Scotton and Auer: **1. the length** of switches, **2. the function** of switching, **3. the competence** required and finally, somewhat related to the penultimate, **4. the degree of integration**<sup>21</sup> exhibited by switches, especially phonologically and morphologically. Sections in the above quote referring to each of these distinctions have been emphasized in bold. Distinctions quoted verbatim are similarly emphasized throughout this subsection. That is not to say that these distinctions encompass all the interconnected and contradictory distinctions made to define CS. They do, however, highlight most of the differences of the approaches I reviewed in this study. I will now discuss these distinctions in the same order as listed above.

Heller's (1988) reference to moving away from models dictating the form of code-switching also alludes to the allowed length of a switch. According to

<sup>18</sup>also written as "code switching" or "code-switching"

<sup>19</sup>e.g. Sankoff & Poplack 1981: "alternating use of different languages in a given situation" (p. 3), Heller 1988 "use of more than one language in the course of a single communicative episode" (p. 1), Matras, Yaron 2009: "alternation of languages within a conversation" (p. 101)

<sup>20</sup>This can be seen very clearly in Auer (1999) where in conjunction with most references relating to his use of the term, as well as the terms language mixing and fused lects, he has to mention which term in the referred work corresponds to which in his.

<sup>21</sup>Sometimes also called *assimilation*, or *conforming* [to the rules of the ML]

Myers-Scotton (1997), from the 1970's to 1980's, the consensus was that only longer switches constituted "true CS" (p. 23-24). One term that has been used to refer to single-word insertions that do not meet the criteria for either borrowings or CS is "*nonce borrowing*", which e.g. Auer (1999) uses, and that Matras (2009) attributes to Poplack, Sankoff & Miller (1988), a paper concerning French-English borrowing in Canada. Much of what Poplack, Sankoff & Miller (1988) consider (nonce) borrowing would be defined as CS according to MLF. The distinction given by Poplack et. al. (1988) is that "[in borrowing], an L<sub>2</sub> lexical item submits to L<sub>1</sub> morphological and syntactic rules in L<sub>1</sub> discourse, [whereas in code switching], each monolingual fragment is lexically, morphologically, and syntactically grammatical in one language"<sup>22</sup> (p. 93). "Nonce borrowing", per se, was used to refer to loans that only appeared in the data used once. As Myers-Scotton (1997) also acknowledges, some research allows single-word CS, but also classifies some EL insertions as (nonce) borrowing (e.g. Auer 1999 p. 317, 327)<sup>23</sup>. On the other hand, some research has classified single-word insertions, provided that they are *unassimilated*, as CS since the 1970's (Myers-Scotton 1997 p. 21).

This need for distinction between borrowing, nonce borrowing and insertional CS arises from another difference between MLF and Auer (1999). Auer (1999) uses CS as a more exclusive term than most contemporary research, or his own prior research. Auer (1999) calls language contact code-switching if the change of language itself is *functional*<sup>24</sup>. Single-word insertions from an EL are only considered CS by Auer (1999) if the switch itself carries local meaning. Otherwise an EL insertion in a segment of CS is considered a (nonce) borrowing. According to Auer (1999), alternational CS is always an attempt to change the ML (see chart on p. 328), or as he sometimes refers to it, the *language of interaction*<sup>25</sup>, and is always met with a correction. Insertional CS is also defined in association with competence: "participants show an orientation towards the '**other-languageness**' of the insertion, either by deriving some particular interactional meaning from it, or by relating it to the **speaker's (momentary) incompetence** in the established language-of-

<sup>22</sup>More on Sankoff & Poplack (1981) and Poplack, Sankoff & Miller (1988) compared to MLF later on in this subsection

<sup>23</sup>Myers-Scotton (1997) does not, naturally, refer to Auer (1999) specifically, but refers to contemporary and prior research in general.

<sup>24</sup>Verbatim, "used as a contextualization cue (i.e., that it is 'functional')". Later discussion makes it clearer that other functions besides contextualization are possible.

<sup>25</sup>Interestingly, Auer (1999) credits Myers-Scotton (styled as "Scotton, Carol Myers" by Auer 1999 and Myers-Scotton 1988 herself) with coining the term ML (Auer 1999, p. 316). Myers-Scotton (1997) attributes coining the terms ML and EL, and using them as she does, to separate sources from the 1970's and 80's (p. 20).

interaction” (p. 314, emphasis mine). As Auer’s (1999) definition of the term CS is so different from those of Poplack & associates or Myers-Scotton, this thesis refers to it as cCS where there is ambiguity.

Auer’s (1999) definition is especially strict because he relegates some of what Myers-Scotton describes as CS to two other (re-)defined terms, *language mixing* (LM) and *fused lect* (FL). Language mixing, according to Auer (1999), is language contact where a clear ML cannot be ascertained, instead the language from which grammar and vocabulary are derived changes dynamically and, as Auer sees it, independently of each other. Most importantly, changing language has no local meaning, resources from both languages are simply available at the same time (p. 315). Myers-Scotton (1992, 1997, 2002) would define this as CS, and the principles of MLF appear to govern the short EL islands attested in his examples<sup>26</sup>.

Fused lects, on the other hand, give different languages different tasks. Typically, one may provide the nouns and the other verbs and grammar, but e.g. connectives like “but” from either languages may be used as graded synonyms, the word from language A denoting a stronger relation than that from language B (p. 326-327). As MLF is mainly concerned with code-switching, fused lects have no direct parallel in its terminology. However, Myers-Scotton (2002) discusses creoles, split languages and (lexical) borrowing in more detail in. Indeed, many of the varieties Auer (1999) lists as examples of FL are already known as creoles and pidgins (e.g. p. 325). Note, that Myers-Scotton’s definition of *split language* in (2002) is closer to Auer’s (1999) definition of Language Mixing.

Auer (1999) also proposes that diachronic change from one form of language juxtaposition to another in a community typically only happens in the direction cCS → LM → FL. Transitional phases with e.g. locally meaningful cCS and LM with access to words and formulations of both languages coexisting may be present, however. One argument he gives for this unidirectionality is that once a bilingual community is formed, it may wish to set itself apart from speakers of both of their languages by using an LM code unintelligible to others<sup>27</sup>. Arguments for LM → FL are weaker, and Auer himself acknowledges that they resemble educated guesses (p. 324). However, he points to e.g. theories on the undocumented histories of creoles formed from European colonizing languages and African or American

<sup>26</sup>A more exhaustive reanalysis of Auer’s data is beyond the scope of this thesis

<sup>27</sup>cf. Myers-Scotton (1988) on CS between English and Swahili as unmarked choice for Luo-speaking students in a university setting (p. 163). Myers-Scotton (1997) also hypothesizes generally that CS may be the unmarked choice in casual in-group interactions between peers who want to associate with the identities presented by all of the languages present (p. 213). This describes the data of the current thesis rather well.

aboriginal languages. Auer (1999) also allows higher-order CS between LM and FL codes as well as more “traditional languages” (p. 318), arguing that the definition of “code” must always come from the speakers’ notions, not the researcher, however “objectively” similar or dissimilar the two codes may be (p.312).

Auer (1999) and Myers-Scotton’s MLF thus differ in three of my four distinctions. Auer classifies short frequent switches as LM, not CS (**length** of switch). Auer requires the switching of a language to have a function in itself to constitute cCS (**function** of switch). Finally, he argues that alternational CS is seen as “momentary incompetence” in one of the languages (**competence** required for switch). If we take Auer’s LM and cCS as roughly representative of what MLF defines as CS, Auer also places constraints on whether or not there is a ML, whereas CS as described by MLF always has a ML. Note, however, that in the 1997 afterword, Myers-Scotton allows for a *Composite ML* resulting from insufficient competence in any of the languages, thus requiring structure from several sources (p. 257)<sup>28</sup>.

The fourth and final difference, that of **integration**, divides MLF from Poplack & associates than Auer (1999). Sankoff & Poplack’s *free morpheme constraint* (p. 5) states that a switch may not occur between a bound morpheme and a lexical form unless the lexical form is *phonologically integrated* into the language of the bound morpheme. The *equivalence constraint* (p. 5), on the other hand, requires that the order of constituents is grammatical in both languages on either side of a switch. That is to say, “[CS does not] involve deformation or replacement of parts of the grammar or lexicon of the language(s) involved”; the resources of both languages are not only *available* simultaneously, but the grammars of both are *in effect* at the same time at the point of the switch in Sankoff & Poplack’s (1981) model. This can be both more restrictive and more permissive than MLF, depending on the circumstances.

Myers-Scotton (1997) dedicates several pages to explicitly discussing the failings of these constraints (p. 26 onwards). For myself, I do find Sankoff & Poplack (1981) somewhat contradictory with Poplack, Sankoff & Miller (1988) on the definition of code-switching; the latter claims that each monolingual fragment in CS is to be lexically, morphologically, and syntactically grammatical in one language, whereas the former claims that surrounding the switch, constituents should

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<sup>28</sup>for more discussion on related issues of convergence and attrition, see the Myers-Scotton (2002) chapter (p. 164-232) on these phenomena. By (2002) she appears to also acknowledge that several languages in which the speaker is proficient in can provide the structure

be grammatical (or at least grammatically ordered) in *both*. The crucial, but unspoken, distinction that Poplack, Sankoff and Miller make in these works does indeed seem to be, as Myers-Scotton (1997) claims, the length of the form being a single word. Poplack et al. (1988), for example, mention in passing that single-word CS is “theoretically possible” (p. 53)<sup>29</sup>, before stating that only single-word L<sub>2</sub> content was analyzed in the paper as it focuses on borrowing. This is confirmed in Poplack et al (1987), which brushes off English forms inflected in Finnish (cf. the current study) in its data as nonce loans (p. 43-47), exactly what Myers-Scotton (1997) accuses “Poplack and his associates” of.

As is apparent from the circumspect wording of the constraints, Sankoff & Poplack (1981) reject the notion of all CS having an identifiable “*base language*” and “*language of the switch*”, instead positing that at times, the rules to construct *a constituent* may at times be drawn from either language (p. 11-12), their interaction forming in essence a CS grammar (p.10), which forms grammatical monolingual sentences in either language, as well as only the allowed code switches (e.g. p. 36). Despite Myers-Scotton’s criticism of the model, the resulting analysis of a constituent is somewhat similar. Sankoff & Poplack (1981) differ from MLF more on the restraints they place on switching than the grammar that a constituent follows (cf. EL and ML islands in MLF). Interestingly, Heller (1988) doubts the existence of a CS grammar, and acknowledges that CS may not be distinguishable from borrowing *on purely formal grounds* (p. 11), and that *universal typological characteristics* distinguishing CS from other language contact phenomena for any pair of languages may not exist (p. 15).

As stated before, the definition of CS has been the subject of much debate in the field. MLF was chosen for the current study over the definitions of Auer (1999) and Poplack & associates because it describes the data much better. This is discussed more thoroughly in section 4.4.1. However, the crux of the other approaches’ failings to describe the data of the current thesis is that they place restrictions on CS that appear arbitrary in this context, and relegate what does not conform to these restrictions as special cases of borrowing. The term “nonce borrowing”, especially, referring to rare insertions from another language, constructed on the fly, fails to describe the very frequent code switches in my data that flout several of the restrictions placed by both Auer and Poplack & associates.

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<sup>29</sup> This is clarified in an endnote to refer to at least single-word L<sub>2</sub> insertions “of grammatical categories not susceptible to borrowing” (p. 99)

### 2.3 Status of English in Finland

An overview of the status English enjoys in Finland is necessary to provide context for the discussion of video games in English learning in the following subsection. This is significant to the present thesis because many past studies into language contact between English and Finnish in a video game context have concerned minors. While Finnish adults playing boardgames or playing alone have been studied, this is the first study of Finns, who are both past the age of compulsory education and have completed their compulsory education, playing a multiplayer video game. As such, my focus is less on the pedagogical advantages of gaming and more on the linguistic phenomena present in such discourse.

English is the most popular (i.e. studied by the most students) non-Finnish language and the most popular foreign language taught in Finnish schools (Official Statistics Finland, henceforth OSF, 2016). Education is compulsory in Finland for the first nine grades, or for ten years counting from the beginning of comprehensive education (OSF a). This education is offered generally in Finnish (for 95% of the population) or Swedish (5%), but is also offered in Romani or Sami to official minority populations (Finnish National Agency for Education) A compulsory non-native language, A1, other than the language of instruction, begins at grade 1-6, and another compulsory language, B1, at grade 7-9. Additional languages, A2, A3, B2, etc. may be studied alongside these. Typically A1 begins on 3<sup>rd</sup> grade and B1 on 7<sup>th</sup> grade. After compulsory comprehensive education, students have a choice of upper secondary general school education<sup>30</sup> or vocational education (*ammattikoulu* or *yrkeskolan*, henceforth *vocational school* or *vocational education*). Students may begin additional language studies in secondary education (OSF a).

For example, A1 may begin on grade 3 and B1 on grade 7. One or two additional languages, including ones started in secondary education, are common. Learning both Finnish and Swedish at some point on grades 6-9 is compulsory, and the second national language is mandatory in the matriculation examination, the first mandatory national test, taken at the end of gymnasium (Leppänen, Pitkänen-Huhta, Nikula et al. 2011 introduction, Finnish National Agency for Education 2012).<sup>31</sup>

In 2015, a total of 66% of comprehensive school students studied

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<sup>30</sup> *lukio* in Finnish or *gymnasiet* in Swedish, henceforth referred to as *gymnasium*. All terminology given first in Finnish, then in Swedish unless otherwise specified.

<sup>31</sup> The terms *grade*, *gymnasium* and *vocational school* used in this study as defined by OSF (OSF a).

English as an A language on grades 1-6, most as A1 (OSF 2016), and a total of 99.5% of students studied English as an A or B language in grades 7-9. Note that Finnish students choosing to study English as A1, the first compulsory language other than their mother tongue, is overwhelmingly more common than any alternative, despite Finnish and Swedish being the two official languages, and hence more likely candidates as foreign mother tongues of other people in their environment. OSF does not provide statistics for vocational education, but in 2015, 99,2% of completers<sup>32</sup> of gymnasium had studied English<sup>33</sup>.

The status of English as the most prominent foreign language in Finland is not a development of just the current generation. In the introduction to the Finnish-language compilation of articles *Kolmas kotimainen: Lähikuvia englannin käytöstä Suomessa*<sup>34</sup> (Leppänen, Nikula & Kääntä 2008), Leppänen and Nikula give an overview of its history and its prominence in Finland as per the findings of the *English voices in Finnish society* project. Documents of English being taught in Finnish public education extend at least as far as 1918. As early as 1967-1988, over 70% of pupils in Finland studied English (ibid. p. 17-18). They also raise the point that unlike in many other countries, films and series are not typically dubbed in Finland, and have instead been subtitled since as early as the 1960's (ibid. p. 20). Because of this, Finns have been exposed to English spoken by native speakers in a large portion of entertainment, in addition to it being a commonly taught language, for generations.

## 2.4 Dota 2

In this section, I give a general overview of the nature of the videogame that is played in the recordings that make up the data of the present study. I briefly cover its history and prominence in the current videogame market and e-sports scene, as well as giving a condensed account of its game mechanics. This information is necessary to introduce the game to readers who are unfamiliar with it, as well as to introduce the relevant terminology in one place and in a logical context. This section can be referred back to as needed, instead of explaining the features of Dota 2 as they come

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<sup>32</sup>Terminology *sic* from OSF

<sup>33</sup> It is possible for the percentage in gymnasium completers to be lower than in comprehensive school in the same year because these students finished comprehensive school some 2-4 years earlier. However, these numbers have been above 90% since 2010.

<sup>34</sup>my translation: *The Third Domestic [Language]: Closeups of the Use of English in Finland*



up in analysis.

Not all of the elements of Dota 2 discussed here are necessarily relevant in and of themselves to my analysis, but some understanding of all of them is necessary to understand those elements that are. I am also forced to refer to some elements in relation to others before I get to explain them at length. This is the case e.g. with towers and lanes being referred to in the minimap layout before explaining what their function is in the game later on. Those terms that are used later on in the study are listed and described briefly with references to their explanation in the body text in appendix 7.1.3 Dota & Gaming

### 2.4.1 History

Dota 2 (named after the mod *Defence of the Ancients*, commonly abbreviated and rendered as *Dota*, *DOTA* or *DotA*) is a videogame of a genre commonly labeled as *Action Real Time Strategy* (ARTS, often also abbreviated as “*action RTS*”) or *Multiplayer Online Battle Arena* (MOBA)<sup>35</sup> (Dota 2 wiki, *Dota 2*. Funk 2013). Dota 2 is the second most popular ARTS game on the market, behind League of Legends (LoL) with more than eight times the number of players compared to Dota 2 as of 2013 (Funk 2013).

The ARTS genre has its origins in mods (user-made modifications to existing games) to two Blizzard games, *Starcraft* (a sci-fi real-time strategy game published in 1998) and *Warcraft 3: Reign of Chaos* (the third, 2002, instalment of Blizzard's *Warcraft* series of fantasy real-time strategies). Blizzard's games are especially conducive to modding, as the publisher usually includes tools in the game for the creation of *custom maps* (Funk 2013). These maps can range from new missions to completely different game modes. It was custom maps<sup>36</sup> like this that lead the development of the ARTS genre. The *Starcraft* mod *Aeon of Strife* already displayed most of the typical characteristics of an ARTS game, but it did not become as popular as the *Warcraft 3* mod *Defence of the Ancients*. The first significant boom

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<sup>35</sup> MOBA seems to be the more common name for the genre, but Valve, the developer of Dota 2, refers to the game as an ARTS since the term MOBA was originally coined especially for its competitor, Riot games' League of Legends (LoL). However, there is no general agreement as to what the genre should be called (Funk 2013). Since this thesis is concerned with Dota 2, I use the term ARTS.

<sup>36</sup> While these user-made modifications to the *Warcraft* series were called custom maps after the terminology in the map editor, similar modifications to games in general are called mods. Both terms are technically correct, and this study does not differentiate between them in the case of the mods that lead to the development of the ARTS genre.

in popularity came when a third mod, DOTA Allstars, was released for *Warcraft 3's* expansion *The Frozen Throne* (2003)<sup>37</sup> (*ibid.*). Dota 2 was released in 2013, although it was in closed but widely available beta since 2011 (*ibid.*). In part due to their origins in user-made, essentially fan content, both LoL and Dota 2 are Free-to-Play (F2P) games, with only optional micropayments. Micropayments offer cosmetic items in Dota 2 and LoL, as well as some playable heroes in LoL, but neither game gives paying players a clear gameplay advantage over those who choose not to. Being free allows these games a large and changing playerbase, as players need not invest anything aside from their time into playing the game.

ARTS games have been a major moving force in electronic sports (e-sports) in recent years. Prize pools for the biggest tournaments range in the millions (US dollars), with millions of spectators on-site and watching remotely via internet video streaming, and game companies make hundreds of millions (US dollars) (Wingfield 2014). Robert Morris University, a college in Chicago, Illinois, even offered a sports scholarship for LoL players in 2014 (Tassi 2014)<sup>38</sup>. Dota 2 is the most popular game on the games distribution platform Steam, and LoL has been described as “arguably the most popular game in the world” (Funk 2013). The fact that these games are so important to the gaming scene at present, and so prominent in the videogames market and especially in the rising market of e-sports, makes ARTS games an especially interesting subject of study.

### 2.4.2 Gameplay

In this subsection, the terms are those used in Dota 2, but the broad principles are the same across the genre. Some other details, such as the number of towers on a lane or the number of heroes to choose from are naturally also different in other ARTS games. Note, that not all the terms are present anywhere in the game itself, but have instead been coined by the Dota 2 player community.

Academic documentation of the game is unavailable and the Dota 2 wiki is an unreliable and changing source<sup>39</sup>. Additionally, the wiki is mainly written

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<sup>37</sup> Allstars was also the debut of the developer known only by his pseudonym Icefrog. He was later hired by Valve to lead the team behind Dota 2.

<sup>38</sup>The RMU team was formed to compete in the Collegiate star league, sponsored by LoL’s publisher Riot Games and already featuring teams from colleges around the USA, but it was the first team to be officially part of its school's sports programme

<sup>39</sup> This is by definition and design. Not only is the bulk of the Dota 2 wiki, as most wikis, free to edit by anyone who creates an account, but it is also constantly updated to reflect the constant updates to the game. Because of this, articles may be restructured and no longer contain the particular

to cater to readers who have at least some prior knowledge of the game, and because of this, it does not describe the most basic aspects of the game in great detail. Instead, I consulted my study participants for the most rudimentary aspects of the game, as well as drawing on my own tacit knowledge of some common features in videogames. All of the information below would, however, be repeatably verifiable by playing the game or consulting the source code. Unfortunately, neither of these are any more useful as direct sources for the present study, as Dota 2 is not only constantly updated, but impractical to reference, and the source code is not publicly available.

