MASTER'S THESIS

A Formal Approach to Comedy:

How Bo Burnham Makes Jokes Funny Through Math

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Abstract

This paper describes a formal, qualitative approach to comedy. By using concepts from set theory and function theory in mathematics, formal semantics, Grice's Cooperative Principle and maxims, and Austin's performatives as tools in the approach, this thesis discusses the question of the advantages and disadvantages of such an approach in terms of its applicability in uncovering where comedy is created. Furthermore, this thesis seeks to answer the question of what Bo Burnham's comedic type and comedic force are. Jokes from Bo Burnham's comedy shows *what* (2013) and *Make Happy* (2016) are used as data, to which the approach is applied. The approach in question is as follows:

1) Assign one or more comedic categories to a given joke,

2) identify and create the ontology, in accordance with the model theory outlined in the formal semantic section,

3) identify and categorize performatives, based on the theory pertaining to Austin's performatives,

4) identify and analyze the utterer's intention and meaning with the joke, in light of Grice's Cooperative Principle and maxims.

This paper concludes that this approach is a helpful tool in the process of describing the important things that are happening in a joke, as well as the intention and meaning behind the actions of Bo Burnham. The approach provides a clear picture of the elements that pertain to a joke, ranging from the actions of the comedian, to the change in lights and music, and how Bo Burnham utilizes these elements to create comedy. Formal semantics was used to describe who were in the jokes and what they were doing. Grice's Cooperative Principle and maxims were used as a way of describe the meaning behind what was happening on stage, and Austin's performatives were used in conjunction with the Gricean part of the analysis. However, the approach is not without fault. To improve the formal approach, this paper finds that it would be beneficial to define precisely what goes into a performative for it to have been successfully done, as well as a more concise and rigorous outline of the model theory, specifically in terms of the denotation assignment function between the object-language and the meta-language. This paper also answers the question of what Bo Burnham's comedic type (what type of jokes he makes) and comedic force (the substance of the jokes) are, and in that regard, the formal approach provides a small account of what the comedic type and force might be, but ultimately this approach can-

not definitively conclude what Bo Burnham's comedic type and comedic force are. This is, in part, because the qualitative nature of the approach limits the data to only a small selection of jokes, four to be exact, and the data is selected from a limited part of Bo Burnham's work, namely the comedy shows. To get a better understand of what Bo Burnham's comedic type and force are, this paper suggests adopting a quantitative approach, where the data includes all of Bo Burnham's work. The quantitative approach would ensure that more of Bo Burnham's work would be analysed, and as a consequence, a better conclusion on what Bo Burnham's "true" comedic type and force can be derived.

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1 Introduction

Comedy is something that is unique and personal to each individual person. It might be a fondness for fart jokes, political satire, or offensive and edgy jokes; there is something that can make anyone laugh. But what is it that makes a joke funny? Is the fart joke funny because of the sound it makes? Is the political joke funny because the butt of the joke is a person who is on the other side of the political spectrum? Are offensive jokes funny because the subjects are sensitive or taboo, and they are not supposed to be talked about, let alone be made fun of? It is hard to pin down where exactly a joke turns from being a bunch of words into something that can make a person laugh.

Bo Burnham is an artist who has released a variety of different works, from a collection of poems, to music albums, to Vine videos, and comedy shows. Although they are different mediums, there is a common aspect that his work shares: in some way, shape, or form, they are funny. Comedy finds a way into whatever Bo Burnham creates. The data analysed in this thesis are two of his comedy shows, specifically the shows called *what*, from 2013, and *Make Happy*, from 2016. Furthermore, the focus will not be on the shows in their entirety, but on a small selection of jokes from both shows.

As the title of this paper alludes to, a formal approach is adopted to analyse this small selection of jokes. The theories used in this paper are, in order: Cann's version of formal semantics, Grice's Cooperative Principle and maxims, and Austin's performatives. Formal semantics is an area of linguistics that seeks to mathematize natural languages in such a way that the meaning of an expression in a natural language can be described and decoded in a mathematical way. For this paper, the focus will be on what is called the *model theory*, which is a theory that describes how to mathematically categorize what is happening in a given situation. Grice's Cooperative Principle and maxims encompass a set of rules, or guidelines, such that a conversation between two parties is as *efficient* as possible if the parties follow these guidelines. These rules state that for parties engaged in conversation, each party should be as precise as possible, as unambiguous as possible, and so on, for the conversation to be as efficient as possible. Austin's theory on performatives helps to analyse what a person means when they are doing something or saying something. By saying: *"Watch out!"*, a person may intend to warn another person, and mean for the other person get out of the way, or be careful. Austin's

performatives illuminate the difference between what the intended effect of an action is from the perspective of the utterer, and what effect the utterance actually has.

This thesis seeks to analyse and discuss the applicability of a formal approach that can be used to uncover where comedy is created. Furthermore, this thesis seeks to answer the question: *What is Bo Burnham's comedic type and comedic force?*

This thesis starts with a section on math, specifically set theory and function theory. The theories covered in this section are some of the basic ideas in these fields, and examples are included throughout this section to show how the concepts can be used. The following chapter will focus on Cann's version of a formal semantic theory, specifically the concept of model theory. After that, Grice's Cooperative Principle and maxims will be introduced in section 2.3, and lastly, the theory chapter concludes with a section on Austin's Performatives. The thesis then outlines the method and the formal approach, after which the jokes are analysed in light of the theories given in the theory chapter. The thesis concludes with a discussion on the research questions.

Theory 2

This chapter provides a limited account of set and function theory from mathematics, as well as a limited account of the model theory used in Cann's version of formal semantic theory. Furthermore, this chapter explores Grice's Cooperative Principle and maxims, and lastly Austin's theory of performatives. Examples will be given throughout this chapter to illustrate how the theories can be applied.

2.1 Mathematics

The purpose of this section is to make clear the mathematical concepts that will be used in Cann's version of the *model theory*. Specifically, set theory will be used as a tool in creating the *ontology* of a *state-of-affairs*, and function theory will be used to explain the connection between the *object-language* and the *meta-language*, as well as the connection between the *extension* and *intension* of a given state-of-affairs. These concepts will be explained in the formal semantics section.

2.1.1 Sets

Usually, sets are used to represent numbers, like the set of all natural numbers, denoted by $\mathbb{N}$, or the set of all real numbers, denoted by $\mathbb{R}$. However, they are much more versatile than that, as they can contain virtually anything.

Definition 1 (Sets)
A *set* is an unordered collection of objects, called *elements* or *members* of the set. A set is said to *contain* its elements. $a \in A$ denotes that *a* is an element of the set *A*, while $a \notin A$ denotes that *a* is not an element of the set A (Rosen, 2013: 118).

There are a few ways to describe a set, and this paper will use the *roster method*, which is a method that lists all the elements of a set between a pair of curly brackets. If a set is sufficiently large, all the elements of the set will not be listed. Instead, the first two or three elements will be listed, followed by dots, followed by the last one to three elements of the set (ibid: 118).

Example 1

Let L_{Eng} be the set that contains the letters of the English alphabet. Then: $L_{Eng} = \{A, \ldots, Y, Z\}$, $N \in L_{Eng}$, and $Å \notin L_{Eng}$. □

It can also be the case that two sets are equal.

Definition 2 (Equal Sets)

Two sets are *equal* if and only if they have the same elements. Therefore, if *A* and *B* are sets, then *A* and *B* are equal if and only if $\forall x(x \in A \leftrightarrow x \in B)$[a]. If *A* and *B* are equal sets, it is written as $A = B$ (ibid: 119).

[a] This is read as *for all x, x is in A if and only if x is in B*

Example 2

Let L_{Eng} be the set from example 1, L_{Fre} be the set that contains the letters of the French alphabet (not including diacritics), and L_{Da} be the set that contains the letters of the Danish alphabet. Then: $L_{Eng} = L_{Fre}$, and $L_{Eng} \neq$ [1] L_{Da} □

Although the English and Danish alphabets are not equal, they share a different trait.

Definition 3 (Subsets)

The set *A* is a *subset* of *B* if and only if every element in *A* is also an element of *B*. $A \subseteq B$ denotes that *A* is a subset of *B* (ibid: 121).

Example 3

Let L_{Eng} and L_{Da} be the sets from example 2. Then $L_{Eng} \subseteq L_{Da}$, but $L_{Da} \nsubseteq$ [2] L_{Eng} because *Æ*, *Ø*, $Å \notin L_{Eng}$ □

As a small remark, for two sets to be equal, the following condition must be true: $A = B$ if and only if $A \subseteq B$ and $B \subseteq A$ (ibid: 123).

Due to the fact that sets are inherently unordered, the following equivalences are true:

$$\{1, 2, 3\} = \{2, 3, 1\} = \{3, 2, 1\}$$

[1] $\neq$ denotes that the sets are *not* equal

[2] $\nsubseteq$ denotes that L_{Eng} is *not* a subset of L_{DA}

However, the order of the elements of a set can be important.

Definition 4 (Ordered n-tuples)
The *ordered n-tuples* $\langle a_1, a_2, \ldots, a_n \rangle$ is the ordered collection that has a_1 as its first element, a_2 as its second element, ..., and a_n as its *n*th element (ibid: 124)

It is important to note the distinction between a set and an ordered n-tuple.

Example 4
Let $A = \{1, 2, 3\}$ be a set. From this set, it is possible to create ordered triples. An ordered triple could be $\langle 1, 2, 3 \rangle$. Although they look similar, $\{1, 2, 3\} \neq \langle 1, 2, 3 \rangle$. Due to order being important, $\langle 1, 2, 3 \rangle \neq \langle 3, 2, 1 \rangle$ □

2.1.2 Functions

In terms of mathematics, a function usually represents some kind of relation between two sets of numbers. Generally, functions are used to denote polynomials such as $f(x) = 3x^2 - 2x + 6$, or trigonometric functions like $f(x) = sin(x)$. However, functions can be used for more than that. As stated in the previous subsection, sets can contain virtually anything, and functions can be used to denote some kind of relation between a pair of sets.

Definition 5 (Functions)
Let *A* and *B* be nonempty sets. A *function f* from *A* to *B* is an assignment of exactly one element of *B* to each element of *A*. It is written as $f(a) = b$ if *b* is the unique element of *B* assigned by the function *f* to the element *a* in *A*. A function *f* from *A* to *B* is denoted by $f : A \to B$ (ibid: 140).

Functions are also called *mappings* or *transformations*. For the purpose of this paper, functions will be considered transformations, because they will be used to transform object-language elements to meta-language entities. This relation will be explained in the model theory section.

The sets *A* and *B* are special kinds of sets. Not because they contain special elements unique to them, but because of how the function relates *A* to *B*.

Definition 6 (Domain and Codomain)
If f is a function from A to B, it is said that A is the domain of f, and B is the codomain of f. If $f(a) = b$, it is said that b is the *image* of a and a is the *preimage* of b. The *range*, or *image*, of f is the set of all images of elements of A. Also, if f is a function from A to B, it is said that *f maps A to B* (ibid: 140).

Example 5

Let S be a set that contains the names of students, G be the set that contains the numbers used in the Danish grading system, and let $f_{grad} : S \to G$ be the function that maps each student in S to a grade in G. Then

$$f_{grad}(\text{Albert}) = 7$$
$$f_{grad}(\text{Bernard}) = 02$$
$$f_{grad}(\text{Carrie}) = 10$$

It is possible for a function to map different inputs from the domain to the same output in the codomain. If s_1, $s_2 \in S$, where $s_1 \neq s_2$, and $g_1 \in G$, then $f(s_1) = g_1 = f(s_2)$, which means that two different students can the same grade. □

Functions are not limited to taking one argument from the domain and outputting one element of the codomain. Functions can take any number of arguments and output any number of elements in the codomain. A function taking *n* unordered arguments will be written as $f(a_1, \ldots, a_n)$, and a functions that takes *n* ordered arguments will be denoted by $f(\langle a_1, \ldots, a_n \rangle)$. It can also the case that a function maps *B* to *A*, which is called the *inverse* of a function.

Definition 7 (The Inverse of a Function)
The *inverse function* of f is the function that assigns to an element b belonging to B the unique element a in A such that $f(a) = b$. The inverse function of f is denoted by f^{-1}. Hence, $f^{-1}(b) = a$ when $f(a) = b$ (ibid: 146).

In other words, if $f : A \to B$, then $f^{-1} : B \to A$

Example 6

Using the premises in example 5, $f^{-1}_{grad} : G \rightarrow S$ and

$$f^{-1}_{grad}(7) = \text{Albert}$$
$$f^{-1}_{grad}(02) = \text{Bernard}$$
$$f^{-1}_{grad}(10) = \text{Carrie}$$

Just as in example 5, if s_1, $s_2 \in S$ and $g_1 \in G$, then $s_1 = f^{-1}_{grad}(g_1) = s_2$, meaning that a grade can be assigned to different students. □

For the purpose of this paper, functions will not follow all of the strict definitions and rules from mathematics, but rather be based on the loose definition that a functions transforms something into something else. They will be used as a tool to transform elements from an *object-language* into entities in a *meta-language*. The following section will make the connection between mathematics and formal semantics clearer.

2.2 Model Theory

This section is based on the work of Ronnie Cann, specifically his work on formal semantics. Although his book, *Formal Semantics: An introduction*, is an introduction to the field of formal semantics, it serves as an excellent tool in conveying the key concepts that Richard Montague, who is largely credited with the popularization of formal semantics, put forth in his extensive work on the subject matter. This section will focus on the connection between an *object-language* and a *meta-language*, and how to transform elements from one to the other. Furthermore, set theory will be used as a basis for the *model theory*, specifically as a tool to describe what is in the *state-of-affairs*, or the *ontology* of a state-of-affairs.

2.2.1 The Basics of Formal Semantics

In essence, formal semantics is the mathematicalization of semantics. The idea is that it is possible to accurately determine the meaning of an expression in any natural language through precise and rigorous mathematical concepts.

Like any mathematical theory, a formal semantic theory is built from the bottom up, and at the core of Cann's version is the declarative sentence. These are sentences that are said to express propositions, and, as Cann puts it:

> "The proposition expressed by a declarative sentence uttered as a statement is true on some particular occasion if, and only if, that proposition corresponds to some state-of-affairs that obtains on that occasion" (Cann 1993: 15).

This is where one of the mathematical concepts used in formal semantics come into play, and it is perhaps the most important one, namely *propositional logic*. In short, propositional logic is the assignment of *truth values* to declarative sentences, meaning that a declarative sentence is either *true* or *false*, but never both (Rosen, 2013: 2). The link between what is expressed by Cann in the above quote and propositional logic is called *truth conditional semantics*: the meaning of a sentence is its truth-conditions. In other words, to know the core of a sentence uttered as a statement is to understand the conditions under which it could be true (Allwood, 1977: 129, Cann, 1993: 15). To clarify what is meant by this, consider the following example:

Example 7

The world is three-dimensional. Such an utterance would be considered true, because the conditions for this statement to be true are met, but for the higher-dimensional beings in the movie

Interstellar (2014), such a statement would be considered false, as they ”live” in a higher dimension. □

However, there is one problem with this approach. According to Cann (1993: 16), if *s* is a sentence and *c* is a set of conditions, then 1) *s* is *true* if and only if *c*, and 2) *s* centrally means that *c*. A sentence like *the sky is blue* is true if and only if the sky is blue. The meaning of the statement *the sky is blue* is described by the language of which the sentence itself is a member, in this case the English language. This language is not mathematical in nature, so trying to assign truth-values to a statement in English using the English language is futile. The solution to this circulatory problem is to construct a *meta-language*, a language into which a statement in English, or any other natural language, is converted and then assigned a truth value (Saeed, 2015: 7).

2.2.2 The Three Languages

In terms of formal semantics, and for the purpose of this paper, there are three languages: the *object-language*, the *translation-language*, and the *meta-language*. The object-language, denoted by O_{Lang}, is the language in which statements and utterances are constructed. In this paper, English will be considered the object-language. The meta-language, denoted by M_{Lang}, is the language used to determine the meaning of the sentences, and the meta-language will be a combination of propositional logic, function theory, set theory, and English. Lastly, the translation-language, denoted by T_{Lang}, serves as a mediator between the object-language and the meta-language (Cann, 1993: 24). It is easier to think of the translation-language as a function, or transformation, that takes arguments, or sentences, from the object-language and converts them into statements in the meta-language where they are assigned a truth value. To put it in slightly more mathematical terms:

$$T_{Lang} : O_{Lang} \to M_{Lang}$$
$$T^{-1}_{Lang} : M_{Lang} \to O_{Lang}$$

Example 8

Consider the sentence in example 7. Let *The world is three-dimensional* $\in O_{lang}$, and $x \in M_{Lang}$ be some kind of representation of the given sentence.

Then T_{Lang}(*The world is three-dimensional*) $= x$. A truth value is then assigned to x, in this

case $x =$ true. All that is left to do is to convert this expression back to the object language, so $T^{-1}_{Lang}(x) = \langle$*The world is three-dimensional, true*$\rangle$. □

The entity that is the ordered pair $\langle$*sentence, truth value*$\rangle$ is not a concept Cann mentions in his book, but is a representation of how to interpret the output of T^{-1}_{Lang}. The ordered pair contains the sentence in O_{Lang} and the truth value assigned to it in M_{Lang}. The question now is how to construct elements in O_{Lang} and determine which of these need to have their meaning derived, as well as what the representation of sentences in O_{Lang} looks like in M_{Lang}.

2.2.3 Extension and Intension

One of the core tenets of a formal semantic theory is that it should seek to provide an account of the relations between linguistic expressions and the things that they can be used to talk about (ibid: 1). Natural languages are most commonly used by people to talk about things that are happening around them, or happening in their world. Consider the following example: *The doctor helped the sick patient*. There are two entities in this scenario: a doctor and a patient. Furthermore, there is a relation between the two, namely that one engages in the act of helping the other. In a sense, the physical entities are *denoted* by the words *the doctor* and *the sick patient*, and, according to Cann, expressions are said to denote objects in the world (ibid: 10). However, instead of denoting entities in the real world by their noun phrases, this paper will instead use the *lexeme form* of words. The lexeme form is the "simplest" form of a word. Take the words *help, helped, helps, helping* as an example. All of these words are derivations of the underlying lexeme *HELP*. Although they all have slightly different meanings, in this case the time of when the act of *helping* was carried out, they all convey the same action. In its lexeme form, the sentence *the doctor helped the patient* becomes *DOCTOR HELP PATIENT*. Even if the latter sentence sounds like a caveman's version of the former, they essentially carry the same meaning: a doctor helps a sick patient.

From this example, it is clear that there is a difference between the "properties" of words. *The doctor* and *the patient* denote objects that are rooted in the physical world, whereas *sick* is not rooted in the physical work. It is a trait of an object that exists in the real world, in this case the patient. To differentiate between these two types of words, Montague distinguishes between the *extension*, denoted by $\mathcal{E}$, and the *intension*, denoted by $\mathcal{I}$ of an expression (Montague, 1974: 98)[3]. Essentially, the extension of an expression is the "physical" aspect of that expression; it is

[3]Montague does not use $\mathcal{E}$ and $\mathcal{I}$ to denote these concepts.

the words in the expression that denote objects in the real world. On the other hand, the intension of an expression is the "property" aspect of that expression (Allwood, 1977: 126). Using the same example, the extension of the above expression would be $\mathcal{E} = \{\text{DOCTOR}, \text{PATIENT}\}$, and its intension would be $\mathcal{I} = \{\text{HELP}, \text{SICK}\}$. Unfortunately, another problem arises. Consider the following expression: *the big fish ate the small fish*. The extension and intension of this statement would be $\mathcal{E} = \{\text{FISH}, \text{FISH}\}$ and $\mathcal{I} = \{\text{BIG}, \text{EAT}, \text{SMALL}\}$. Clearly, in the context of the meaning of the statement, FISH $\neq$ FISH, but looking exclusively at the extension, it is hard to differentiate the two. A solution to this problem is to use numbered subscripts for identical lexemes. The extension of the example is then $\mathcal{E} = \{\text{FISH}_1, \text{FISH}_2\}$, and it is easier to see that the expression has two different entities with similar lexeme forms.

2.2.4 Ontology

Lastly, this subsection will focus on the model that is used to describe the state-of-affairs of a given situation. Considering the previous example. The state-of-affairs is that of one fish, who is large, eating another fish, who is small. As seen in the example, it can be split into two aspects; the extension and the intension. The model of a state-of-affairs is based on what is in it (extension) and what is happening in it (intension). In other words, the model of a state-of-affairs is the *ontology* of that state-of-affairs.

