PLAYING WITH PERSIFLAGE: HOW FREE-FORM DIALOGUE ENABLES EMERGENT NARRATIVES IN ORCHESTRATED DIGITAL GAMES

by

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Abstract

Digital games struggle to blend compelling narrative with interactivity. For example, computer role-playing games allow players the freedom to explore an open world, yet limit their interaction with the world’s inhabitants to selecting from pre-determined dialogue choices. This constrains players’ interactions and the game’s narrative to those conceived in advance by the game’s designers. We show how game orchestration enables a human to play the role of non-player characters, expanding interactive narrative through truly open-ended conversation. This idea is concretely realized in the novel game *Persiflage*. Through a study of five groups playing the game, we show how players and orchestrator converse, interact, and play using natural language. Players engage deeply in the game’s story, but do not adhere rigidly to the game’s setting, liberally employing slang and anachronistic references. Orchestrators accommodate the players but themselves play truer to the game’s setting, leading to asymmetric dialogue. Groups exhibited a range of dominance structures that affect the fluidity of the gameplay. Players and orchestrators use open ended conversations to collaboratively construct a narrative that emerges through gameplay. Orchestrators take the lead in authoring the story by preparing the game world for the players to explore. As the game progresses players make contributions and authorial control shifts between players and orchestrators. We show that orchestrated computer roleplaying games are an enjoyable outlet for players to exercise their creativity and that interesting and complex narratives can emerge from their play.
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Table of Contents

Abstract .................................................................................................................................................. ii
Acknowledgements .............................................................................................................................. iii
List of Figures ........................................................................................................................................ vii
List of Tables ......................................................................................................................................... viii
Chapter 1 Introduction .......................................................................................................................... 1
  1.2 Game Orchestration as a Solution ................................................................................................. 2
    1.2.1 Persiflage ................................................................................................................................. 2
    1.2.2 Research Questions .................................................................................................................. 3
  1.3 Results ........................................................................................................................................... 3
    1.3.1 Playing with Natural Language ............................................................................................... 4
    1.3.2 Collaborative Storytelling ....................................................................................................... 4
  1.4 Design Implications ....................................................................................................................... 5
  1.5 Contributions ............................................................................................................................... 6
Chapter 2 Literature Review .................................................................................................................. 8
  2.1 Artificial Storytelling ..................................................................................................................... 9
    2.1.2 Natural Language ..................................................................................................................... 11
  2.2 Orchestration ................................................................................................................................ 14
    2.2.1 Commercial Asymmetrical Games ......................................................................................... 14
  2.3 Improvisational Theatre ............................................................................................................... 16
  2.4 Summary ..................................................................................................................................... 17
Chapter 3 Persiflage .............................................................................................................................. 19
  3.1 Arranging Players and Orchestrator ............................................................................................. 20
    3.1.1 Players’ Perspective ................................................................................................................. 20
    3.1.2 Orchestrator’s Perspective ....................................................................................................... 21
  3.2 Digital Northaven .......................................................................................................................... 23
  3.3 Conversations in Persiflage ........................................................................................................... 24
  3.5 Summary ..................................................................................................................................... 25
Chapter 4 The Study Procedure ........................................................................................................... 26
  4.1 Recruiting .................................................................................................................................... 26
  4.2 Training Session ............................................................................................................................ 27
  4.3 Playing Persiflage ......................................................................................................................... 28
  4.4 Data Collection ............................................................................................................................. 29
# Chapter 5 Results: On Character Presentation

5.1 Language Choices ............................................................................................................. 33
5.1.1 Code counts for Slang, External References, and Period Language ............................ 34
5.1.2 Examples ....................................................................................................................... 35
5.2 Storytelling ....................................................................................................................... 37
5.3 Group Dynamics .............................................................................................................. 41
5.3.1 Single-Player Dominance ......................................................................................... 41
5.3.2 Orchestrator Dominance ......................................................................................... 43
5.3.3 Player Co-Dominance .............................................................................................. 45
5.4 Chapter Summary ......................................................................................................... 46

# Chapter 6 Results: On Shared Authorial Control

6.1 Enriching the Story ...................................................................................................... 49
6.1.1 Coding Enrichment ................................................................................................. 49
6.1.2 Backstories and Histories ..................................................................................... 50
6.1.3 NPC Relationships ............................................................................................... 53
6.1.4 A Trail of Clues .................................................................................................. 54
6.1.5 Conclusion ........................................................................................................... 57
6.2 Player’s Authorial Contributions ................................................................................ 58
6.2.1 Player Direction and Offers in Improvisational Theatre ........................................ 58
6.2.2 Coding Player’s Offers ......................................................................................... 59
6.2.3 Flavour .................................................................................................................. 61
6.2.4 Story ...................................................................................................................... 64
6.2.5 Game ...................................................................................................................... 66
6.2.6 Conclusion ........................................................................................................... 68
6.3 Improvising Orchestration .......................................................................................... 69
6.3.1 Improvisation Codes ............................................................................................ 70
6.3.2 Reactive Improvisation ......................................................................................... 72
6.3.3 Enabling/Blocking Improvisation ....................................................................... 74
6.3.4 Directing ................................................................................................................ 76
6.3.5 Acting Improvisation ............................................................................................ 78
6.3.6 Conclusion ........................................................................................................... 79
6.4 Chapter Summary ....................................................................................................... 80