The basic premise of all ARTS games is pitting two teams of characters controlled by players against each other in a match to destroy critical structures in the other team's base, while defending those on their own side. In Dota 2, the two teams of five *heroes* start in their respective *bases*. Behind the critical structure, or the *Ancient* (noun), is the *fountain* (known among players also as *pool*), where the heroes appear, or *spawn* at the start of the game and *respawn* after a short delay whenever they get killed (or *ganked*<sup>40</sup>). The sides in Dota 2 are called *Radiant* and *Dire*. Which team the player is in makes little difference, aside from minor asymmetries between the two sides of the map. It is more important who is in the team with them. Dire is on the top of the minimap and Radiant on the bottom. This is shown on figure 1 of the minimap below.

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information cited from them. I do, however, use the wiki to support other sources, or in the absence of such. (For more information on most of these terms. See e.g. Dota 2 wiki, *Glossary*; Dota 2 wiki, *Dota 2* and Funk 2013)

<sup>40</sup> *Ganking* is an imperfect synonym to killing a player character. Usually a kill referred to as a gank is planned and orchestrated by several players, commonly by luring the victim into a one-on-one duel with one hero, with others waiting or joining in ambush. A computer-controlled non-player character (NPC) such as a *creep* (introduced later on in this section) killing a player would not typically be referred to as a gank.

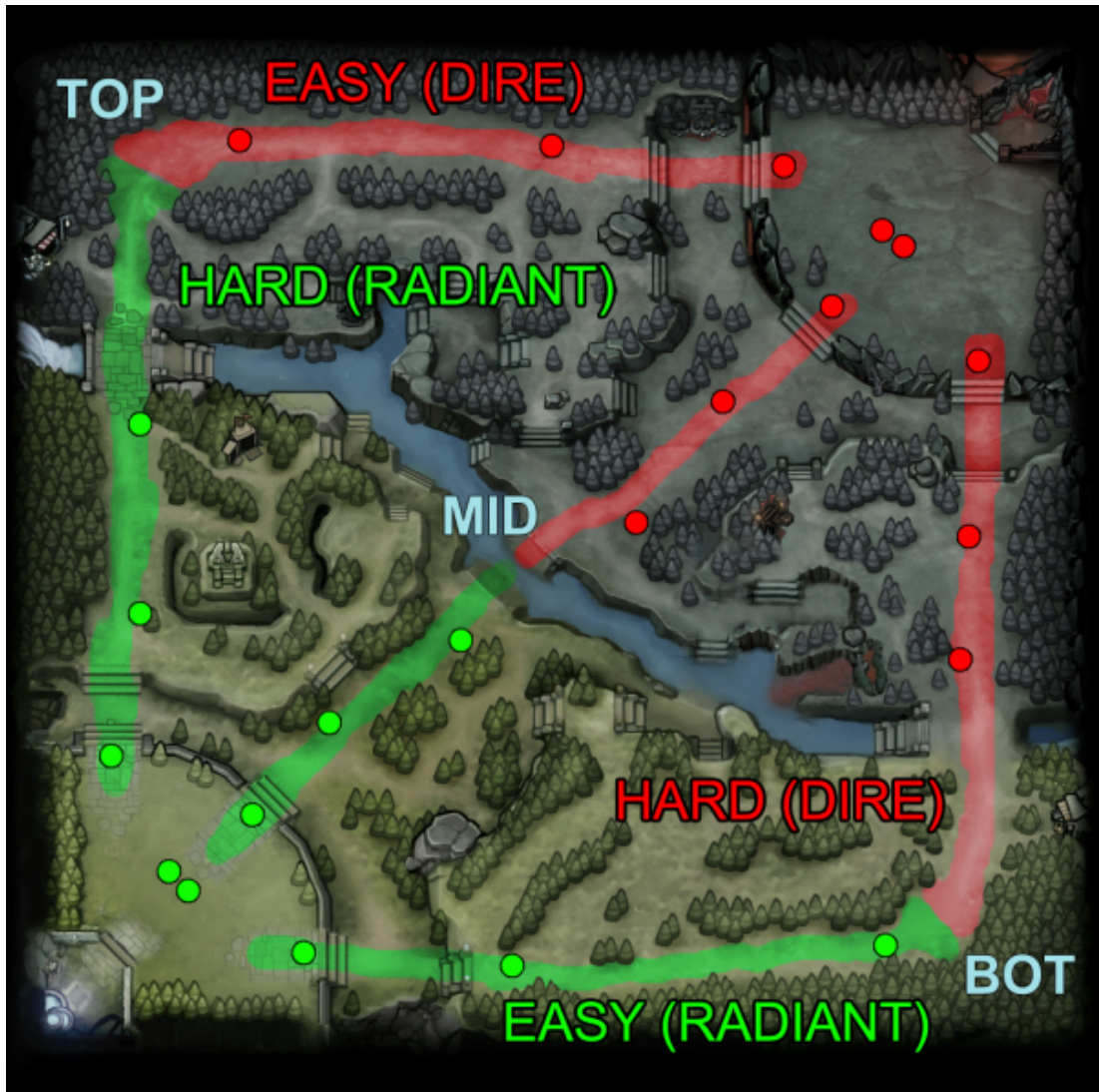


Figure 1: The minimap

Red denotes the Dire, green the Radiant. Team-colored blips indicate the placement of towers. Lane names by orientation on minimap in gray, by relative orientation to bases in team colors<sup>1)</sup>

There are currently a total of 113 heroes in the game (Dota 2 wiki, *Heroes*<sup>41</sup>), each with their own characteristics. The heroes played on each match are chosen before it begins. The details of how this is achieved depend on the *game mode*. Heroes are divided by *role* for classification. For example, *support* heroes, as the name implies, help allies but are not necessarily very effective at harming the enemy on their own, while *carries* start out weak, but become the most powerful heroes in the late game (if allowed to progress sufficiently). *Carrying* is also used as a verb, both to refer to a powerful hero doing the bulk of the work in the late game, and the rest of the team covering for a weaker hero. The latter sense is also called *babysitting*. A single hero can have several roles, so not every role describes the

<sup>41</sup> Accessed 3.5.2017

whole playstyle of a hero, and indeed, many heroes can be played several ways. *Initiator*, for example, is a role excelling in engaging enemies in combat and keeping them engaged, but not necessarily very powerful alone. A hero that is only good at initiating would not be very useful at all. In addition to the official roles listed by Valve, there are unofficial roles discussed by the community. These include sub-roles such as *hard carry*, a “true carry” that is all but useless to begin with but becomes extremely powerful in the late game and *soft carry* (also *semi-carry*), a hero with a less pronounced carry progression, being somewhat more useful to begin with, but either peaking earlier or not being as devastating as a true carry. Choosing an effective combination of heroes is a major part of the strategy involved in Dota 2.

Other hero classifications have more direct ramifications in gameplay. Heroes are divided into *strength*, *intelligence* and *agility heroes* based on their *primary attribute*. Some game modes randomize a set of heroes for the player to choose from based on this classification. e.g. *Single Draft* randomizes one hero with from each of the primary attribute groups. Even more importantly, some heroes’ attacks are *ranged*, others *melee*. Melee attacks connect instantaneously, whereas ranged attacks launch a projectile that takes time to travel to the target, depending on the projectile speed (which depends on the particular ability or attack) and the distance between the hero and the target. Ranged attacks and abilities may *miss*, which happens if a target turns *invisible* or *blinks* using an *ability* (all of these terms explained further in this section)<sup>42</sup>. Attacks also have a small random chance to miss if the target is at higher elevation, *uphill*. However, all attacks have a *range*, a certain distance at which they may be used, and a few melee attacks that deal their damage instantly have a longer range than some ranged attacks that only deal damage once the projectile has had the time to travel to the target.

Heroes and other *units* (such as *creeps* and buildings, which are introduced further) also have a *vision range* which they share with allies. Essentially, every player can see whatever every other player in the same team can, and every player can see everything in the vision range of every allied unit. Elevation differences also restrict vision. Areas not covered by the vision of a friendly unit are hidden by the *fog of war*; they are shown darkened, and the game does not show units in these areas.<sup>43</sup>

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<sup>42</sup> Most ranged projectiles can also be *disjointed*, which means a homing projectile stops tracking its target and never connects. This happens with some abilities (more on these further on), mainly if an ability causes the target to move instantaneously or quickly to another place or to become invisible.

<sup>43</sup> However, if a player is attacked from the fog of war, a small area around the attacker is visible for a short time. Some sounds can also be heard from the fog of war if the player’s point of view is positioned so that it’s in range to hear them.

The most common game mode is *All Pick*. It works slightly differently depending on whether the match is *Ranked* or *Unranked* (see the next subsection for more information). In *Unranked* or *normal*, all the players choose heroes simultaneously from all the heroes in the game, the first to pick a given hero gets to play it. In *Ranked*, however, there is first a 15-second *banning phase* during which each player may choose a hero to be banned. The game then randomly chooses half of the heroes voted as banned and removes them from the available heroes for that match. After the banning phase, each team may pick one hero at a time in the *picking phase*, until everyone has a hero. Available game modes are restricted in ranked, while *Captains mode*, in which one member of each team picks heroes for all the others, is typical in tournaments.

During a match, heroes gain *experience points* (*exp*, *xp*, often capitalized: *EXP*, *XP*) for killing each other or weaker computer-controlled units called *creeps*. Going after creeps for xp and *gold* instead of enemy players or other strategic pursuits is called *farming*<sup>44</sup>. After gaining enough exp, a hero *levels up*, or gains a *level*. Leveling up raises the *statistics* or *stats*; *health points*, *mana* and *attributes*. *Health points* (*HP*), also referred to simply as *health*, determine how much *damage* a hero can sustain before dying. Damage and health points are both treated mathematically instead of according to any biologically sound model. However, there may be several positive and negative multipliers used to translate damage to a reduction in HP, such as character-determined resistance to damage types and certain *abilities* and *effects*. Mana is required for using *abilities* (also known as *skills* or *spells*). The third stat are the attributes: *strength*, *intelligence* and *agility*. Each level increases a hero's attributes, by different amounts depending on the hero. In addition to raising the stats, leveling also grants an *ability point*, which can be used to *unlock* an ability or level one (increasing its effectiveness in various ways depending on the specific ability), or to take an *attribute bonus*, a simple addition of two points to each attribute<sup>45</sup>. Each point in strength increases the maximum HP of the hero, as well as the speed at which it regenerates. Each point in intelligence increases the speed at which a hero gains mana (*mana regen*) as well as the amount of mana they can hold in reserve (*mana pool*)<sup>46</sup>. Finally, each point in

<sup>44</sup> Farming in the *jungle* (to be introduced later in the section) is called *jungling*. Few heroes are effective junglers, and this is a role in its own right.

<sup>45</sup> Since gathering the audio data, this has been changed. Instead of a flat attribute bonus, players can now [31.5.2017] choose to unlock *talents* which grant benefits unique to each hero, ranging from additional increases in stats, or improvements to performance traits that may not be otherwise possible to influence directly, such as reducing an *cooldown* (time until it is available after use) of an ability.

<sup>46</sup> As of April 2016, intelligence has also increased the damage output of abilities, although the game refers to them as *spells* here, probably to consistently associate the intelligence attribute with magic.

agility increases a hero's *armor* (how much of damage received is ignored outright) and *attack speed* (how often the hero can perform their basic *autoattack*).

Additionally, each point in a hero's primary attribute increases the damage of their autoattack by one. Some abilities are also affected by attributes, the exact outcome varying on the specific ability.

Units have an *auto attack*, which is the default action taken by right clicking an enemy unit. Typically heroes can autoattack fairly often, more than once a second. Heroes also have at least four *abilities*. Most typically an ability entails an attack that is more powerful than the hero's auto attack, but requires mana and can be used less often. *Nukes*, for example, are simply attacks that deal lots of damage.<sup>47</sup> Other abilities include replenishing or *healing* HP, effects over time that benefit allies (*buffs*) or undermine hostiles (*debuffs*), or more complicated effects such as creating duplicates of a hero, teleporting, switching places with an ally, or disguising as a creep. Most abilities are *active*, meaning they have to be triggered, or *cast* by the player. *Passive abilities* are either triggered automatically by an event, such as the hero receiving damage, or simply always in effect, such as a stat bonus depending on the time of day<sup>48</sup>. Whether active or passive, an ability may also have a *cooldown*, a period of time after it is triggered (or, depending on the ability, after the effect ends, which may be different if it has a *duration*) that has to pass before the ability may be triggered again. Each hero may unlock an especially powerful ability, called an *ultimate ability* (*ultimate*, *ult*) at level 6, and level it to levels 2 and 3 on levels 11 and 16, respectively<sup>49</sup>. Ultimate abilities are often pivotal to playing a given hero effectively and, by extension, winning matches.

In addition to experience, killing enemies gains heroes *gold*, used to buy *items* in *shops*<sup>50</sup>. Items may grant e.g. *passive* resistance to kinds (*types*) of damage<sup>51</sup>, health regeneration (*regen*), or active abilities like those of heroes. Some items are *consumables*, which means they have a limited number of uses after which

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<sup>47</sup>*Crowd control* or *CC* attacks are useful for area denial, e.g. by slowing enemies them down or creating obstacles, or simply dealing damage to all enemies (or in some cases all units) in an area, referred to as *area of effect* damage, or *AOE*. *Damage over time* (*DoT*, *dot*) attacks do not necessarily deal as much damage as nukes right away, but continue dealing damage for a time after impacting the enemy.

<sup>48</sup> The time of day cycles from day to night every four minutes. The difference is binary. Most heroes have reduced vision range during the night.

<sup>49</sup> After gathering the data, this was changed in December 2016 to 6/12/18

<sup>50</sup> There is a shop in either base, in addition to shops on the outermost lanes and a secret shop for either team (although any player can purchase items in any shop) in the forest between the outermost (bot or top) and mid lanes, known as side lane shops. Each type of shop has a different set of items for sale, although the selections overlap.

<sup>51</sup> The source of the damage, whether it be a creep, a hero or a tower, and the exact ability that was used to inflict it, determines its type.

they are removed from the unit's *inventory*. For example, *Shadow Blade* grants the ability *Shadow Walk*, which makes the caster invisible<sup>52</sup> and increases movement speed for a time. Other items which grant active effects include the early-game consumable *Tango*, which allows a hero to destroy a tree or an enemy *ward* to heal itself or an ally, and the late-game item *Aghanim's Scepter*, which has a different complex effect (an extra ability or a permanent buff to an ability, for example) depending on the hero. All heroes benefit from items, but certain items are best suited to certain heroes. Additionally, hard carries especially tend to be very reliant on having powerful items, which means they have to farm a lot in the early and early mid-game to be effective, which in turn takes them away from other endeavours at that stage.

*Wards* are consumables designed specifically to extend a team's vision. *Observer wards* simply grant vision of the area as if a hero were standing there (although wards have their own specific vision range). *Sentry wards* grant any existing friendly vision inside of a radius *True Sight*, which can see invisible units. This radius is smaller than the sight radius of an Observer Ward, and a Sentry Ward only grants a very small sight range of its own for a short time after placing. Both Observer and Sentry Wards disappear, *expire*, after a time.

Although all creeps are computer-controlled, both teams have their own creeps who only attack hostile buildings, heroes and creeps. *Neutral creeps*, or simply *neutrals*, are hostile to all except other neutral creeps. Team creeps spawn and progress towards opposite team's ancient on *lanes*, three avenues of attack, commonly called *top lane*, *mid lane* and *bottom* (or *bot*) *lane*, after their orientation on the minimap. Top and bottom may also be referred to collectively as the *side lanes*. The right lane (facing the opposite base) is also known as the *easy lane* and the left the *hard lane* or *suicide lane* (see Figure 1). The lanes join the bases together and are divided by *jungle* or *forest* which is spotted with thickets of impassable trees<sup>53</sup> with only narrow avenues through them, and *camp*s with neutral creep spawnpoints in the middle. A set of two *barracks*, one for ranged and one for melee creeps is situated at the ends of each lane, in the teams' bases. When a barracks is destroyed, the corresponding creeps on the corresponding lane of the team that destroyed it become more powerful<sup>54</sup>.

Lanes are also guarded by *towers*, two along each lane for either team.

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<sup>52</sup> Some units, such as towers, can see invisible units

<sup>53</sup> Trees can, however, be destroyed or consumed by certain abilities

<sup>54</sup> This may be confusing, as it may appear more logical that destroying a barracks would be detrimental to the quality of the side that loses it instead of advantageous to the side that destroys it.



They use moderately powerful ranged attacks against enemy units in range. Five additional towers are in either base, one at the beginning of each lane near the barracks, and two guarding the Ancient. Each tower except for those farthest from the base is invulnerable<sup>55</sup> until the preceding tower on the same lane is destroyed, and the ancient is invulnerable to damage until one of the two towers guarding it is destroyed.<sup>56</sup>

While this section may be much to take in at once, it only scratches the surface of the complexity of the game. This is why in addition to playing the game, avid players also discuss strategies among friends and on forums. This is called *metagame*, or simply *meta*, and consists of, broadly speaking, strategies, hero matchups, which order to buy items and level skills in (commonly referred to as *builds*, also *skill builds* and *item builds* specifically), as well as the effects recent updates have had to all of this.

### 2.4.3 Matchmaking

In addition to metagame, another element of the game that spans several matches is the *Matchmaking*. Matches can be played in either *ranked* or *unranked* (referred to as *normal* in-game) mode, the difference being that ranked games are subject to ranked matchmaking. In ranked matches, the game uses *matchmaking rating* (commonly abbreviated to *MMR*), ie. player performance data simplified into a single number, from earlier ranked matches to choose which players it puts in the same match. This has an indirect effect on gameplay, as players whose matchmaking scores are too far apart cannot play in the same team in ranked. Players can form a *party* to guarantee that they get placed in the same match on the same side, provided, in ranked, that their MMR's are sufficiently similar. In unranked, the game collects a different, hidden MMR and tries to match similarly skilled teams against each other. However, players parties can join the same team on an unranked match regardless of their hidden unranked MMR. The portion of a team that entered matchmaking as a party is called a *stack* in the community<sup>57</sup>, often in conjunction with the numerical size of a

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<sup>55</sup> Invulnerability e.g. as a characteristic of buildings or an effect of an ability is often shortened to *invuln*

<sup>56</sup> Since recording the audio data, two minor types of building, Shrines and Effigies, have been added to the game in December 2016.

<sup>57</sup> The term "stack" is used in this thesis to refer to this, not other connotations of the noun in e.g. poker, programming or mathematics, unless otherwise specified.

party, for example, a stack comprising a full team of five players is often called a *five-stack*.

In unranked matches players have less to lose outside the match, whereas in ranked a loss will impact negatively on matchmaking score and force the player to play against less skilled opponents. I hypothesize that this makes ranked matches more stressful and influences the discourse. I expect the players who choose to play ranked matches to be more invested in strategy and try to communicate their intentions and suggestions in as clear a fashion as possible. On the other hand, the hectic situation under stress may influence them to prioritize speed of communication over absolute clarity. Similarly, trying to keep the discourse as clear as possible would drive the participants to talk less, whereas unclear situations in a more challenging game against more motivated opponents increase the amount of information that needs to be communicated, which may increase simultaneity at key moments in the match.

## 2.5 Game Studies

Video games are a new, but increasingly popular object of study. Even so, “Game studies” can be interpreted, at the most inclusive, as “studies concerning games” or more inclusively e.g. as “the study of games”<sup>58</sup>. The studies discussed in this section are mainly studies concerning games, not studies of games, as is the present study itself.

Many studies similar to mine have been conducted of minors playing console video games together, such as Piirainen-Marsh (2008, 2010, 2012), Leppänen & Piirainen-Marsh (2009) and Vuorinen (2008), all principally on the same data of Finnish adolescents playing *Final Fantasy X* (FFX, Sony Computer Entertainment 2001)<sup>59</sup>. All of the aforementioned studies except for Vuorinen (2008) are conducted by Piirainen-Marsh either alone or with associates. Vuorinen’s (2008) gradu, on the other hand, was conducted at the university of Jyväskylä, where Piirainen-Marsh works. Piirainen-Marsh (2008) concerns code-switching as a context

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<sup>58</sup>Siitonen (2007) refers to a three-fold classification by Järvinen (2003) into studies of the games themselves; their mechanics, studies of the interaction between game and gamer, and studies of the rich culture surrounding games (as cited in Siitonen 2007 p. 28). Siitonen (2007) cites Järvinen (2003) in an online journal that does not appear to be available anymore.