Definition 8 (Ontology)
Let S be some state-of-affairs in a natural language O_{Lang}. The ontology, denoted by $\mathcal{O}$, is defined to be the sum of the *extension*, $\mathcal{E}$, and *intension*, $\mathcal{I}$, of that particular state-of-affairs. In other words (Cann, 1993: 40)

$$\mathcal{O}_S = \mathcal{E}_S + \mathcal{I}_S$$

Note that $\mathcal{O}_S$[4] $\subseteq S \subseteq O_{Lang}$. There are two problems with this definition. Firstly, let I_n, for $n \geq 0$ and $n \in \mathbb{N}$, be some number of unique interpreters and S_k be some state-of-affairs in O_{Lang}, then $I_n(\mathcal{O}_{S_k}) \neq I_m(\mathcal{O}_{S_k})$ for $n \neq m$, or in other words, two distinct interpreters of the same state-of-affairs can yield two different ontologies. Secondly, how an interpreter creates their extension and intension of the state-of-affairs can vary across different interpreters. Essentially, the problem boils down to *what should be included in the ontology*. Since the

[4]Read as *the ontology of S*

ontology is the sum of the extension and the intension, it is possible to create an arbitrary number of ontologies of any given state-of-affairs by including anything and everything in either the extension or the intension.

Example 9

Consider the following statement: *Alice eats an apple*. The simplest versions of $\mathcal{E}$ and $\mathcal{I}$ are $\mathcal{E} = \{\text{WOMAN}_1, \text{APPLE}\}$ and $\mathcal{I} = \{\text{EAT}\}$. Other possible versions of $\mathcal{E}$ and $\mathcal{I}$ could be $\mathcal{E} = \{\text{WOMAN}_1, \text{ARM, INDEX FINGER, THUMB}, \ldots, \text{LITTLE FINGER, MOUTH, APPLE}\}$ and $\mathcal{I} = \{\text{BEND, GRASP, EAT}\}$, and so on. □

Theoretically, the extension and intension of a given state-of-affairs could be infinitely large, if *everything* should be included in the ontology. However, to solve this problem, the ontologies in this paper will only include relevant entities in the extensions and actions in the intensions.

Now that there is a method to describe the elements of O_{Lang}, a method to describe the transformed elements of O_{Lang} in M_{Lang} is needed as well. This is done with a *denotation assignment function*, or $\mathcal{F}_{da}$. $\mathcal{F}_{da}$ is a function that takes arguments from the ontology and transforms them into entities in M_{Lang}, so $\mathcal{F}_{da} : \mathcal{O} \rightarrow M_{Lang}$. For the sake of simplicity, let $\mathcal{O}_{\mathcal{M}}$ denote the ontology transformed by $\mathcal{F}_{da}$, then $\mathcal{F}_{da} : \mathcal{O} \rightarrow \mathcal{O}_{\mathcal{M}}$, where $\mathcal{O}_{\mathcal{M}} \subseteq M_{Lang}$.

There are two parts to the denotation assignment function. The first part is based on the extension of an ontology, and the other part is based on the intension of an ontology. Elements from the extension that are transformed by $\mathcal{F}_{da}$ will be called *entities*, and elements from the intension transformed by $\mathcal{F}_{da}$ will be called *predicates* for the remainder of this paper. The set of entities will be denoted by $\mathcal{N}$, and the set of predicates will be denoted by $\mathcal{P}$. In short

$$\mathcal{F}_{da}(\mathcal{E}) = \mathcal{N}$$
$$\mathcal{F}_{da}(\mathcal{I}) = \mathcal{P}$$

Similar to definition 8, $\mathcal{O}_{\mathcal{M}S} = \mathcal{N}_S + \mathcal{P}_S$ for some state-of-affairs S. Entities and predicates will be superscripted with a primemarker in addition to their lexeme form, and will all contain lower case letters. Considering the ontology of example 9,

$$\mathcal{F}_{da}(\text{WOMAN}_1) = \text{alice}' \qquad \mathcal{F}_{da}(\text{APPLE}) = \text{apple}'$$
$$\mathcal{F}_{da}(\text{EAT}) = \text{eat}'$$

In a sense, the predicates of $\mathcal{P}$ are relations between the entities of $\mathcal{N}$. Considering the same example, the relation between alice$'$ and apple$'$ is the predicate eat$'$, because the state-of-affairs is

defined by the sentence *Alice eats the apple*. This relationship is also preserved by $\mathcal{F}_{da}$, meaning that $\mathcal{F}_{da}(\mathcal{O}_S)$ associates each predicate with some amount of the entities (ibid: 47). This means that $\mathcal{F}_{da}(\text{EAT}) = \text{eat}'$, and $\text{eat}' = \{\langle \text{alice}', \text{apple}' \rangle\}$. Note that the predicate contains an ordered pair, meaning that it is Alice that eats the apple, and not the other way around. In this example, the predicate eat′ contains two arguments, and it is considered a *two-place predicate*. In general:

Definition 9 (Predicates)
Let $P \in \mathcal{P}$ and $e \in \mathcal{N}$, then $P_n(\langle e_1, e_2, \ldots, e_n \rangle)$ denotes that P is an ***n-place predicate*** that takes ***n*** ordered entities (ibid: 32).

Now that it is possible to express a state-of-affairs in terms of expressions in M_{Lang}, all that is left to do is tie it together with truth-conditional semantics, to be able to determine the meaning of expressions in a given state-of-affairs. This is done with the following definition:

Definition 10 (Truth Value of Predicates)
An n-place predicate $P_n \in \mathcal{P}$ is true if and only if the ordered n-tuple $\langle e_1, e_2, \ldots, e_n \rangle$, where $e_1, \ldots, e_n \in \mathcal{N}$, is in the set of ordered n-tuples denoted by P_n. Otherwise it is false.[a]

[a] Based on Cann, 1993: pages 49, 51, 52

The previous example would then yield that ⟨*Alice eats an apple, true*⟩ because $\langle \text{alice}', \text{apple}' \rangle \in \text{eat}'$. Conversely, ⟨*An apple eats Alice, false*⟩ because $\langle \text{apple}', \text{alice}' \rangle \notin \text{eat}'$. This is a rather simple example that is somewhat circular, because it states that it is true that Alice is eating an apple, because that is the only expression in the state-of-affairs.

One of the areas where formal semantic theory is useful is in the analysis of ambiguous statements.

Definition 11 (Homonyms)
If *W* is a set of inflectionally related word forms $\{w^1, w^2, \ldots, w^n\}$, of which w^i is the lexeme form, then the translation of any word, w^i, in *W*, is ${w^i_n}'$, where $n \geq 0,\ \ n \in \mathbb{N}$ (Cann, 1993: 36).

In short, this means that any words that have similar spellings but different meanings will be numbered according to their different meanings when transformed by $\mathcal{F}_{da}$. To show how formal

semantics can be properly utilized, consider the following example:

Example 10

Let S be the state-of-affairs given by the following sentence: *Albert is dying*. Then

$$\mathcal{O}_S = \begin{cases} \mathcal{E}_S = \{\text{ALBERT}\} \\ \mathcal{I}_S = \{\text{DIE}\} \end{cases}$$

However, depending on the context of when and where the statement was uttered, there is another way to interpret the statement. Let the following be the other interpretation:

$$\mathcal{O}_S = \begin{cases} \mathcal{E}_S = \{\text{ALBERT}\} \\ \mathcal{I}_S = \{\text{LAUGH}\} \end{cases}$$

There is no way of determining this until the ontology has been transformed by $\mathcal{F}_{da}$.

$$\mathcal{F}_{da}(\mathcal{O}_S) = \mathcal{O}_{\mathcal{M}S} = \begin{cases} \mathcal{N}_S = \{\text{albert}'\} \\ \mathcal{P}_S = \{\text{die}'\},\ \ \text{die}'_1 = \{\emptyset\},\ \ \text{die}'_2 = \{\langle \text{albert}' \rangle\} \end{cases}$$

where die'_2 denotes the alternative meaning of the lexeme form of *to die*, that being *laughing*, and die'_1 denotes the act of *dying*. Note that die'_1 contains $\emptyset$, which denotes that die'_1 contains nothing. From $\mathcal{P}_S$, it is easy to determine that the statement *Albert is dying* correlates to *Albert is laughing* by looking at the truth values of the following statements in $\mathcal{O}_{\mathcal{M}}$

$$\text{die}'_1(\text{albert}') = \text{false, because albert}' \notin \text{die}'_1$$
$$\text{die}'_2(\text{albert}') = \text{true, because albert}' \in \text{die}'_2$$

meaning that it is true that *Albert is laughing*. □

This example also illustrates the importance of context of when a statement is uttered, or how the ontology of a state-of-affairs is created.

2.3 Grice's Cooperative Principle and Maxims

This section focuses on Grice's Cooperative Principle and the Maxims attached to it, as well as the distinction between what an utterer *says* and what an utterer *means* by saying something. The principles explained in this section serve as tools to determine what an utterer means when they say something, and their intention when saying something. The relationship between this section and the previous is that the model theory can be used to determine what is said and done in a given situation, and the Gricean analysis can be used to determine the meaning and intention behind it.

2.3.1 The Cooperative Principle and Maxims

This subsection will start with an example that will serve as a steppingstone to creating Grice's Cooperative Principle. Consider the following example, which is a slightly modified version of Grice's example (1995: 24):

Example 11

Let α, β, γ[5] be three distinct people, and suppose that α is talking with β about their friend γ, who is a shop clerk in a small shop. α asks β how γ is doing so far on their new job, to which β says: *"They are doing alright. They are well-liked by their colleagues, and they have not been to prison yet"*. To this, α asks β just what exactly is implied by the last remark. There are a multitude of implications in that last remark: it could be that γ's colleagues are detestable characters and, by association, γ is too, or that γ is the sort of person to find themselves regularly in prison. It could also just be the literal implication of the phrase, that γ has not yet been to prison. □

The purpose of this example is to highlight the somewhat problematic meaning of the word **say**. On one hand, the word **say** is the literal meaning of the word, that it is the act of uttering words, and on the other hand it also incorporates the *meaning* of what was said[6] (ibid: 25). To better illustrate this duality:

Example 12

Break a leg! If no other context is given about how or when this utterance was said, it could

[5] Is read as *alpha, beta, gamma*, respectively

[6] What was *implied* by saying it

be either (1) that someone wants someone else to literally break a leg, or (2) that someone is wishing someone else good luck. □

In terms of implications, Grice differentiates between *conventional* and *nonconventional* implications (ibid: 25). Consider the premise of example 10. The *convetional implication* of *Albert is dying* is the literal meaning of the sentence. The implication of the sentence is determined by the conventional use of the words in the sentence. Conversly, the *nonconventional implication* would be that *Albert is dying* means that Albert is laughing, where the words in the sentence are not attributed their conventional meaning. To put it into a formal semantic point of view: $\text{die}'_1(\text{albert}')$ would be considered a conventional implication, and $\text{die}'_2(\text{albert}')$ would be considered a nonconventional implication.

Furthermore, Grice considers a branch of nonconventional implications he calls *conversational implications*, which are connected with certain types of features of discourse (ibid: 26). In general, human conversation does not consist of a series of random utterances; it has structure to it. If two people are engaged in a conversation and one person says something, the other person will usually follow up by saying something related (Hutchby & Wooffitt, 1998: 38). In a sense, conversations are cooperative acts, and the members of the conversation recognize some mutually accepted direction of the conversation (Grice, 1995: 26). This direction is usually accepted from the start of the conversation, and can change as the conversation progresses. It is generally in the interest of both parties to engage in the conversation in as efficient a manner as possible. To formulate this in another way:

Definition 12 (The Cooperative Principle)
Make your conversational contribution such as is required, at the state at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged (Grice, 1995: 26).

Grice divides this principle into four categories, or *maxims*, which are further divided into subcategories, or *submaxims*. Grice labels the four maxims: *Quantity, Quality, Relation*, and *Manner* (ibid: 26). Each of these maxims, and their subsequent submaxims, will be followed by an interpretation of example 11 in light of the maxim in question. *Quantity* is, as the label implies, about the amount of information that a speaker should provide, and it is divided into the following submaxims. Quoting Grice (1995: 26):

1) Make your contribution as informative as is required (for the current purpose of the exchange).

2) Do not make your contribution more informative than is required.

To illustrate how this maxim can be applied, consider the last phrase of β's reply. By β giving the extra piece of information that γ has not yet been to prison, there is a chance that β is violating these submaxims. Either β is (1) contributing with information not required in the conversation, or (2) contributing with more information than necessary.

Quality can be summed up as the maxim "*try to make your contribution one that is true*" (ibid: 27), and it is divided into two submaxims. Quoting Grice (1995: 27):

1) Do not say what you believe to be false.

2) Do not say that for which you lack adequate evidence.

In regards to the second submaxim, the example makes no mention of γ's previous history with the prison system, so for β to say that γ has not yet been to prison could be considered lack of adequate evidence on β's part.

The maxim of *Relation* can be explained by the short phrase: "*Be relevant*" (ibid: 27). This maxim is more or less tied to the fact that a conversation is a cooperative act, and that it is in the interest of the parties involved in the conversation to make their contributions as relevant as possible to the topic of the conversation. Although β's remark might seem out of place, it could be that it is relevant for α to know that γ has not yet been to prison.

The last maxim is different than the other three. Whereas the previous maxims are about *what* is being said by the participants of a conversation, the maxim of *Manner* is about *how* something is being said. Quoting Grice (1995: 27):

1) Avoid obscurity of expression.

2) Avoid ambiguity.

3) Be brief (avoid unnecessary prolixity).

4) Be orderly.

Example 11 makes no mention of *how* β says the last remark, however, depending on β's intention, had β stated it without showing any emotions, α might take the meaning of the phrase literally. On the other hand, if β said it sarcastically, or in a malicious way, α might take the meaning of the phrase as β does not think γ is an honorable person.

The list of maxims, and their respective submaxims, is not an exhaustive list. The submaxims can be interpreted in a number of different ways, and it is possible to include other submaxims as well. *Be orderly* can be interpreted as to be polite, and other social norms can be included under each maxim. This is generally true for any of the maxims, and it is generally agreed upon that the maxims are too vague. Frederking argues that the Cooperative Principle and the maxims can be summed up as "Do the right thing" (Frederking, n. d.), and Sperber and Wilson argues that the essential concepts of the maxims are left entirely undefined (Sperber & Wilson, 2011: 36). Furthermore, there is a cultural aspect to conversations as well, and a critique of the the Cooperative Principle and the maxims is that they do not apply in some cultures (Keenan, 1976: 78). To exemplify the vagueness of the maxims, consider the maxim of *Quality*. Would a person be flouting the maxim if they unknowingly told something that was not true while also believing they had adequate evidence for it?

The Cooperative Principle does not only apply to conversation, but can be applied to other acts as well, or what Grice calls the *sphere of transaction*. To exemplify this concept, consider the following example, which is a slightly modified version of Grice's example (1995: 28):

Example 13

Let α and ω[7] be two people engaged in the act of baking a cake. ω is assisting α in this endeavour.

1) *Quantity*. If ω is assisting α, it is expected that ω contributes neither more or less than what is expected by α. Should α request that ω hand them four eggs, it is ω's obligation to hand α exactly four eggs.

2) *Quality*. It is on ω to contribute to the transaction as genuinely as possible. Should α be in need of flour for the cake, it is expected that ω hands α flour and not eggs.

3) *Relation*. It is expected of ω to contribute appropriately at each stage of the cake-baking process. If α asks for a whisk or a spatula to mix the ingredients, ω should not give α an oven tray, although this action might be expected later in the process.

4) *Manner*. α expects ω to make it clear what they are doing in a given stage of the baking process, and it is expected of ω to execute each of the tasks in the process to the best of their ability.

□

[7]Read as *omega*

In essence, the Cooperative Principle is an *axiom* of almost every type of conversation. Much of what is said and implied in a conversation is based upon the mutual presupposition that the participants in a conversation follow the Cooperative Principle, if not explicitly, then implicitly.

The Cooperative Principle is contractual in nature. If all participants of a conversation agree to follow the maxims, then all participants can rely on the others to relay relevant information, thus ensuring an "efficient" conversation. Although the maxims might seem as a set of rules, they act more as a set of guidelines to maximize the outcome of a conversation (ibid: 29). However, while thinking of the Cooperative Principle as a contract may be ideal in some cases, in others it will not. There exists a host of exchanges which do not fall within the guidelines of the cooperative quasi-contract. In a sense, if the participants care about the goals of a given conversation, it is in their best interest to follow the Cooperative Principle, as it would ensure the maximum profitability of the conversation for all participants (ibid: 30).

Having now defined what the Cooperative Principle entails, the next step is to connect it with *conversational implications*. A person who, by saying that *p* has implicated that *q*, may be said to have conversationally implicated that *q* (ibid: 30). This is provided that (1) the person is, to some extent, following the maxims, or at the very least the Cooperative Principle; (2) the supposition that they think *q* is required to make their saying *p* consistent with the presumption; and (3) the speaker thinks that the listener is able, to the extent of their ability, to work out that the previous supposition is required (ibid: 31). To illustrate this, consider the problem outlined in example 11. From β's statement that γ *has not yet been to prison*, it is reasonable to suggest that α might think that (1) β has violated the supermaxim *Relation*, specifically by not being relevant in saying γ *has not yet been to prison*; (2) given the context, α can regard β's comment as irrelevant, on the basis that α thinks β sees γ as a dubious person; (3) β knows that α is capable of working out scenario two, in which case β implies that γ is dishonest (ibid: 31). Conversational implications must be able to be worked out. In order for a listener to work out that a conversational implication is present, they need to rely on the following five points (ibid: 31):

1) The conventional meaning of the words used in the utterance in which the implication is present, as well as identify any references that may be present,

2) the Cooperative Principle and the maxims attached to it,

3) the context, be it linguistic or other, of the utterance,

4) other items of background knowledge,

5) and that all relevant information contained in (1)-(4) is available to all parties, and that all parties know the information is available.

Going back to example 11, for α to work out what β meant, they have to: (1) actually now what the words in the phrase mean[8], (2) presuppose that β follows the Cooperative Principle and the maxims, (3) the context of the situation in which the phrase was uttered, (4) and (5) know the same information that β knows.

2.3.2 Intention and Meaning

In saying something or doing something, a participant in a conversation will generally have some intention behind what they say or do. A person putting on a sweater might mean to say that they are cold, and by extension[9] that the room is cold (Searle, 2002: 143). To put it in broader terms, let $\mathcal{U}$[10] denote an utterer, x denote some action, and δ[11] denote the meaning or intention of that action, then (1) "$\mathcal{U}$ said that δ" entails (2) "$\mathcal{U}$ did something *x* by which $\mathcal{U}$ meant that δ" (Grice, 1995: 87). However, since the focus of this paper is more in the realm of speech and conversation, the act of doing *x* will in most cases be a linguistic act. The two points above can be specified into the following (ibid: 87):

"$\mathcal{U}$ did something *x* (1) by which $\mathcal{U}$ meant that δ

(2) which is an occurrance of an utterance type S such that

(3) S means δ

(4) S consists of a sequence of elements following syntactic rules

(5) S means δ in virtue of (4)"

However, this definition is too wide. In doing something x, $\mathcal{U}$ might intend for x to mean something different than what x means. Instead of saying that "$\mathcal{U}$ meant δ by doing *x*", it is perhaps more feasible to say that "by doing x, $\mathcal{U}$ *centrally* meant δ" The above five points can then be reduced to the following two points. Quoting Grice (1995: 88):

"$\mathcal{U}$ did something *x* (1) by which $\mathcal{U}$ centrally meant that δ

(2) which is an occurrance of a type S part of the meaning of which is δ"

[8] Consider if β said the last phrase in Danish, and α did not speak Danish

[9] Not *extension* as discussed in subsection 2.2.3

[10] Pronounced just as a regular 'U'

[11] Pronounced *delta*

To illustrate this, consider again the premises of example 11. β said that γ has not yet been to prison by which β centrally meant that γ was a dubious character. Here, $\mathcal{U} = \beta$, x is the act of saying "γ *has not yet been to prison*", and δ is that β thinks γ is a dubious character. Depending on the context of the utterance, what is meant by uttering x might be different (Searle, 2002: 153). There are four types of meaning. Quoting Grice (1995: 89-90):

1) The *timeless meaning(s)* of an utterance-type.

2) The *applied timeless meaning* of an utterance-type.

3) The *occasion-meaning of an utterance-type*.

4) The *utterer's occasion meaning of an utterance-type*.

The *timesless meaning(s)* of an utterance-type can be condsidered to be either *complete* or *incomplete* (ibid: 89). The difference between the two is that the *complete* subcategory encompasses meaning of a sentence or a sentence-like utterances, whereas the *incomplete* subcategory encompasses the smaller constituents of the sentence or sentence-like structure (ibid: 89).

Example 14

Consider the situation given in example 10: *Albert is dying*. The *complete timeless meaning(s)* of the utterance would be (1) that Albert is literally dying, (2) Albert is laughing, (3) Albert is embarrassed, and so on. The *incomplete timeless meaning(s)* would then be that the word *dying* can be (1) the literal act of ceasing to exists, (2) laughing, (3) embarrassment, and so on. □

Similar to the timeless meaning(s) of an utterance type, the *applied timeless meaning(s)* can be subcategorized into *complete* and *incomplete* types. In this case, the *complete applied timeless meaning(s)* is the exact meaning of a sentence that the utterer intends, and the *incomplete applied timeless meaning(s)* is the same, but for the smaller constituents of the sentence (ibid: 89).