# Chapter 7 Discussion

........................................................................................................................................... 83
List of Figures

Figure 2.1: The player chooses a path along a dialogue tree in Mass Effect, a modern computer roleplaying game. .......................................................... 9
Figure 2.2: Players interact with Grace and Trip in Façade using typed dialogue. ......................... 12
Figure 2.3: A Tough Sell, one of the three games from the LabLabLab project, players play the witch who must convince Snow White to eat the poisoned apple using natural language. ............................. 13
Figure 3.1: Players playing Persiflage. ....................................................................................... 20
Figure 3.2: The players’ view of Northaven. Their characters are dressed in blue and red. Two NPCs in brown await their attention. .................................................................................. 21
Figure 3.3: Orchestrator sits at a desk using a mouse, keyboard and headset. .............................. 22
Figure 3.4: The orchestrator’s interface. The NPC in the centre follows the path traced out in red. The blue buttons trigger speaking and waving animations. Each NPC has an inventory which is currently empty. The window inset in the top-right shows the players’ view; the players (dressed in blue and red wearing top hats) are currently conversing with an NPC. The orchestrator can drag items from the panel in the top left into the game world. ................................................................................. 22
Figure 3.5: The players’ view zooms in on the NPC that they are conversing with. .................. 24
Figure 4.1: Diagram showing the arrangement of hardware and players for the study .................. 28
Figure 5.1: Counts for occurrences of Slang, External References, and Period Language ........ 35
Figure 5.2: Counts for occurrences of Storytelling, Coordination, and Banter ............................. 38
Figure 5.3: Utterance and word counts ....................................................................................... 41
Figure 6.1: Coded sentences from orchestrator’s enrichment document .................................... 49
Figure 6.2: Instances of improvisation by the players, or ‘offers’ .............................................. 60
Figure 6.3: Instances of orchestrator’s improvisation. .............................................................. 71
List of Tables

Table 4.1: Codes derived from Play Session Dialogue .................................................................30
Table 4.2: Codes derived from Orchestrator’s notes. .................................................................30
Chapter 1

Introduction

Computer Role-Playing Games (CRPGs) immerse their players into rich and vibrant worlds populated by engaging and complex Non-Player-Characters (NPCs). Players assume the role of a character in these fictional worlds, exploring the game’s narrative and history through interactions with its NPC inhabitants. Rather than the fast-paced action or complicated planning and decision-making that characterizes other genres of digital games, CRPGs emphasize compelling storylines in an immersive setting [3].

The drawback of CRPGs is that whilst the narrative content is rich and immersive, it is also limited to by what the designers have included at delivery; the stories are set and cannot be changed at runtime. Conversations with NPCs are implemented with branching dialogue trees which, whilst providing choice and complexity, cannot accommodate dialogue unforeseen by the designers. Players are restricted in their choice of words by what Lessard calls “dialogue trees of pre-defined utterances” [24]. This limitation denies players from conducting truly interactive and open-ended conversation as well as having any real authorial influence over the game’s narrative.

To address these shortcomings, we enable players to interact with CRPGs using natural language in full confidence that they could be understood and where their desires can be addressed. We turned to game orchestration as a solution that allows players to engage in free-form conversation with NPCs in a CRPG.
1.2 Game Orchestration as a Solution

Orchestration in digital games refers to the intervention of a human player (an orchestrator) who surreptitiously manages game operations behind the scenes, altering the game experience for the players. As we shall see in chapter 2, the act of game orchestration can involve a variety of tasks, ranging from supporting and organizing players in pervasive augmented reality games to modifying game parameters and conditions in real time in digital settings.

1.2.1 Persiflage

We designed and implemented Persiflage, an orchestrated CRPG, to explore the effect of permitting open-ended conversation with NPCs on how players interact with a CRPG. We maintain the aspects of the player experience typical to CRPGs; players are seated on a couch and move their avatars through a virtual world using game controllers. In Persiflage, the orchestrator takes on the conversational role of the game’s artificial intelligence and manages NPC behaviour and dialogue. This reintroduces two aspects of traditional role-playing games that have been lost in the transition to digital media: first, players can interact with NPCs using natural language, and second, players have the opportunity to influence and share authorship of the game’s story. Persiflage shows that it is possible to provide open-ended dialogue within a CRPG through a human orchestrator, whilst retaining the conventions of traditional video games.