<sup>59</sup>All of the studies share at least one excerpt with each other, and the FFX and FFX data in Piirainen-Marsh (2012) have the same participants

cue (cf. Auer 1999), and many of its findings are repeated in Piirainen-Marsh (2010)<sup>60</sup>. In the (2010) study, there is also data where the participants play *Halo: Combat Evolved* (*Halo*, Bungie, 2001), but little emphasis is given to excerpts from it. In fact, only one excerpt of *HALO* is analyzed at all, and it is of a conversation before an actual match. Thus, the study does not concern true multiplayer situations. Piirainen-Marsh (2012) reanalyzes the (2008) and (2010) FFX data as well as including new *Final Fantasy IX* (*FFIX*, Square 2000) data<sup>61</sup>. The difference between (2008/2010) and (2012) is the approach: the former are conversation analysis studies, the latter a multimodal study that analyzes the data through participation frameworks. Vuorinen (2008) Studies the same FFX data with a conversation analysis approach and focuses on codeswitching, with many findings similar to those of Piirainen-Marsh. The analysis of the current study may resemble conversation analysis, but no particular discipline of conversation analysis was followed. Furthermore, most of the claims as to what my participants mean in the examples analysed are based on their own testimony rather than conversation analytical inference. Finally, Leppänen and Piirainen-Marsh (2009) study the same FFX data as well as fan fiction<sup>62</sup> stories by young writers based on several *Final Fantasy* titles. They focus on the way language policy is fluidly negotiated in a situation such as gaming where a foreign language is ever-present in an everyday setting. I refer to these studies as the *Final Fantasy studies* or *FF studies* later on in the thesis for brevity.

Despite some differences both in data studied and approach employed, all of the FF studies are very similar to each other as they pertain to the present thesis. Namely, they all focus heavily on Finnish minors playing a single-player game on console while physically in the same space. The only multi-player game data present in any of the studies is not analysed in a situation where simultaneous play and discourse occur. The gameplay was recorded on video with two cameras, one pointing at the game screen and one at the participants. This allows the studies to analyse participants' embodied actions in addition to their verbal discourse, but also to precisely time utterances to game events. They all also focus more on what the participants wish to achieve with discourse choices through relatively few examples, rather than cataloguing all of the phenomena present in the data beyond some generalizations. All of them do, however, list repetition of in-game dialogue as well

<sup>60</sup>(2008) was published in Finnish in a book, while (2010) in English in a journal

<sup>61</sup>The data is likely from the same source. At least, the participants playing both games are the same in the excerpts analyzed closely.

<sup>62</sup>Original, non-canonical stories written by fans, based on a commercial work

as imitation of in-game characters (to various intended effects), anticipating their turns, or both, as some of the language contact phenomena present (e.g. Vuorinen p. 59, Piirainen-Marsh 2010 p. 3025, Piirainen-Marsh 2012 p. 216-217).

Piirainen-Marsh (2012), for example, pays very close attention to how the player and the “co-player” (this is the form in all of the FF studies’ FF data) negotiate choices in game menus, often by reading out the option in English directly off the screen. This is classified as “[the game] as a resource for joint action while managing game tasks”. Similar situations prompt Piirainen-Marsh (2010) to conclude in that the medium of the discourse is not clearly Finnish in a situation like this, as English in the game influences it, but this influence, in turn, is not clearly English, as some elements of English culture, such as the game character Wakka’s vaguely Caribbean accent, are portrayed as “foreign” in a way that is not directly related to their familiarity to the consumer outside of the game world (p. 3027). Interestingly, Myers-Scotton (2002, p. 5) makes a similar argument against claiming that all *language contact* is in fact contact between *speakers*, as some language contact clearly occurs solely by via the sheer juxtaposition of the languages both culturally and in physical space, here (as in the present thesis) through popular media.

Sjöblom (2011) studies somewhat similar data, this time gathered in an internet café, involving somewhat older, but still minor (for one exception) participants from Sweden. The video data is shot with a single camera, positioned in such a way as to give a general idea both of the screen and of the movements of the gamers. The dissertation consists of four constituent studies and involves several games, including the original Defence of the Ancients mod for Warcraft III (see section 2.4.1). The approaches Sjöblom uses are ethnomethodology and conversation analysis. Study II, for example, examines the differences between a discourse situation where an expert instructs a new player in DotA and one where two experts play *World of Warcraft* (*WoW*, Blizzard, 2004)<sup>63</sup> and one of them comments on a perceived mistake by the other. Sjöblom refers to these situations as an *expert-novice dyad* and an *expert-expert dyad*, respectively. He finds that whereas the novice player submits to being instructed and may even request instruction from the expert, an expert is likely to object to being corrected, even by another expert (p. 146-147).

Like Piirainen-Marsh (2012), Sjöblom (2011) pays close attention to the significance of on-screen text in his data, but the focus is somewhat different. For example, one of the participants in the expert-expert dyad berated the other for not

<sup>63</sup>Numerous expansions to the 2004 base game have been released by Blizzard since.

noticing a written message appearing on the screen before a devastating attack in WoW. Sjöblom posits that the function of this is to imply that an expert player of WoW should know to react to the message, and to hold the other player accountable for that competence (p. 150). While Piirainen-Marsh's (2012) participants also strive for a mutual goal, responsibility for the outcome is not enforced similarly. This may stem from the fact that WoW is a multiplayer game and both participants are playing simultaneously, instead of one playing and the other watching like in the FF studies. Sjöblom calls this vigilance to the competence of other players *professional vision* (p. 253). Discussion of the relative merits of gameplay choices are very different in the FF studies; for example, in Piirainen-marsh (2010, p. 251), one participant simply remarks to the other that a certain kind of in-game potion "is good", without explicitly proposing that the other use it, let alone holding him accountable for failing to do so.

Game studies, especially ones on minors, tend to link their findings to language competence and effects on learning. Piirainen-Marsh (2012, p. 197), for example, refers to Salokoski (2005) and Gee (2007). The former is a Finnish study that found a correlation between violent tendencies and what was defined as "problem gaming" in schoolchildren, the latter an American book that lauds the modern videogame as a form of entertainment that harnesses a love for learning inherent in all of us, stimulating it in a way that mainstream pedagogy often fails to. Myllärinen (2014), despite studying an adult gamer, also refers to another learning-related gaming study, Uuskoski (2011), which found a positive correlation between playing videogames, roleplaying games in particular, and english grades in gymnasium.

Myllärinen (2014)<sup>64</sup>, studied codeswitching in *let's play videos* of a Finnish Youtuber playing *The Last of Us* (Naughty Dog, 2013), a singleplayer game, on PC. Again the data contained a video component, like in the FF studies, of both the player and the game, facilitating some analysis of embodied actions, as well as closer analysis of the timing of utterances in relation to in-game occurrences. However, the marked difference here is that a let's play video is specifically intended by the Youtuber to be published and, at least hopefully, viewed by a large audience of strangers, unlike the more private gaming sessions at home, recorded strictly as scientific data in the FF studies or, indeed, the casual gaming sessions similarly recorded by Sjöblom (2011). The Youtuber can also edit their let's play video before publishing it, but a more personal feel without trying to eliminate mistakes is typical

<sup>64</sup>Myllärinen also discusses many of the sources used in the present study, often in more detail.

of the genre (Myllärinen 2014, p. 5). Nevertheless, both the way the game is represented in the video and the angle at which the player is filmed are chosen, not by the researcher, but by the participant<sup>65</sup>.

Myllärinen also finds her informant imitating game characters and even replying to turns, ad-lib and in character, as the character he currently controls. This is similar to some instances of imitation in Piirainen-Marsh (2010 and 2012), However, the instances are far more frequent, the English constituents longer and grammatically more well-formed. Still, Myllärinen's research subject, like Piirainen-Marsh's, displays their opinion of something through deliberately unfaithful imitation. The difference is that where Piirainen-Marsh's (2010) participants e.g. imitate a character's turn with an exaggerated accent to draw attention to voice acting they deem sounds "stupid" (p. 3025), Myllärinen's Youtuber replies to turns by one in-game character by referring to the character he is controlling as "I", but saying things the character would not likely say, such as "I'm right fucking here" (p. 39). At least in these instances, Piirainen-Marsh's participants parody the accent and voice quality, which are also what they display their affect towards. Likewise, Myllärinen's informant parodies and displays affect towards the verbal content of the dialogue. The parody also appears to comment on the illogical nature of the other character's artificial intelligence.

Suominen (2014) studies Finnish adults playing a tabletop role-playing game. His stated approach is sociolinguistic, but his methods have characteristics of autoethnography, as he participates in the games in his data as the gamemaster. Suominen follows Auer's (1999) definitions of CS, LM and FL. The model does not quite fit the data, however, as he notes that functionally, the data is closest to a mixed code, whereas in form, it appeared more like conversational CS (p. 32) The terms he finds most frequently originating from English are very similar to the ones in my data, such as "ekspa" for "experience points". Myllärinen's findings are similar, categorizing the code-switching found into six categories, code-switching in immersive events, gaming-related vocabulary in insertions, repetition of written instructions, imitation of character talk, exclamations and trash talk and metadiscourse. In Suominen's data, once a word of English origin was used, more were likely to follow; the insertional switches were clustered (cf. Myers-Scotton on EL trigger hypothesis, CS as unmarked choice). Use of CS as a context cue was

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<sup>65</sup>Incidentally, compared to recording the screen with a video camera, direct video capture software typically used for gaming Youtube videos actually provides better quality footage of what goes on in the game, though synchronizing it with the video feed showing the player's face is at the discretion, and depends on the video editing skills, of the Youtuber.

present, but did not describe all of the CS present, nor did all CS convey affectation as Auer posits (Suominen 2014, p. 58).

Like Suominen (2014), Piirainen-Marsh (2010) attests to both terminology lifted straight from the game (p. 3027). She also acknowledges that not all CS in her data serves as a context cue (p. 3019). However, a very common situation in which CS is used as a context cue in Suominen's data is signalling when a player is talking in character as their roleplaying character. However, CS was present in situations where this was not the case, and not all in-character lines were uttered in English (p. 34). Citation-like phrase-level CS, however, was almost exclusively a context cue for discussion of the game's rules, typically entailing a direct quotation of a section from the rules (p. 38). Suominen also attested to the participants using both the first and third-person pronouns for their characters (p. 34).

Keating & Sunakawa (2010) make similar observations not only in relation to personal pronouns, but also spatial relations; "here" and "there" more commonly refer to the player's positions in the game world rather than their position in physical space during play (p. 344-345) Their data consists of video recordings of LANparties<sup>66</sup>, one with one further player connected only via the internet. The participants are playing *City of Villains (CoV)*, Cryptic Studios / Paragon studios, 2007), a massively multiplayer online role-playing game that features the players crafting a superhero or -villain with powers of their choosing. Most of their attention was directed at the participants' embodied actions and how that affected the discourse situation. Some of their observations are rather obvious to most gamers, for example, they find that during play, the participants keep their heads and torsos aligned to the screen instead of to the people they are speaking to, interacting instead in the game world, if at all. It is, however, valuable to descriptively report findings such as this, and Keating & Sunakawa interpret this as different norms being in place in the discourse during a game as opposed to face-to-face conversation (p.342).

Keating & Sunakawa compare discourse phenomena present in their gaming data to similar phenomena in more conventional situations from other studies. Namely, they compare gamers reviewing a plan just before executing it to an *approach briefing* in an airliner cockpit (p.339), use of prosodic features such as voice quality to the same in an airline's operations room, and the participants reporting what they are doing in real time to *on-line commentary* during doctor's

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<sup>66</sup>Gatherings where gamers bring their computers and play simultaneously. Named after the fact that before broadband internet, a large function of LANparties was connecting the computers via Local Area Network for multiplayer gaming with a fast connection.

appointments (p.339). One of the differences they find between the discourse in an airliner cockpit or an airline operations room and their gaming data is that they claim that their participants do not have roles assigned beforehand as the professionals in the other studies do. I argue that the situation is different in Dota 2 where heroes are chosen before a match and have specific roles they excel at, such as healing<sup>67</sup>. This is discussed in more detail in section 4.4.2.

Siitonen (2007) studies another MMORPG (massively multiplayer online role-playing game), *Anarchy online* (Funcom, 2001)<sup>68</sup>. His doctoral dissertation, like the present thesis, is an ethnographical study, but not an ethnography. That is to say, his goal is not to generate a deep cultural interpretation of one game's community (Siitonen 2007, p. 30; Wolcott 1995, p. 82). Compared to mine, Siitonen's approach is closer to a classic ethnography, however, in that his methodology included a period of immersion into the playerbase of the game. He focused more on how communities form and evolve in *Anarchy online* and how a player progresses on their "career" as a new player of the game. His methodology did, however, greatly influence mine, especially by introducing naturalistic inquiry to me, as well as encouraging me to give more emphasis to interviewing my informants, not only analysing the data on my own.

### 3 Methods

I begin this section by detailing how I follow naturalistic inquiry in my approach, going on to broadly describe my data and how I selected the set analysed from a larger body of data initially gathered. Finally I describe the transcription and translation practices I used while processing the data and describe how I followed ethnography and autoethnography in practice.

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<sup>67</sup>As do no doubt hero or villain builds in *City of Villains*, but Keating & Sunakawa do not devote much discussion to this and I am personally unfamiliar with the game.

<sup>68</sup>Similarly to Dota 2, *Anarchy online* has been free to play since 2004.



### 3.1 Approach and hypotheses

While ethnography hails from the study of foreign cultures, the principles apply also to my situation. My study is similar to Van Maanen (1982) studying police officers, in that my participants do not represent an alien culture to me, but instead are engaged in a facet of my own culture that I am less knowledgeable of. However, I am even closer to my participants than Van Maanen is to his. as not only do I represent western culture, and Finnish culture in particular, but I also play videogames myself, although not Dota 2. Most of my participants and all of my informants<sup>69</sup> are my personal friends. Indeed, much of the knowledge analogous to that which Van Maanen draws from completing nine months of police academy and “slipping in and out of various research roles” (p. 104) I have gathered over more than a decade of acquaintance with most of the informants, as well as almost a lifetime of experience of videogames and by extension, much of the terminology that is also present in Dota 2. Naturalistic inquiry and Code-Switching were also chosen as the research foci out of necessity, as the data that I collected only has audio, which places an emphasis on studying the language and relying on the informants’ help to decode the situational meanings, whereas most of the other game studies covered in section 2.5 had access to video data, and hence could place some focus on embodied action through conversation analysis and multimodality.

Van Maanen remarks that “to write an ethnography is to distance oneself from the people studied” (*ibid.* p. 139). Even though the present ethnographic study is not an *ethnography* (see Wolcott 1997 in section 2.1) per se, this applies not only to the writing process, but to every aspect of conducting the study. As my objects of study are people known to me and a subject that I spend a lot of time with, video games, to make the process accessible to people who do not necessarily play video games and who are not part of the same social group, I have to distance myself from both of them. I have to explain **understandings** that are obvious to me as **member** of this social group and a frequent player of video games (cf. quote from Gephart in section 2.1.1.). My approach has elements of each of the three kinds of autoethnography Reed-Danahay (1997) outlines: I am a gamer studying gaming language, which has been extensively studied before by non-gamers, or at least without taking into account facts obvious to gamers (like the subtleties of Final

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<sup>69</sup>I use *participants* to refer to all of the players present in my data and *informants* to those whom I also interviewed.

Fantasy games in Piirainen-Marsh's research); and I am a gamer who does not play Dota 2, studying Dota 2 and relying on my informants for expertise on the game.

Knowing the participants personally helps in verifying that this is how the group typically communicates during a match of Dota 2 – the study is naturalistic and studies the situation as it would happen were it not being recorded, without changing anything about the situation<sup>70</sup>. One of the participants simply used the recording function present in the VOIP program they were already using, Mumble. The participants are familiar with the software, so they are aware of the icon in the interface indicating they are being recorded, and indeed, I asked the participants recording to verify the consent of everyone being recorded for my study.

This closeness also makes autoethnographical self-reflection<sup>71</sup> especially important in the present study. On the one hand, studying friends and drawing on personal, tacit knowledge of videogames where academic sources fail makes the study less objective. On the other, years of acquaintance has allowed me to develop a baseline to compare the participants' discourse against, and given me an idiomatic understanding of video game terminology that no amount of rigorous study could recreate<sup>72</sup>. Though I have only dabbled in Dota 2 myself, I have seen it played in LANparties, overheard conversations on it (both in person and via VOIP), it even affects the humor and idiolect of this social group. My experience of this group of friends, this game and gaming conventions in general not only has an inescapable effect on my interpretations of my findings, but is instrumental to the study, providing insight an outsider studying gaming and Dota 2 as a foreign phenomenon and this social group as strangers could not.

In studying personal friends instead of going through an intensive and/or lengthy period of immersion I also follow Crawford's (1996) suggestions; As a member of the social group already, the only way I could embrace the object of my study more would be by playing the game myself and appearing in the data. Unfortunately, the scope of a pro gradu thesis does not allow for me to catch up to the participants' years of experience, although I have played a match or two in the past. Still, the terminology of the game has made its way into my own informal speech too, aided by my playing other games, socializing with the participants and other mutual friends who play Dota 2, as well as planning and discussing the present

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<sup>70</sup>I could, for example, have asked the participants to play particular heroes or prime them to pay attention to a certain term if I wanted to study some aspect in particular instead.

<sup>71</sup>See section 2.1, especially on Bird 1992, Fiske 1990 and Crawford 1996

<sup>72</sup>Lincoln & Guba (1985) list utilization of tacit knowledge as one of the characteristics of naturalistic inquiry (p. 40)

thesis over several years since conducting my bachelor's thesis on a single match of the same game. Therefore in some senses, I am also part of the Dota 2 community.

While the ethical ramifications of understanding the group studied are not as serious in the present study as in the examples in Reed-Danahay (1997) with cultural minorities, they nevertheless exist. For example, knowing my participants to be sensitive of their online privacy, I do not disclose their real names, screen names, or even the screen names of other players mentioned<sup>73</sup>, as e.g. Steinkuehler (2006) does.

Based on my experience of discourse during matches of DotA 2, I expect there to be tangible differences between the discourse during a ranked match and an unranked one. I hypothesize that the participants will compromise amount of information in favour of quality in ranked matches and pay less attention to communication in unranked matches. In unranked matches, I even expect conversations unrelated to the match at hand to crop up, which I don't expect to happen in ranked. I expect English-derived gaming terms or in-game names to be more prevalent than Finnish nouns for the same referents. However, I have observed e.g. intentionally foregrounded direct translations to be used for humorous purposes, so I expect the few Finnish nouns for referents that have a specialized gaming or Dota 2 term to be more prevalent in unranked. I expect Finnish to remain the matrix language throughout the discourse, excepting few and far between alternational code switches (EL islands) of one or a couple sentences. English terms are likely to be phonologically and morphologically altered to conform with Finnish pronunciation and inflection, and be inflected as Finnish words are.

I did not choose the particular terms to study beforehand, but instead saw which arose as pivotal in these particular matches through close listening and transcription, which I in turn supplemented by open-ended interviews (see subsection 3.2.3 on interviews)<sup>74</sup>. This, too, is grounded in previous experiences of discourse during a Dota 2 match; an unlikely situation may make an uncommon occurrence in the game at large, and the terms associated with it, very common in a given match.

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<sup>73</sup>One exception to this was made in the case of an enemy player whose name contained the word "berzerker", because the participants engaged in interesting wordplay on it. The word is common enough in gaming screen names that I deemed it sufficiently non-personifying, a judgement based on the same experience as a gamer that prompted me not to disclose my participants' names.

<sup>74</sup>Lincoln & Guba (1985) also list purposive sampling and outcomes negotiated with the research subjects as characteristic of Ethnography (p. 40-41)

## 3.2 Data

In this subsection, I introduce the data used. This consists of audio data, which was transcribed using the software ELAN, data from interviews conducted over WhatsApp messenger, and publicly available statistics of the matches in question provided by Dotabuff.

### 3.2.1 Audio Recordings

The data analyzed consists of four recordings of the conversation of a stack during a match of Dota 2 over the VOIP program Mumble. Mumble was also used to record the data since it is the program that the participants normally use to communicate while playing the game<sup>75</sup>. Two of the matches are ranked with a stack of three and two are unranked with a stack of four, with a total of seven different participants included. The matches will heretofore be referred to as U1, U2, R1 and R2.<sup>76</sup>

Table 1 below shows which participants participated in which matches, the stack sizes of the matches, their outcome, their length (in hours, minutes and seconds), as well as the word counts of their transcriptions. X represents participation in a match and R that the participant in question recorded the match. Total tallies are also given for the amount of games each participant was present in and the combined length and word count of all the recordings.