Example 15

Suppose that Albert is at a comedy show with a friend, and the friend sees Albert laughing very much, to the point of breathlessness. At some point, it might be fair for the friend, when retelling what happened at the show to a third party, to say that *Albert was dying*. In this case, the *complete applied timeless meaning* of this utterance is that Albert is laughing. It follows then that the *incomplete applied timeless meaning* of the word *dying* is *laughing.* □

The *occasion-meaning* of an utterance-type is closely related to the *applied timeless meaning(s)*. The meaning of an utterance is linked to the context of when it was uttered. It would be incorrect to say that by uttering *Albert is dying*, the friend meant that Albert was literally dying, because the context of the situation was that both were watching a comedy show (ibid: 90).

Lastly, the *utterer's occasion-meaning* of an utterance encompasses what is *meant* by uttering something. By uttering *Albert is dying*, the friend meant to convey that Albert was having a great time (ibid: 90).

These four definitions can be summed up as the following. Let $\mathcal{U}$ be an utterer, x be an utterance-type, and δ_i[12] be a possible meaning of an utterance. Quoting Grice (1995: 90-91)

(1) x means 'δ_i' (Timeless meaning(s) - either complete or incomplete)

(2) x meant here 'δ_i' (Applied timeless meaning(s) - either complete or incomplete)

(3) $\mathcal{U}$ meant by x 'δ_i' (Occasion-meaning)

(4) $\mathcal{U}$ meant by uttering x that 'δ_i' (Utterer's occasion-meaning)

With the examples given, it is fair to say that by uttering *Albert is dying*, the friend *intends* for the third party to ask what happened that made Albert almost laugh himself into non-existence. In more general terms, if $\mathcal{A}$ is an audience[13], and r is a response, then "$\mathcal{U}$ meant something by uttering x" is true, if and only if, for some $\mathcal{A}$, $\mathcal{U}$ uttered x intending (ibid: 92):

(1) $\mathcal{A}$ to produce a particular response r

(2) $\mathcal{A}$ to think (recognize) that $\mathcal{U}$ intends (1)

(3) $\mathcal{A}$ to fulfill (1) on the basis of their fulfillment of (2)

Example 16

COnsider again the premise of example 10. The friend uttered *Albert is dying* intending: (1) the third party, or $\mathcal{A}$ to produce the question "*Why did Albert laugh so much?*", (2) the third party to recognize that, in uttering *Albert is dying*, $\mathcal{U}$ intends (1), and (3), the third party to fulfill (1) on the basis that (2) is fulfilled. □

As stated in the introduction, and by what has been shown with the examples, the theories presented in this section will be used in conjunction with formal semantic to determine both *what* the meaning of an utterance is and the *intention* of the utterance.

[12] Here, the subscripted *i* denotes the different possible meanings of an utterance

[13] The term audience is used to encompass any other participants than the utterer, and $\mathcal{A}$ is just a fancy 'A'

2.4 Austin's Performatives

This section introduces aspects of Austin's work described in *How to do Things with Words* (1962). Specifically, this section focuses on what a performative is, if it is *happy* or *unhappy*, as well as what locutionary acts are. This section can be seen as an extension of the last section, in the sense that a performative is an action that someone does, and by doing the act, they intend to convey some kind of meaning.

2.4.1 The Performative

The focus of this subsection will be on what Austin calls the *performative sentences*, or in short *performatives*. These types of sentences differs from other sentences in that they indicate the performance of an action. The uttering of a performative is the performing of an action, it is not just saying something (Austin, 1962: 6). Quoting Austin (1962: 5), these are sentence types that satisfy the following:

1) They do not 'describe' or 'report' anything, they do not have a truth value; and

2) the uttering of the performative is the doing of an action, which would not normally be described as saying something

To exemplify what a performative is, Austin offers the following example: "*I bet sixpence it will rain tomorrow*". The uttering of this sentence is not to describe the action of the sentence, or state the doing of the action, but rather, it is to do it. To bet someone anything is to say "*I bet you... that...*" (ibid: 6). However, just uttering a performative is not enough for it to have been performed. The *circumstances*, or context, of the performative have to be appropriate as well (Searle, 2002: 144). For a bet to have been made, the offer of the better should be accepted by the taker. In uttering a performative, it is not only necessary for the utterer to perform appropriate actions, but necessary for all participants involved to perform appropriate actions as well (Austin, 1962: 9. Searle, 2002: 169).

On the matter of appropriate circumstances, is it true to say that a performative has been successfully executed if only one participant of the exchange has done the appropriate steps to make the exchange valid (Searle, 2002: 147)? If α bets β sixpence that it will rain tomorrow, α produces the money from their pocket, β accepts by saying: "I accept the bet", and it rains the day after, should β refuse to pay α the promised sixpence, has the performative been successfully executed? Surely, α has upheld their end of the bargain, both in speech and action, but β

has not, so to speak, performed appropriately under the circumstances of the bet. In a sense, this would be considered an *unhappy* outcome. More generally, things that can *go wrong* when uttering a performative are called *Infelicities* (Austin, 1962: 14). For a performative to be *happy*, that is to say it has been executed successfully by all participants, the following conditions must be satisfied. Quoting Austin (1962: 14-15):

A.1 There must exist an accepted conventional procedure having a certain conventional effect, that procedure to include the uttering of certain words by certain persons in certain circumstances, and, further,

A.2 the particular persons and circumstances in a given case must be appropriate for the invocation of the particular procedure invoked.

B.1 The procedure must be executed by all participants both correctly and

B.2 completely.

C.1 Where, as often, the procedure is designed for use by persons having certain thoughts or feelings, or for the inauguration of certain consequential conduct on the part of any participant, then a person participating in and so invoking the procedure must in fact have those thoughts or feelings, and the participants must intend so to conduct themselves, and further

C.2 must actually so conduct themselves subsequently.

There is a distinction between rules A and B taken together, and rule C. If a participant is observed to deviate from the rules in either A or B, either by uttering the performative incorrectly, or not be in a position to act it out, then the act has not been successfully performed. On the other hand, if a participant has been observed to satisfy the conditions in A and B, but not in C, then the performative act has been achieved, but the performative is *insincere*, so to speak (ibid: 15-16). To break the rules of A is considered a *misinvocation*; to break the rules of B is considered a *misexecution*; and lastly, to break the rules in C is considered an *abuse* (ibid: 18). To exemplify these terms, consider the following example:

Example 17

A crowd is gathered to watch the naming of a ship, and a designated person is standing with a bottle next to the stem of the ship, ready to say: "I name this ship the Queen Margrethe", and then smash the bottle on the ship. If the designated person was not the person chosen to carry out the naming of the ship, then it would be considered a *misinvocation*. If the designated person

smashed the bottle on the ground instead of on the stem of the ship as they say "I name this ship the Queen Margrethe", then it would considered a *misexecution*. Lastly, should the designated namer uphold rules A and B, but instead of saying "I name this ship the Queen Margrethe", they say "I name this ship Henrik, the Prince Consort of Denmark", then it would be considered an *abuse*. □

2.4.2 The Three Locutionary Acts

In a sense, there are a few ways to *say something*. In the conventional way, to say something *is* to do something. By producing sounds, something has been done: movement of the mouth, vocal cords, etc. However, it is also possible to do something *in* saying something, or do something *by* saying something. Saying something, in the normal interpretation of the word, is to utter certain noises, in a certain way, following certain rules (Austin, 1962: 94. Searle, 2002: 154). This act of *saying something* is called a *locutionary act*. A locutionary act is made up of three things. Quoting Austin (1962: 95):

1) *The Phonetic Act*: The act of uttering certain noises.

2) *The Phatic Act*: The act of uttering a phonetic act, but the noises belong to a certain set of vocabulary, and follow a set of grammatical rules.

3) *The Rhetic Act*: The act of uttering a phatic act with a certain definite sense and reference[14].

Example 18

Let α, β and γ be three distinct people. If α says: "It is snowing", then α is performing a phatic act (and by definition also a phonetic act). However, if β says to γ: "α says it is snowing", then β is performing a rhetic act (and by definition also a phatic and phonetic act). □

Note that it is possible for two people to perform the same phatic act but not produce the same rhetic act as a result. Conversely, it is also possible to perform two different phatics acts and still produce the same rhetic act. If α says: "γ is a *good* (sarcastic, rolling their eyes) person", and β says: "γ is a good (not sarcastic) person", then α and β have performed the same phatic act, but not the same rhetic act. Similarly, if α says: "γ is a bad person", and β says: "γ is not a good person", then α and β have performed the same rhetic act, but not the same phatic act (ibid: 97).

[14]Sense and reference essentially mean 'context'

Essentially, an illocutionary act is the way in which a locutionary act is used. To perform a locutionary act is also, in some sense, to perform a illocutionary act. A locution may be used in the following ways. Quoting Austin (1962: 98):

> to ask or answer questions
>
> giving some information or an assurance or a warning
>
> announcing a verdict or an intention
>
> making an identification or giving a description

This is not an exhaustive list; there are many more ways to use a locutionary act. The problem with the definition of an illocutionary act is that it is too wide. The same locutionary act may be used in different ways, and each different way has different meaning. Consider the difference between uttering "*Be careful!*" as either a warning, or to advise, or even as a suggestion. Although it is the same locutionary act, the *illocutionary force* differs depending on the context (ibid: 99).

Example 19

In reference to the weather, when asked about its condition, α says: "It is snowing". On one hand, this locutionary act could be considered a warning in that α uses their statement to convey the message that the person asking should be careful when venturing outside. On the other hand, it could be considered a factual statement about the conditions of the weather. The illocutionary force differs depending on the context of the situation. □

Just as it is possible to perform a rhetic act when performing phatic act, it is also possible to perform another type of act when performing an illocutionary act. By saying something, it is often the intention of the speaker to produce certain effects on the listeners, either effects upon the feelings, thoughts, or actions, and usually with intent. Austin names these types of performances *perlocutionary acts* (ibid: 101). To exemplify these differences, consider the following example, which is based on an example from Searle (2002: 163):

Example 20

β asks about the condition of the weather, to which α replies: "It is snowing" (locutionary act). α meant this as a warning to β (illocutionary act) that it is very cold outside. By warning β, α intends for β to put on a warm jacket (perlocutionary act). □

This example can also be viewed in the light of Grice. Let $\mathcal{U} = \alpha$, *x* be the sentence *it is snowing*, S be a warning, and δ be intention of getting β to put on a jacket, then the example satisfies (Grice, 1995: 88):

"$\mathcal{U}$ did something *x* (1) by which $\mathcal{U}$ centrally meant that δ

(2) which is an occurrance of a type S part of the meaning of which is δ"

Method and Analysis 3

This chapter contains the methods section, which includes how and where the data was selected, how it was processed, and how it will be analysed. Furthermore, this chapter contains the analysis section, which features the analysis of the data in terms of the theories outlined in the previous chapter.

3.1 Method

The purpose of this section is to explain the choices made in regards to the selection of data, specifically the choice of comedian, the choice of jokes from said comedian, and the transcription process. Lastly, this section contains an outline of how each joke will be analysed in terms of Cann's version of formal semantics, Grice's Cooperative Principle and maxims, and Austin's performatives.

3.1.1 Bo Burnham

Bo Burnham has been chosen as the subject of focus. It is common for comedians to have a "schtick", a certain way of doing comedy, and this paper suggest the following categories to denote what "schtick" constitutes: *comedic type* and *comedic force*. To exemplify these categories, consider British comedian Jimmy Carr. He is a "one-liner" (comedic type) who focuses on deadpan delivery, taboo subjects, irony, and playing on the expectation of the audience (comedic force). Consider the following joke of his: *No matter how much you give a homeless person for tea, you never get that tea* (Nelson, 2018). It is a joke about the, somewhat, taboo subject of homelessness, specifically giving money to the homeless. In the first part of the sentence, Mr. Carr portrays himself as a charitable person, as someone who does not shy away from giving a homeless person some money for tea. However, this image is reversed when it is revealed that Mr. Carr's intention was not to be charitable, but to employ the homeless person to fetch him some tea. The joke is a play on the expected social conduct when interacting with a homeless person and the selfishness of Mr. Carr.

On the other end of the spectrum is the "storyteller" type of comedian. Gabriel Iglesias is an american comedian and his comedic force consists of hyperbole, funny voices, and, perhaps

most importantly, the stories are about what has happened or is happening in his life. He is, essentially, retelling his experiences in an exaggerated way. Consider one of his best-known jokes: One night he gets pulled over by a police officer after pulling out of the drive-through of a Krispy Kreme Doughnuts, and he fails to obey the traffic laws. This particular officer takes too long to get to the car window, so Mr. Iglesias puts the box of doughnuts on his lap, intending to eat them while he waits for the officer. The officer gets to the window before Mr. Iglesias can eat any of the doughnuts and asks: "Do you know why I stopped you?", to which Mr. Iglesias replies: "'Cus you can smell it" (Iglesias, 2010). The joke here is the American stereotype that all police officers like doughnuts, and the officer pulled Mr. Iglesias over, not because of his violation, but because of the doughnuts.

These examples serve to highlight the "extreme" ends of the comedic type spectrum, but that is not to say that these two particular comedians are bound by their respective type. Jimmy Carr has incorporated some stories in his comedy routines, albeit not to the extent of Mr. Iglesias. It is safe to say that almost every comedian uses a diverse set of joke-telling techniques, and that is one of the reasons Bo Burnham has been chosen as the focus of the analysis in this paper. Mr. Burnham blends musical acts and storytelling in his routines, and, arguably, he sits close to the middle of the comedic type spectrum. Furthermore, he is a "physical" comedian as well, both in terms of how he acts on stage, and in how he uses objects in his performance. In contrast, Jimmy Carr would not be considered a "physical" comedian, as he mainly stands in the middle of the stage, addressing the audience with his jokes, and Gabriel Iglesias would be considered a "partial physical" comedian, as he acts out the stories he is telling, but does not use any objects. In a sense, Bo Burnham is a more versatile comedian; he experiments on stage, and that makes him an interesting subject to analyse.

3.1.2 The Formal Approach

Although Bo Burnham is an accomplished artist, having written and acted in movies and television shows, released four albums, as well as released a book with poems, the focus of this paper is on his two comedy shows *Bo Burnham: what* (2013) and *Bo Burnham: Make Happy* (2016). From each of these shows, a few jokes have been selected that will be used in the analysis section. The focus, so to speak, will be on how the theories outlined in the first chapter can be used to analyse the jokes in question, and in doing so figure out what makes the jokes funny. Furthermore, the comedic type and comedic force of Bo Burnham will be analysed as well.

A qualitative approach to the data has been adopted as a means to get a glimpse into what constitutes Bo Burnham's comedic type and comedic force. The qualitative approach serves as a great tool to be able to dive deeper into the selected data, and consequently get a better understanding for the comedic aspects in play, in terms of how Bo uses these aspects and what effect they have on the audience. The upside of this approach is that it allows for a closer inspection of how Bo Burnham creates comedy, both in how he performs on stage, but also what comedic categories he uses in his jokes. On the other hand, because it is a qualitative approach, not much can be said about what is considered Bo's *real* comedic type and force. Since this paper only uses a limited sample, the data can only show what the real comedic type and force *might* be, not what it actually is. To get a better understanding of that Bo Burnham's *real* comedic type and force is, a quantitative approach should be adopted instead. This approach would ensure that more of Bo's work would be analysed, and in doing so, this approach would be able to give a stronger conclusion on the question of Bo's comedic type and force. Furthermore, the comedy shows have been chosen because this medium provides extra elements that some of his other works do not. Consider his albums: although some of them are comedic in nature, they lack the visual aspects of a comedy show. On the other hand, consider his acting career: they contain comedic elements, but can lack the personal touch of Bo Burnham. It is often the case that there are more than one writer for a show, which makes the comedic effect of the show an amalgamation of each of the writers, whereas a one-man comedy show has the personal effect of its titular character. By choosing jokes from comedy shows, the jokes in question will have a more personal touch, it will be an undiluted version of Bo Burnham's comedic force, so to speak.

On a more technical note, the following will be the procedure of how each joke will be analysed. According to Scott Dikkers, the founder of the satirical news website TheOnion.com[1] (Dikkers, n. d.), there are eleven categories that jokes can be divided amongst. They are: (1) *irony*, (2) *character*, (3) *reference*, (4) *shock*, (5) *parody*, (6) *hyperbole*, (7) *wordplay*, (8) *analogy*, (9) *madcap*, (10) *meta-humor*, and (11) *misplaced focus* (Johnson, 2017). As a remark, it is not the case that a joke must fall under one and exactly one of these categories, but point one through eleven should be thought of as tools that can be used to make something funny. Consider Jimmy Carr's joke "*No matter how much you give a homeless person for tea, you never get that tea*". It incorporates a bit of points one, three, and four. Points one to eleven will serve as guidelines in the identification of what makes the chosen jokes funny. The procedure

[1]The Danish counterpart is rokokoposten.dk

that this paper will use to analyse the jokes will be as follows:

1) Assign one or more comedic categories to a given joke,

2) identify and create the ontology, in accordance with the model theory outlined in the formal semantics section,

3) identify and categorize performatives, based on the theory pertaining to Austin's performatives,

4) identify and analyze the utterer's intention and meaning with the joke, in light of Grice's Cooperative Principle and maxims.

Points two and four are a bit problematic. In regards to point two: the ontology of the shows changes very little from joke to joke. Most of the time, the ontology of each show will consist of Bo Burnham, the audience, and the objects that Bo Burnham interacts with, and the things that he says and does. There is a clear distinction between the what can be considered the *real ontology* and the *imaginary ontology*. Consider the previous example with Mr. Iglesias and the police officer. The *real* ontology would consist of Mr. Iglesias and the audience, whereas the *imaginary* ontology would consist of all the persons and objects in the story he is telling, those being himself, the police officer, the doughnuts, etc. From an analytical point of view, the imaginary ontology has far more substance than the real ontology. To differentiate between the real and imaginary ontology, this paper suggests the following definition:

Definition 13 (Real Ontology and Imaginary Ontology)
For a given state-of-affairs, *S*, let $\mathcal{O}_S^{Re}$ denote the *real* ontology of *S*, and let $\mathcal{O}_S^{Im}$ denote the *imaginary* ontology of *S*. Furthermore, $\mathcal{E}_S^{Re}$ and $\mathcal{I}_S^{Re}$ denote the extension and intension of the real ontology. Similarly, $\mathcal{E}_S^{Im}$ and $\mathcal{I}_S^{Im}$ denote the extension and intension of the imaginary ontology.

This definition satisfies the properties of definition 8, and, for a given state-of-affairs S,

$$\mathcal{F}_{da}\left(\mathcal{O}_S^{Re}\right) = \mathcal{O}_{\mathcal{M}\,S}^{Re}$$
$$\mathcal{F}_{da}\left(\mathcal{O}_S^{Im}\right) = \mathcal{O}_{\mathcal{M}\,S}^{Im}$$

Furthermore, $\mathcal{O}_S^{Re} \subseteq S \subseteq O_{Lang}$ and $\mathcal{O}_S^{Im} \subseteq S \subseteq O_{Lang}$, although the imaginary ontology is not technically a part of the state-of-affairs, because it is either a retelling of past events or a fictitious creation, to avoid further confusion, the imaginary ontology will be considered

a subset of the state-of-affairs. This is done because the imaginary ontology is something that is created in parallel with the real ontology. It would be more appropriate to say that $\mathcal{O}_S^{Im} \subseteq \mathcal{O}_S^{Re} \subseteq S \subseteq O_{Lang}$. Here, the relation $\mathcal{O}_S^{Im} \subseteq \mathcal{O}_S^{Re}$ does not follow the mathematical sense of what makes $\mathcal{O}_S^{Im}$ a subset of $\mathcal{O}_S^{Re}$, but rather $\mathcal{O}_S^{Im}$ exists as a consequence of $\mathcal{O}_S^{Re}$. Additionally, the "over-all" ontology of the state-of-affairs can be viewed as the sum of $\mathcal{O}_S^{Re}$ and $\mathcal{O}_S^{Im}$. In theory, a formal semantic theory can be used to transform every kind of expression in an object-language into expressions in a meta-language, complete with rigorously defined syntactic structures. However, since the model theory outlined in this paper only consists of a very limited account of how to create an ontology and how to express object-language elements as entities in a meta-language, some liberties will be taken when analysing the chosen jokes, specifically in regards to the predicates of $\mathcal{P}$ in $\mathcal{O}_{\mathcal{M}}$. To solve this problem, the elements of the ontology will have an explanation as to how they fit into the analysis. Regarding point four, as the data has been collected from comedy shows, the intent and meaning of a joke is almost always to make the audience laugh. While this is not insignificant, as the purpose of a comedy show is generally to make people laugh, it is uninteresting for the purpose of this paper. Similarly, the utterer is Bo Burnham in both shows, and the audience is a static element in each of the shows. To put it in Gricean terms (Grice, 1991: 88, 92): $\mathcal{U}$ = Bo Burnham, $\mathcal{A}$ = the audience, x^2 is some joke, and r is laughing. By saying some joke, Bo Burnham intends for the audience to laugh. Furthermore, in the analysis of each joke, the Cooperative Principle and maxims will be considered to be followed by the participants of the comedic exchange. That is to say, for the purpose of this paper, Bo Burnham will be considered to follow the Cooperative Principle and maxims by default. The same goes for the audience.