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<sup>75</sup>The game also has built-in voice and text chat functionalities, but these are not used in the analysis, as the scope of a master's thesis does not permit analyzing them thoroughly

<sup>76</sup>I originally received more recordings than I ultimately used. I discuss the selection criteria for the data in the following subsection. This follows Lincoln & Guba's characteristic 8, emergent design (p. 41)

	S1	S2	S3	S4	S5	S6	S7	Stack n	Outcome	Length <sup>77</sup>	Word Count <sup>78</sup>
U1 19.1. 2016	X	X	X	X R				4	Win	00:32:48	4981
U2 28.1. 2016		X		X R	X	X		4	Loss	01:02:20	6934
R1 10.4. 2016		X R				X	X	3	Win	00:44:36	1902
R2 10.4. 2016		X R				X	X	3	Loss	00:57:39	3762
Total	1	4	1	2	1	3	2	N/A	N/A	03:17:19	17579

*Table 1: Matches in the data*

### 3.2.2 Selection Criteria for Recordings

The data was gathered by asking Dota 2 players I know to record matches they play while conversing with their teammates over a VOIP program. As discussed above, this has the advantage that recording does not change the situation other than letting the participants know that they are being recorded. Knowing the participants personally meant I could verify their consent after the fact if it was not apparent on the recordings. Four of the seven participants<sup>79</sup>, S2, S4, S5 and S6 were also interviewed as informants, although S2 and S4 more than the others.

I received a total of fifteen recordings, eleven unranked matches recorded by S4 and two ranked matches recorded by S2, as well as two matches played as part of a weekly tournament, Battle Cup, organized by Dota2's developer Valve. The Battle Cup recordings also have two people I do not know personally, whom I could only reach via Steam, so I decided against using these recordings as data. This narrowed the ranked matches to two, which were unfortunately recorded

<sup>77</sup>Note that this is the length of the recording, not the match. The recordings may contain e.g. the picking round, or some remarks after the match has ended.

<sup>78</sup>Note that these were counted from a list generated automatically by ELAN. Because of the transcription conventions used (see section 3.3). e.g. pauses are counted as words as well, whereas unintelligible segments regardless of length are counted as a single word.

<sup>79</sup>More participants were present in the data before selection

with the exact same players in a stack and on the same day, even played back to back. Given the already small data size and inherently qualitative nature of the study, this does not diminish the representativeness of the data significantly further.

Luckily, one of the provided ranked matches was a loss and the other a victory. I was also able to choose the unranked matches so that one was a loss to the stack being recorded and the other a victory, and all other players in the stack aside from S2 and S4 being different between the matches. Unfortunately the stack sizes of both the ranked games and both the unranked games are identical. As such, some differences between the data sets may arise, not from rankedness, but from stack size.<sup>80</sup>

### 3.2.3 Interviews

Participants S2, S4, S5 and S6 were interviewed over the course of the study over WhatsApp messenger<sup>81</sup>. Questions were added as needed and the participants answered when they chose to. Individual interviews were used in transcription and revisions to supplement the researcher's knowledge of terminology and gameplay mechanics and to ask for clarification on particularly unclear segments in the audio data. I simply asked the participant who uttered a given term or an unclear utterance in the audio data what they meant. This also served to solicit some of the relevant terminology in written form from the participants in a naturalistic manner. During analysis, the same informants were interviewed in a group conversation on WhatsApp messenger for a final check on some of the terminology, as well as their opinion on the validity of certain interpretations in the analysis.

A similar form of interview is also used by Siitonen (2007) and Van Maanen (1982). Both had informants that they worked more closely with than the studied group in general. Van Maanen, as far as he tells in *Fieldwork on the beat*, did this mainly due to hostility in many officers towards "a sociologist". Siitonen, much like myself, used informants check if his understanding of the meaning and usage of e.g. a given term are true.

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<sup>80</sup>Note that *stack* is used here in the sense it has in the Dota 2 community, covered in the background section

<sup>81</sup>A mobile phone application that allows users to send and receive mainly text-based messages via the internet to each other's phones.

### 3.2.4 Dotabuff Statistics

Statistics pages provided by Dotabuff were used to aid in analysis of ambiguous cases with names of heroes, abilities and items, as well as being used to refresh the informant's memory in secondary analysis (see section 3.5. Secondary Analysis: A competitive player). Dotabuff.com is a website that records the hero chosen, abilities trained, items bought and lane played, among other things, of every player of every Dota 2 match, as well as the winner of the match. Tooltips reveal even more information; by hovering over, for example, the item icons in the "items" column of the team listings, Dotabuff shows the in-game description of the item, a listing of its effects, its price, the items it can be *crafted*<sup>82</sup> from, as well as which shop or shops on the map it can be brought from. Hovering over the match date reveals the exact time it was played, and so on. Dotabuff straddles the line between data and source in this study, as it is used to verify the exact items and abilities et cetera used by the players in the specific matches, but also for example to conveniently find the exact spellings of specific items used in these matches instead of searching e.g. the Wiki. However, I cannot add a reference to the particular Dotabuff pages referenced as they would reveal the Steam identities of not only the participants, but other players who just happened to be in the same match. An image of the Dotabuff page for U1, composited of several screen lengths and with identifying information blurred is, however, provided as an appendix.

### 3.3 Transcription

The software ELAN was used for transcription because it allows the user to assign text to sections of the recording and automatically timestamps them. These sections are called segments in the program and this thesis. ELAN also outputs, among other formats, tab-delimited text which can be read with a spreadsheet program. The most helpful feature of ELAN for the present thesis was tiers: the user can assign the segments to a set of timelines instead of just a single one. This made transcribing simultaneity, for example, much easier. I chose to represent each speaker in three tiers, one for the Finnish transcription, another for a literal English translation (more on the conventions in the next subsection) for each segment, and a third with IPA transcriptions for words that display English influence. An additional tier in each

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<sup>82</sup>Created by forfeiting the original item

recording was used to record other pertinent information, such as other people (aside from the participants playing the match) speaking on the channel (including, in one short instance, the researcher), relevant background noises (such as clicks of buttons being pressed or background static, where it is prominent or referred to by the participants), or when it is unclear which participant is speaking. Figure 2 below shows the tiers as they appear in ELAN<sup>83</sup>.

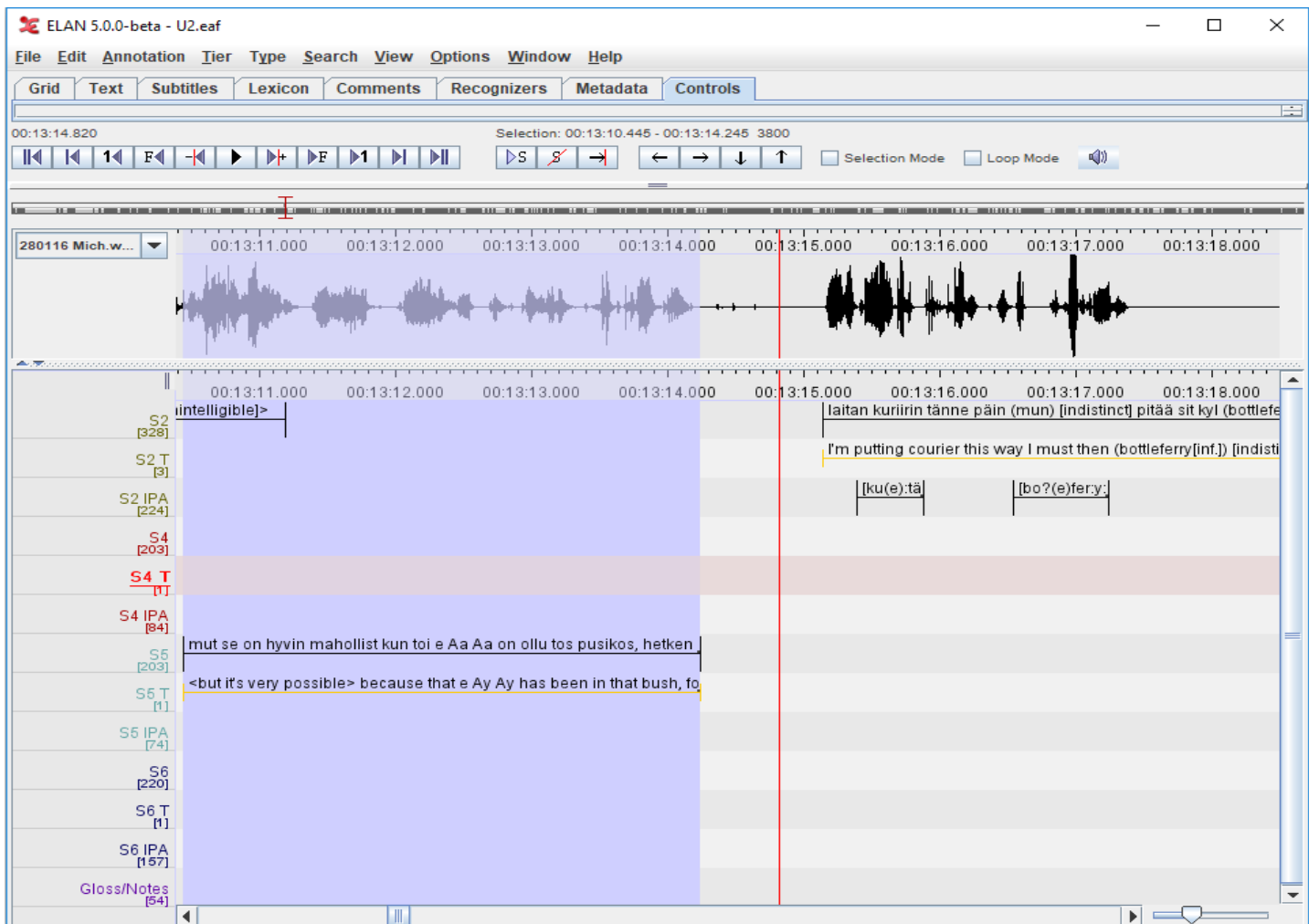


Figure 2: The tiers in ELAN (example from U2)

Some supersegmental elements or other features that are difficult to represent in orthography were transcribed in square brackets. For example, audible turbulence from forceful breathing or sighing was transcribed as “hh”, and other letters were also used simply for the phoneme they represent in Finnish orthography,

<sup>83</sup>Note that to fit the picture on a page, I had to take a screenshot of a considerably smaller window. A fullscreen view was used for the majority of the transcription process.



for example, to transcribe stuttering. Square brackets were used for conveying that the letters in question were to be taken as IPA transcriptions of the sounds uttered (The IPA tier was reserved for words exhibiting English influence and words surrounding them when they in turn affect the pronunciation of the former). For example, when a speaker inhales or exhales with their tongue in the way, this is rendered with the IPA symbol for the voiceless alveolar lateral fricative ɬ. This was, however, substituted by [lh] during the transcription process for ease and speed of transcription<sup>84</sup>.

Parentheses are sometimes used to indicate that the portion in the brackets is modified by the following element in square brackets, such as “(he did it on purpose) [laughter]” to indicate that the portion was uttered while laughing. [unintelligible] was used for portions where I was unable to even so much as guess as to what was said. Portions that I am unsure about are transcribed in parentheses with a following [indistinct]. If a guess as to the content of an unclear segment is especially tenuous, or does not make sense in the context, a question mark is added after the parentheses. If only a portion of the indistinct segment is insensible or a tenuous guess, a second set of brackets is added around that portion, for example: “(I’m sure it was (Pudge)?) [indistinct]”. In cases where the speaker was asked to clarify what they said, but the audio remains inconclusive, an [informed] modifier was added<sup>85</sup>. For wordless laughter, I include the number of syllables uttered if possible, for example, “([lh]) [laughter][3]” or “(heh) [laughter][7] [cuts off]”. “[cuts off]” signifies that a word or utterance appears to be cut off by the participant releasing their push-to-talk button. Similarly, “[cuts in]” is used when the participant’s microphone only starts transmitting mid-utterance. An educated guess as to the word in question is used in the translation, the original uttered portion in the main tier for the participant.

Long pauses (about longer than a second) were transcribed as “[pause]”, and shorter ones with a comma. A pause of more than five seconds constitutes a new segment even if the next utterance is by the same speaker. However, sometimes a string of speech by a single speaker was broken up into several segments, even in the absence of long pauses, to keep the segment a

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<sup>84</sup>Numerous substitutions for IPA characters like this were used during the transcription process, but these were changed to the appropriate IPA characters for examples given in this thesis, for the exception of the triangular colon [ː], which is substituted with the colon [:], which is almost indistinguishable visually with the font ant size used in this thesis.

<sup>85</sup>Full list, detailed descriptions and usage examples of square bracket “modifiers” in appendix 2: transcription conventions. Note, however, that text in square brackets may also be a freeform comment.

manageable length<sup>86</sup>. Segments were also cut as soon as cohesively possible after overlapping speech, so as to keep the transcription legible and logical even if read as lines instead of on ELAN.

ELAN was also used to search the transcribed data, as the search function brings up the correct segment for search results. IPA transcriptions can easily be revised without switching programs. Excerpts were imported as tab-delimited text to a spreadsheet application and copied as plain text to be set into form that is legible even without the dynamic nature of ELAN.

Guessed Finnish words (in brackets preceding an [indistinct] modifier, especially with a question mark) were transcribed in standard written Finnish (*kirjakieli*), whereas the rest is transcribed as they appeared in spoken Finnish (*puhekieli*). To make the corpus easier to understand and search with a computer, word-initial consonants that were realized as long consonants because of a preceding vowel-final word were not transcribed in the main tiers of the speakers. They were, however, recorded in the IPA transcription tiers, along with the whole word bordering the word of interest. For example, the last consonant in “*mun*”, the genitive of the colloquial form of “*minä*”, “me”, is transcribed as “*mun*”, no matter which nasal consonant is realized, if any. That is to say, “*mun mielestä*”, “in my opinion” is represented in the main tier as written here, even if it were pronounced [mum:ielestä]. Additionally, if this effect, or any other word-border effects affecting the pronunciation of the word of interest, occurred bordering an English-influenced word, such as “*ward(i)*” in “*mun wardi*”, the bordering word was included in the IPA transcription on the corresponding tier, e.g. [muv:ardi].

The IPA transcription is rather coarse situational; e.g. lax vowels like [ɪ] were used more when closely transcribing a word that was pronounced in a peculiar way. However, the IPA transcriptions in the examples given in the thesis have been checked individually and are more exact than most in the full transcription, for the notable exception of [a], [ʌ] and [ɑ], which are only differentiated between when it is important in analysis, such as when an English word is pronounced with [ɑ], which is the most unmarked sound for /a/ in Finnish. Otherwise, [a] is used to represent all three.

English words were written according to English spelling norms. This often contrasted with the spelling used by my informants. This disparity was

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<sup>86</sup> This is dictated mainly by ELAN, which works best with segments that fit on the screen. The most zoomed-out setting that numbers each second separately (instead of showing every odd second) was used, which shows a little more than 15 seconds on the screen that was used.

especially clear in the case of English words or word fragments with a vowel-final spelling receiving the epenthetic “i” common to Finnish loans (VISK § 151), or forming the stem of an inflected form. In this case, an apostrophe was used, e.g. “lane’i”. Typically<sup>87</sup>, Fennophone players would render this phonetically as “*leini*”. Besides the ubiquitous epenthetic “i”, this was used to transcribe e.g. inflected verbs, such as “*dive’ataan*” the passive of the verb “*dive’ata*” (spelled here according to my system), from the English “dive”, which would phonetically be written as “*daivataan*”. The apostrophe is unnecessary with consonant-final English stems, such as “*Earthiä*” “Earth” in the partitive case, despite the written form appearing to break Finnish vowel harmony (VISK §15).

### 3.3.1 Translation

The transcriptions were translated as needed, i.e., the segments used as examples were translated for accessibility to non-Fennophone readers. Additionally, portions of the first recording transcribed (U1) were translated to test the tier layout. Finally, some portions were translated e.g. to record a guess which full word a fragment belongs to, as only the portion present in the recording was transcribed on the main tier.

The translations in my transcripts are deliberately literal to reflect the original Finnish data as closely as possible word-for-word. Example 1 below is the transcription of the first 40 seconds of U1. The original utterance is bolded, followed by a translation. No translation is provided for segments consisting solely of translingual words, code switches comprising the whole segment, or segments containing no words, or if the segment consists of e.g. only a participant’s name, which are anonymized.

<b>1 S1</b>	<b>me hävittiin <u>se ainoo</u></b>
1 S1 T	we lost <u>that only "one"</u>
<b>2 S2</b>	<b>yks oli liikaa</b>
2 S2 T	one was too much
<b>3 S1</b>	<b>voi vit- <u>[cuts off]</u></b>
3 S1 T	oh fu-"ck" <u>[cuts off]</u>
<b>4 S2</b>	<b><i>recordit</i> päälle [hh]</b>

<sup>87</sup> From the researcher’s personal experience as well as according to interview data

- [rekordit]
- 4 S2 T "I'll put the" *records* on [hh]
- 5 S2** pitääks täs [pause] osata käyttäytyy, ([kr]) [laughter]
- 5 S2 T must "one" here "=then" [pause] know how to behave, ([kr])[laughter]
- 6 S1** ei [cough]
- 6 S1 T no [cough]
- 7 S2** hyvä
- 7 S2 T good
- 8 S1** ooks sä joskus käyttäytyy *recordeis*  
[rekordeis]
- 8 S1 T have you sometime behaved in *records*
- 9 S2** en
- 9 S2 T no "I haven't"
- 10 S3** joo
- 10 S3 T yeah
- 11 S2** är dee
- 11 S2 T arr dee
- 12 S1** ([S4]) [drawn out]
- 13 S3** (voi vittu) [guttural]
- 13 S3 T (oh fuck "=for fuck's sake") [guttural]
- 14 S1** ([S4]) [drawn out]
- 14 S2** [S4]
- 15 S1** (joo ei [S4], ei) [laughter]
- 15 S1 T (yeah no [S4], no) [laughter]
- 16 S3** oiskohan pitäny varmist- noni
- 16 S3 T "I wonder if we should have" made sur-"e" ah so "=there we go"
- 17 S2** [S4] halua vaa reaktiot tähän [pause] *recordiin*  
[rekordi:]
- 17 S2 T [S4] wants just "the" reactions onto this [pause] *record[illat.]*
- 18 S1** ([hh]) [laughter]  
[S2 or S3 may be laughing too]
- 18 S3** kyllä
- 18 S3 T yes
- 19 S2** mutettiks se oman mikkisä samalla  
[mutet:iks]
- 19 S2 T did it mute "their" own mic at the same time
- 20 S3** [hh] joo
- 20 S3 T [hh] yeah
- 21 S2** nice  
[nais]

Segments 1, “we lost that only ‘one’”, and 17, “have you sometime behaved in *records*”, exemplify the literality of the translations well. This is done to reflect the word order and literal meaning of the original segments as transparently as possible, which in turn makes it easier to transcribe supersegmental phenomena such as voice quality the same way in the translations as well as the main tiers. The aforementioned segments could more idiomatically be translated as “We lost the only one” and “have you ever behaved on records”, but that would make the literal senses of the words inaccessible to a non-Fennophone reader, even if it could make the translation easier to follow. An even more transparent representation could have been given by glossing the words and inflections word-for-word, but this was not possible given the scope of the study. Some inflection glosses are, however, given in square brackets following the inflected word.

Clarifying remarks are given in quotation marks instead of square brackets because square brackets are, as explained in the preceding subsection, already reserved for coding extralinguistic and supersegmental elements. Unlike in the main tier, a guess as to the word being cut off is given in the translation. A portion approximately corresponding the recorded fragment was written, followed (or preceded) by the remainder of the word after a hyphen, such as in segment 16 “‘I wonder if we should have’ made sur-‘e’ ah so ‘=there we go’”. In the original, the speaker started to say “*varmistaa*”, but cut off their microphone early.

In segment 16, “=there we go” in quotes following “ah so” is to clarify the meaning in context. As I refrain from finding idiomatic correspondents for the original words, the translation’s literal meaning may sometimes be left ambiguous or even mean something else entirely. In this case, “*no niin*” (here realized in a more colloquial form [noni], often, as here, written as one word) does literally translate to “oh, like that”. However, “ah, so” was chosen to better represent the amount of words uttered and encourage the reader to interpret the first word as an exclamation. The expression is notorious for acquiring varying meanings in context, signifying, among other things, contentedness or simple acknowledgement (as in example 1), “I told you so”, “that’s enough” and “so” or “here we go” (e.g. when beginning a speech or setting on a task).