3.1.3 Jokes and Transcriptions

The jokes have been chosen on the basis of being as diverse as possible in terms of how Bo performs them and their content. Specifically, two songs have been chosen, one being the intro song to the show *Make Happy*, and the other being a song about a story from Bo's life. The other two jokes consist of a "physical routine", akin to slapstick humor, and the last is a fictional story, like a fantasy bedtime story. In regards to the eleven types of categories that jokes can be divided into, the jokes have also been chosen to represent as many of the categories as possible.

[2] δ has been purposefully left out because the meaning of a joke is tied to the joke, so if the joke is not explicitly stated, the meaning of it cannot be defined.

The jokes have been transcribed to include what is essential in order to facilitate a formal analysis as outlined in the previous section. The transcriptions include timestamps of when something is said, as well as a number, to make referencing easier. Furthermore, the transcriptions include what happens on stage, both in regards to what Bo does, but also anything extra, like changes in light or music, if there is a small pause, or the audience laughs. Lastly, but perhaps most importantly, the transcriptions include who says what on stage. Since Bo is the only person on stage in the shows, this might seem a bit redundant, but a few of the jokes include fictional characters, so the transcriptions include a clear distinction between when Bo plays one of these characters and when he does not. There is also a clear distinction between when something is said, and when something is sung. To better illustrate how the transcription has been done, consider lines 44 and 45 in appendix D, *Andy the Frog*:

44 (00:44:14) [Bo changes his voice to indicate the crocodile is talking, and chants] **Crocodile**: ♪ *I woke up this morning and I sat on a log. I opened up the menu. The menu said frog."* ♪

45 (00:44:19) **Bo**: *"Andy said,"* [As Andy, in an increasingly panicking voice, screaming] **Andy:** *"No, no."*

The references number is followed by a timestamp, and the timestamp indicates when something is said, and is in the form *(hour:minute:second)*. The text in the square brackets indicate what is happening on stage, and the bold words, or names, indicate who is talking. This is followed by what that character says, shown by the italic font. If something is sung, the italic text is bracketed by musical notes, like so: ♪ *lyrics go here* ♪. Lastly, the transcriptions are based on the subtitles from the Netflix shows, as well as subtitles from independent sources. This was done to minimize the amount of inaccuracies when transcribing the jokes.

3.2 Joke A: Is rap a white man's game?

This section contains the analysis of the joke corresponding to appendix A: the joke named *Intro Joke* from *Make Happy* (2016). To summarize what is happening in this joke: Bo enters the stage and hip-hop music starts to play. He grabs the microphone and starts rapping, which consists of asking the audience yes-or-no questions, and if members of the audience can answer yes, they should reply with a *"Hell, yeah!"*. This continues throughout the entire performance, where the questions get weirder and weirder. There are times where Bo breaks from this formula, where, after the audience has replied with *"Hell, yeah!"*, the rapping stops, and Bo speaks to the audience in a somewhat normal manner. Specifically, this relates to a math joke, a police joke, and a joke about the Israel-Palestine conflict.

In terms of the comedic categories, this joke uses elements of (2), (3) and (5); *character*, *reference*, and *parody*. Since this is a comedy show, it is fair to say that the primary role of Bo is that of a comedian. However, since this is a rap song, Bo takes on the role of a rapper as well, so for this joke, he is playing the character of a rapper. This is seen by the change in his body language, the music playing in the background, and the way he sings the lyrics of the song. Hip-hop music is also more of a participatory genre for the audience, as it is common for a rapper to include the audience in some form or another, and here Bo includes the audience by asking them to yell *"Hell, yeah!"* if they fall into some category based on the questions asked by Bo during the song. The questions that Bo asks the audience during the performance are of the nature: *if you like/do/etc something, let me hear you say "Hell, yeah!"*, and the *something* are experiences that the audience can relate to. Consider line 15 of the joke, where Bo poses the question *If you like drinking booze let me hear you say, "Hell, yeah!"*. It is a common experience that most members of the audience can relate to, and this is the nature of most of the questions asked by Bo in the song. Lastly, the performance is a parody in two ways. First, since the show is a comedy show, it is expected, from the perspective of the audience, that Bo fulfils his duty as a comedian. This fulfilment requires that Bo performs his show in a way that is stereotypical for a comedian, which is, in a broad sense, standing on stage, walking a bit back and forth on stage, telling their jokes. Jimmy Carr is a prime example of how a stereotypical comedian behaves on stage, as he mostly does the actions just described. In contrast, by blending the characters of being a comedian and a rapper, Bo executes the character of being a comedian in an unfamiliar way; a way that is uncharacteristic for a comedian. The second way that the joke can be considered to have elements of parody is in the way that Bo performs the character

of being a rapper. Consider line 11 of the joke: *If you can divide by zero let me hear you say, "Hell, yeah!"*. Bo is a skinny, white guy, who, at first glance, does not fall into the stereotypical character of being a rapper, and when looking at line 11, it is clear that Bo parodies the rap and hip-hop genre by breaking from the formula: by not rapping about the appropriate subjects of the genre, but rapping about subjects that are at the other end of the "subject-spectrum".

The first part of creating the ontology is to identify what constitutes the state-of-affairs of this joke, and then create, on the basis of the state-of-affairs, the two ontologies $\mathcal{O}_S^{Re}$ and $\mathcal{O}_S^{Im}$. In the case with this particular joke, the state-of-affairs changes as the performance progresses. Specifically, line 19 shows that Bo breaks from the rapping, and starts acting like a "faux police officer" and "arrests" members of the audience. However, even though there is a shift in the state-of-affairs that pertains to this joke, the ontology will reflect the performance as a whole, rather than two separate state-of-affairs. Let $\mathcal{S}1$ be the state-of-affairs of appendix A, then $\mathcal{S}1$ consists of the following lines:

Line 1	Line 2	Line 3	Line 4
Line 19	Line 20	Line 21	Line 22
Line 27	Line 29	Line 30	Line 33

Using these lines, $\mathcal{S}1$ is the following state-of-affairs: $\mathcal{S}1$ = *Bo Burnham walks on stage, and the audience cheers loudly. In the background, hip-hop music starts to play, and the lights turn purple. Bo walks up to the microphone, picks it off the stand, the lights turn blue, and he starts rapping. The rapping progresses to a point where the rap is stopped, instigated by Bo asking the audience if they like to smoke weed, to which the audience replies: "Hell, yeah!". At this point the hip-hop music stops, and the lights turn red and blue, like the lights on a police car. Sirens can be heard wailing, and police officers can be heard telling people to get on the ground. This part ultimately ends, and Bo continues to rap in the same manner as before. The next subject is about the Israel-Palestine conflict, where the joke is about the complicated nature of the conflict. The rapping ends with Bo asking the audience if they are ready to get the show started*. In regards to the ontologies of $\mathcal{S}1$, $\mathcal{O}_{S1}^{Re}$ is identified to consist of what is happening on the stage during the performance. On the basis of the provided lines from the transcript, $\mathcal{E}_{S1}^{Re}$ and $\mathcal{I}_{S1}^{Re}$ are the following two sets:

$$\mathcal{E}_{S1}^{Re} = \{\text{BO, SPOTLIGHTS, MICROPHONE, STAGE, SPEAKERS, AUDIENCE}\}$$

$$\mathcal{I}_{S1}^{Re} = \{\text{WALK, MOVE, CHANGE, PLAY, RAP, LAUGH, CHEER, CLAP, TALK}\}$$

Similarly, $\mathcal{O}_{\mathcal{S}1}^{Im}$ can be identified to be the sum of the sets $\mathcal{E}_{\mathcal{S}1}^{Im}$ and $\mathcal{I}_{\mathcal{S}1}^{Im}$, where

$$\mathcal{E}_{\mathcal{S}1}^{Im} = \{\text{POLICE OFFICERS, HELICOPTER, SIRENS, ISRAEL, PALESTINE}\}$$
$$\mathcal{I}_{\mathcal{S}1}^{Im} = \{\text{YELL, ARREST, FLY, WAIL, WAR}\}$$

Concerning $\mathcal{O}_{\mathcal{S}1}^{Im}$, the part with the police officers and the helicopters have been put into $\mathcal{O}_{\mathcal{S}1}^{Im}$ because they are not physically on the stage, but exist only in the minds of the audience members as a consequence of the audio being played over the speakers and the changing of the lights on the stage. It is imagined that the officers are on stage, and it is imagined that the officers arrest members of the audience. Hence, the officers, the helicopter, and the sirens have been put in $\mathcal{O}_{\mathcal{S}1}^{Im}$ rather than $\mathcal{O}_{\mathcal{S}1}^{Re}$.

Using $\mathcal{F}_{da}$, $\mathcal{O}_{\mathcal{M}\mathcal{S}1}^{Re}$ is constructed to be the following two sets, where $\mathcal{F}_{da}\left(\mathcal{E}_{\mathcal{S}1}^{Re}\right) = \mathcal{N}_{\mathcal{S}1}^{Re}$ consists of the entities of $\mathcal{O}_{\mathcal{S}1}^{Re}$ in the meta-language, and $\mathcal{F}_{da}\left(\mathcal{I}_{\mathcal{S}1}^{Re}\right) = \mathcal{P}_{\mathcal{S}1}^{Re}$ consists of the predicates of $\mathcal{O}_{\mathcal{S}1}^{Re}$ in the meta-language. They are:

$$\{\text{bo}', \ \text{spotlights}', \ \text{microphone}', \ \text{stage}', \ \text{speakers}', \ \text{audience}'\}$$

$$\text{walk}' = \{\text{bo}'\} \qquad \text{move}' = \{\text{bo}'\}$$
$$\text{rap}' = \{\text{bo}'\} \qquad \text{talk}' = \{\text{bo}'\}$$
$$\text{laugh}' = \{\text{audience}'\} \qquad \text{cheer}' = \{\text{audience}'\}$$
$$\text{clap}' = \{\text{audience}'\} \qquad \text{speakers}' = \{\text{play}'\}$$
$$\text{change}' = \{\text{spotlights}'\}$$

Similarly, $\mathcal{O}_{\mathcal{M}\mathcal{S}1}^{Im}$ can be constructed using $\mathcal{F}_{da}$, where $\mathcal{F}_{da}\left(\mathcal{E}_{\mathcal{S}1}^{Im}\right) = \mathcal{N}_{\mathcal{S}1}^{Im}$, and $\mathcal{F}_{da}\left(\mathcal{I}_{\mathcal{S}1}^{Im}\right) = \mathcal{P}_{\mathcal{S}1}^{Im}$. $\mathcal{N}_{\mathcal{S}1}^{Im}$ and $\mathcal{P}_{\mathcal{S}1}^{Im}$ are, respectively:

$$\{\text{police-officers}', \ \text{helicopter}', \ \text{sirens}', \ \text{israel}', \ \text{palestine}'\}$$

$$\text{yell}' = \{\text{police-officers}'\} \qquad \text{arrest}' = \{\langle \text{police-officers}', \ \text{audience}' \rangle\}$$
$$\text{fly}' = \{\text{helicopter}'\} \qquad \text{wail}' = \{\text{sirens}'\}$$
$$\text{war}' = \{\langle \text{israel}', \ \text{palestine}' \rangle\}$$

Note that the audience is part of the predicates in $\mathcal{P}_{\mathcal{S}1}^{Im}$, even though the audience is a member of $\mathcal{E}_{\mathcal{S}1}^{Re}$ and not $\mathcal{E}_{\mathcal{S}1}^{Im}$. This is because the police officers, when yelling for people to get down on

the ground, as seen by line 20, are referencing the members of the audience who yelled *"Hell, yeah!"* when asked if they like to smoke weed in line 17.

As a consequence of the creation of $\mathcal{O}^{Re}_{\mathcal{M}\mathcal{S}1}$ and $\mathcal{O}^{Im}_{\mathcal{M}\mathcal{S}1}$, it is now possible to identify the performatives that are a part of $\mathcal{S}1$. The overarching performative of $\mathcal{S}1$ is Bo's rapping. Rapping is the medium through which Bo performs the joke in question, and it is seen in the way that the joke is constructed. The joke consists of Bo singning in a manner that fits the rap genre, the music playing in the background is heavily influenced by the hip-hop genre, and Bo performs the rap to an audience, so on account of these points, it is evident that Bo performs a rap. However, it is clear that Bo misexecutes the rapping. This is seen as early by lines 9 and 11, where he deviates from what would be considered normal rap lyrics by saying *Virgins, if you haven't felt a person say, "Hell, yeah!"* and *If you can divide by zero let me hear you say, "Hell, yeah!"*. These lyrics are, in a sense, considered abnormal rap lyrics. That is not to say that a rap song could not incorporate these lyrics in a suitable manner, but in the context of this particular joke, the lyrics are considered a deviation from the norm. Taking this a step further, it is also clear that Bo misexecutes the rapping by taking into consideration what is happening in line 14. After asking if the audience can divide zero, he breaks from the rapping, although the hip-hop music is still playing, to state that it is *"Mathematically impossible. Listen. Don't be pavlovian. I'm looking for answers here. Trying to gather information. Let's go."*. This line also shows that Bo is misinvoking the performative of rapping. In saying: "*I'm looking for answers here. Trying to gather information"*, it is clear that the call-and-response type lyrics of the song do not serve to hype up the audience, as in lines 5 and 7, but instead serve to question the audience on their lifestyles. This is a clear deviation from what would be considered normal rap lyrics, and thus is a misinvocation of the rap performative. Bo's misinvocation and misexecution is also seen in lines 19 to 26, where he first asks the audience if they like to smoke weed, and upon hearing *"Hell, yeah!"* from the audience, he proceeds to "mock-arrest" members of the audience. Furthermore, he deviates from his own formula, seen in line 26. Up until this point, Bo asked the audience to reply by saying *"Hell, yeah!"*, a short and easy to say phrase. However, in line 26, Bo switches it with *If that seems oversimplified to you let me hear you say, "It's a really tough job and they're doing their best"*, a substantially longer phrase for the audience to say, which is almost impossible to say in the same time span as *"Hell, yeah!"*. This could also be considered an abuse on the part of Bo, but not in the strict sense of how Austin uses the term. In saying *[...]let me hear you say, "It's a really tough job and they're doing their best"*, Bo abuses the rap performative by not following his own rap convention. The expectation of the

audience is that Bo continues with the established call-and-response of Bo saying something and then the audience replies with the phrase *"Hell, yeah!"*. However, Bo abuses this trust by suddenly using a longer phrase that the audience must respond with. Essentially, Bo abuses his own established convention.

As stated in the method section, Bo is considered to follow the Cooperative Principle by default, as well as $\mathcal{U}$ = Bo Burnham and $\mathcal{A}$ = the audience. It is seen that Bo follows the Cooperative Principle up to and including line 8. It is clear that $\mathcal{U}$ intends for $\mathcal{A}$ to think that he is performing a rap song by playing hip-hop music, performing hip-hop moves, and hyping $\mathcal{A}$ up by asking (1) *Ladies, if you feel me say, "Hell, yeah!"*, and (2) *Fellas! Come on, fellas if you feel me say, "Hell, yeah!"*. However, $\mathcal{U}$ quickly opts out of the Cooperative Principle by saying in line 9: *Virgins, if you haven't felt a person say, "Hell, yeah!"*, on the account of breaking the third maxim, the maxim of *Relation*. In the context of the first two questions, the third question is not relevant to the general purpose of a rap song. This is also supported by the question posed in line 11: *If you can divide by zero let me hear you say, "Hell, yeah!"*, which is also irrelevant in the context of the previous questions. $\mathcal{U}$ then seemingly opts back into the Cooperative Principle by explaining that the questions are asked as a way of gathering information. The intention of this statement is to explain the choice of lyrics used in the song, as well as change the expectation of $\mathcal{A}$, so the following call-and-responses do not seem as random as the previous. At this point, $\mathcal{A}$ expects the song to continue the call-and-response formula, knowing that $\mathcal{U}$ intends to acquire information about $\mathcal{A}$. Although $\mathcal{U}$ and $\mathcal{A}$ do not follow the original Cooperative Principle, they follow a slightly altered version. However, this altered principle is opted out of by $\mathcal{U}$ in line 19, where, after $\mathcal{A}$ respond with *"Hell, yeah!"* to the statement *If you like smoking weed let me hear you say, "Hell, yeah!"*, the music stops, and blue and red lights starts to flash in the background. Police-officers can be heard yelling at $\mathcal{A}$ to get down on the ground, while a helicopter can be heard in the background. $\mathcal{U}$ opts out by essentially lying to $\mathcal{A}$ when stating *"I'm looking for answers here. Trying to gather information"*. Instead of intending to actually gather information, $\mathcal{U}$ uses the call-and-response to identify members of $\mathcal{A}$ who are breaking the law by smoking weed, and have them arrested. $\mathcal{U}$ defuses the "tense" situation in line 23 by saying: *"Psych!"*, the intent of the statement here being to serve as a "gotcha-moment", and the whole police sketch is then, by extension, a prank. The intent of the prank is also to make $\mathcal{A}$ believe that $\mathcal{U}$ is on the side of the law, but this is refuted in line 24 where $\mathcal{U}$ says: *If you don't give a fuck about the law let me hear you say, "Fuck the police!"*, and then shows his middle finger. Lastly, $\mathcal{U}$ takes a more neutral stance on

the subject matter in line 26 by saying: *"If that seems oversimplified to you let me hear you say, "It's a really tough job and they're doing their best"*. The intent here is to make $\mathcal{A}$ recognize that it is a complicated subject that cannot be simplified the way that $\mathcal{U}$ has just done. Lastly, the subject changes to the Israel-Palestine conflict, where $\mathcal{U}$ states: *If you know nothing about the conflict between Israel and Palestine and thus feel super uncomfortable weighing in on it til you've read about it let me hear you say, "No comment"*. The intent here being to compare the two complicated subjects and make $\mathcal{A}$ realize that there is no simple solutions to either of these problems.

Essentially, this joke is funny because $\mathcal{U}$ opts out of the Cooperative Principle in a few ways, as well as "betraying" the expectations of $\mathcal{A}$, both in how $\mathcal{U}$ breaks from the conventional aspects of a rap song, but also in the subjects that are talked about in the song. It is a funny joke because $\mathcal{U}$ misuses the standard practices involved in a rap song, either by rapping about things that would be considered abnormal in a rap song, or by rapping in an "unfamiliar" manner.

3.3 Joke B: Breaking up is fun, right?

This section contains the analysis of the joke corresponding to appendix B: the joke named *The Break-up Song* from *Make Happy* (2016). To summarize what is happening: Bo retells a story from his life, specifically about a break-up with a girlfriend. As he is the only person on stage, Bo plays the part of the girlfriend as well as the part of himself. The song switches between the two characters as they sing about how they feel about the whole situation. To differentiate between the two characters, BO_w denotes when Bo is playing the girlfriend, and BO_m denotes when he is playing himself.

This joke incorporates a bit of points (2) through (6) of the comedic categories, which are the following: *character*, *reference*, *shock*, *parody*, and *hyperbole*. As with joke A, Bo once again takes on the role of a rapper, but this time also of a regular singer. This schism is shown in the way that Bo portrays the two characters in the joke: the girlfriend is characterized as a regular singer, and Bo himself is characterized as a rapper. Furthermore, this divide between the characters is also shown in the lighting on the stage when one of the characters are either singing or rapping. The girlfriend is represented with a soft blueish color, and Bo is represented by a heavy red color and flashing lights. Additionally, the music playing in the background when either of them perform also reflects their character. The girlfriend sings to soft piano music, and Bo raps to hip-hop music. The situation portrayed in the joke is something that most members of the audience can relate to: breaking up with a partner. It is done in such a way, for comedic effect, that it is essentially a rap battle between the girlfriend and Bo. The joke employs a bit of a mix between *shock*, *parody*, and *hyperbole* in the way the characters explain how they feel. Breaking up can be nasty business, feelings are running rampant, and hurtful words are thrown around liberally, and in this case, the manner in which the characters insult each other incorporates a bit of the three points mentioned.

Since this joke is more or less a retelling of how the break-up went, the ontology of the state-of-affairs will be heavily skewed towards the imaginary part. In contrast to joke A, the state-of-affairs does not change during the performance of the joke. The state-of-affairs can be summed up in a simple way: the two characters are having a conversation about breaking up. The flow of the joke is not broken by anything extra, like the "police-officer-bit" in joke A. The ontology of the state-of-affairs, denoted by $\mathcal{S}2$, that pertains to this joke can be created from the following lines from appendix B:

Line 1	Line 2	Line 3	Line 12
Line 16	Line 17	Line 21	Line 28
Line 33	Line 35	Line 40	Line 41

Based on these lines, $\mathcal{S}2$ will be the following state-of-affairs: $\mathcal{S}2$ = *Bo is telling the story of how he recently had "the" conversation with his girlfriend. The situation is that she just exited the shower, and she starts to explain how she feels about their relationship. In response to this, Bo starts to insult her, telling her to "eat a dick" in a number of different ways. The girlfriend is irritated by this response, and she keeps trying to explain her feelings about their relationship, while Bo interrupts her repeatedly, telling her to "eat a dick". The girlfriend gets more and more frustrated, and she finally snaps at Bo, saying that he is immature. Bo responds to this by explaining his lack of experience in conveying how he feels. The girlfriend is taken aback by this explanation, and says that they might be able to work it out in the end. Bo is excited by this idea, but the girlfriend quickly dispels any notion of them getting back together by insulting Bo in the same manner as he did to her; by telling him to "lick her clit2*. Based on $\mathcal{S}2$, $\mathcal{O}_{\mathcal{S}2}^{Re}$ can be identified to consist of the following sets:

$$\mathcal{E}_{\mathcal{S}2}^{Re} = \{\text{BO, SPOTLIGHTS, MICROPHONE, SPEAKERS, AUDIENCE}\}$$
$$\mathcal{I}_{\mathcal{S}2}^{Re} = \{\text{SING, RAP, MOVE, CHANGE, PLAY, LAUGH, CHEER, CLAP, TALK}\}$$

In a similar fashion, $\mathcal{O}_{\mathcal{S}2}^{Im}$ can be seen to be the sum of the following two sets:

$\mathcal{E}_{\mathcal{S}2}^{Im} = \{\text{BO}_w,\ \text{BO}_m\}$

$\mathcal{I}_{\mathcal{S}2}^{Im} = \{\text{SING, RAP, INSULT, CRY, EXPLAIN, FRUSTRATED, EXCITED, MOVE, SHOWER}\}$

Using $\mathcal{F}_{da}$, the real ontology, $\mathcal{O}_{\mathcal{S}2}^{Re}$, is transformed into its meta-language counterpart, where $\mathcal{F}_{da}\left(\mathcal{E}_{\mathcal{S}2}^{Re}\right) = \mathcal{N}_{\mathcal{S}2}^{Re}$ and $\mathcal{F}_{da}\left(\mathcal{I}_{\mathcal{S}2}^{Re}\right) = \mathcal{P}_{\mathcal{S}2}^{Re}$ are the following two sets:

$$\{\text{bo}',\ \text{spotlights}',\ \text{microphone}',\ \text{stage}',\ \text{speakers}',\ \text{audience}'\}$$

$$\text{walk}' = \{\text{bo}'\} \qquad \text{move}' = \{\text{bo}'\}$$
$$\text{rap}' = \{\text{bo}'\} \qquad \text{talk}' = \{\text{bo}'\}$$
$$\text{sing}' = \{\text{bo}'\} \qquad \text{speakers}' = \{\text{play}'\}$$
$$\text{change}' = \{\text{spotlights}'\} \qquad \text{laugh}' = \{\text{audience}'\}$$
$$\text{cheer}' = \{\text{audience}'\} \qquad \text{clap}' = \{\text{audience}'\}$$

Similarly, the imaginary ontology, $\mathcal{O}_{S2}^{Im}$, is transformed into its meta-language counterpart, where $\mathcal{F}_{da}\left(\mathcal{E}_{S2}^{Im}\right) = \mathcal{N}_{S2}^{Im}$ and $\mathcal{F}_{da}\left(\mathcal{I}_{S2}^{Im}\right) = \mathcal{P}_{S2}^{Im}$ are the following sets:

$$\{\text{bo}'_w,\ \text{bo}'_m\}$$

$$\text{sing}' = \{\text{bo}'_w\} \qquad \text{rap}' = \{\text{bo}'_m,\ \text{bo}'_w\}$$

$$\text{insult}' = \{\langle \text{bo}'_m, \text{bo}'_w\rangle,\ \langle \text{bo}'_w, \text{bo}'_m\rangle\} \qquad \text{cry}' = \{\text{bo}'_m\}$$

$$\text{explain}' = \{\langle \text{bo}'_w,\ \text{bo}'_m\rangle,\ \langle \text{bo}'_m,\ \text{bo}'_w\rangle\} \qquad \text{frustrated}' = \{\text{bo}'_w\}$$

$$\text{excited}' = \{\text{bo}'_m\} \qquad \text{move}' = \{\text{bo}'_m\}$$

$$\text{shower}' = \{\text{bo}'_w\}$$

It is important to keep in mind that for $\text{BO} \in \mathcal{O}_{S2}^{Re}$, it is true that $\mathcal{F}_{da}(\text{BO}) = \text{bo}'_m$ and $\mathcal{F}_{da}(\text{BO}) = \text{bo}'_w$, where $\text{bo}'_m, \text{bo}'_w \in \mathcal{N}_{S2}^{Im}$. Simply put, this means that Bo, the comedian on stage, plays the parts of his girlfriend and himself in this joke. Furthermore, the two ordered pairs that are in the set connected to the predicate insult′ indicate that, at some point in the story, bo'_m insults bo'_w as well as the other way around. It is also important to note that the changing lights and music are not a part of the story, as the story is considered an event that happened in the past. The reason for this is that it is unlikely that the way Bo tells the story in the joke, where he sings and raps, is a true rendition of how it actually happened. It is fair to assume that Bo is exaggerating some of the aspects of the story.

In the case of this joke, there are four main performatives that can be identified. Although $\text{BO} \in \mathcal{O}_{S2}^{Re}$ is the person to which these performatives should be attributed, for the sake of simplicity, the performatives will be divided amongst the characters, namely $\text{BO}_w, \text{BO}_m \in \mathcal{O}_{S2}^{Im}$. It is readily seen, from lines 2 through 10, that BO_w is singing as well as explaining her feelings. For the performative of singing to be successfully executed, the circumstances requires that BO_w sings a song to some music, which is the case as seen in lines 2 and 3. It is a bit more difficult to justify that BO_w is explaining something to BO_m. For the "explaining performative" to have been successfully executed, it is more or less required that another person is present, or persons for that matter. This is the case, as seen in line 2, where Bo explains the premise of the situation that is about to unfold, which establishes the presence of BO_w and BO_m. Furthermore, the statements BO_w makes in lines 3 through 10 can be interpreted as her explaining how she feels about BO_m, which is further supported later in the song, where BO_w states, in line 20, *"I try to speak to you, but you won't listen–"*, which makes it clear that she is desperately trying to

convey her feelings to BO_m. In the case of the performative of rapping, the same justification can be used to say that BO_m raps. Hip-hop music is playing in the background, he adopts the body language of what would be considered stereotypical for rapping, and this is supported by line 12. At this point in the joke, BO_m starts to insult BO_w as he is rapping. This is clearly seen by BO_m telling BO_w to *"eat a dick"* over and over again, in lines 12 to 15. In the wake of this barrage of insults, BO_w tries to remain calm, cool, and collected, and succeeds even though BO_m interrupts her periodically by telling her to "eat a dick". When BO_w finished explaining how she feels about BO_m's insults, BO_m begins to rap again, but this time not to insult BO_w, but to explain why he insults her, rather than tries to talk in a mature manner. This is seen in lines 28 to 34, where he explains how he got his temper and why he chose to deal with the break-up situation by insulting BO_w. Lastly, BO_w flips the script by insulting BO_m through rap. This can be deduced from lines 41 to 45, where BO_w uses a "womanized" version of the insult 'eat a dick' by saying 'lick my clit'. Essentially, BO_w becomes the female version of BO_m in regards to rapping and insulting. To sum it up, BO_w executes the performatives of singing, explaining, rapping, and insulting. On the other hand, BO_m raps, insults, and explains.

To conclude the analysis of joke B, the focus will be on the intent of the joke that Bo tells, rather than characters' intention with their actions. Again, let $\mathcal{U}$ = Bo Burnham, $\mathcal{A}$ = audience, and $\mathcal{U}$ be observed to follow the Cooperative Principle. It is clear, although uninteresting, that $\mathcal{U}$ intends for $\mathcal{A}$ to laugh when retelling the break-up story. $\mathcal{U}$ starts the story by explaining the premise surrounding the situation, namely that BO_w just exited the shower and starts a conversation with BO_m about their relationship. By portraying BO_w as a person who sings to soft piano music with soft lights in the background, $\mathcal{U}$ intends for $\mathcal{A}$ to think that BO_w is a calm, rational, and mature character. Furthermore, this also affects $\mathcal{A}$ such that they think the ensuing situation is going to be a mature discussion between adults. However, this notion is quickly subverted by how $\mathcal{U}$ portrays BO_m, and it is clear that $\mathcal{U}$ intends for $\mathcal{A}$ to think that BO_m is an immature person by having BO_m behave in the opposite manner of BO_w. At this point, $\mathcal{U}$ has opted out of the Cooperative Principle by destroying $\mathcal{A}$'s expectation that the break-up situation was going to be mature. At this point, the expectation of $\mathcal{A}$ is that BO_w is the mature character and BO_m is the immature character. These expectations are also quickly thrown out the window in the way that BO_m explains why he acts so immature in this situation. BO_m is mature enough to understand that he has a problem in conveying his feelings to BO_w, and he explains this to BO_w. BO_w responds to this by saying that they might be able to work out their problems to save the relationship. $\mathcal{U}$'s intention is to show $\mathcal{A}$ that BO_w is still a mature character who is able to

find solutions to hard problems. However, this is also where $\mathcal{U}$ completely shatters the image $\mathcal{A}$ has of BO_w. In lines 41 to 45 it is revealed that BO_w is not above insulting BO_m in the same manner that BO_m insulted BO_w, which ultimately portrays BO_w as immature as BO_m.

This joke is funny in two ways. Firstly in the way that BO_m and BO_w are polar opposites: BO_w is mature and BO_m is immature, which flips during the performance, such that BO_m is the mature person and BO_w is the immature. Secondly, the way that BO_m insults BO_w seems largely unnecessary. He is telling her to "eat a dick" like one would eat corn on the cob (line 12), as well as insinuating that there exists a pair of gloves solely for the purpose of eating a dick (line 13). The same can be said of BO_w, that her insults are uncharacteristic of the way that she is initially portrayed by $\mathcal{U}$.

3.4 Joke C: What does a water bottle and a hotdog have in common?

This section contains the analysis of the jokes corresponding to appendix C: the jokes named *Water bottle* and *Hotdogs* from *what* (2013). The first joke is about Bo making a big deal out of knocking over a water bottle, and the other is about how Bo felt after eating a hotdog for breakfast. The jokes are similar, in the sense that they incorporate some of the same comedic aspects, especially that both are "physical" jokes.

The comedic categories used in these jokes are points (3), (6), (7), and (9), those being: *reference*, *hyperbole*, *wordplay*, and *madcap*. The premise of the water bottle joke is rather uninteresting, but Bo takes the joke to another level through hyperbole and madcap. The joke is about Bo knocking over a water bottle, and playing it off as if it was an accident. However, it was not an accident, and Bo explains this to the audience in an extreme way, which includes him dancing on stage. The joke about the hotdog for breakfast uses a bit of all four comedic categories. At its core, it is a pun, but just like with the water bottle joke, Bo takes it to another level.

Since there are two jokes in this section, each joke will have its own state-of-affairs and corresponding ontologies. Regarding the first joke, it contains four parts, which can be described as the following: part one is Bo knocking over the water bottle, setting up the joke. The second part is the music track playing over the speakers as Bo dances. The third part is the same song is playing again. The fourth part is a different song playing, but with a similar theme to the first two songs. The hotdog joke is a bit more simple: Bo eats a hotdog for breakfast, and then something happens to his stomach. The state-of-affairs surrounding the water bottle joke can be described with the following lines:

line 2	line 3	line 4	line 8
line 11	line 12	line 14	line 16

Based on these lines, the state-of-affairs, $\mathcal{S}3a$, is the following: $\mathcal{S}3a =$ *Bo is taking a sip of his water, and as he puts it back on the black stool in the middle of the stage, he accidentally knocks the bottle off the stool. He apologises for this mishap, and a song begins to play over the speakers. A disembodied voice sings about how Bo intended to knock over the bottle, and that the audience thought it was an accident. After the song is finished, Bo tries to continue with show, but the song starts to play again. Bo acts as if this is not intended by trying to get the*

music cut off. However, the music starts to play again, but this time the lyrics are about how Bo intended to play the song again, and that the audience thought it was an accident, even though it was not. From $\mathcal{S}3a$, $\mathcal{O}^{Re}_{\mathcal{S}3a}$ can be identified to consist of the following two sets:

$$\mathcal{E}^{Re}_{\mathcal{S}3a} = \{\text{BO, BOTTLE, STOOL, MICROPHONE, SPEAKERS, AUDIENCE, STAGE}\}$$
$$\mathcal{I}^{Re}_{\mathcal{S}3a} = \{\text{TALK, DRINK, PLACE, DANCE, PLAY, FALL, LAUGH, CHEER, CLAP}\}$$

The state-of-affairs for this joke contains no $\mathcal{O}^{Im}_{\mathcal{S}3a}$ because Bo is not retelling a story of something that has happened in the past. There are no "invisible" characters, like the police officers in joke A, and Bo is not playing any other character than himself. In short, $\mathcal{O}^{Im}_{\mathcal{S}3a} = \emptyset$ because $\mathcal{E}^{Im}_{\mathcal{S}3a} = \emptyset$ and $\mathcal{I}^{Im}_{\mathcal{S}3a} = \emptyset$. Transforming $\mathcal{O}^{Re}_{\mathcal{S}3a}$ with $\mathcal{F}_{da}$, the meta-language ontology, $\mathcal{O}^{Re}_{\mathcal{M}\mathcal{S}3a}$, consists of the sets $\mathcal{F}_{da}\left(\mathcal{E}^{Re}_{\mathcal{S}3a}\right) = \mathcal{N}^{Re}_{\mathcal{S}3a}$ and $\mathcal{F}_{da}\left(\mathcal{I}^{Re}_{\mathcal{S}3a}\right) = \mathcal{P}^{Re}_{\mathcal{S}3a}$, where $\mathcal{N}^{Re}_{\mathcal{S}3a}$ is the set:

$$\{\text{bo}', \ \text{bottle}', \ \text{stool}', \ \text{microphone}', \ \text{stage}', \ \text{speakers}', \ \text{audience}'\}$$

and $\mathcal{P}^{Re}_{\mathcal{S}3a}$ is the set:

$$\text{talk}' = \{\text{bo}'\} \qquad \text{dance}' = \{\text{bo}'\}$$
$$\text{place}' = \{\langle \text{bo}', \ \text{bottle}', \ \text{stool}'\rangle\} \qquad \text{play}' = \{\text{speakers}'\}$$
$$\text{drink}' = \{\text{bo}'\} \qquad \text{laugh}' = \{\text{audience}'\}$$
$$\text{cheer}' = \{\text{audience}'\} \qquad \text{clap}' = \{\text{audience}'\}$$
$$\text{fall}' = \{\langle \text{bottle}', \ \text{stool}'\}$$

The two-place predicate fall′ contains the ordered pair $\langle \text{bottle}', \ \text{stool}'\rangle$, and should be read as *the bottle falls off the stool*. Similarly, the three-place predicate place′ contains the ordered triple $\langle \text{bo}', \ \text{bottle}', \ \text{stool}'\rangle$ and is read as *Bo places the bottle on the stool.*

The state-of-affairs surrounding the hotdog joke can be described with the following lines:

Line 21 Line 23 Line 24

Based on these lines, the state-of-affairs, $\mathcal{S}3b$, is the following: $\mathcal{S}32b$ = *Bo tells the audience that he wants to do some food jokes. The Joke starts with him telling that he had a hotdog for breakfast earlier the same day. He states that "after eating it I felt like this", and he picks up the stool, lifts it over his head, and starts to run around in a small circle. He puts the stool back down again and says: "'cause I couldn't control my stools"*. From $\mathcal{S}3b$, the real ontology, $\mathcal{O}^{Re}_{\mathcal{S}3b}$,

can be identified to consist of the sets $\mathcal{E}^{Re}_{\mathcal{S}3b}$ and $\mathcal{I}^{Re}_{\mathcal{S}3b}$, which are:

$$\mathcal{E}^{Re}_{\mathcal{S}3b} = \{\text{BO, STOOL, MICROPHONE, AUDIENCE, STAGE}\}$$
$$\mathcal{I}^{Re}_{\mathcal{S}3b} = \{\text{TALK, LIFT, RUN, PUT, LAUGH, CHEER, CLAP}\}$$

In contrast to $\mathcal{S}3a$, $\mathcal{S}3b$ contains an imaginary ontology. Let $\mathcal{O}^{Im}_{\mathcal{S}3b}$ be the imaginary ontology of $\mathcal{S}3b$. $\mathcal{O}^{Im}_{\mathcal{S}3b}$ consists of the following two sets:

$$\mathcal{E}^{Im}_{\mathcal{S}3b} = \{\text{BO, HOTDOG}\}$$
$$\mathcal{I}^{Im}_{\mathcal{S}3b} = \{\text{EAT, SICK}\}$$

Bo states in line 23 that the event he is talking about is something that happened in the past, which is why $\mathcal{O}^{Im}_{\mathcal{S}3b} \neq \emptyset$. Using $\mathcal{F}_{da}$, the meta-language ontology consists of the sets $\mathcal{F}_{da}\left(\mathcal{E}^{Re}_{\mathcal{S}3b}\right) = \mathcal{N}^{Re}_{\mathcal{S}3b}$ and $\mathcal{F}_{da}\left(\mathcal{I}^{Re}_{\mathcal{S}3b}\right) = \mathcal{P}^{Re}_{\mathcal{S}3b}$, which are:

$$\{\text{bo}', \ \text{stool}', \ \text{microphone}', \ \text{audience}', \ \text{stage}'\}$$

$$\text{talk}' = \{\text{bo}'\} \qquad \text{run}' = \{\text{bo}'\}$$
$$\text{lift}' = \{\langle \text{bo}', \ \text{stool}'\rangle\} \qquad \text{put}' = \{\langle \text{bo}', \ \text{stool}', \ \text{stage}'\rangle\}$$
$$\text{laugh}' = \{\text{audience}'\} \qquad \text{cheer}' = \{\text{audience}'\}$$
$$\text{clap}' = \{\text{audience}'\}$$

In similar fashion, $\mathcal{F}_{da}\left(\mathcal{E}^{Im}_{\mathcal{S}3b}\right) = \mathcal{N}^{Im}_{\mathcal{S}3b}$ and $\mathcal{F}_{da}\left(\mathcal{I}^{Im}_{\mathcal{S}3b}\right) = \mathcal{P}^{Im}_{\mathcal{S}3b}$ are the following two sets:

$$\{\text{bo}', \ \text{hotdog}'\}$$

$$\text{eat}' = \{\langle \text{bo}', \ \text{hotdog}'\rangle\} \qquad \text{sick}' = \{\text{bo}'\}$$

In terms of performatives, the water bottle joke is based on Bo lying to the audience, or at least intentionally misleading the audience. For this kind of performative to be happy, the circumstances requires that Bo is intentionally misleading the audiences, which is the case, based on the lyrics of the first song that plays after he knocks the bottle of the stool. However, it is also required that the participants who are being mislead, who in this case is the audience, are actually being mislead. This is much harder to prove, but the case can be made that they are being mislead, by the fact that the audience laughs and claps after the first song has finished playing (lines 9 and 10). Furthermore, the way that Bo executes the "accident" certainly leads

the viewer to believe that Bo did not intend to knock the water bottle off the stool. The way he puts the bottle down and it falls off the stool, and the way he seems embarrassed and apologizes to the audience for the accident seems so natural. The same goes for the second time he plays the first track (lines 11 to 16). It seems, from the perspective of the audience, that Bo, or perhaps the sound technician, accidentally plays the first song again, not meaning to do it. Again, it is in the way that Bo acts, how he seems embarrassed that it happened, and how he tries to put the show back on track that leads the audience to believe that playing the song again is not intentional.

The performative is, essentially, the same in the second joke. By lifting the stool over his head and running around on the stage, the audience is "mislead" in how this relates to Bo eating a hotdog for breakfast. By doing something that is unrelated to the premise of the joke, Bo successfully misleads the audience.

Again, let $\mathcal{U}$ = Bo Burnham, $\mathcal{A}$ = the audience, and both be observed to follow the Cooperative Principle. $\mathcal{U}$'s intentions in the first joke builds upon the fact that $\mathcal{U}$ is trying to misleading $\mathcal{A}$. From lines 1 to 3, $\mathcal{A}$ is lead to believe that $\mathcal{U}$ is just having an accident on stage, which is a thing that can happen for any performer. However, $\mathcal{U}$'s intention with what happened in those lines is made clear in line 4, where a song begins to play over the speakers, telling the audience that $\mathcal{U}$ meant to knock the bottle over. From $\mathcal{U}$'s perspective, his intention is to do exactly what he says in line 2: "*And I hope there's some surprises for you or some-*". $\mathcal{U}$ is not hoping that $\mathcal{A}$ will be surprised at some point in the show, $\mathcal{U}$ wants to surprise $\mathcal{A}$ with this joke specifically. It is clear that $\mathcal{U}$ intentionally opted out of the Cooperative Principle, as the joke is based on $\mathcal{U}$ lying to $\mathcal{A}$, but $\mathcal{A}$ does not observe this until line 4. After the song is over and $\mathcal{A}$ is done applauding $\mathcal{U}$, the song plays again, much to the perceived dismay of $\mathcal{U}$. $\mathcal{A}$ has just observed $\mathcal{U}$ opt out of the Cooperative Principle, and in line 14 and 15 it is $\mathcal{U}$'s intention to make $\mathcal{A}$ believe that he has opted back in. The way $\mathcal{U}$ acts when the first song is playing leads $\mathcal{A}$ to believe that it was an accident. $\mathcal{U}$'s intention with this is, yet again, to mislead $\mathcal{A}$. This is supported by line 16, where it is revealed that $\mathcal{U}$ meant to play the track again.