Even if a more idiomatic translation were used, these remarks would be needed e.g. to signify articles, such as in segment 17 “[S4] wants just ‘the’ reactions onto this record[illat]”, as Finnish has no articles. As such, choosing which article to

use is an important translation choice that I want to make transparent, and often has to be made completely arbitrarily. Another outright language gap that exists between English and Finnish is that of gender. Although I know that all of my informants are male and make this explicit to the reader, to underline the fact that Finnish has no gender, I use the singular “they” to translate the Finnish “*hän*” where it occurs instead of “he”, glossing where necessary. However, in the register my informants speak in, even people are usually referred to as “it”, “*se*”, in the third person as in the example, “*mutettiks se*”, “did it mute”. Glossing pronouns in the English translation is also necessary because Finnish, both *kirjakieli* and *puhekieli* differentiate between 2<sup>nd</sup> person plural and singular. Pronoun glosses and inflectional glosses, e.g. [2p.sg] (second person singular) or [illat.] (illative, e.g. in segment 17) are given in square brackets instead of quotation marks because given their form, there is no risk of confusion with extralinguistic or supersegmental elements. Only square brackets denoting a pronoun or other inflectional gloss include full stops, “.”, and all such glosses used include at least one. A full list of inflection glosses used along with a legend in appendix 7.1.4 Transcription Conventions.

#### **4 Analysis and Findings**

Portions of the data were listened to before starting transcription to decide on which to choose for further analysis. The transcription process also served as close reading. Interesting phenomena were noted down as they came up and while deciding on how to reflect them in transcription. S2, S4, S5 and S6 were interviewed over WhatsApp Messenger as needed, (1) to determine whether they believed the terms were only used in their social circle, among Finnish Dota 2 players or worldwide, (2) to clear up ambiguities or unclear utterances, as well as (3) to solicit their views on the origins of some of the forms, and the terminology in written form as the participants would spell them. Objective (3) was accomplished not only through direct questions such as “where do you think this term comes from”, but also through close reading of other answers, such as if an unclear portion turned out to be a term that the informant proceeded to explain without my asking. All of the participants were also interviewed while writing the final analysis, this time soliciting their opinion on the situations explicitly.

This section begins with a subsection covering the differences between the ranked and unranked data in broad terms. The most noticeable difference was

clarity. The two following sections give examples of the gaming jargon used. The first one is focused on largely unchanged Finnish and English words used as terms to define referents in a Dota 2 match, whereas the second covers processes that some words go through before becoming the forms that are used in this group's idiolect. The final subsection compares the present study with others. First, I present evidence from the data that Myers-Scotton's MLF model describes my data in ways that Auer (1999) and the studies of Poplack and associates fail to do. Finally, the discourse situation in the data is compared to the situations in the (1996) Goodwin & Goodwin study on Atlantic Hawk, a commuter airline, and Nevile's (2004) study on airline pilots, much as Suchman (1992) compares Goodman & Goodman (then forthcoming) to a study tracking the movements of lizards.

#### 4.1 Differences in Clarity Between Ranked and Unranked Data

The participants who appear in both ranked and unranked matches (S2 and S6) in spoke less often and for fewer words at a time. This partially confirms my hypothesis that participants would prioritize clarity over volume of information. Note, however, that the stack size was smaller in the Ranked matches (three instead of four), so it is possible that the participants spoke comparably to the unranked matches, but used in-game voice chat more. Unfortunately, this is not included in the data recorded over Mumble<sup>88</sup>. In an interview, S6 said he expects there to be more talk in ranked matches than unranked, at least about the game itself, and S2 agrees that talk not pertaining to the game would be rarer. The latter was indeed the case.

A more surprising finding was that the turns uttered in Ranked were often *less* clear to me during transcription. I had to ask for clarification from S2 and S6 much more often in the ranked dataset, and it was more common in the ranked dataset for them to be unable to make out what is said themselves. S6 even commented that he has a bad habit for "thinking out loud and apparently mumbling". While S6 may have meant this of his clarity in general (and I did have to ask for more clarifications from him than from S2 or S4), S2 was notably clearer in the unranked matches. The only audible speech by S2 whose content could not be resolved even with his help was in the ranked matches. That is to say, some unintelligible portions were present even in the unranked matches, but they were

<sup>88</sup>even the replays that would have been available for download for about a month after each match and viewable in the Dota 2 client would not have included the voice chat. The limitations of the data gathering methods are discussed in more detail in section ##







(is this hat-)? [indistinct]

### Example 3

Here, segment 5 is not unclear, but simply inaudible as S4 talks over it in a moderately loud voice (not loud enough to be transcribed as [loud], however). Judging by the timing (not represented precisely in this transcription), with a longer pause (about two seconds) between segments 4 and 5, the segment may have been an afterthought by S2 and not uttered very loudly, or perhaps some in-game challenge demanded his attention, interfering with his timing and volume. Either way, the result is that S5 takes another turn more decisively, judging the floor untaken.

Segment 3 is a clearer example of deliberately taking the floor from another speaker. In segment 2, S6 replies to S4's proposal to amass several sets of creeps to a jungle spawnpoint for S6 to farm with, stating that he already has a lot of gold. Since by the time S6 has finished saying "two thousand", if not earlier, S2 judges his query to S5 more urgent, as his immediate course of action, outlined in segment 7, depends on it.

The IPA transcriptions in segments 3 and 7 represent the utterances as much less clear than they are. This is simply an artifact of the rather coarse IPA transcription. In "kuriirin", S2's r's are very lightly trilled, to the point where they become vowel-like, and the syllable boundary is marked by a very light glottal obstruction. I would not, however, interpret this as an English pronunciation of /r/, but rather, an uncharacteristic failure to produce the Finnish speech sound. The same is true for "bottleferry"; judging by the length of the following scwha, the glottal stop in [boʔəfer:y:] is a hesitation, not a realization of /t/. Another possible transcription of this word could thus be "bo- öö ferry", "bo- uh ferry[inf.]<sup>89</sup>". The fact that both words are pronounced very clearly in Finnish phonology supports this assessment. The verb "to bottleferry" refers to using the courier, a unit controllable by all the players in the team it belongs to that can carry items, to take an item called Bottle to the base, where its uses are replenished, and bring it back to the player.

Much of the "mumbling" that S6 confesses to consists of careless pronunciations like S2's realization of /r/ as [ɹ] instead of the Finnish [r]. For example, the voiced fricative in segment 4 of example 2 appears to be a voiceless bilabial stop pronounced with insufficient closure and voicing bleeding in from the

<sup>89</sup>The infinitive case is formed colloquially. The same form inflected in formal Finnish would be "ferrytä" (Kielitoimiston ohjepankki: *Rektioita: Pystyy tekemään vai pystyy tehdä*)

surrounding vowels, resulting in a voiced bilabial fricative. Similar shifts of several sound features are more common in ranked. For example, “*hauntaan saman tien kun mä ressaan*” “[I will] haunt [as soon as I] res[urrect]” is realized by S6 as [haunt:asəmaðiŋ:um:æres:ɑ:], where the word-final /n/ in “hauntaan” and the initial /t/ in “tien” is realized as [ð], a sound that does not produce contrast in Finnish, instead of /nt/. The diphthong /ie/ is also reduced to [ɪ] and /ŋk/ is realized as [ŋ:]. Finally, the utterance-final vowel is produced voicelessly, which is a common quality of Finnish speech (Suomi, Toivanen & Ylitalo 2008, p. 137), but more pronounced in the ranked matches in my data. Vowel reduction, even in unstressed syllables, however, is not a commonly attested phenomenon in Finnish<sup>90</sup>.

In the ranked dataset, S2 and S6 use considerably more breathy voice (throughout utterances but especially in sentence- and utterance-final positions), quieter overall volume, but louder shouting when the volume is raised, and more frequent creaky voice and strained voice. Speech sounds are pronounced less precisely, closer together and generally more towards the centre of the mouth. Segments cutting in or off mid-utterance are more common, especially for S2, whereas S6 tends to err on the side of caution by keeping the push-to-talk button down even longer after speaking in the ranked matches.

Example 4 from R1, consisting of several utterances of nervous chatter by S2, exemplifies most of these effects. For clarity, this example is typeset differently: The ELAN segment is broken up into several lines. The entirety of the segment is transcribed in IPA, below the original transcription, followed by the translation. A gloss is added for section 2, as an idiomatic English translation has a radically different word order compared to the Finnish original<sup>91</sup>. Wider line breaks are added between “blocks”, each representing a different section of the segment, broken up along breaks in the audio longer than a second, with break length given in the original transcript<sup>92</sup>.

<sup>90</sup>A search of VISK for “*reduktio*” “reduction”, “*redusoitunut*”, “reduced” and “*heikko*”, “weak” only yielded articles on phenomena that happen to diphthongs and reduction to the point of sound deletion in others in certain dialects, and weak as opposed to strong vowel harmony. Suomi, Toivanen & Ylitalo (2008) postulate that lack of research on the subject indirectly implies that its effects are negligible (p. 22).

<sup>91</sup>Note that square brackets are used in this gloss like quotes are used when explanations are given in line with translations like in the earlier examples; the word “will” has no equivalent in the original utterance, but is required to convey the same meaning in English.

<sup>92</sup>This was done simply because the English translations are longer due to some of the case and inflection markings, and some would not have fit on one line.

- 1 S2           **[unintelligible] (tota)? [indistinct] Voidii [pause ~2s]**  
 1 IPA           [əntəwoədi:]  
 1 S2 T         [unintelligible] (that[part.]?) [indistinct] Void[part.] [pause ~2s]
- 2 S2           **ei se kyl kerkee disjointtaa (ajois) [indistinct] [pause]**  
 2 IPA           [esekylkerke:disjont:a:ʔa:s]  
 2 S2 T         no it yes have-time[3rd.p.sg] disjoint[inf.] (in time) [indistinct] [pause]  
 2 gloss         *it [will] not in fact have time to*
- 3 S2           **ei se pysty disjointtaa, kuitenkin pääsee kar- [cuts off] [pause ~2s]**  
 3 IPA           [eiθpystyd:isjomt:ə] [kuitŋkip:ä:ʃe:kar]  
 3 S2 T         not it can disjoint, after-all gets aw- [cuts off] [pause]
- 4 S2           **vittu [pause ~3s]**  
 4 IPA           [wət:u:]  
 4 S2 T         fuck [pause]
- 5 S2           **(hh) [nasal exhale] taas jääny kuuskytä Tangoa**  
 5 IPA           [h:ta:sjæ:nyk:u]kytætəŋ:ɔ̃ə  
 5 S2 T         (hh) [nasal exhale] again there are left sixty Tangos[part.]

#### Example 4

The vowels in section 1 have all reduced towards schwa. In the absence of discernible consonants, I could only make a guess as to the word immediately preceding “Void”. It appears to be “*tota*”, a colloquial form of “*tuota*”, “that” in the partitive case, the same case that “Void” is uttered in. This implies that “Void” is the object in a sentence and the unintelligible portion in the beginning of the section represents a verb. It is also possible that “*tota*” is simply a hesitation marker.

Section 2 begins with “*Kerkee*”, a form of the verb “*keretä*”, a dialectal and colloquial synonym of “*ehitä*”, inflected in the third person. The words mean “to have the time to/for” or “to be in time”. As it is used transitively, it is to be interpreted in the first sense. “*Ajois*”, a clipped form of “*ajoissa*”, the inessive plural of “*aika*”, literally “in times” is thus not completely redundant. It does, however, carry little more information, which is why I suspect it was pronounced in so reduced a form; the yod is reduced to the slightest hint of an obstruction (not transcribed above, but colours the middle of the [o:]) and the diphthong /oi/ is reduced (VISK

§23<sup>93</sup>) to a lengthening of the [o] preceding the almost-deleted yod. The /oi/ in “*disjointaa*” is similarly reduced to [o], and “*ei*”, formally pronounced [ei], is reduced to [e]. Note that the diphthong /oi/ is pronounced in “*disjointtaa*” in section 3<sup>94</sup>. As with similar cases in examples 2 and 3, I would not interpret the lax [ɪ] as pronouncing “disjoint” with English phonology, but rather as a result of an overall lax pronunciation, as the rest of the word is pronounced with Finnish morphology.

Section 3 also exhibits a (possibly dentalized) [θ] realizing /s/, typically pronounced with a [s] in Finnish. The vowel in “*se*”, “*it*”, is omitted, just as the same vowel is in the second syllable of “*kuitenkin*”. /n/ in a position before /k/ being realized as [ŋ] is a typical feature of Finnish. Pronouncing the voiced velar fricative as [w] may be playing with the speech sounds to lessen the impact of the swearword, but judging by the frequency of swearing in both the ranked and unranked data, I postulate that it is rather a result of an overall lax pronunciation.

Much more than the final syllable of section 5 is produced voicelessly, beginning with “*kytä*”. [a] and [ŋ] are pronounced with normal voicing, and the last diphthong is pronounced voicelessly. Sections 2 and 5 are also somewhat breathy throughout, whereas section 1 is rather quiet and 3 is creaky and strained.

I would postulate that this is an effect of *choking under pressure* (Baumeister 1984), the somewhat counterintuitive effect of a reward being offered for good performance causing a drop in performance. In Baumeister (1984), a cash prize was offered for good performance in a fine motor task. In a ranked Dota 2 match, winning or losing affects the MMR score of the players in a team, and subsequently their following games (see section 2.4.3 on matchmaking), so there is not only a reward for good performance, as opposed to no reward in unranked, on the line, but a similar punishment for bad performance.

Much of what makes play successful in Dota 2 is achieved not only by controlling one’s own hero, but through speech, by communicating well with teammates. As such, it is to be expected that the “choking” in response to more potential reward or punishment would also affect speech in the situation<sup>95</sup>. The

<sup>93</sup>VISK treats this as a dialectal phenomenon. Even though it is a feature of carelessly pronounced speech here, the fact that VISK acknowledges it as a documented feature in Finnish is notable.

<sup>94</sup>The inflected form of “*disjointata*” in 2 and 3 is the same, but would not be in *kirjakieli*. In *kirjakieli*, VtA-final (VISK § 75) verbs, including the kotus type 73/salata (Kielitoimiston sanakirja 2017) that “*disjointata*” is inflected with, take the illative case in conjunction with the verb “*pystyä*”, “to be able to”. This would result in “*ei pysty disjointaamaan*” In colloquial *puhekieli*, however, they can also take a third-person form like “*salaa*” or “*disjointaa*” (Kielitoimiston ohjepankki: *Rektioita: Pystyy tekemään vai pystyy tehdä*). VtA verbs may also take an infinitive: “*pystyä salata*”, in colloquial speech in this situation, but extensive research on the subject has not been conducted.

<sup>95</sup>As Keating & Sunakawa remark, this is similar to the findings of Goodwin & Goodwin’s study of a commuter airline. While the similarities that Keating & Sunakawa explicitly draw attention to are use

participants are so focused on communicating all possible important information to the rest of the team that they end up rambling incoherently at times. The lack of clarity could also be explained by the players prioritizing *any* communication, or timely communication, over absolute clarity. The odd choice of a hyperbolically large number, sixty, by S2 in example 4 supports this interpretation at least in the case of section 5.

## 4.2 Terminology and Language Contact in Dota 2 matches

This subsection gives a broad account of the languages that the terms in the data are derived from. For more detail on the processes that some terms go through, see the next subsection.

### 4.2.1 Codeswitching to English

The overwhelming majority of the names of skills, heroes and roles are simply used in their original English form. Some of the most often repeated terms are “*fight*” (both noun and verb), *damage*, *mana* and *hero*. All of these are present both as inflected and bare forms, and pronounced both according to Finnish and English phonology, although some degree of inflection and Finnish phonology is most common.

Interestingly, almost all terms receive some inflection, although often the sentence is constructed so that a CS form need not be inflected to awkward cases (cf. Myers-Scotton 1997 on bare forms). This and its implications on the accuracy of the three CS theories discussed in section 2.2 are explored in more detail in section 4.4.1.

Alternational CS is also present in the data. For the most part, this is comprised of quotes, such as “it’s in the bag”<sup>96</sup> (S2 U1) or near-fixed expressions such as “that’s about it” in example 2. Other EL islands, such as “uphill we go” (S2 U1) or “fuck, Chrono” were attested. These, too, are discussed in more detail in section 4.4.1.

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of prosodic features to convey meaning and the situation being embedded with technology. In section 4.4.1, I argue that the similarities of the two situations extend further.

<sup>96</sup>All of the heroes have voice files with variations of this sentence, called Assured Victory Shouts, which can be activated at the beginning of a match if the player has a certain vanity item called a Prediction Gem, which was available for a limited time in 2014.

Example 5 below is an excerpt from U1, some four minutes after example 1. It has examples of both English and Finnish (discussed in the next subsection) terms, as well as two examples of alternational CS

- 1 S2** ja, Guardian Angel, [laughter][3] [cuts off] [pause] vitusti right clickii  
 [gɑ:ˌɹdiənˈeɪntʃl̩] [raitklik:i:]
- 1 S2 T and, Guardian Angel, [laughter][3] [cuts off] [pause] fuck [part.] "=fuckloads of" right click [part.]
- 2 S1** sit vaa healaat [S4]:a ja, (you) [indistinct] never die  
 [hi:lɑ:t] [ynevørda:i]
- 2 S1 T then just you-heal [S4][part.] and, (you) [indistinct] never die
- 3 S2** sit heität repelit muhun mä hö- hyppään sinne sisään ja noi lyö kolme kertaa mua (ja) [indistinct] mä kuolen, [kr][laughter][4]  
 [repeleit]
- 3 S2 T then you-throw repels me[iness.] "=onto me" | ju- jump there-to inside[iness.] and those hit three times me[part.] (and) [indistinct] | die
- 4 S2** (siit) [indistinct on tullu <(melkeen)? [indistinct] bannii>  
 [bæn:i:]
- 4 S2 T (from-it) has come <(almost)? [indistinct] ban[part.]>
- 5 S1** <nice tactics> mate  
 [nɑɪstæktiksmeit]
- 6 S2** ei pidä hypätä sinne sisään [pause ~3s] (toisaalta) [indistinct] aika harvoin sitä muutakaan pitää hypätä sisään enemmänki pois päin
- 6 S2 T no must "=should not" jump there inside[iness.] (on the other hand) [indistinct] rather rarely that[part.] "= is it that" anyways "that one" must jump inside[iness.] more "like" away

### Example 5

Segment 1 includes two slightly different English terms used without altering them at all. "Guardian Angel" is a proper name referring to one of Omniknight's skills. "Right click", on the other hand, has a referent outside of Dota 2, but is used here to refer specifically to a hero's autoattack<sup>97</sup>. Both are pronounced more or less according to Finnish morphology. [ʃ], which is present in some established loans, but not an endemic speech sound (VISK § 6), is used, and the r in

<sup>97</sup>The right mouse button is used to direct units to move, or when clicking another unit, to attack. The fact that the noun is not used to refer to moving despite the same button being used supports the interpretation that "right click" (noun) is used as a Dota 2 jargon term and not just the dictionary senses of these words.

“Guardian” is untrilled. Again, because other sounds, such as [tʃ] instead of [dz], a Finnish, backed [ɑ] in the diphthong /ia/ and a front [i] in /ei/, and, most importantly, the word-initial glottal stop in [angel] are closer to Finnish phonology, I postulate that this is careless pronunciation and not conforming to English phonology.

Segment 2 by S1 includes another term which has a clear everyday referent in English, “*heal*”<sup>98</sup>. Like “*right click*” in segment 1, it is inflected in the Finnish partitive case. “*Repel*” in segment 3 “*banni*” in segment 4 are likewise inflected to plural forms.

Segment 2 also includes an alternational code switch by S1. This, like the second alternational switch in segment 5, also by S1, is pronounced completely with Finnish speech sounds. They are both also self-contained units, the switch constituting all of segment 5, whereas in segment 1, the switch is separated from the rest of the segment by a pause following a coordinating conjunction. Some alternational switches, like the aforementioned “*fuck, Chrono*” by S6, which also comprises the entirety of the segment it occurs in, are, however, pronounced with English morphology; [fak.k<sup>h</sup>ioono:] (the period [.] represents a short pause between the words).

#### 4.2.2 Use of Finnish Terms

The use of Finnish Dota 2 jargon terms is more interesting than English despite it being the ML in the data, as using English terms or terms derived through some of the phenomena covered in section 4.3 is more common (cf. Myers-Scotton on CS as the unmarked choice, 1988 p. 163, 1997 p. 213). Finnish is still the matrix language according to MLF, as by “Dota 2 jargon terms” I mean terms that have referents that only make sense in the context of Dota 2 or gaming in general.

The most obvious cases border on calques. Using the Finnish established loan “*kuriiri*” for the courier<sup>99</sup> is one example. Some skills, heroes and items have Finnish “nicknames”, such as “*Peura*”, “*Deer*”, used by S3 and S4 in U1 for Enchantress, a hero whose model is a dryad with the lower body of a deer. In R2, S7 refers to both the number of uses left on the item Bottle, as well as using the item

<sup>98</sup>Here the case is clearer as there is no likely context for the sense “heal a physical injury” as opposed to “heal hp damage”. That is not to say that the word can not be used humorously outside of a Dota 2 match to refer to the former, but this is a marked usage.

<sup>99</sup>A unit that can be bought and controlled by any team member. It can be used to carry items around, to extend inventory space or more commonly, to take bought items from the shop to a hero or between heroes. The courier itself does not benefit from the effects of most items.



as “*hörppy*”, which means “[a] gulp [of drink]”. There is no single-word English term for the same referent attested in the data. Other Finnish terms are used alongside the English equivalent, such as “*läpsy*”, “slap [noun]” alongside *damage* (only one instance, in U2 by S5, attested in the data, but fairly common according to the informants, and attested in wide use in other gaming contexts by the researcher).

Usages like “*hörppy*” are on the borderline between simple dictionary sense use and Dota 2 term. The same is true for “*kuolla*”, “to die”, and even “*heittää*”, “to throw” and “*hypätä [sisään]*” “to jump [inside]” used in example 5. With “*kuolla*”, the situation is similar to “*heal*”; while it is not impossible for someone to literally become free of an ailment, or lose their life, during a match of Dota 2, it is an unlikely occurrence. “*heittää*” + plural has everyday referents, a faulty water fixture, for example, can be said to “*heittää vedet naamalle*”, “throw waters face[allat.]”; “throw [the] water [onto the] face” in this context, however, the structure becomes synonymous with “to cast [a spell]”. Another Finnish idiom that can be used synonymously is “*vetää*” + plural, a more colloquial construction, used in e.g. “*vetää kännit*”, “to get drunk” (VISK § 454<sup>100</sup>). “*hypätä sisään*” is likewise used with the typical sense of the words, but the particular sense at least in this situation is more nuanced, apparently referring to committing quite decisively in a fight. Note, that “*hypätä sisään*” can also refer to using the hero Lifestealer’s ultimate ability Infest, which allows it to take control of a creep, or travel undetectably within a friendly hero. With Aghanim’s Scepter, Lifestealer gains another ultimate, Assimilate, which allows it to carry around a friendly hero undetectably within it.

### 4.2.3 Other languages

Both insertional and alternational switches to other languages besides English are attested in the data, although sparsely. For example, “Blood Cyka”, a nickname derived from Russian expletives, is commonly used for the hero Bloodseeker. Bloodseeker’s abilities, such as Rupture, which causes a targeted enemy to take damage upon moving, are ideal for targeting and picking out individual players. This makes Bloodseeker a very dangerous, albeit also vulnerable, hero to encounter alone as well as a decisive factor in team fights, which often results in players killed by Bloodseeker feeling that the kill was unfair (cf. following discussion on “Cancer

<sup>100</sup>VISK mentions “*vetää pää täyteen*”, lit. “to pull [the] head full [of something]”, also meaning “to get drunk”, and lists “*vetää*”, “to pull” as a particularly commonly used verb in idioms.

Lancer”, a similar nickname for a hero called Phantom Lancer).

Blood, [blʌd], and the Russian expletive “блядь”, [blʲæɪʲ], are partially homophonous, as are “seeker”, [si:kə] and a similar expletive, “сука”, [sukə]<sup>101</sup> (cf. section 4.3.4 on the same process between English and Finnish). Russian players also have a reputation for an aggressive playstyle, and a propensity to speak Russian on Anglophone servers<sup>102</sup>. “сука” as part of a name referring to Bloodseeker was rendered in visually similar instead of homophonous Latin alphabet letters because this is the way it tends to be written in the community. The instance was also pronounced [platsyka] in the data; the Russian portion read phonetically out loud in Finnish instead of emulating Russian pronunciation.

Other marginally present languages in the data include German and Japanese. In U2, S5 utters [dankeʃo:n], “*danke schön*”, a common German expression of thanks, with the literal meaning of “a beautiful thank-you”. The expression is somewhat set in Finnish parlance, Germany having been a strong cultural influence in Finland’s history, as well as German a moderately popular language to study (OSF 2015, 2016). Interestingly, instead of the set form conformed to Finnish phonology, [danke:esø:n]<sup>103</sup>, S5 chose to follow the German pronunciation more closely, although still operating within the speech sounds available through Finnish established loans (VISK § 6). A slightly strained voice quality and a hint of a scwha before the first consonant are indicative of an intentionally exaggerated pronunciation. “Schön” would, however, properly be pronounced in German as /ʃø:n/ or /ʃøn/

Japanese, on the other hand, is not a commonly learned language (e.g. OSF 2015, 2016 do not list it, although it may be included in the “others” category). Instead, contact with the language is likely through media such as manga, anime and (video)games. This is reflected in the two Japanese words that appear in the data. In a single instance in U2, S5 refers to the hero Slark using a Japanese honorific, as “Slark-u senpai”, [slark:usenpai]. This, similar to “*danke schön*” above, is also pronounced with several exaggerations: a trilled [r] (despite the sound not appearing in Japanese phonology) as well as a clichéd additional vowel reminiscent of Japanese loans from English. Another feature that points to an exaggerated, or at least very

<sup>101</sup>Both of which can be used both as “bitch, contemptible person” and as an exclamation or interjection like “fuck”. “Блядь” especially is well known on the internet from a much repeated expletive phrase “сука блядь” (Know Your Meme: *Blyat / Cyka Blyat*).

<sup>102</sup>It is beyond the scope of the current thesis to comment whether or not this view is accurate. However, the wide spread of the aforementioned expletives in the international Dota 2 community, can be attested e.g. from the search results for “blood cyka” on Youtube.

<sup>103</sup>Used alongside other German phrases like “bitte sehr”, similarly assimilated to [bit:ese:r] instead of the German /bitəze:p/

conscious, pronunciation is that the nasal [n] is not pronounced in the articulation place of the following stop [p], as would be typical in Finnish phonology. These factors underline the humorous intent of the formulation, likely a reference to the fact that honorifics are commonly not translated in Manga and Anime.

The other Japanese word is attested in U1. There are two instances of S3 referring to an ability used by a neutral creep called *Satyr Tormenter*, *Shockwave*, as “Hadouken”. This is a reference to a move of the same name in *Street Fighter*, the popular series of games by Capcom (the first instalment, *Street Fighter*, was released in 1987). *Satyr Tormenter*’s *Shockwave*, like *Hadouken* in *Street Fighter*, produces a sphere of energy that travels from the hands of the character to the target. S5 pronounces the word once as [hado:ken] and once as [hadu:ken]. The former is closer to the Japanese pronunciation, or at least that in the game, while the second is an Anglicized pronunciation common in international gaming media (see also Section 4.3.6 on cultural references).

### 4.3 Word Transformation Phenomena

Some words in the data have gone through one or more transformation phenomena before becoming the term that the group studied uses. Several forms of the same term may also be in use simultaneously (see discussion on table 3). The following subsections discuss a non-exhaustive and overlapping taxonomy of these phenomena.

#### 4.3.1 Clipping and Initialisms in Proper Nouns

Numerous proper nouns referring to heroes, items and skills are composed of several words in Dota 2. Examples include the heroes *Earthshaker*, *Drow Ranger* and *Phantom Lancer*, the items *Aghanim’s Scepter*, *Divine Rapier* and *Boots of Speed*, and the abilities *Arcane Bolt*, *Ghostship* and *Poison Attack*. Many of these can be referred to with only part of their name. The context usually fills in the rest. For example, by saying “you have boots, you’re faster than me”, a player can pass on not only the meaning that the other player has an item that has the word “boots” in its name, but that the specific item that they have increases the hero’s movement speed. While there are several items that fulfill these criteria, the state of

the game and the particular hero that the player is playing will usually narrow this down to one or two, which may be valuable information to anyone on the team at some point.

Similarly, depending on the team's make-up and who one is talking to, e.g. *Poison Attack* can be referred to as "Poison", or *Arcane Bolt* as "Bolt" or "Arcane" (depending on context, such as whether or not someone has the items *Arcane Boots* or *Arcane Ring*) without risking confusion. However in many cases, the parts of the name have become alternative names in their own right. *Drow Ranger*, for example, is often referred to only as "Drow", *Earthshaker* can be called both "Earth" or "Shaker" without danger of confusion (unless Earth Spirit is also present). Likewise, *Aghanim's Scepter* is often called either "Aghanim's" or "Scepter".

Not all two-part names can be clipped either way. *Drow Ranger* is known as "Drow", Phantom Lancer as "Lancer", *Manta Style* as "Manta" and *Ghostship* as "Ship" (see table 2 below). Happenstance no doubt plays a role, though it is unlikely to be the only determiner. Even though only one hero besides Drow, *Windranger*, has the word "ranger" in her name, the word can be used to refer to any ranged unit and might thus cause confusion. Similarly, "phantom" and "ghost" are words that occur in other names too. A risk of confusion is not an automatic disqualifying factor, however, as can be seen from the example of *Earthshaker* and *Earth Spirit* above. The modifier appears to be more commonly used than the word modified, as is the case with *Manta Style* and *Drow Ranger*, But not *Ghostship* or *Boots of Speed*. "Ship" is a more distinctive than "ghost", whereas "boots", as discussed above, occurs only in the names of certain kinds of items, making it a useful shortcut in certain contexts. Modifiers constructed using "of" in a possessive construction are, however, less likely to be clipped forms.

The status of "boots" as a kind of "class" is somewhat unique, especially among items. Several items also have "ring" in their name, and represent jewellery, but the word is not used in a similar way to "boots". This is likely in part due to the fact that the game only gives a movement speed buff for one pair of boots, as if the character could only wear one at a time, while there is no similar restriction for rings<sup>104</sup>. "Arcane" is a word that appears in the names of several skills and items and can usually be referred to them, but again, the game does not support it as a

<sup>104</sup>Note that unlike in many games, boots, shoes, rings or jewellery are not worn in slots, but simply carried in the inventory. Movement speed buffs from other items or other sources can be received in combination to those from boots, but the game specifically allows only one kind of shoes to give a movement speed bonus at a time. Other buffs from several shoes items can be active simultaneously.

distinct class like boots, and the instances can be explained equally well as the other word in the proper noun offering less of a distinction, or by “arcane” clearly being the modifier. The only other candidate for an item “class” is “ward”, which *is* a group of items treated in a unique way by the game, but only has two members. Some words appear repeatedly in several different skills, such as “Arcane/Chaos/Fade/Lightning Bolt”, (e.g.) “Burrow-/Geo-/Adaptive/Blink Strike” and, to a lesser extent, “Anchor/Boulder Smash” and “Echo/Hoof Stomp”. However, even “Strike” and “Bolt” are less economic shortcuts than “boots”, as all heroes have (at least) four distinct abilities in any case, making them inherently easier to distinguish in context.

Single-word proper nouns can likewise be clipped. S2, for example, frequently refers to Spirit Breaker as Bara in R2. This is a clipped version of Barathrum the given name of the hero called Spirit Breaker. Other heroes who have two names include Shadow shaman, whose given name, Rhasta, S2 uses extensively in the audio data. Personal names in proper nouns referring to items can also be clipped, e.g. “Agha” referring to “Aghanim’s Scepter”.

Proper noun	Referent	Clipped form(s)
<i>Poison Attack</i>	An ability	“poison”
<i>Arcane Bolt</i>	An ability	“bolt”, “arcane”
<i>Arcane Ring</i>	An item	“arcane”, “ring”
<i>Arcane Boots</i>	An item	“arcane”, “boots”
e.g. <i>Boots of Speed</i>	An item	“boots”
<i>Aghanim’s Scepter</i>	An item	“Aghanims”, “Scepter”, “Agha”
<i>Drow Ranger</i>	A hero	“Drow”
<i>Phantom Lancer</i>	A hero	“Lancer” (However, see table 3)
<i>Earthshaker</i>	A hero	“Earth”, “Shaker”
<i>Earth Spirit</i>	A hero	“Earth”, “Spirit”
<i>Manta Style</i>	An item	“Manta”
<i>Ghostship</i>	An ability	“ship”
<i>Barathrum</i>	A hero	“Bara”

Table 2: Examples of clipped proper nouns

Clipped forms legend: modifier, class, purely contextual, more distinctive, clipped personal name

Another way to shorten a name consisting of several words is using an initialism. This is also possible with e.g. Earthshaker (note that the ambiguity with Earth Spirit remains), Queen of Pain (QoP) and Dragon Knight. In the data, the informants invariably use the Finnish names for the letters, so Dragon Knight becomes [de:ko:] and Earthshaker [e:æs]. QoP, however, is typically read aloud instead of naming the letters, as [kop] or [kop:i], sometimes voicing the first consonant in an overcorrection of the foreign letter q.

### 4.3.2 Variable Pronunciations

In addition to choosing which portion of the full name to use or whether to use an initialism, the player also needs to choose which set of norms to pronounce the name by, or may want to exaggerate a pronunciation for comedic effect. Let us take Earthshaker as an example once more. Its pronunciations vary e.g. from a markedly British RP [ɜ:θʃeɪkə] through a markedly North American [ɜ:θʃeɪkə] to a phonetically Finnish approximation [ø:tʃeika] or [o:tseik:a] (both the first vowel and the length of the final consonant are attested to vary independently in the data). Sometimes the participants use intentionally exaggerated pronunciations, such as [ø:t:er] for “Aether” (used by e.g. S1 in U1), which could apply similarly to render “shaker” as [ʃø:ker]\*<sup>105</sup>, or imitating the parlance of a real or imagined character, such as the Australian accent of the Sniper in Team Fortress 2 (Valve, 2007). In addition to pronunciations based on approximating or exaggerating speech sounds or accents, words can be pronounced as read phonetically in Finnish, e.g. rendering the postfix “-er” as [er].

As with QoP above, both “Earth” and “Shaker” may, but don’t necessarily, receive a word-final “i” to comply with Finnish word formation rules and better facilitate Finnish inflection. This doubles the possibilities. By shortening “Shaker” further to “Shake”, pronouncing it with Finnish phonology and adding an epenthetic “i”, we could even arrive at [ʃeik:i]\* that happens to be homonymous with the Finnish word for “Sheikh”. Some pronunciations appear to be simple wordplay with no easily discernible functional purpose (like the epenthetic “i” to facilitate inflection) or model (like an imitated accent). One recurring phenomenon is appending an /a/ at the end of a name, such as “kurira”, [kuri:ra], for “courier”, “rapira” [rapi:ra] for “rapier” and “divina”, [divina] / [divi:na] for “divine” (which also usually refers to *Divine Rapier*).

### 4.3.3 Translation and Calque

While the above progression from Earth Shaker to [ʃeik:i]\* is construed, a name constructed via a similar progression has been established in use by the group of friends studied. The voice actor of the hero *Pudge* pronounces his name [pudʒ], which was exaggerated to [pødʒ] or [pødʒe], which in turn was

<sup>105</sup>Asterisks are used for construed forms in this section.

intentionally bastardized into [pøtkø], homonymous to “pøtkø”, a Finnish noun for elongated, often tubular shapes, such as sausages or similarly shaped food packaging. The informants are not aware of this being used outside of their social group.

Another similar progression is, however, more widely adopted. This has to do with the hero Phantom Lancer. Out of contempt for the hero being overpowered in an earlier version of the game, players worldwide began to refer to Phantom Lancer as “Cancer Lancer”, or simply “Cancer”. This may be an allusion to the fact that it replicates itself, somewhat like a cancer cell, but is more likely derived from the internet slang connotation of the word, calling anything seen as negative “cancer” or “cancerous” (Know Your Meme 2013). Thus, in the data, one instance is attested of Phantom Lancer being referred to simply as “cancer [the illness]”, “*syöpä*”, in Finnish. Early on in U1, S2 remarks “kato, syöpä”, apparently upon someone on the other team choosing Phantom Lancer<sup>106</sup>. The internet slang connotation of “*syöpä*” is also attested in the data, in U2, where S5 expresses his frustration with “*vittu tää on syöpästä peliä*”, “fuck this is [such] cancerous play”. Table 3 below illustrates the processes “Phantom Lancer” underwent to become “*Syöpä*”.

Process	Proper noun in game	Clipping	Cultural Reference	Translation
Form	<i>Phantom Lancer</i>	“Lancer”	“Cancer”	“ <i>Syöpä</i> ”

Table 3: Progress from “Phantom Lancer” to “*Syöpä*”

This is not to say that there is any conclusive evidence that this was the exact order that these processes must have happened in. Indeed, as said, “Cancer Lancer” is a form used to refer to the hero in international use in the Dota 2 community, which includes the Finnish Dota 2 scene and this group. Two-word Finnish names for Cancer Lancer were not, however, attested by the informants, although they understood intuitively what “*syöpäpeitsimies*”\*, a very markedly awkward calque of “cancer lancer” would refer to.

Other similar intentionally humorous calques are in use by this group, such as “*ydinkärkiä*” used to refer to *nukes* (a community term for high-damage attacks), by S3 and S4 in U1. Whole idioms or other phrases, such as “heavy mana problems” in example 1, may also be calqued. Another example is S5’s utterance

<sup>106</sup>No-one in the match ended up playing Phantom Lancer, but the hero each player has currently chosen is visible in real time. The choices are not finalized until the picking round ends.



“*pelataan pitkää peliä*”, “we play [the] long game” or “let’s play the long game”, in U2, a reply to S6 humorously suggesting that he buy an item that is clearly not suited for the hero he is playing and would take a long time to produce any effect. While the exact idiom is not used altogether typically, the direct translation is more idiomatic in English than the original is in Finnish. Such usage is, as all kinds of humor, less common in the ranked dataset.

#### 4.3.4 Homophony

In addition to calque, using as direct a translation as possible, the participants sometimes also do the opposite, using similar sounds with no regard, necessarily, for the meaning. Sometimes this is done for humorous effect, such as “*Perse-Erkki*”, the Finnish word for “arse” and the male given name Erkki used by S2 to refer to a player whose Steam handle contains “berzerker” in U2, or S6 referring to the hero *Alchemist* as “Anal Chemist” in the picking round of the same match. In U1, S4 refers to the hero *Antimage* as “*Antimeisseli*”, preserving the first part of the name intact, but replacing “mage” with “*meisseli*”, “screwdriver”, which is slang for penis and also used, along with “*mela*”, “paddle” (another slang word for penis), to refer to improbably large hand-to-hand weapons in games, at least in this group’s parlance. “*Rölli*”, the name of a fictitious troll in a well-known children’s TV Show in the 1990s, is used by both S3 and S4 in U1 to refer to the hero Troll Warlord as well as its player<sup>107</sup>. Homophony between another English word and a Dota 2 term can also be used. S5, for example, refers to the item Octarine Core as “*Ocarina*” in S1.

Sometimes it is unclear whether a homophone is invoked deliberately or by happenstance while approximating the pronunciation of an English term. This is the case with “carry” being pronounced [kær:y] or [kær:i], both of which happen to mean “cart” in Finnish, and are surprisingly descriptive of the Dota 2 sense of the word (see section ## on Dota 2 gameplay for an explanation of the role). During the early game, other players must follow the carry around and help them ahead, whereas in the late game, the progress of the whole team may depend on the carry; the carry is both “carted around” and “carts around” the rest of the team over the course of a match. “*Puskea*”, the Finnish verb “to ram” or “to gore”, on the other hand, is used alongside “*pushata*” to convey the meaning of trying to advance on a lane, usually

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<sup>107</sup>Players who are not part of the same party, even on the same team, are more commonly referred to by the name of their hero than by their Steam handle

against opposition. Both stem from the English verb “to push” used internationally for in the same sense.

#### 4.3.5 Cultural Reference

Several of the examples already discussed in relation to other phenomena also border on, or constitute in addition, cultural reference. *Hadouken* was discussed in relation to the fact that it is of Japanese origin, but it is also a cultural reference to the similar move of that name in the *Street Fighter* series. Referring to Troll Warlord (or indeed one of several neutral creeps called trolls) as “Rölli” is likewise a reference to the children’s show of the same name. The Japanese honorific “senpai” is also more naturally interpreted as a reference to partially localized Japanese media than as embracing Japanese culture, at least in the situation discussed earlier. Popular culture is referenced freely by the participants, and obscure cross-reference is a prominent feature of video game culture. Game makers often include hidden references or *easter eggs* in their work, and gamers use relevant terminology from other games to better make sense of the game they are currently playing, as well as simply to use the full extent of their idiolect<sup>108</sup>.