$\mathcal{U}$'s intention with the second joke is a bit more simple, in that $\mathcal{U}$ intends to mislead $\mathcal{A}$, not by lying to them, but by making them question what is happening on stage. By saying that he ate a hotdog for breakfast, $\mathcal{U}$ is setting the stage for what he is about to talk about. However, $\mathcal{A}$'s expectations are thrown out the window when $\mathcal{U}$ lifts the stool over his head and runs around on stage. $\mathcal{U}$'s intention with this physical routine is to describe how he felt after eating said hotdog, and to connect it with the punchline of the joke: "'*cause I couldn't control my stools*".

$\mathcal{U}$'s intention with lifting the stool over his head is to describe to $\mathcal{A}$ what happened with his stomach in a non-verbal, whacky manner.

Both of these jokes are funny in a similar way: they are misleading the audience. Each joke leads the audience to believe that a certain thing is happening, only for Bo to flip it on its head. The first joke is funny because Bo is lying to the audience about what is going to happen, and the other joke is funny because he uses a physical object to make a pun.

3.5 Joke D: Frogs, Guns, and Crocs

This section contains the analysis of the joke corresponding to appendix D: the joke named *Andy the Frog* from *what* (2013). To summarize: Bo tells a story about a frog named Andy who has three best friends. One day Andy sees a new frog across the pond, and he falls in love. He decides to go after the beautiful frog, and on his journey he comes across a turtle who denies Andy passage, but is then shot in the chest with a rifle. Later, Andy meets a crocodile and Andy is summarily devoured. The end.

This joke incorporates the following comedic categories: (2), (3), (4), (5), (7), (8), and (9). They are: *character*, *reference*, *shock*, *parody*, *wordplay*, *analogy*, and *madcap*. Points two and three are included because the story contains fantasy elements and characters. In this case, the characters are four frogs, a turtle, and a crocodile. The audience learns more and more about the characters in the story, and what the characters do and say incorporates a bit of shock and madcap. The characters do and say some outrageous stuff, considering that Bo presents the story as a story for the whole family. Bo, at the start of the joke, tells the audience that it will include long and convoluted similes, and this is where wordplay and analogy comes into play. Lastly, the whole joke is a parody of how to tell a story. Bo uses many of the storytelling tropes related to the fantasy genre, chief of which is the rule of three.

The premise of the joke is that Bo is telling a story, and as a consequence of this, the state-of-affairs surrounding this joke will include a real ontology and an imaginary ontology. The state-of-affairs of this particular joke can be described using the following lines from appendix D:

Line 1	Line 11	Line 12	Line 13
Line 15	Line 16	Line 17	Line 18
Line 20	Line 22	Line 28	Line 31
Line 32	Line 38	Line 42	Line 44
Line 46	Line 51		

Based on these lines, let $\mathcal{S}4$ be the state-of-affairs of joke D, and $\mathcal{S}4 =$ *Bo starts to tell a story he named 'Andy the Frog'. Andy is a frog who lived in Patton Park pond, and he had three friends: Millie, Billy, and Roger. One day, Andy sees a beautiful frog across the pond and he falls in love. He decides to go after her into the woods. Andy comes across a turtle who denies Andy passage, but is then suddenly shot in the chest with a rifle. Despite this event, Andy*

continues his journey deeper into the forest. He meets a crocodile who eats Andy, and Andy dies a horrible death. The end. As mentioned, $\mathcal{S}4$ contains $\mathcal{O}_{\mathcal{S}4}^{Re}$ and $\mathcal{O}_{\mathcal{S}4}^{Im}$, where $\mathcal{O}_{\mathcal{S}4}^{Re}$ details the situation of Bo telling the story, and $\mathcal{O}_{\mathcal{S}4}^{Im}$ details what is happening in the story. Starting with $\mathcal{O}_{\mathcal{S}4}^{Re}$, the real ontology consists of the following two sets:

$$\mathcal{E}_{\mathcal{S}4}^{Re} = \{\text{BO, BOOK, STOOL, MICROPHONE, SPEAKERS, AUDIENCE}\}$$
$$\mathcal{I}_{\mathcal{S}4}^{Re} = \{\text{TALK, SIT, READ, PLAY, LAUGH, CHEER, CLAP}\}$$

In similar fashion, $\mathcal{O}_{\mathcal{S}4}^{Im}$ is identified to be the sum of the following sets:

$$\mathcal{E}_{\mathcal{S}4}^{Im} = \{\text{ANDY, MILLIE, BILLY, FROG, TURTLE, CROCODILE}\}$$
$$\mathcal{I}_{\mathcal{S}4}^{Im} = \{\text{LOVE, TALK, PURSUE, DENY, DIE, CHANT, EAT}\}$$

Using $\mathcal{F}_{da}$, the meta-language ontology consisting of $\mathcal{F}_{da}\left(\mathcal{E}_{\mathcal{S}4}^{Re}\right) = \mathcal{N}_{\mathcal{S}4}^{Re}$ and $\mathcal{F}_{da}\left(\mathcal{I}_{\mathcal{S}4}^{Re}\right) = \mathcal{P}_{\mathcal{S}4}^{Re}$ is found to be the sum of the following sets:

$$\{\text{bo}', \ \text{book}', \ \text{stool}', \ \text{microphone}', \ \text{speakers}', \ \text{audience}'\}$$

$$\text{talk}' = \{\text{bo}'\} \qquad \text{read}' = \{\langle \text{bo}', \ \text{book}' \rangle\}$$
$$\text{sit}' = \{\langle \text{bo}', \ \text{stool}' \rangle\} \qquad \text{play}' = \{\text{speakers}'\}$$
$$\text{laugh}' = \{\text{audience}'\} \qquad \text{cheer}' = \{\text{audience}'\}$$
$$\text{clap}' = \{\text{audience}'\}$$

Here, the two-place predicates read$'$ and sit$'$ indicate that Bo is reading from the book, as well as sitting on the black stool. Similarly, $\mathcal{F}_{da}\left(\mathcal{E}_{\mathcal{S}4}^{Im}\right) = \mathcal{N}_{\mathcal{S}4}^{Im}$ and $\mathcal{F}_{da}\left(\mathcal{I}_{\mathcal{S}4}^{Im}\right) = \mathcal{P}_{\mathcal{S}4}^{Im}$ are the following sets:

$$\{\text{andy}', \ \text{millie}', \ \text{billy}', \ \text{roger}', \ \text{frog}', \ \text{turtle}', \ \text{crocodile}'\}$$

$$\text{talk}' = \{\text{andy}', \ \text{millie}', \ \text{billy}', \ \text{roger}', \ \text{turtle}'\} \qquad \text{love}' = \{\langle \text{andy}', \ \text{frog}' \rangle\}$$
$$\text{pursue}' = \{\langle \text{andy}', \ \text{frog}' \rangle\} \qquad \text{deny}' = \{\langle \text{turtle}', \ \text{andy}' \rangle\}$$
$$\text{die}' = \{\text{turtle}', \ \text{andy}'\} \qquad \text{chant}' = \{\text{crocodile}'\}$$
$$\text{eat}' = \{\langle \text{crocodile}', \ \text{andy}' \rangle\}$$

The predicate of talk$'$ indicates that the animals are talking to eachother. Although it would be more accurate to include every ordered pair of who is talking to who in the story, for the sake of

simplicity, the entities in talk′ indicate which of the animal are talking at some point in the story. Furthermore, the two-place predicates of love′, pursue′, deny′, and eat′ indicate, in order, that Andy falls in love with this new frog, he pursues her into the woods, Andy is denied passage by the turtle, and that Andy is eaten by the crocodile.

In terms of performatives, there are two that the joke relies on. The first being the overarching performative of storytelling, while the other is the performative of lying. The story contains two instances where Bo "lies" to the audience: in line 12, he states that the story will have long and convoluted similes, and when he starts to tell the first simile, it is actually not a smile at all. The other is a bit more convoluted. In general, stories are meant as a means to convey some kind of morality, and when a listener engages in the act of storytelling, it is usually expected of the story, and the storyteller as well, to convey some kind of moral. In this case, Bo engages in the act of telling a story, so it is expected that this story will have a moral, but that is not the case. Bo states, in line 52, that the moral of this particular story is irrelevant, and in a sense, he has lied to the audience. Regarding the performative of storytelling, Bo executes it correctly, to some extent. The requirement for a story to have been successfully told contains more than just the teller having told the story to its conclusion. It is, more often than not, required that the story has a moral, which is not the case with this story, so regarding that aspect, Bo fails to perform the storytelling performative correctly. However, the other aspects of the storytelling performative are executed correctly. Bo clearly indicates that he is going to tell a story, and he does it by having a song play over the speaker, which clearly states his intent. Furthermore, there is an audience to listen to his story. Lastly, Bo incorporates some of the familiar storytelling tropes in his story. There is a clear beginning, middle, and end, the protagonist is put on a journey that takes him away from his customary pond to pursue a love interest, he overcomes a trial put in front of him to test his mettle, and the story concludes with a battle between the protagonist and an antagonist. The story, as mentioned, also uses the "rule-of-three", represented by Andy's three friends. In terms of these storytelling aspects, the performative of storytelling has been executed and invoked successfully. On the other hand, it would not be much of a joke if there was not a deviation from the storytelling norm, and in this case, Bo abuses the story telling performative by using the storytelling tropes in an unfamiliar manner. Andy has three friends, and it is expected, from the theme of the story, that these friends are similar to Andy in terms of how they are portrayed. Millie and Billy behave like an audience would expect, but Bo deviates from this by having the third friend, Roger, deviate in two ways: (1) Andy, Millie, and Billy all have similar names, in that they end on a *ie* or*y*

sound, where Roger breaks from this pattern, and (2) Millie and Billy seem like characters that are extensions of Andy's personality, where Roger is a frog that has been arrested for tadpole porn. This deviation from the rule of three is further supported by lines 23 to 25, where Millie, Billy, and Roger comment on the looks of the female frog, and Roger says that she is a bit old for his taste. The beginning of the story follows established storytelling conventions, where the protagonist, Andy, is put on a journey, in this case being to pursue a love interest. The middle of a story is usually where the hero has to overcome a number of tests, and, in this story, Andy has to get past a turtle that stops him in his pursuit of love. Generally, it is through willpower that the hero overcomes these obstacles, but in this story, Andy gets past the turtle as a consequence of an improbable event happening. The turtle is shot through the chest, not by Andy, but by an unseen participant. Andy does not overcome the obstacle through his own means, but by sheer luck. This is where Bo abuses the storytelling performative: he does not have the hero overcome the hardship on his own, but instead through luck. The manner in which this obstacle is overcome is absurd in and of itself. Lastly, the end of the story usually requires that the hero acquires the MacGuffin that set him on his journey, which in this case is the relationship with the female frog. Bo abuses the "happy-ending" trope by having the protagonist be eaten by a crocodile.

Let $\mathcal{U}$ = Bo Burnham, $\mathcal{A}$ = audience, and both be observed to follow the Cooperative Principle. It is seen that $\mathcal{U}$ follows the principle up to line 18, where $\mathcal{U}$ breaks from the storytelling norm. In this line, it is revealed that one of Andy's friends, Roger, is a criminal. By stating that Roger has been arrested for possession of tadpole porn, $\mathcal{U}$ intends to break from established storytelling conventions, and subsequently opts out of the Cooperative Principle. From this point, it is $\mathcal{A}$'s expectation that the story $\mathcal{U}$ is telling is not a regular story. From the perspective of $\mathcal{A}$, the Cooperative Principle is not broken by $\mathcal{U}$ in line 25, where Roger comments on the look of the female frog, saying that she is a bit old for his taste. In line 18, $\mathcal{U}$ adopts a modified version of the Cooperative Principle, and in line 25 $\mathcal{U}$ does not opt out of the modified principle, but stays within the boundaries set by the expectation of $\mathcal{A}$. Although $\mathcal{U}$ opts out of the conventional storytelling norm, $\mathcal{U}$ clearly remains within his own set of rules. Another way $\mathcal{U}$ opts out of the Cooperative Principle is by lying to $\mathcal{A}$. In lines 11 and 12, $\mathcal{U}$ states that the story contains long and convoluted similes, and that he will warn $\mathcal{A}$ when they rear their old heads. $\mathcal{U}$ keeps this promise by stating, in line 35, "...*this is the first long, convoluted simile*". It is with this simile, lines 37 and 38, that $\mathcal{U}$ opts of the Cooperative Principle again. $\mathcal{A}$ expects that the rest of the similes in this story will be of the same format, in that they are not similes

at all. However, $\mathcal{U}$ immediately breaks that expectation by actually having a simile that is used in the correct way. $\mathcal{U}$'s intention with the first simile is to lower the expectation of $\mathcal{A}$ in terms of what constitutes as a simile for $\mathcal{U}$, only to throw that expectation out the window in the next sentence. Lastly, $\mathcal{U}$ opts out of the Cooperative Principle by having a "bad" ending. From the start, by having a chipper voice sing that it is time for a story, $\mathcal{U}$ intends for $\mathcal{A}$ to think that the story is one with a happy ending. Throughout the story, it is made clear to $\mathcal{A}$ that this is not a regular story. However, by the fact that it is a "story", $\mathcal{A}$ expects that it will have a satisfying ending, or at the very least contain some familiar storytelling tropes. This is not the case, as the hero meets his untimely end, and there is no moral to the story.

Essentially, this joke is funny because Bo takes the storytelling performative and abuses the conventional tropes tied to the storytelling genre. Furthermore, it is funny because this abuse is taken to an extreme by: (1) having the protagonist be associated with a pedophile, and (2) having the protagonist killed in a brutal manner. The joke is also funny because Bo indirectly lies to the audience by abusing the storytelling genre, and also in how he directly lies to the audience. It is the abuses, shock, and unconventional elements that makes this joke funny.

Discussion 4

This chapter contains a discussion on the advantages and disadvantages of the formal approach outlined in the method section. Furthermore, this discussion should also be viewed as the conclusion to the first research question. Additionally, chapter also contains a discussion on how the analysis of jokes A through D contribute to the identification of Bo Burnham's *comedic type* and *comedic force*. This discussion should be viewed as the conclusion to the second research question.

4.1 Advantages and Disadvantages of the Approach

The formal approach was given by the following four points:

1) Assign one or more comedic categories to a given joke,

2) identify and create the ontology, in accordance with the model theory outlined in the formal semantic section,

3) identify and categorize performatives, based on the theory pertaining to Austin's performatives,

4) identify and analyze the utterer's intention and meaning with the joke, in light of Grice's Cooperative Principle and maxims.

The idea behind this approach was for it to be a bottom up approach, both in how the theories were used, as well as how the data was processed. In regards to the theories, the order of implementation goes as follows: formal semantics (point two), Austin's performatives (point three), and Grice's Cooperative Principle, maxims and analysis of intention and meaning (point four). Formal semantics was used as a tool to describe who or what (extension) were in the situation (joke), and what they were doing (intension), and sum them up in the real ontology and the imaginary ontology. From here, Austin's performatives were used as a means to analyse the intension of the ontologies more thoroughly, and describe the requirements behind these performative acts. Lastly, the idea that the utterer, $\mathcal{U}$, and the audience, $\mathcal{A}$, were observed to follow the Cooperative Principle was adopted, and from this point of view, the intention and meaning of the performative acts, as well as what was said in the joke, were analysed.

An advantage of this approach is its linearity. There is a clear and easy progression in how the data is processed, with a clear beginning and a clear end. The approach starts by identifying what comedic elements are employed in the joke, and the goes on to identify what or who is in the joke, as well as what they are doing. These performatives are further analysed, culminating in the analysis of the intention of what is said and done, and the intended meaning of these acts. Lastly, the whole thing is wrapped up by analysing how the intentions and meanings make the joke funny on the basis of the comedic categories identified in the beginning. Essentially, the analysis answers the questions of who, how, and why, in that order.

The comedic categories were a helpful tool in all of the other steps of the formal approach. Starting at point two, the comedic categories helped in the identification of what elements would be vital in both the real and imaginary ontologies. As an example, consider joke B, the break-up song. The comedic categories associated with this joke were points two through six. Focusing on point two and five, *character* and *parody*, $\mathcal{O}^{Re}$ and $\mathcal{O}^{Im}$ could more easily be created in regards to what was happening on stage. Looking at $\mathcal{O}^{Im}_{\mathcal{S}2}$, specifically $\mathcal{E}^{Im}_{\mathcal{S}2}$, it contains the elements of $\{\text{bo}'_w,\ \text{bo}'_m\}$, who are the characters that Bo is playing throughout the performance. Furthermore, by identifying that the joke has a focus on characters, it is easier to determine that the analytical focus should be on what the characters are doing. By virtue of having characters, the joke, in a sense, forces the focus to be on what the characters are doing in a given joke. Regarding point three, the comedic categories were not much of a help as this section of the analysis as the focus was more on exploring the performatives of the joke. That is not to say that the categories did not play a role, but it was not a vital role. Knowing that the joke had multiple characters, the analysis is forced to focus on the performatives of the characters, which in this case are the performatives of the characters bo'_w and bo'_m. Lastly, the comedic categories are a bit more helpful in the identification of intention and meaning. By knowing that a joke has a focus on certain comedic categories, it is easier to extract the intention and meaning of the performatives used in the joke. There is a clear link between the intention and meaning of a performative and how they are used to achieve a certain comedic effect. Using the same example, it is clear that by executing the performative of "insulting", the goal is to achieve the comedic effect of shocking the audience. By having one character, bo'_w, seem as an innocent person, Bo contrasts her with bo'_m, who is a hyperbolic version of himself, who, by aggressively telling bo'_w to eat a dick over and over again, achieve the comedic effect of shock.

Formal semantics has been a helpful tool to use in the identification of who and what is in the joke, as well as what they are doing. The ontology, both the real and imaginary, has also

been essential in determining the characters and their actions, as they provide clear and concise sets of the elements in question. Furthermore, the conversion of the object-language elements to meta-language entities, using the denotation assignment function $\mathcal{F}_{da}$, has been helpful in identifying which of the elements in $\mathcal{E}_S^{Re}$ and $\mathcal{E}_S^{Im}$ are doing what actions in the sets $\mathcal{I}_S^{Re}$ and $\mathcal{I}_S^{Im}$. $\mathcal{O}_S$ only lists the characters and the actions that are in the state-of-affairs. $\mathcal{O}_S$ does not tell the reader what elements of $\mathcal{E}_S$ is doing what action in $\mathcal{I}_S$. Consider joke D, Andy the Frog, where the $\mathcal{O}_{\mathcal{S}4}^{Re}$ and $\mathcal{O}_{\mathcal{S}4}^{Im}$ are given by the following sets:

$$\mathcal{E}_{\mathcal{S}4}^{Re} = \{\text{BO, BOOK, STOOL, MICROPHONE, SPEAKERS, AUDIENCE}\}$$
$$\mathcal{I}_{\mathcal{S}4}^{Re} = \{\text{TALK, SIT, READ, PLAY, LAUGH, CHEER, CLAP}\}$$
$$\mathcal{E}_{\mathcal{S}4}^{Im} = \{\text{ANDY, MILLIE, BILLY, FROG, TURTLE, CROCODILE}\}$$
$$\mathcal{I}_{\mathcal{S}4}^{Im} = \{\text{LOVE, TALK, PURSUE, DENY, DIE, CHANT, EAT}\}$$

These sets do not tell the reader which character is doing what action, they only tell that someone is doing something. This is where $\mathcal{F}_{da}$ is helpful in the clarification and resolution of this problem. By looking at the sets in $\mathcal{O}_{\mathcal{M}S}^{Re}$, it is made clear which character is doing what. As an example, consider the two-place predicate eat$' = \{\langle \text{crocodile}', \text{ andy}' \rangle\}$ in $\mathcal{P}_{\mathcal{S}4}^{Im}$. From $\mathcal{E}_{\mathcal{S}4}^{Im}$ and $\mathcal{I}_{\mathcal{S}4}^{Im}$ it is not clear that the crocodile is eating Andy, but by looking at the two-place predicate eat$' \in \mathcal{P}_{\mathcal{S}4}^{Im}$, it is clear that, since it contains the ordered pair $\langle \text{crocodile}', \text{ andy}' \rangle$, the crocodile is eating Andy. The ontologies are also helpful in determining the performatives that pertain to a given joke. Using joke D as an example, it is clear that there are a number of actions going on. Looking at $\mathcal{I}_{\mathcal{S}4}^{Re}$, it contains the actions of talking, sitting, reading, and so on, and by looking at these, the identification of the overarching performative of the joke is a bit easier. Specifically for this joke, the "prime" performative was that of storytelling, and some of the requirements for this performative to have been successfully executed are that someone has to tell a story to someone else, which is in accordance with the elements of $\mathcal{E}_{\mathcal{S}4}^{Re}$ and $\mathcal{I}_{\mathcal{S}4}^{Re}$. These sets contain the characters and objects of Bo, a book, a microphone, and the audience, as well as the actions of talking, sitting, and reading. It follows then that Bo is reading something to the audience. What this "something" consists of is clarified by the elements of $\mathcal{E}_{\mathcal{S}4}^{Im}$, and it can be concluded that Bo is telling a story to the audience.