Many players are well versed in other cultural works besides the games they play, and at least in the case of Dota 2, more ambitious players do not only play the game, but also follow competitive matches and streamers playing the game. For example, when I interviewed S6 to make sure that I didn’t simply mishear “Ocarina” and that it was in fact a reference to the item Octarine Core, he reported that he not only picked the form up from a livestream by a former competitive player called SingSing. He also revealed that he sometimes refers to the item as “Terry Pratchett core”, as it was named after the “colour of magic” in the Discworld universe<sup>109</sup> to honor of the late author, who died a little before the item was released.

<sup>108</sup>This is very much a case of tacit knowledge as mentioned in Lincoln & Guba

<sup>109</sup>The first novel of which, *The Colour of Magic*, was published in 1983 by Colin Smythe.

## 4.4 Comparisons to other studies

### 4.4.1 Evidence for MLF versus Auer (1999) and Poplack & associates

Myers-Scotton's (1997) Matrix-Language Frame model describes the code-switching in the current data considerably better than Auer's (1999) definition of code switching or the definitions of Poplack & associates covered in section 2.2.2.

Contrary to what could be expected following Poplack's *free morpheme constraint* and *equivalence constraint*, many of the English-derived Dota 2 jargon terms appear as both inflected and bare forms, pronounced according to Finnish and English phonology and varying combinations thereof. Nor are both sides of the switch always grammatical in both languages. The preceding sections have covered numerous examples of pronunciations of both inflected and uninflected terms. "Low hoo pee", "low HP", on the other hand, is an excellent example of a term that appears in the data both inflected and uninflected forms, as seen in Example 6 from U2 below.

- 1 S2** (öijöijöi) [strained], ([kr] (hh) [exhale]) [laughter][3] ei se ees osunu siihen, hei toi on aika low hoo pee toi, Tee Bee se yrittää kikkailla <(nyt [louho:be:] vittu sen tuolt)? [indistinct]>
- 1 S2 T (eyeyey) [strained], ([kr] (hh) [exhale]) [laughter][3] it didn't even hit it, hey that's pretty low aitch pee[adess.] that, Tee Bee it tries to trick around <(now fuck[interjection] it there-from)? [indistinct]>
- 2 S6** sil on kyl se Aegis [aegis]
- 2 S6 T it[adess.] is yes "=it actually has" that Aegis
- 3 S2** niin mut se yrittää kikkailla tiätsä ittesä vitun low hoo pee, toi tulee niin [vitulouho:pe:] feilaa tapetaan se vaan, mut se pitää tappaa ny ei noin (eh) [coughs] [feila:] [laughter], (tai no) [indistinct] (hh) [inhale]<,> tai no joo (kuolee se tolleenkin)? [indistinct]
- 3 S2 T yes but it tries to trick around you know itself fucking low aitch pee, that's going to so fail let's kill it just "=just kill it", but it must be killed now not like that(eh) [coughs][laughter], (or well) [indistinct] (hh) [inhale]<,> or well yeah (dies it like-that-too)? [indistinct]
- 4 S6** <[unintelligible]>

The first instance of “low hoo pee” is inflected to the adessive case, which most typically signifies adjacent location (cf. “at the house” vs. “in the house”, which would be translated in the inessive case), but can also be used in a sense e.g. “*motivaationi on matalalla*”, “my motivation is low[adess.]”, and, indeed “*terveyspisteeni ovat matalalla*”\*, “my health points are low[adess.]”. Interestingly, however, the whole switch appears to be inflected as one word, “*low hoo peella*” resulting in a form that could literally be taken to mean “I have [a] *low* [letter] aitch on [my] [letter] pee”, were “*low hoo pee*” not taken as a unit. Finnish is a highly agglutinative language and allows for compound words, which would similarly appear like the last word were inflected in a similar situation. However, an equivalent compound form in this situation, such as “*matalaterveyspisteinen*”\*, lit. “low-health-pointed”, would not take the adessive case, as the suffix “-inen” already conveys that the word refers to a quality. The form “*low hoo pee*” seems to appear in the positions an equivalent Finnish compound form would, but be inflected as the adjective in an equivalent Finnish sentence would.

“*Matalaterveyspisteinen*”\* would take the translative in the second instance of “*low hoo pee*” in example 7, in segment 3. In a Finnish sentence, the adjective would take the allative “*matalalle*”. but instead of “*low hoo peeks*”\*, or “*low hoo peelle*”\*, S2 uses it as a bare form. This is compelling evidence for Myers-Scotton’s bare forms hypothesis (see section 2.2.1). Whereas “*low hoo peel*” can be inflected with the addition of a single speech sound, [l], which may not necessarily be heard, “*low hoo peeks*”\*<sup>110</sup> would require much more noticeable speech sounds, highlighting the fact that the word is inflected and the literal sense of the resulting sentence is not meant. Similarly, “*low hoo peelle*” would require S2 to eschew the colloquial deletion of the final vowel to show contrast between the illative and allative cases, “*peellä*” and “*peelle*”, respectively.

S5 solves the same situation elsewhere in U2 by inflecting “low”, “*mä oon vitun loweil*”, “I am fucking low[pl.adess]”. Here, “low” takes a form used in the same position in some idioms, such as “*olla kovilla*”, “to be hard[pl.adess]” lit. “be on the hard[one]s”, meaning “to have a hard time”. This is likely done instead of saying “*mun hoo pee on vitun lowilla*”\* to avoid a clumsy construct centred on an initialism and the awkward form “*lowilla*”\* which, would be homonymous with

<sup>110</sup>Both of these forms are colloquial. The formal forms would be “*peellä*” and “*peeksi*”, respectively.

“*lovilla*”<sup>111</sup>, “notch[pl.adess.]”; “notched many times / in many places”, “many-notched”. Constructions such as “*se sai hoo peensä matalalle*”\*, “it got its aitch pee[+possessive suffix] low[allat.]”\*, with “*hoo pee*” inflected as nouns in conjunction with “low” are not attested in the data; “low” is not used as an adjective, but “*low hoo pee*” appears as a unit.

This follows Myers-Scotton’s *bare forms hypothesis*; there is insufficient congruence between the English EL form “low” and the Finnish form “*matala*” as well as the English form “low hp” with the initialism read in Finnish and the Finnish constructed form “*matalaterveyspisteinen*”\*. Or rather, between the English “low HP” and the fact that there is no comfortable expression in Finnish to convey a lack of health points in the same way regardless of environment. This appears to also be the gap that motivated the switch in the first place.

Sentences like the aforementioned “*toi on aika low hoo peel*” either fail to conform to the *equivalence constraint* posited by Poplack and associates (that constituents on either side of the switch should be grammatical in both languages), or, alternatively, interpreting them as doing so is a gross misunderstanding of the meaning of the sentence. If we insist that “*low hoo pee*” acts like a compound, it does not have a suffix to convey the fact that “low HP-ness” is a quality it represents. Instead, its last word *does* get inflected to the same case the corresponding Finnish adjective would. If, on the other hand, we interpret “low”, used as an adjective, as the whole switch, the sense of the sentence changes, and besides, English grammar or word order is not followed on either side of the switch; “that is rather low aitch pee on”\*. Even in Finnish, for the whole sense of “low HP” to be understood in the allative case, the adjective would also have to be inflected: “*low’lla hoo peellä*”\*, which it is not. The whole switch is thus thoroughly ungrammatical both in English and in Finnish, at least to convey the meaning that it is understood to convey by the participants.

The term “nonce loan” does not alleviate the problem, as not only do the insertions not function like endemic words (but sometimes as bare forms), but many of them are also very frequent and established in the Finnish Dota 2 community, although not the Finnish speech community at large. The only way to explain the insertional code-switching in this data away would be to argue that the code spoken by these Fennophones during these matches of Dota 2 is a pidgin or

<sup>111</sup>Pronounced with a [v] instead of a [w] as S5 pronounces “loweil”. [w] is not a speech sound used in Finnish endemic words or old established loans (VISK § 6). Some forms, such as “ward” can, however, be attested with both speech sounds, even by the same speaker in the same sentence.

creole in its own right, with virtually only content words taken from English and almost all of the grammar taken from Finnish. The simplest explanation for the distribution and usage of English-origin linguistic content in the data is simply that Finnish is the matrix language and English EL forms are used as MLF predicts they would.

None of Auer's (1999) definitions describe the data accurately either. The data is not cCS because the participants do not attempt to correct towards either language, nor are all switches context cues. Most English-origin terms are, however, used more exclusively for in-game referents than the original word in English. The data does not constitute LM, as English is never the source of the grammar. Nor is it a FL, as verbs, nouns and adjectives are used from both languages, and even though Finnish and English terms for the same referents sometimes complement each other, there is no evidence of e.g. strata of gradation between them. Of the definitions of CS covered, only Myers-Scotton's MLF describes the data as a typical case, instead of a special one, such as "Finnish-English LM without grammar from English", "Finnish-English FL without clear distribution of work between the languages" or "frequent English nonce loans in Finnish discourse".

#### 4.4.2 Work ethnographies and Game Studies

Keating & Sunakawa (2010) briefly mention that the talk in their data exhibits characteristics described in studies on airliner cockpit communications, airline operations rooms and acute medical visits. Specifically, they recognize similarities between the *online commentary* given by a doctor to their patients in Heritage & Stivers (1999)<sup>112</sup>, and the players in their data telling each other in real time what they are doing in a co-ordinated battle, between the *approach briefing* carried out by the first officer and the captain in Nevile (2004)<sup>113</sup>, as well as the use of prosodic features in the airline operations room work in Goodwin & Goodwin (1996)<sup>114</sup>. The

<sup>112</sup>This consists chiefly of explaining what they are doing, hearing, seeing or feeling, generally with the intent to reaffirm the patient either that they were right to seek medical aid, or that their situation is not too serious.

<sup>113</sup>The present study uses the same terminology as Nevile; The captain is the pilot who is not flying, but "retains ultimate control of the flight", whereas the first officer actually manipulates the controls. Besides Keating & Sunakawa, Nevile (2004) is also referenced by Sjöblom (2011).

<sup>114</sup>Keating & Sunakawa also reference Suchman 1992, which takes the same study, then forthcoming, as an example of a *centre of coordination*, making passing comparisons to a seemingly very different study following the movement of entities in physical space; A study tracking the movements of lizards.

point of their comparisons is the use of the aforementioned micro-level strategies, and they do not explore these similarities much further. I argue that not only are similar speech phenomena present in a co-operative multiplayer game such as Dota 2 or City of Villains (CoV) and coordinating the arrivals and departures of a commuter airline and planning the approach and landing of an aeroplane, but that the situations are partially analogous.

One aspect of Goodwin & Goodwin (1996) that Keating & Sunakawa (2010) compare in more detail to their own data is the fact that the operations room personnel have predetermined roles and are able to assume how arrivals and departures progress, which is not the case in their data. They claim that

*“the game scenes have a novel and unpredictable character, and the gamers do not have preassigned professional roles. Roles emerge and must be taken up, and attributes enabling or disabling participation are lost or regained in a changing environment with changing properties of visibility and opportunities to participate”* (Keating & Sunakawa 2010 p. 340)

While I have no personal experience of City of Villains (CoV), I am highly suspicious of these claims, as, like Dota 2, the kind of CoV content played in Keating & Sunakawa’s data demands co-operation, and the player characters have varying superpowers, analogous to the heroes’ abilities in Dota 2. Certainly in Dota 2, a successful combination of roles (see section 2.4.2 Gameplay) in a team is integral to success in a match. It is determined before the match which player’s hero can heal others, shield them from damage or restrict the enemies’ movement and which ones can attack from afar, deal the most damage or move in and out of fights the fastest.

Dota 2 players with any expertise are quite familiar with the structure and a wide array of likely scenarios in a match, which may be very different from the kind of CoV content Keating & Sunakawa study. This can be seen e.g. from S2’s description of an unfavorable scenario in example 5, or the planning between S4 and S3 in the beginning of and before example 3. Thus to a competent Dota 2 player, the situations are not completely surprising. Piirainen-Marsh makes similar notes as Keating & Sunakawa of her participants and FF games, but this situation, too, is very different from the one in the current data. The players are less experienced in the particular game, younger and possibly less seriously engaged in the activity, and finally, the game itself is different, a story-driven action-adventure game instead of more iterative like Dota 2, in which matches of some dozens of minutes reoccur with the same kind of progression between and during gaming sessions<sup>115</sup>.

<sup>115</sup>This is, however, not to say that some dedicated fans do not play FF games over and over and become very familiar with any likely situation in the game.

Keating and Sunakawa are right, however, in that tasks such as reporting on whether or not the enemies have visited the bottom rune (see example 3), and ostensibly taken it, fall dynamically to whoever happens to be best suited to carry them out. In my assessment, these tasks are not analogous to the professional roles or workstations in an operations room, but to tasks such as helping out the newcomer in Goodwin & Goodwin (1996). The roles of the heroes (which most heroes can fill several of with different builds) are more analogous to the workplace roles, and indeed, it would appear that the workers sometimes change who is monitoring which piece of equipment and handling which aspect of arriving and departing flights. The chain of command in Goodwin & Goodwin's operations room *is* more rigid, but there is still a degree of deference to, and somewhat more prominently, a measure of trust in the expertise of, S2 and S6 in the unranked matches in the data because they have played the game more and take it somewhat more seriously than the other players who mostly play unranked<sup>116</sup> (cf. Sjöblom 2010 on expert-novice dyads).

Most of the time, the roles of leader and follower, both in terms of who makes decisions and who goes into e.g. a fight first, as well as planner and executor, change fluidly, as Keating & Sunakawa outline. But this is also attested to a lesser extent even in the Goodwin & Goodwin data. The study refers to a situation in which the new employee happens to know more about the operation of jet bridges than his more senior colleagues. In this situation *he* is in turn deferred to, and his expertise heeded. Though this is the only instance discussed at length, the paper says that it is part of the "ethos" of the particular workplace community (Goodwin & Goodwin 1996 p. 85-86).

I also disagree with Keating & Sunakawa as to the applicability of the kind of online commentary described in Heritage & Stivers (1999) in a gaming setting, or at least my data on Dota 2. In a doctor-patient dyad, the doctor is an expert while the patient is unlikely to have much knowledge about the medical procedures. The doctor is also an active agent and the patient a passive receiver of treatment or examination, or at most, a descriptor of symptoms. In my data on Dota 2, and, I would argue, Keating & Sunakawa's on CoV, both the player describing what he is doing and seeing in the game as well as the other players listening have some degree of agency in the situation and expertise in its execution. They are also simultaneously playing, constructing speech and listening. The Heritage & Stivers (1999) model may

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<sup>116</sup>Except for S7, who only appears in the ranked matches in this data, but does also play ranked quite frequently





be[3rd.p.sg.][+ interr.] "could it be" [pause ~3s] (shall we try)?  
 [indistinct] that[part.] Enchantress

### Example 7

Note how all the subjects and objects are either jargon terms or personal pronouns. Both excerpt 1 and example 7 also exhibit ellipsis, “to be [within] visual [range]” on lines 4-5 in excerpt one and “lanewardi oisko [se]”, “lane ward could [it] be” in example 7. The fact that the ranked Dota 2 game is a less serious and less professional endeavour than landing a commercial airliner is most apparent in the colloquial register of example 7 and the peculiar word order of “lanewardi oisko”, which would likely be more neutral in a more professional situation<sup>118</sup>

## 5 Discussion

I begin the final section of the present study by discussing some of the limitations of its limitations. I go on to propose what future research could do to circumvent them, but also other avenues of research that occurred to me during the present study, but which I deemed beyond the scope of a case study. Finally, I collate my findings in the conclusion.

### 5.1 Study limitations

A clear limitation of the present study compared to the studies referenced in section 2.5 is the lack of video data. Not only am I unable to analyse the players’ use of embodied actions to construct meaning, but I may also miss some contextual information that events in the match could have provided. The latter is especially frustrating because replays of the matches would have been available to download on Valve’s servers and viewable with the free Dota 2 software for at least a month after the matches were played, but I did not save them when I could have. Were I a player of Dota 2 myself, or even a fan of a particular Dota 2 E-sports team, this may have occurred to me sooner.

However, even the Dota 2 replay would not record the point of view of each player, nor could it be played back by a later version of the Dota 2 client. It

<sup>118</sup>While Finnish has a generally free word order (VISK § 1367), “oisko lanewardi” would be less marked. The marked order likely resulted from S6 prioritizing passing this information on as quickly as possible over absolute clarity (cf. end of section 4.1) and utters the name of the enemy hero first, only then deciding to also express his uncertainty

would have to be translated to video in some way that would inherently lose some of the information stored in the replay. One acceptable compromise could be to use video capture software to capture the replay being played with the camera following each of the heroes, or using video capture software on at least one team's computers when the match is actually being played. This would, however, have a more pronounced observer effect. Video capture programs can be resource-intensive to run, and participants may not be comfortable sharing all that goes on on their screen during a match.

Many of the findings of this study rely heavily on tacit knowledge acquired through personal experience as part of the group being studied, hearing Dota 2 being discussed and playing other video games. The data is also rather small and the transcription conventions changed somewhat over the course of the transcription. For example, “[indistinct]” without preceding parentheses was used in the earlier transcriptions for the same role as [unintelligible] is in the examples given. The examples in this thesis were hand-picked and transcribed more thoroughly and according to the latest iteration of conventions.

Some of the deductions of this study, such as the progression resulting in “*syöpä*” as a nickname for Phantom Lancer, could benefit from verification using diachronic data. This would, however, require vastly more work, Already due to the necessity of having similarly-sized datasets from at least two points in time. A more robust verification would require data whose size would allow statistic analysis, and as such would have to contain more varied participants. Analysis of the game events would thus likely play a larger role in determining referents in the conversation if the researcher were not familiar with the informants.

## 5.2 Proposals for Future Research

This case study is only an exploratory first essay into the language contact present in Dota 2. Whole studies could focus on comparing video game discourse with discourse in other ethnographies and ethnographical studies. High-fidelity naturalistic data of video games is much easier and less ethically questionable to gather than in situations where trade secrets or people's lives are at stake. By studying the discourse of co-operation in a setting such as this, or e.g. in an e-sports tournament, we may uncover generalisable trends that would be difficult to glean from small or redacted data in other fields. Data of failed attempts at

communication are especially more available in gaming, as not all gamers need to be proficient, whereas professionals, by definition, should be, and would have a vested interest not to allow professional mistakes to be studied.

Future studies could use video capture software such as Fraps to capture all of the video and audio shown to each player during the match. This would require closer coordination with the participants and lead to a more pronounced observer effect as a result. Such software can also be taxing to run on lower-end computers, which could negatively impact the participants' ability to play the game. Large Dota 2 (and other e-sports) tournaments are already televised and streamed online, which could provide usable data. An even more interesting prospect would be working together with a tournament host to get access to the teams' communications as well as video and screen capture from a tournament. This would be less intrusive to plan, as the computers used by pro players are likely to be more powerful, and some tournaments even use computers provided by the host. Such data would be an order of magnitude more stressful than a typical ranked match at home, but still be easier to gather than professional<sup>119</sup> data such as that of Goodman & Goodman (1996).

To paint a clearer picture of the language choices players of strategic and competitive multiplayer games make, vastly larger data would have to be analyzed. Quantitative corpus studies of data large enough to make statistic inferences could make more general assessments of the mechanisms at play. Before that, numerous more case studies and other qualitative would be needed to establish where for trends and which mechanisms to explore further. Their findings could also be used as data in metastudies and literature reviews.

While I feel that this study is a step in the right direction in terms of games research in that I am a gamer and have some knowledge from a gamer's point of view of the game in question, I would like to see more similar studies and studies such as those described above conducted by dedicated players of the very games they study. The current gaming scene is filled to bursting with games with rich jargons and international playerbases, not only Dota 2 and League of Legends, but Rocket

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<sup>119</sup>Note, however, that some players of Dota 2 and other e-sports are in fact literal professionals too, earning all of their living this way. While this is not trivial, it is still likely that they players would be more willing to provide complete data without covering up failures or the need for anonymizing e.g. flight destinations than the airline studies covered in this study.

League<sup>120</sup>, Crusader Kings and Europa Universalis<sup>121</sup>. MMORPG's such as World of Warcraft are also understudied in terms of the rich linguistic data they could provide.

### 5.3 Conclusion

The distribution of English and Finnish content in the data is accurately predicted by Myers-Scotton's Matrix Language Frame model, and the data also provides evidence that undermines the legitimacy of Auer's (1999) definitions of language contact phenomena as well as the theories of Poplack & associates for Finnish-English code switching. The distribution of jargon terms is also similar to that in e.g. a commercial aviation setting (Nevile 2004), although the gravity of the situation is notably less pronounced. The terminology and other English elements present in the data can be arranged in a loose and overlapping taxonomy, and the processes by which terms are formed from English, Finnish and e.g. Russian words are at least partially conscious to the participants.

The joint coordination of achieving a shared goal, destroying the enemy's ancient in Dota 2, is partially analogous to how operations room employees of a small airline handle arriving and departing flights (Goodwin & Goodwin 1996, Suchman 1992), and how a plan for approaching and landing is negotiated in the cockpit of an airliner (Nevile 2004). The data of many games studies, such as the studies on Finnish adolescents playing various instalments of Final Fantasy (Piirainen-Marsh 2008, 2010, 2012, Leppänen and Piirainen-Marsh 2007, Vuorinen 2008), in fact have less in common with the current data, although their participants are also coordinating to achieve a shared goal. This is because the games played are single-player and story-driven, or the study's focus is too different, as most other games studies covered have had access to video material and have thus been able to more closely analyse the precise timing of game and speech events and embodied actions in the discourse (e.g. Keating & Sunakawa 2010, Sjöblom 2010, Myllärinen 2014). The other game studies covered use different definitions of CS, the data in some of them does not contain terminology as frequently and they don't focus as closely on terminology in particular. However, the frequency and distribution of CS (as defined in this study according to Myers-Scotton's 1997 Matrix-Language Frame

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<sup>120</sup>A game approximating soccer with three rocket-powered cars in a large cage and utilizing a communication system of predetermined written chat messages.

<sup>121</sup>Both are grand strategy games where players vie for control of states with politics, and can double-cross both NPC's and each other.

model) are, similar in this study and the other games studied covered, as are the functions of the terms that do appear in the data.

Pronunciation was found to be noticeably less precise in the ranked matches, which I attribute to choking under pressure (Baumeister, 1984). Interestingly, the participants appear to use reduced forms of speech sounds, which is not a commonly attested feature of Finnish. Talk was also less frequent in the ranked matches than in the unranked ones, although this may in part be due to the stack size being smaller in the ranked matches in the current data; the participants may be talking more over the game's own voice chat, which was not recorded in the data and would have been difficult to record without video capture software used during play.

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## 7 Appendices

### 7.1 Indices

The following are indices of (1) the initialisms used in the thesis, (2) the Codeswitching terminology from MLF, Auer (1999) and Poplack & associates' definitions, (3) the Dota 2 and gaming terminology that is used in the study (excluding some that only appear in section 2.4 on Dota 2) and (4), the transcription conventions used for the examples in the thesis.

#### 7.1.1 Initialisms

Some initialisms, notably referring to Dota 2 terminology not used outside section 2.4, are excluded from this list, as they are only explained once to provide context for other terminology and not referred to again.

<b>AA</b>	Ancient Apparition)
<b>ARTS</b>	Action Real-Time Strategy (see in Dota 2 & Gaming index)
<b>CS</b>	Codeswitching (code switching, code-switching)
<b>cCS</b>	Conversational codeswitching (see in Codeswitching index)
<b>DK</b>	The hero Dragon Knight, mentioned on p. 65
<b>CoV</b>	The game City of Villains, studied by Keating & Sunakawa (2010), see p. 34
<b>DotA, DOTA, Dota</b>	Defence of the Ancients, a game on which Dota 2 is based on, as well as the source of its name
<b>EL</b>	Embedded Language (see in Codeswitching index)
<b>ES</b>	the heroes Earthshaker and Earth Spirit, see p. 65
<b>FF, FFI, FFX</b>	Final Fantasy, Final Fantasy IX and Final Fantasy X, instalments in a series of Japanese adventure games. See also FF studies, p. 30
<b>FL</b>	fused lect (see in Codeswitching index)
<b>HP</b>	health points (see in Dota 2 & Gaming index)
<b>IPA</b>	International Phonetic Alphabet
<b>LAN</b>	Local Area Network (see also Dota 2 & gaming index: LANparty)
<b>LM</b>	language mixing
<b>LoL, LOL, Lol</b>	League of Legends, another ARTS/MOBA game, see p. 2, 20. Not to be confused with LOL, "laughing out loud"
<b>ML</b>	Matrix Language (see in Codeswitching index)

<b>MLF</b>	Myers-Scotton's Matrix Language Frame model (see in Codeswitching index)
<b>MMORPG</b>	Massively Multi-player Online Role-Playing Game, e.g. Anarchy online (see p. 35), World of Warcraft
<b>MOBA</b>	Multiplayer Online Battle Arena (see in Dota 2 & Gaming index)
<b>MMR</b>	Matchmaking Rating (see Dota 2 & Gaming index: Matchmaking)
<b>R1, R2</b>	the ranked matches in the data, see p. 39
<b>S1-S7</b>	the participants in the data
<b>U1, U2</b>	the unranked matches in the data, see p. 39
<b>VOIP</b>	Voice-Over-Internet Protocol, software like Skype or Mumble, see p. 2, 37, 39
<b>WoW</b>	World of Warcraft
<b>QoP</b>	the hero Queen of Pain, see p. 65
<b>XP, EXP, exp, xp</b>	Experience Points (see Dota 2 & Gaming index)

### 7.1.2 Codeswitching

Some MLF terminology that is only mentioned to provide context for other MLF terminology and not referred to again is excluded from this list. Where applicable, the theory, approach or researcher from which or whom the term originates in the current thesis is indicated in the beginning of the explanation. Some terms are defined differently by different sources, and this may be indicated in the explanations in this index. Initialisms used for terms in this list are indicated in parentheses after the entry if applicable.

<b>bare form</b>	MLF: CS forms used with no ML or EL system morphemes, even if this is required by the morphosyntax of the ML or one of the EL's, see p. 12, see also 'bare forms' hypothesis
<b>Blocking Hypothesis</b>	MLF: the assumption that an EL island can also be triggered by an EL content morpheme, e.g. if it is realized as a system morpheme in the ML, see p. 10
<b>borrowed form</b>	a.k.a. borrowing, loan. MLF: a word with foreign origins that has established use in the ML and can thus be accessed like an ML morpheme in CS, see p. 11, 12
<b>borrowing</b>	see borrowed form
<b>classic CS</b>	Myers-Scotton: Codeswitching with competence in ML and typically also EL, see p. 8

<b>conversational CS</b>	Auer (1999): CS with a local function, such as context cue. Used in this thesis to differentiate from CS as defined by MLF, see p. 14-15
<b>content morpheme</b>	MLF: a morpheme that participates in the thematic grid, p. 9-10, see also 4-M model
<b>CS form</b>	MLF: used to contrast with borrowed forms, see p. 11
<b>Double morphology</b>	MLF: using system morphemes from both an EL and the ML, e.g. double plurals. One of the ways to flout the System Morpheme and Morpheme order principles, see p. 10
<b>EL island</b>	MLF: a constituent of CS whose morphosyntactic frame and morphemes are provided by the EL (instead of the ML providing the frame), see p. 10, see also EL trigger hypothesis
<b>EL Trigger Hypothesis</b>	MLF: the assumption that an EL island can be triggered by an EL system morpheme, see p. 10, see also Blocking Hypothesis
<b>Embedded Language (EL)</b>	MLF: a language in CS that mainly provides content morphemes, or that may be switched to temporarily (see also EL island), see p. 9
<b>equivalence constraint</b>	Poplack & associates: the word order and grammar of both languages must be followed simultaneously on either side of a code switch, see p. 16
<b>free morpheme constraint</b>	Poplack & associates: bound morphemes may not be bound to lexical forms from a different language unless they are integrated into the same language, see p. 16
<b>fused lect (FL)</b>	Auer (1999): language contact where two languages are used simultaneously, but for different functions (cf. Language mixing, Conversational CS), see p. 15
<b>language contact</b>	Auer (1999): conversational CS, language mixing and fused lects. MLF / Myers-Scotton: see p. 31
<b>language mixing (LM)</b>	Auer (1999): CS (as defined by MLF) with no local significance for the switch and no ML (cf. conversational CS, fused lect), see p. 15
<b>loan</b>	see borrowed form
<b>Matrix Language (ML)</b>	MLF: The language (or other code) in CS that provides the morphosyntactic frame, defined by morpheme frequency see p. 9, 10, 11

<b>Matrix Language Frame model (MLF)</b>	Myers-Scotton's definition of code-switching, followed in the current thesis. See section 2.2.1 beginning on p. 8
<b>ML hypothesis</b>	MLF: the assumption that in CS, the ML provides the morphosyntactic frame and the majority of content morphemes, see p. 9
<b>ML island</b>	MLF: a constituent of CS with only ML morphemes and morphosyntax (cf. EL island, ML + EL constituent), see p. 10
<b>ML + EL constituent</b>	MLF: a constituent of CS where both ML and EL material is attested, see p. 9
<b>Morpheme-Order Principle</b>	MLF: the tendency for the word-order of the ML to be followed in ML + EL constituents, see p. 9
<b>morphological integration hypothesis</b>	MLF: the tendency for CS forms to be more integrated than borrowed forms, see p. 12
<b>morphosyntactic frame</b>	MLF: consists of specifications of morpheme order and realization of system morphemes, see p. 9 footnote 12
<b>nonce borrowing</b>	see nonce loan
<b>nonce loan</b>	Poplack & associates, Auer (1999): unestablished borrowed forms that only occur rarely, see p. 14, 17,
<b>system morpheme</b>	MLF: a morpheme that does not participate in the thematic grid, see p. 9-10, see also 4-M model
<b>System Morpheme Principle</b>	MLF: the tendency for the ML to provide system morphemes in ML + EL constituents, see p. 9
<b>4-M model</b>	Myers-Scotton (/ MLF): a model that divides morphemes into content morphemes and three kinds of system morphemes, see p. 9-10
<b>'bare form' hypothesis</b>	MLF: the assumption that bare forms are caused by insufficient congruence between an EL form used and the corresponding ML form, see p. 12

### 7.1.3 Dota 2 & Gaming

The following is a list of the Dota 2 and Gaming terminology used outside of section 2.4 on Dota 2. This is not an exhaustive list of all the Dota or gaming terminology by any other criterion except inclusion in the present study outside of the aforementioned section.

<b>ability</b>	a.k.a. skill, spell. A special action that a hero can take, such as an especially powerful attack. Typically has a cooldown period. see p. 25, 26
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<b>Aghanim's Scepter</b>	A unique late-game item which has a different complex effect on each hero, see p. 27
<b>Action Real-Time Strategy (ARTS)</b>	a.k.a. MOBA. The videogame genre that Dota 2 represents. see p. 20
<b>autoattack</b>	an attack, typically with a low cooldown, that does not have to be unlocked. Becomes more powerful as a match progresses. see p. 26,
<b>ban, banni</b>	in gaming in general, denial of access to services by e.g. server hosts, distributors such as Steam or the publisher of the game. see also banning phase
<b>banning phase</b>	in Dota 2, a phase before a ranked match in which players vote on heroes that may not be used in the match, see p. 25
<b>buff</b>	a positive effect caused by e.g. an ability or item, note also antonym debuff, see p. 26
<b>carry</b>	a role in Dota 2, carries are heroes that start out weak but become extremely powerful in the late game if played well. Can also be used as a verb. see p. 23, 27
<b>courier</b>	a unit that can be controlled by anyone in its team, which can carry items, but not receive the effects of most of them, see p. 53
<b>creep</b>	a comparatively weak, computer-controlled unit. Both teams have their own creeps, and neutral creeps spawn in the jungle. see p. 27
<b>damage</b>	a numerical value subtracted, after context-dependent negative and positive multipliers, from the HP of a target unit as a result of an autoattack or ability. see p. 25
<b>experience points (XP)</b>	points that heroes receive for killing units. Once enough XP is accumulated, a hero levels up. see p. 25
<b>disjoint</b>	causing a homing projectile to stop tracking its target, see p. 24 footnote 42
<b>e-sports, electronic sports</b>	videogames played competitively, see p. 21
<b>farm, farming</b>	Verb: focusing on killing units for xp and gold instead of other endeavors, see p. 25
<b>forest</b>	see jungle
<b>heal, healing</b>	replenishing a unit's HP, see p. 26
<b>health points (HP)</b>	A numerical value that, once depleted to zero by damage, causes the unit to die, see p. 25

<b>hero</b>	a playable character in Dota 2, see p. 23-24
<b>item</b>	something that can be placed in a hero's inventory to gain effects, see p. 26-27
<b>jungle</b>	a.k.a. forest, thickets of impassable trees between the lanes, with neutral creep spawns spotted throughout, see p. 27
<b>lane</b>	one of three avenues of attack through the jungle, traversed by team creeps, see p. 27
<b>LANparty</b>	A gathering where gamers bring their computers to play together in the same space, originally to facilitate low-latency multiplayer gaming over a Local Area Network p. 34 footnote 66
<b>level</b>	verb: to gain a level, which increases e.g. a hero's HP and mana. Also gives an ability point which can be spent to unlock an ability to gain access to it, or level one, increasing its effectiveness. see p. 25
<b>mana</b>	A numerical value from which a given amount is subtracted when using most abilities. Replenishes over time and can be replenished e.g. with items. see p. 25
<b>matchmaking</b>	in Dota 2, the game attempts to face teams of equal skill against each other. This is more transparent and more strictly enforced in ranked matches. see p. 28
<b>melee</b>	in Dota 2, attacks whose damage is applied instantly. Note, that may refer to all close-range attacks in other games. see p. 24
<b>meta, metagame</b>	e.g. strategies discussed by players, see p. 28
<b>Multiplayer Online Battle Arena (MOBA)</b>	see ARTS
<b>mod</b>	user-made modifications to existing games, e.g. Defence of the Ancients, the Warcraft III custom map that Dota 2 is based on. See p. 20-21
<b>multiplayer, multi-player</b>	Adjective: a videogame in which several players play at the same time in a way that they affect each other's experience of the game through the game
<b>range</b>	the distance at which e.g. an ability or attack may be used, also vision range, the distance a unit can see. see p. 24
<b>ranged</b>	in Dota 2, attacks that have a projectile that travels at a certain speed and whose damage is only applied once the projectile reaches the target. note that can refer to all attacks at a distance in other games, see p. 24

<b>ranked</b>	a match in which only players sufficiently similar matchmaking ratings can play in the same team, see p. 25, 28
<b>role</b>	A hero's area of expertise in Dota 2, e.g. carry. see p. 23
<b>singleplayer, single-player</b>	a game in which the actions of other players do not affect the gameplay experience of each other, at least through the game itself
<b>skill</b>	see ability
<b>spawn</b>	Verb: to become existent in the game, in reference to units. Also respawn, this happening again after death. Noun: the act of being spawned, also spawnpoint, where this happens. see p. 22, 27
<b>spell</b>	see ability
<b>stack</b>	Noun: a portion of a team that entered the match as a party, see p. 28. Verb: luring neutral creeps away from their spawnpoint to that another set is spawned, accumulating more creeps available to farm at a time, see p. 53
<b>Steam</b>	the distribution platform through which Dota 2 can be acquired and played, see p. 21
<b>ultimate, ultimate ability</b>	an especially powerful ability that each hero has, which can only be unlocked and levelled once the hero has reached certain levels, see p. 26
<b>unit</b>	e.g. creeps, buildings and heroes. Anything that either team's heroes can attack with an autoattack and/or either team's players can control, see creep, hero, buildings (p.27-28), courier
<b>unranked</b>	a match in which anyone may play together. However, the game still attempts to equalize the skill levels in both teams, see p. 25, 28
<b>ward, wardi</b>	a consumable item that grants vision or true sight to the team where it is placed, see p. 27

#### 7.1.4 Transcription conventions

The following are lists of the transcription conventions of supersegmental and prosodic features and cases and affixes present in the examples in the present thesis. This is not an exhaustive list of the transcription conventions used for the whole data or the Finnish case system.

##### Supersegmental and prosodic features

<b>[coughs]</b>	The speaker is coughing
<b>(lorem ipsum) [coughs]</b>	The segment in parentheses is uttered while coughing
<b>(lorem ipsum) [creaky]</b>	The segment in parentheses is uttered in creaky coice
<b>[cuts in]</b>	The segment starts when the speaker is already speaking, possibly in the middle of a word
<b>[cuts off]</b>	The segment ends while the speaker is still speaking, possibly in the middle of a word
<b>(hh) [exhale]</b>	An audible sigh. [nasal exhale] may be specified
<b>(lorem ipsum) [indistinct]</b>	the tanscriber is unsure of the content of the segment in parentheses
<b>(lorem ipsum)? [indistinct]</b>	The transcriber could only make a tentative guess of the content of the segment in parentheses
<b>(lorem (ipsum)?) [indistinct]</b>	The trancriber is unsure of the content of the segment in the outer parentheses, and could only make a tentative of the content of the segment in the inner parentheses followed by a question mark
<b>(lorem ipsum) [inhale]</b>	the segment in parentheses is uttered ingressively. Can also be used to transcribe audible inhalations, in which case [nasal inhale] may be specified
<b>[laughter]</b>	the speaker laughs. the number of syllables of laughter may be specified: [laughter][3]
<b>(lorem ipsum) [laughter]</b>	the segment in parentheses is uttered while laughing
<b>[pause]</b>	the speaker is silent for longer than a second (pauses shorter than this are transcribed with a comma), but less than five seconds (in which case the next speech is transcribed in a new segment). The approximate length may be specified: [pause ~3s]
<b>(lorem ipsum) [strained]</b>	The segment in parentheses is uttered in a strained voice
<b>[unintelligible]</b>	even a tentative guess of a segment could not be made, but the speaker was heard to be vocalizing
<b>&lt;lorem ipsum&gt;</b>	the segment between the angle brackets is simultaneous with another section in angle brackets of a following or preceding segment by another speaker
<b><i>lorem ipsum</i></b>	the italicized segment is an EL island (see in Codeswitching index) or a markedly foreign or foreignly pronounced word
<b><u>lorem ipsum</u></b>	the underlined section will be referred to later on in the thesis

## Cases and Suffixes

N.B.: This is not an exhaustive list of the Finnish case system!

**[adess.]** adessive

**[allat.]** allative

**[illat.]** illative

**[iness.]** inessive

**[inf.]** infinitive

**[part.]** partitive

**[pl.]** plural, may also be appended to other cases. e.g. [pl.adess.]

**[3rd.p.sg.]** third person singular

**[+ interr.]** interrogative suffix

## 7.2 Dotabuff page of U1

(on next page)

Esports Series Scores Leagues Players Teams Matches

## Match

Overview

Very High Skill SKILL BRACKET   Normal LOBBY TYPE   Random Draft GAME MODE   Europe West REGION   24:43 DURATION   2016-01-19 MATCH ENDED

0 COMMENTS

Overview
Build Details

# RADIANT VICTORY

## 26 24:43 7

### THE RADIANT

Hero	Player	K	D	A	NET	LH / DN	GPM / XPM	DMG	HEAL	BLD	Items
	16	15	2	2	14.6k	104 / 6	643 / 557	16.3k	-	2.4k	
	11	1	3	13	9.0k	36 / 2	367 / 307	7.9k	1.3k	1.1k	
	10	1	1	1	8.2k	50 / 7	346 / 224	1.6k	2.7k	740	
	11	4	2	4	7.1k	17 / -	341 / 243	3.1k	-	430	
	15	5	0	5	14.4k	144 / 32	596 / 485	6.7k	-	5.0k	
		26	8	25	53.3k	351 / 47	2.3k / 1.8k	35.5k	4.0k	9.7k	

### THE DIRE

Hero	Player	K	D	A	NET	LH / DN	GPM / XPM	DMG	HEAL	BLD	Items
	8	3	7	4	3.3k	16 / 5	191 / 166	7.6k	-	-	
	8	-	7	1	1.1k	28 / -	161 / 167	2.8k	-	-	
	11	3	5	1	6.8k	73 / 10	310 / 317	7.3k	-	521	
	7	-	5	7	2.1k	7 / 4	140 / 118	4.6k	-	-	
	13	1	2	2	5.0k	142 / 16	380 / 378	1.4k	-	-	
		7	26	15	18.3k	266 / 35	1.2k / 1.1k	23.8k	-	521	

Extra stats (item timings, player kill counts, etc) are not available for this match. This may be due to a variety of different reasons.

#### TEAM ADVANTAGES PER MINUTE

##### Experience

#### TOWERS AND BARRACKS

#### RADIANT BUILDS MORE

Hero	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

#### DIRE BUILDS MORE

Hero	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25

0 COMMENTS

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