The identification and analysis of performatives were useful in terms of how Bo made his jokes funny, not from the perspective of what he said, but from the perspective of how he broke from normal performative conventions. This type of analysis was a great help in determining where Bo broke from these performative conventions. By making it clear what was required

to go into a performative for it to have been performed successfully, it was subsequently also made clear where the performer deviated from these norms. Consider, again, joke D, where the overarching performative was that of storytelling. There are a lot of presuppositions of what is required for the performative to have been executed successfully, and one of the requirements is that the protagonist is going to overcome danger and be victorious in the end. By having the protagonist killed, Bo deviates from the norm of the storytelling performative[1], and this deviation plays a role in what makes this joke funny. The requirements of the performative also helps in the identification of the expectations of the other participants, who, in this case, are the members of the audience. When Bo makes it clear to the audience that he is going to tell them a story, there are certain aspects of the performative that the audience expects Bo to include or fulfill, and by not including or fulfilling these expectations, Bo throws the audience's expectations into disarray, which also plays a part in making the joke funny.

Lastly, the intention and meaning, as well as the Cooperative Principle, is an extension of the analysis that follows from the performatives. In regards to the Cooperative Principle, it is essentially tied to the expectation of the audience and how Bo subverts these expectations. By engaging in a particular performative, the audience creates a certain set of expectations that they think Bo will fulfill. It is their assumption that Bo will adhere to the "rules" of the expectations, but when he inevitably deviates from the norms associated with the given performative, he unquestionably opts out of the Cooperative Principle. Essentially, by breaking from the performative norms, Bo opts out of the Cooperative Principle, and since it was just established that breaking from the performative norm plays a part in making a joke funny, it follows that opting out of the Cooperative Principle is also a part of what makes a joke funny. As a consequence of this deviation from the expectations, it is clear that Bo has a certain intention with what he is doing and saying. In the case of the four jokes that have been analysed, Bo's intention by breaking from the norms is to make the audience recognize that they thought one thing, but something else happened, and it is in that moment comedy is created.

Turning towards the disadvantages of the approach, point one has a few problems as well. Firstly, there is the problem of what categories each jokes should be associated with. The idea behind using the categories was to provide an early indication of what the joke was going to be about, and what elements were going to be employed to make the joke funny. Rather than listing all the different categories that were used in the joke, the idea of only using the overarching categories was adopted. To better illustrate this point, consider joke B, the break-up song from

[1]It is recognized that this is not the case for ALL stories, but for this one in particular

what. The categories of (2) *character*, (3) *reference*, (4) *shock*, (5) *parody*, and (6) *hyperbole* were associated with this joke, but the case could also be made that category (7), *wordplay*, should be on that list. The joke incorporates singing and rapping, and Bo makes "word-rhyme-jokes" in the performance, which is the case with line 15, where Bo rhymes "*sitch*" with "*bitch*"[2]. Furthermore, it could be argued that category (9), *madcap*, should be on the list as well. By having the pair insult each other left and right, Bo's take on the break-up situation is crazy and wacky. Even the idea of setting the situation up as a song/rap-battle is comical in itself, supporting the notion that this category should be in the list of categories associated with joke B. Although it is a comprehensive list of categories, it is far from exhaustive, and as a consequence, liberties have been taken in how to interpret each of the categories. Consider the category of *character* and the situations portrayed in jokes A and D, the intro song to *Make Happy* and Andy the Frog from *what*. In joke A, Bo plays the character of a rapper, and to an extent someone who is trying to gather information for a questionnaire. In his performance of these, he acts on the personality traits that are associated with these types of character. In contrast to this, Bo plays a fictional character (as well as others) in joke D, and there is a clear difference between playing the character of a rapper and the fictional character of a fairy tale frog. One character type is, in a sense, an extension of oneself, whereas the other is the complete removal of oneself in order to portray the character.

The problem with point two of the approach has already been discussed in section 2.2 and in the method section to a lesser extent. It is the problem of the liberties taken throughout the theory section and the analysis section. The main idea behind a formal semantic theory is the conversion of any natural language into a unifying, universal language. In this case, the universal language is described through math. Montague's, and by extension Cann's, approach to this was to find a way to convert grammatical and syntactical structures, and other linguistic aspects of any natural language into a universal language. The idea laid out by Cann was to start from the bottom and work his way up, by starting with the declarative sentence, which is a simple sentence type that relays information. "*The sun is hot*" is considered a declarative sentence, and the idea behind starting with sentences of this type was to produce a procedure that could convert the grammar and syntax of declarative sentences into a coherent grammar and syntax in the universal language. This procedure is essentially what the denotation assignment function, $\mathcal{F}_{da}$, is designed to do, namely convert the elements of the state-of-affairs in the object-language into entities in the meta-language while also converting the associated grammar and syntax.

[2]In this case, "*sitch*" is an abbreviation of the word *situation*

To better exemplify how this is done, consider the follow declarative sentence: "*The woman wrote a review*". It is clear that the structure of this sentence can be said to have the form NP_s V_t[+form] NP_{do}, where these abbreviations denote subject noun phrase, verb phrase[3], and direct object noun phrase, respectively. This form is then denoted as GR1_{obj}, the first grammatical rule of the object-language, which is then converted to a similar rule in the universal language, or meta-language. Let the converted rule of GR1_{obj} be denoted by GR1_{meta} and have the following form: $\text{V}'_t(\text{NP}'_s, \text{NP}'_{do})$. The sentence "*The woman wrote a review*" in the object-language becomes write$'$(woman$'$, review$'$) in the meta-language. There is clear connection between this rule and the ontologies of the state-of-affairs that pertains to this specific declarative sentence. It is readily seen that

$$\mathcal{E}_S : \{\text{WOMAN},\ \text{REVIEW}\} \qquad \mathcal{I}_S : \{\text{WRITE}\}$$
$$\mathcal{N}_S : \{\text{woman}',\ \text{review}'\} \qquad \mathcal{P}_S : \text{write}' = \{\langle \text{woman}',\ \text{review}' \rangle\}$$

Looking at $\mathcal{P}_S$, it is clear that there is connection between the two-place predicate of review$'$ and GR1_{meta}. The next step of the formal semantic theory is to identify and outline every grammatical and syntactical rule of a given object-language and define clear and concise grammatical and syntactical rules in the meta-language such that no linguistic aspect is lost when converting from one language to the other. This is where the problem in this paper arises. Since the rules of how to convert object-language elements into meta-language entities have not been explicitly stated, it could be argued that such a conversion cannot be done. To preserve the integrity of a formal semantic theory, it is required that rules such as GR1_{obj} and GR1_{meta} are stated, such that the clear and concise nature of the mathematical approach that is intrinsic to a formal semantic theory is upheld. This is not the case in this paper. The grammatical theory, for a lack of a better term, of formal semantics has been left out on purpose, as these rules are not important in the context of this paper. It is far more important to analyse what is in the state-of-affairs in terms of persons, characters, and others, and what they are doing, rather than ensuring that the sentences in a given state-of-affairs are converted correctly. This was what was meant with taking liberties in regards to the formal semantic approach: not strictly following the guidelines of how to correctly convert sentences in a state-of-affairs into entities in the meta-language, but rather analyse what is happening in the state-of-affairs in terms of the characters and their actions. Another, but smaller problem with the formal semantic approach is the problem of what the state-of-affairs should consist of, and consequently what the sets $\mathcal{O}_S^{Re}$ and $\mathcal{O}_S^{Im}$ should consist

[3]The subscripted *t* denotes that the verb is a transitive verb

of. As mentioned briefly in section 2.2, any number of interpreters of a state-of-affairs do not necessarily agree on what should make up that given state-of-affairs. Following from this, $\mathcal{O}_S^{Re}$ and $\mathcal{O}_S^{Im}$ would also differ for each interpreter. In the case of this paper, the idea behind the creation of a given state-of-affairs was to summarize the jokes as precisely and clearly as possible, creating the state-of-affairs such that they conveyed the most important aspect of a given joke. It could be argued that the ontologies of each state-of-affairs do not have sufficient information. In the spirit of being as precise as possible, everything would have to be denoted, in some way or another, in the relevant ontologies, such that each audience member would be denoted, each piece of clothing, each and every possible thing in the room where the performance takes place would be in the sets of the ontologies. However, this would only be confusing, as the sets would be more or less infinite in length, as well as contain elements that are not relevant to the joke in question. Is it important to include audience member number 125's glasses in the extension of the real ontology? From a mathematical and formal semantic point of view: yes. From an analytical point of view: no.

In terms of Austin's performatives, the problem with the third point of the approach is the ambiguousness of what constitutes a performative, or rather, the requirements for a performative to have been executed successfully. Some of the examples used in section 2.4 outline lists of requirements for a given performative. Looking at the performatives analysed in each of the four jokes, it is difficult to determine if every requirement for the performative to be executed successfully have been clearly stated, and if the requirements that were listed were even the correct requirements. Consider the case of joke C, specifically the Water Bottle joke. The performative in this case was that of lying, and from a theoretical standpoint, there is a set containing the exact requirements necessary for the performative to have been performed successfully. However, it is not clear whether or not Bo fulfills all of these requirements. Being more specific, the case was made that Bo successfully lies to the audience based on the fact that the audience laughed when the song played after the bottle was knocked over. It could be the case that some members of the audience saw through Bo's charade and were not mislead, and if this was the case, Bo would not have successfully mislead the audience. To determine what requirements were needed for a given performative, this paper relied on what is considered to be common knowledge of what pertains to a given performative. In the case with lying, a requirement that would be considered common knowledge is that of a person being intentionally deceitful, and the sole purpose of what they are doing is to mislead the other participant(s). There are undoubtedly other requirements, but this exact requirement is perhaps the essential

requirement for the performatives of lying or misleading. The same idea was adopted in the analysis of the other performatives that belong to their respective jokes: the idea of identifying surface level (common knowledge) requirements for a given performative, and using these as a way of analysing if a performative was done successfully or unsuccessfully.

Lastly, point four of the approach was only really a problem in one regard, that being the purpose of the Cooperative Principle and the maxims, or at least the implementation of them. The idea behind the implementation of the Cooperative Principle and maxims was that they should serve as points of "conversational common ground" between Bo and the audience. By stating that Bo would be observed to follow the principle and the maxims, it made the identification of where comedy was created easier. However, by virtue of being a comedy show, the members of the audience already expect to be mislead and deceived by Bo, effectively nullifying the Cooperative Principle and the maxims. Going in to the comedy show, the members of the audience knows that, at some point, Bo will *not* make his contribution as informative as is required (maxim of *Quantity*), not make his contribution one that is true (maxim of *Quality*), not be relevant (maxim of *Relation*), and obscure expressions or be intentionally ambiguous (maxim of *Manner*), all for the sake of creating comedy. In light of this, it is hard to argue that Bo is viewed to follow the Coopertive Principle and the maxims because the audience knows that Bo will opt out of the principle, and break most of the maxims. By stating in the analysis that Bo and the audience were seen to follow the Cooperative Principle and maxims, it is more correct to say that the audience is under the illusion that Bo follows the principle. The comedy is not necessarily created from the fact that Bo opts out of the principle and the maxims, but it is created in the *ways* that he opts out of them.

To further support the argument that comedy is created in the ways that a comedian breaks from what is considered stereotypical conventions, consider the thesis by Møller & Jensen titled "No fun intended - A very serious discourse study on gender in danish comedy" (2017). In this paper, the authors analyse a number of jokes from the show *Comedy Aid 2016*[4], where they focus on how gender is portrayed in jokes. They analyse the jokes partly based on Membership Categorization Analysis, or MCA, which, in short, details how different categories are associated with different activities. The authors provide the following example: "*Women (category) are bad at driving (activity)*" (Møller & Jensen, 2017: 10), and explain the concepts of *category-bound predicates* and *category-activity puzzles*, the first being a set of features or qualities, good and bad, that are associated with a given category, and the other being the ways to

[4]A yearly comedy show where well-known danish comedians do stand-up for charity

combine categories and activities that are conflicting. The joke in question is one where danish comedian Jonas Mogensen is out bowling with a group of friends. There is another group of guys playing next to them, and somehow the groups end up fighting each other. Mogensen does not really want to fight, so he tries to find a person in the other group who does not want to fight as well. He finds such a person and they end up hugging. Møller & Jensen argue that Mogensen creates a contrast by portraying the stereotypical tough-guy category versus the soft-guy category, of which Mogensen is a member. In this case, the comedy of the joke is created by having the protagonist, Mogensen, appear as a tough guy, but in the end it is revealed that he is actually a soft guy. To put it in terms of Grice, by portraying himself as a tough guy, Mogensen intends for the audience to think that he is a tough guy, but breaks that expectation by hugging another guy. This joke is similar to the scenario portrayed in joke B, where Bo portrays the break-up situation. To put joke B in terms of MCA, Bo assigns his girlfriend the features of being nice, reasonable, and level-headed, but at the end of the song it is revealed that she is the opposite of those features. As was argued in this paper, that is where comedy is created. Mogensen deviates from the expectations that the audience has created around the situation, just like Bo does in joke B. Furthermore, in a thesis titled "Fallon, jokes and Democracy" (2017), Ruder analyses political jokes from Jimmy Fallon using the theories of humor relating to *superiority*, *incongruity*, and *release*. Of these three, incongruity is perhaps the most interesting. Ruder states: "*Incongruity is the humor that arises from subverting expectations or, in other words, being incongruous*" (Ruder, 2017: 40). Ruder offers the following analysis of one of Fallon's jokes. On the firing of James Comey, Fallon states that "*Comey heard about it right before the recruitment event he was going to speak at*", and Ruder argues that the incongruity springs forth from the fact that Comey was fired from a recruitment event, an unlikely scenario (Ruder, 2017: 66). The comedy of this "joke" is created by the very fact that Comey was relieved of his duties at a recruitment event. To put this in terms of expectations, it is not expected, by any audience, that a man is fired on his job, where his job is literally to hire people. In light of incongruities, Bo Burnham employs some similar concepts in his material. Taking joke D as an example, the incongruousness is depicted in the way joke D is set up. By having a jaunty jingle play as Bo states that he would like to read the audience a story about a frog named Andy, the audience expects it to follow some sort of agreed-to convention. As was argued, Bo breaks these expectations by deviating from the storytelling norm by having the characters act in uncharacteristic ways. In doing so, the "incongruousness" is created, and comedy is created.

4.2 Bo Burnham's Comedic Type and Comedic Force

As briefly mentioned in the method section, Bo Burnham is a versatile artist. He does not shy away from using unconventional methods to tell a joke in his routines. Based on the jokes analysed in the previous chapter, it is evident that Bo Burnham sits in the "storyteller" end of the comedic type spectrum. Not to the extent of Mr. Iglesias, in the sense that telling stories is the only thing that Bo does, but it is clear that each of the jokes analysed incorporates some storytelling aspects. Joke B illustrates how Bo Burnham is a storyteller, solely by the fact that the joke is about a situation from his life. It is the story of how his girlfriend broke up with him. Although it might be fair to say that it is not a true rendition of how the breakup actually played out, the joke is, essentially, Bo retelling what happened in this situation. There is a clear set of characters, a beginning, where the girlfriend initiates the conversation, and an end, where they break up. Joke C is not really a story, in the same way that joke B is, but there are some elements of storytelling visible. This is only the case for the Hotdog part of joke C, as the Water Bottle part is not so much as story as it is Bo Burnham goofing around on stage. Joke A is not considered a story in the same ways as jokes B and C, but it could be argued that there are some storytelling elements. Looking at the part where Bo "fake arrests" the audience for possession of weed, Bo, in a sense, creates a narrative where he is a snitch that rats the audience out to the police, who subsequently starts arresting members of the audience. It is a situation that is supposed to tell the "story" of how the war on drugs, in this case marijuana, has affected American society. Lastly, joke D is considered a story in the classical sense of the definition. This has already been covered in the analysis of the joke, but to quickly summarize: the joke has a set of characters, a clear beginning that throws the hero on an adventure, a middle where the resolve of the hero is tested, and an end where the story concludes the hero's journey. However, there is one aspect where the joke fails to adhere to the classical sense of storytelling, namely in morality. Bo explicitly states that the story does not have a moral, but since the story contains the other aspects of storytelling, it is still, for the purpose of this paper, considered a story. It would be unfair to Mr. Burnham to label his comedic type as only being a storyteller, but he is a comic who incorporates storytelling elements in most of his jokes. His jokes are often elaborate narratives that play out over the course of several minutes, and this is the reason that he is sitting in the storyteller end.

The comedic force of Bo Burnham is determined on the basis of the eleven categories that jokes can be divided into. Based on the analysis of jokes A through D, Bo Burnham incorporates

the following categories:

(2) *character* (three times) (3) *reference* (four times)

(4) *shock* (two times) (5) *parody* (three times)

(6) *hyperbole* (two times) (7) *wordplay* (two times)

(8) *analogy* (one time) (9) *madcap* (two times)

Looking at this list, it is clear that Bo prefers to base his jokes in situations that the audience can relate to; in something they can reference from their own lives. Joke B references the situation of ending a relationship with a significant other, which is a situation that most people have experienced. Although the breakup portrayed in joke B can be considered a bit of a nasty affair, the overall situation is a relatable experience. Joke C also relies on the fact that the audience members can relate to the experiences portrayed in both of the jokes. It is fair to assume that most people have tried to knock over a container filled with a liquid, spilling the contents everywhere. The other situation in joke C is also well known: eating some strange, exotic food, which ultimately ends with having a bad stomach. Joke A is perhaps the best example that illustrates how Bo uses *reference* in his jokes, as this song is quite literally a questionnaire used to determine if members of the audience have experienced some kind of situation. These questions are about common experiences, like drinking booze or smoking weed, or not having had intimate relations with another person, as well as some more obscure questions, like dividing by zero. Lastly, joke D is the odd one out. Here, reference does not refer to some common experience in the same sense as with the other jokes, but rather the fact that most audience members have heard a story. Although many can relate to the feeling of falling in love or trying to pursue a relationship, it is fair to say that most members of the audience can not relate to being shot in the chest with a rifle, as well as being eaten by a crocodile. In terms of the category of *character*, there are two ways that this category is used by Bo. The first is a type of character that Bo plays and portrays. The best examples are from joke B, where he plays the characters of himself and his girlfriend, and from joke D, where he plays all the characters in the story. In these cases, Bo plays the characters that are portrayed in the situations. The other type of character is a bit harder to define, as this type is not someone who Bo plays, but is still "someone" who is a part of the joke. There are three instances among the four jokes where these characters have been used, and they are the police officers in joke A, as well as the voices singing in jokes C and D. These are incorporeal characters who are still important to the joke. *Parody* perhaps best describes the way in which Bo executes his jokes. The jokes to which the

category of parody was attributed are not parodies in the strict sense of the definition, but more in the way that Bo parodies how a joke is expected to be told. Joke A is a joke where the main act, so to speak, is that Bo is rapping, where the joke in and of itself is not a parody. However, it is the way that Bo raps, the way he parodies the conventional elements that are associated with rap that turns the joke (the rapping) into a parody. The same goes for joke D, where Bo breaks from the conventional storytelling form and adopts his own way of telling a story. He is still using conventional storytelling elements, but in an unusual way. Examples of this include how the rule of three is changed by Bo, as one of Andy's friends, Roger, is a pedophile, and how, at the end of the story, the hero does not find eternal love, but is brutally devoured by a crocodile instead. These three categories, *character, reference*, and *parody* are considered the primary categories, wheres as the rest of the categories, *shock, hyperbole, wordplay, analogy*, and *madcap* are considered auxiliary categories, in that they are not the driving force of the jokes, but are still important aspects of the jokes. To exemplify this, consider the premise of joke B, the break-up song: shock and hyperbole are used to make the break-up funny, in the way that the characters insult each other. Similarly, the fact that Bo parodies storytelling in joke D is not, on its own at least, funny, but by using shock it can be made funny, either by having a friend of the hero be a pedophile, or having the protagonist brutally consumed. The auxiliary categories help make the jokes funnier. To sum it all up: based on the comedic categories, Bo Burnham's *comedic force* can be described as telling stories about things that the audience can relate to in an unfamiliar, shocking, and hyperbolic manner, and he is not afraid to incorporate subjects ranging from world politics to bowel movements.

4.3 Concluding Remarks

The formal approach provided some insight into the other elements that make up a joke. What usually makes a joke funny is either what is said or how it is said, but the formal approach provided in this paper highlighted some of these other comedic elements. The approach gave an adequate way of describing exactly what was happening in a given joke, what elements made the joke funny, and it gave a way to describe the intentions and meanings of what Bo was doing on stage. From abusing the rapping performative, to violating fairytale conventions in a gory manner, Bo Burnham does not create comedy simply in what he is saying. His comedy is a created in the subversion of the expectations of his audience, both in what his is saying, but also in what he is doing on stage. Bo Burnham is a comic who thrives in doing almost the polar opposite of what the audience expects him to do. He takes familiar concepts and situations, and throws convention out of the window so that the audience never knows where the joke is headed, or where it is going to end. This is where comedy, in general, is created: how can the expectation of the audience be sabotaged in such a way that they do not even have the slightest idea of what is going to happen. In this regard, Bo Burnham is proficient saboteur of comedic conventions.

Appendix 5

This chapter contains the transcription of jokes from the shows *what* (2013) and *Make Happy* (2016).

5.1 Appendix A: Intro Joke, from *Make Happy* (2016)

1 (00:02:24) [Bo Burnham walks onstage, and the audience begins to cheer loudly. The spotlights project purple rays of light onto the stage]

2 (00:02:27) [Hip-hip music begins to play]

3 (00:02:35) [The audience continues to cheer as Bo walks up to the micrphone stand and takes the microphone]

4 (00:02:47) [A bell dings as Bo taps his right index finger in the air. As the bell dings, the spotslight turn off. Bo then begins to rap, standing at the front of the stage, with bent knees and doing stereotypical hip-hop/rap motions, and the spotlights turn blue] ♪ *Ladies* ♪

5 (00:02:48) ♪ *Ladies! Ladies, if you feel me say, "Hell, yeah!"* ♪ [Bo extends his arm holding the microphone to the audience]

6 (00:02:51) [The women in the audience replies] *"Hell, yeah!"*

7 (00:02:52) [Bo continues to rap] ♪ *Fellas! Come on, fellas if you feel me say, "Hell, yeah!"* ♪[Bo extends the microphone again]

8 (00:02:56) [The men in the audience reply] *"Hell, yeah!"*

9 (00:02:57) [Bo continues] ♪ *Virgins, if you haven't felt a person say, "Hell, yeah!"* ♪ [Bo extends the microphone]

10 (00:03:01) [Part of the audience replies] *"Hell, yeah!"*

11 (00:03:02) [Bo continues] ♪ *If you can divide by zero let me hear you say, "Hell, yeah!"* ♪ [Bo extends the microphone]

12 (00:03:06) [Part of the audience replies] *"Hell, yeah!"*

13 (00:03:07) [Bo breaks from rapping, and starts talking in a normal tone] *"No, you can't* [The audience laughs]

14 (00:03:10) [Bo continues] *"Mathematically impossible. Listen. Don't be pavlovian. I'm looking for actual answers here. Trying to gather information. Let's go."*

15 (00:03:18) [B starts rapping again] ♪*If you like drinking booze let me hear you say, "Hell, yeah!"* ♪ [Bo extends the microphone]

16 (00:03:21) [The audience replies] *"Hell, yeah!"*

17 (00:03:23) [Bo continues] ♪ *If you like smoking weed let me hear you say, "Hell, yeah!"* ♪ [Bo extends the microphone]

18 (00:03:26) [The audience replies] *"Hell, yeah!"*

19 (00:03:28) [The music stops. Police sirens and a helicopter can be heard over the speakers. Red and blue lights are flashing in the background. Bo stops rapping, and starts speaking in a normal tone.] **Bo**: *"Gotcha. Get these motherfuckers."*

20 (00:03:30) [A police officer's voice can be heard in the background] *"Get down on the ground! Get down on the ground!"*

21 (00:03:33) [Bo is pacing on the stage] **Bo**: *"Pot is ruining America"* [In the background, the police officer can be heard] **Officer**: *"Where's the weed? Where's the weed?"*

22 (00:03:36) [Another officer can be heard as the sirens continue to wail] *"Yeah, we got a room full of potheads. We're gonna need backup. Over."*

23 (00:03:39) [Bo walks to the front of the stage, and the lights focus on him.] *"Psych!"*

24 (00:03:40) [The music starts playing again, and Bo continues to rap] ♪*If you don't give a fuck about the law let me hear you say, "Fuck the police!"* ♪ [As he says "Fuck the police", he extends his the middle finger on his left hand, as well as the microphone to the audience]

25 (00:03:44) [The audience replies] *"Fuck the police!"*

26 (00:03:45) [Bo continues to rap] ♪ *"If that seems oversimplified to you let me hear you say, "It's a really tough job and they're doing their best"* ♪ [Bo exntends the microphone, and the audience laughs]

27 (00:03:50) [Bo continues] ♪ *If you know nothing about the conflict between Israel and Palestine and thus feel super uncomfortable weighing in on it til you've read about it let me hear you say, "No comment"* ♪ [Bo extends the microphone]

28 (00:03:59) [The audience replies] *"No comment!"*

29 (00:04:00) [Bo stops rapping, but the music keeps playing in the background] **Bo**: *"Good call. I have no idea what's going on over there. What are they fighting about? They have similar hats.* [The aduience laughs]

30 (00:04:10) [Bo starts to rap again] ♪ *If you want to start the show let me hear you say, "Hell, yeah!" Come on.* ♪ [Bo extends the microphone to the audience]

31 (00:04:14) [The audience replies] *"Hell, yeah!"*

32 (00:04:16) [Bo continues] ♪ *If my name is Bo...* ♪ [Bo stops rapping and proceeds in a normal tone] *Bo*: *"Whoops."* [The audience laughs]

33 (00:04:22) [Bo continues in his normal voice] *"I think we're done with this call and response shit".*

5.2 Appendix B: The Break-up Song, from *Make Happy* (2016)

Since this is a song in which Bo plays two characters; himself and a previous girlfriend, the following notation will be used to differentiate between what character Bo is playing. Let Bo be himself, Bo_w be the female character, and Bo_m be the male character. Note that, in the context of the story that Bo is telling, Bo = Bo_m.

1 (00:41:51) [Bo, in a normal voice, to the audience] *"I went through a pretty rough...* [Small pause] *"uh, breakup recently. It was a long time coming. Uh, we hand a lot of conversations about it, she and I. But recently we had the conversation...* [Bo emphasises *the*] *"it wasn't recent, but I remember it like it was yesterday, you know?*

2 (00:42:05) [Piano music starts playing. A sort of upbeat song. Bo continues to talk in his regular voice] *"She came out of the shower. Her hair wet, her shoulders wet. It was a shower.* [The audience laughs. Bo continues] *"It's water".* [There's a small pause] *She turned to me and she said it...* [Small pause again] *"She said...* [The last *she said* is said to the beat of the music, indicating Bo is about to sing]

3 (00:42:18) [Bo starts singing as Bo_w in a higher tone. The lights on the stage turn soft blue, and a light is focused on Bo] **Bo**$_w$: ♪ *It's over* ♪

4 (00:42:22) **Bo**$_w$: ♪ *We shouldn't fight to stay together just to fight again* ♪

5 (00:42:26) **Bo**$_w$: ♪ *It's over. We're unhappy* ♪

6 (00:42:29) **Bo**$_w$: ♪ *We need to take a break from us to make us right again* ♪

7 (00:42:33) **Bo**$_w$: ♪ *And even though it's not gonna go any further* ♪

8 (00:42:37) **Bo**$_w$: ♪ *I swear I don't regret a second of it* ♪

9 (00:42:40) **Bo**$_w$: ♪ *And when the dust has settled* ♪

10 (00:42:42) **Bo**$_w$: ♪ *I hope we can still be friends* ♪

11 (00:42:47) [Bo stops impersonating the female character, turns to the audience, and as himself says] **Bo**: "*Then I said...*"

12 (00:42:48) [The piano music stops and hip-hop music starts playing. The lights turn from the soft blue to a deep red, and spotlights flicker on and off in the background. Bo

starts rapping as Bo_m] **Bo**$_m$: ♪ *Eat a dick. Eat a dick. Eat a fucking dick, like this* ♪ [Bo turns the microphone sideways and pretends to eat it like corn on the cob. The audience laughs.]

13 (00:42:55) **Bo**$_m$: ♪ *Put on your dick-eating gloves* ♪

14 (00:42:57) **Bo**$_m$: ♪ *Get ready to gobble a dick up* ♪

15 (00:42:59) **Bo**$_m$: ♪ *If you don't like this dick sitch* ♪ [There's a small pause] ♪ *Eat a dick, bitch* ♪ [The audience cheers and claps]

16 (00:43:02) [The rapping stops, the lights turn blue again, and Bo switches back to Bo_w. The audience is cheering and applauding. Bo_w acts irritated as a response to what she just heard. In a normal voice, she states to the audience] **Bo**$_w$: *"I think I made the right decision"*

17 (00:43:15) [Bo_w starts singing again] **Bo**$_w$: ♪ *Okay, you're angry* ♪

18 (00:43:18) **Bo**$_w$: ♪ *I can see that* ♪

19 (00:43:20) **Bo**$_w$: ♪ *But you don't need to make this harder than it has to be* ♪

20 (00:43:23) **Bo**$_w$: ♪ *I try to speak to you, but you won't listen–* ♪

21 (00:43:26) [Bo_w is interrupted by Bo_m. The lights turn back to red, the piano music is replaced by the hip-hop music] **Bo**$_m$: ♪ *Eat a dick* ♪

22 (00:43:28) [The light changes back to blue and the music back to piano] **Bo**$_w$: ♪ *Hold on. Please just let me–* ♪

23 (00:43:29) [The light changes to red again, and the hip-hop music continues] **Bo**$_m$: ♪ *Eat a dick* ♪

24 (00:43:30) [The light changes back to blue and the music back to piano] ♪ *Oh, my god. Honestly, are you fucking five?* ♪

25 (00:43:33) **Bo**$_w$: ♪ *I am trying to talk this out* ♪

26 (00:43:36) **Bo**$_w$: ♪ *You refuse to even listen to me* ♪

27 (00:43:39) [Bo_w stutters a bit, and changes from singing to speaking] **Bo**$_w$: *"I'm saying how I'm feeling, okay? And then you're saying...* [There's a small pause] *'eat a dick' over and over again. Does that seem mature to you?"*

28 (00:43:47) [The light changes again to red, and music back to hip-hop] **Bo**$_m$: ♪ *No, it doesn't. But see, I think the issue is* ♪

29 (00:43:50) **Bo**$_m$: ♪ *I've got my father's temper and I'm emotionally inarticulate* ♪

30 (00:43:54) **Bo**$_m$: ♪ *So rather than being honest and vulnerable* ♪

31 (00:43:56) **Bo**$_m$: ♪ *I did a quick switch because I'm hurting inside* ♪

32 (00:43:58) **Bo**$_m$: ♪ *And I'm trying to hide it, so eat a dick, man* ♪

33 (00:44:01) [As Bo$_m$ says the last part his voice breaks, and he starts sobbing. He cries for a few moments] ♪ ♪

34 (00:44:09) [Voice brekaing even more, Bo$_m$ continues, not rapping anymore] **Bo**$_m$: *"I thought we had a future together, you fucking whore"*

35 (00:44:14) [The light changes back to blue and the music back to piano] **Bo**$_w$: ♪ *I didn't think you'd cry for me* ♪

36 (00:44:18) **Bo**$_w$: ♪ *I didn't think you cared* ♪

37 (00:44:21) **Bo**$_w$: ♪ *I thought you were lashing out in anger* ♪

38 (00:44:25) **Bo**$_w$: ♪ *But now I see you're scared* ♪

39 (00:44:29) **Bo**$_w$: ♪ *I'm scared, too. Maybe we can work this out and not break up* ♪

40 (00:44:34) [As Bo$_m$, visibly excited and gasping] **Bo**$_m$: *"Really?"*

41 (00:44:36) [The hip-hop music comes back, the light changes to dark purple, and Bo$_w$ starts rapping] **Bo**$_w$: ♪ *No, lick my clit. Lick my motherfucking clit* ♪ [The audience begins to cheer]

42 (00:44:39) **Bo**$_w$: ♪ *You think three lousy tears offsets three years of shit?* ♪

43 (00:44:43) **Bo**$_w$: ♪ *I deserve better than you. Get me wetter, then screw* ♪

44 (00:44:46) **Bo**$_w$: ♪ *Sorry you're not what I need, hun* ♪

45 (00:44:48) **Bo**$_w$: ♪ *Lick this clit then leave, son* ♪

46 (00:44:49) [The music stops, and the audience continues to cheer]

5.3 Appendix C: Water Bottle and Hotdogs, from *what* (2013)

1 (00:08:17) [Bo takes a bottle of water from a black stool standing on the stage] **Bo**: *"This show is called what"* [He takes a sip of water]

2 (00:08:21) [He begins to put the bottle back from where he took it] **Bo**: *"And I hope there's some surprises for you or some–* [He accidentally knocks the bottle off the stool] *Jesus. Sorry."* [He walks over to pick up the bottle]

3 (00:08:25) [He puts the bottle back on the stool] **Bo**: *"That's a good start I hope there's some–"*

4 (00:08:27) [Music starts to play over the speakers, and Bo does some silly dance moves as he stares at the audience. A disembodied voice sings] ♪ *He meant to knock the water over* ♪

5 (00:08:28) ♪ *Yeah, yeah, yeah* ♪

6 (00:08:30) ♪ *But you all thought it was an accident* ♪

7 (00:08:32) ♪ *But he meant to knock the water over* ♪

8 (00:08:33) ♪ *Yeah, yeah, yeah, art is alive, nothing is real* ♪ [The music stops, and Bo stops dancing]

9 (00:08:37) **Bo**: *"So we–"* [The audience starts laughing and cheering]

10 (00:08:40) [In response to the applause] **Bo**: *"Grow up. Grow up with your applause. Stick it"*

11 (00:08:42) [The songs starts to play from the beginning] ♪ *He meant to knock the water over* ♪

12 (00:08:44) ♪ *Yeah, yeah, yeah* ♪ [Bo gestures with his hand to cut the music]

13 (00:08:45) ♪ *But you all thought it was an a–* ♪ [The music is cut off]

14 (00:08:47) [To the audience] **Bo**: *"Just don't – if it's on repeat, it will repeat"*

15 (00:08:51) **Bo**: *"We can cut all this"*

16 (00:08:53) [The music starts to play again. Bo begins to do the same dance moves as before, and the disembodied voice sings] ♪ *He meant to play the track again* ♪

17 (00:08:54) ♪ *Yeah, yeah, yeah* ♪

18 (00:08:56) ♪ *But you all thought it was an accident* ♪

19 (00:08:58) ♪ *But he meant to play the water track again-gain-gain* ♪

20 (00:09:01) ♪ *Art's still alive, nothing's still real* ♪[The music stops]

21 (00:09:03) [As the audience is laughing] **Bo**: *"Food jokes. Let's do some food jokes"*

22 (00:09:05) [Bo, continuing as the audience laughs] **Bo**: *"Segues are weird"* [After a small pause, Bo walks back to the stool, takes the water bottle and puts it on the stage next to the stool]

23 (00:09:14) **Bo**: *"I had a hot dog for breakfast today, and afterwards I felt like this"* [Bo picks up the stool, lifts it over his head and swings it around as he is running around on the stage. The audience laughs]

24 (00:09:22) [Bo put's the stool back on the stage] **Bo:** *"'cause I couldn't control my stools"* [The audience laughs]

5.4 Appendix D: Andy the Frog, from *what* (2013)

1 (00:42:19) [Bo puts the microphone back on the microphone stand] **Bo**: *"It's time for a story. Let's do a story"*

2 (00:42:21) [Music starts to play, music similar to the music on children programs when it is story time. A disembodied voice sings] ♪ *It's time for a story* ♪ [Bo picks up his black notebook from the stool, and walks to the back of the stage]

3 (00:42:23) ♪ *It's time for a story* ♪ [Bo turns around and walks up to the stool]

4 (00:42:25) ♪ *A very special story especially for you* ♪ [Bo does a small jump, and while in the air clicks his heels together]

5 (00:42:28) ♪ *It's time for a story* ♪ [Bo sits on the black stool]

6 (00:42:29) ♪ *It's time for a story* ♪ [Bo adjusts the microphone]

7 (00:42:31) ♪ *Sit down and listen now. Don't be a jew.* ♪ [The audience laughs]

8 (00:42:34) **Bo**: *"This story is called Andy–"*

9 (00:42:35) [The audience keep laughing] **Bo**: *"That's a glitch. You can be jewish."*

10 (00:42:37) **Bo**: *"This story..."* [Bo adjusts the microphone again]

11 (00:42:40) **Bo**: *"This story is called Andy the Frog, featuring long and convoluted similes."*

12 (00:42:45) **Bo**: *"And I'll warn you when one of those long, convoluted similes rears its old head. So here we go."*

13 (00:42:50) [In a lighter, more chippy tone, Bo starts to tell the story] **Bo**: *"Once upon a time, there was a frog named Andy."*

14 (00:42:53) **Bo**: *"Andy lived at the Patton Park pond and had never hopped anywhere else in his entire frog life."*

15 (00:42:58) **Bo**: *"He had three best friends:"*

16 (00:43:00) **Bo**: *"Millie, who never left her lily pad,"* [Bo pretends to laugh]

17 (00:43:03) **Bo**: *"Billy, who was always hopping mad, "* [Bo pretends to laugh again]

18 (00:43:06) *Bo*: *"and Roger, who was arrested for possession of tadpole porn."* [The audience laughs]

19 (00:43:09) **Bo**: *"So one day–"* [The audience keeps laughing]

20 (00:43:11) **Bo**: *"One day, Andy saw something hop across the grass on the other side of the pond."*

21 (00:43:15) [Bo changes his voice to indicate that Andy is talking] **Andy**: *"Millie, Billy, Roger, look"*, **Bo:** *"said Andy."*

22 (00:43:18) **Bo**: *"Across the pond stood the most beautiful frog Andy had ever seen"*

23 (00:43:22) [Bo changes his voice to indicate that Millie is talking] **Millie**: *"She gorgeous,"* **Bo**: *"said Millie."*

24 (00:43:24) [Bo changes his voice to indicate that Billy is talking] **Billy**: *"She beautiful,"* **Bo**: *"said Billy."*

25 (00:43:27) [Changes his voice to indicate that Roger is talking] **Roger**: *"Bit old for my taste,"* **Bo**: *"said Roger."*

26 (00:43:28) **Bo**: *"Classic Roger"* [The audience laughs]

27 (00:43:31) **Bo**: *"And then she was gone."*

28 (00:43:33) **Andy**: *"I need to go find her,"* **Bo**: *"said Andy"*

29 (00:43:34) **Andy**: *"I need to follow my little frog heart."*

30 (00:43:36) **Bo**: *"So Andy follow the beautiful frog's footsteps into the forest."*

31 (00:43:39) **Bo**: *"He then came across a turle."*

32 (00:43:41) [Bo changes his voice to indicate that the turtle is talking] **Turtle**: *"You can't pass,"* **Bo**: *"said the turtle"*

33 (00:43:43) **Andy**: *"Please?"* **Bo**: *"said Andy"*

34 (00:43:44) **Turtle:** *"No,"* **Bo**: *"said the turtle"*

35 (00:43:46) **Bo**: *"And this is the first long, convoluted simile."*

36 (00:43:48) **Bo**: *"Then there was a rustling in the bushes."*

37 (00:43:50) **Bo**: *"And like a man who had been shot in the chest with a rifle,"*

38 (00:43:54) **Bo**: *"the turtle was shot in the chest with a rifle."* [The audience laughs and cheers]

39 (00:44:00) **Bo**: *"Andy kept moving, but at this point,"*

40 (00:44:02) **Bo**: *"like the doctor of the Kenyan track team, his patience ran thin."* [The audience laughs and cheers]

41 (00:44:07) **Bo**: *"Andy kept moving."*

42 (00:44:11) **Bo**: *"He then came across a giant crocodile."*

43 (00:44:12) **Bo**: *"And the crocodile began to chant,"*

44 (00:44:14) [Bo changes his voice to indicate the crocodile is talking, and chants] **Crocodile**: ♪ *I woke up this morning and I sat on a log. I opened up the menu. The menu said frog."* ♪

45 (00:44:19) **Bo**: *"Andy said,"* [As Andy, in an increasingly panicking voice, screaming] **Andy:** *"No, no."*

46 (00:44:21) **Andy**: *"Please let go of me. I can feel myself dying."*

47 (00:44:22) **Andy**: *"You're ripping out my insides."*

48 (00:44:23) **Andy**: *"I'm never gonna find her, am I?"*

49 (00:44:24) **Andy**: *"There's no God, is there?"*

50 (00:44:25) **Andy**: *"Fuck! Fuck!"*

51 (00:44:27) **Bo**: *"The end. The end. That's the end of that story."* [The audience begins to cheer and applaud Bo]

52 (00:44:40) **Bo**: *"Yeah, if you're curious, the moral of that story is irrelevent, 'cause we're humans."*

53 (00:44:44) **Bo**: *"Why would it apply to us?"* [The audience laughs]

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