Whilst the role of the orchestrator in Persiflage might resemble that of a game master (GM) from traditional table-top RPGs, there is a distinct difference. A GM wears multiple hats when running table-top RPG game. They take on the role of a narrator, describing the game’s environments and events, an arbitrator who resolves outcomes of actions, and a manager who ensures that the game runs smoothly. Comparatively, Persiflage’s orchestrator only bears responsibility of replacing the artificial intelligence behind the NPCs in contemporary CRPGs with a human intelligence that can allow players to converse with them in natural language.
1.2.2 Research Questions

The principal question that we address with this research is, “How do players and orchestrator make use of free-form dialogue and shared authorship in a digital roleplaying environment?”

We constructed a study using Persiflage to enable players and orchestrator to use natural language and open-ended communication in a CRPG, from which we hope to see emergent collaborative narratives. In order to address the research question, we observed groups of two players and one orchestrator playing Persiflage and recorded and studied their interactions. By a process of open coding [39] the transcribed dialogue from the study sessions, we look for behaviours that inform and help us to explore the above question in two parts:

(i) “How do players and orchestrators make use of their freedom to choose their own words?”

(ii) “How is authorial control shared between the two asymmetrical roles of players and orchestrator in a CRPG?”

1.3 Results

We present our results separated into two chapters, each discussing one of the above research questions. The first deals with the way players and orchestrator choose to employ natural language during game play. We look at the style of speech and language that they use and how this influences the portrayal of their characters in game. Additionally, we discuss the group dynamics that arise when players are not restricted to predefined utterances. The second chapter looks at the interplay between players and orchestrator as the game progresses and how this results in a collaboratively constructed narrative. We start with the preparatory work that the orchestrator does before the play session and discuss how this affects the game. Borrowing from
the terminology of improvisational theatre, we observe and categorize narrative ‘offers’ made by players during play and their effect on the narrative. We then discuss and how orchestrators interpret and respond to these offers whilst trying to reconcile them with their prepared game story.

1.3.1 Playing with Natural Language

The first section discusses the effect of open-ended conversation on play of a CRPG. Specifically, we address how players present themselves verbally when given the ability to talk in their own voices. We report on the topics of conversation during play and on the degree to which players and orchestrator engage in storytelling. And finally, we explore the group dynamics that emerge from different groups through cooperative play between two players and an orchestrator.

We found that players were engaged with the game’s goals and used open-ended dialogue to advance the story’s plot, sometimes in unexpected ways. Players did not constrain themselves to the game’s mediaeval setting, instead opting to import their own humour and modern anachronisms. Orchestrators played the NPCs truer to their character as mediaeval villagers, sometimes using exaggerated faux period language. We observed different group dynamics between study groups; whereas some groups had orchestrators driving much of the interaction, others included boisterous players who were not shy about imposing themselves. The difference in group dynamics gives rise to different interaction patterns and ultimately affect the game experiences had by each group.

1.3.2 Collaborative Storytelling

The second section observes how players and orchestrator share authorship of the game’s collaborative story. We study the preparatory notes that the orchestrator makes when outlining a murder mystery story for the players to explore, looking at the types of information they choose to include to build a game world. We then discuss how the information in these notes manifests
themselves during game play. From the play session, we look at how players’ interactions with NPCs translate to narrative offers and seek to influence the game’s storyline. Similarly, we observe how orchestrators respond to and handle these offers, consolidating them with their prepared story plan.

Orchestrators outlined the plot of the murder mystery three ways, by giving the NPC inhabitants of Northaven backstories, relationships, and actions. Relationships and backstories give characters histories and inform their personalities and behaviours towards one another. Actions are possible clues that the characters may give to the players which together form a possible path for the players to follow to the mystery’s solution.

We find that players progress the story plot through questioning the NPCs and probing them for clues. These requests range from small suggestions that add flavour to the story but do not alter its course, to large ones that redirect the storyline, and eventually, even the game’s objective. The orchestrators in turn react by either accommodating their requests by rerouting the storyline to fit in the players’ suggestions, or blocking them by denying their possibility, sometimes with an accompanying excuse. We observe the latter behaviour more frequently. Orchestrators also rarely improvise unprompted ideas and are very likely to adhere to the plot outlined in their notes.

1.4 Design Implications

Based on the above findings, we venture to make suggestions for future designers of orchestrated natural dialogue CRPGs. These are presented in detail in chapter 7, a brief summary is given below.

We find that orchestrated CRPGs provide an engaging platform for players to enjoy role-playing using natural language and open-ended dialogue choices. Throughout our study with
Persiflage, we see players engage in play in context of the game and remain so for the duration. The orchestrator, having created a game world for the players to explore, and a narrative plot to follow, takes assumes the ownership of the game. The orchestrator, in an asymmetric role to the players, is also a game player who will guide the players to explore and realize a game vision that they have created. They were generally reluctant to release authorial control of the game to the players, often blocking rather than accepting their offers that alter storylines.

We find that the dynamic of groups influenced the game play and that when either the players or orchestrator was overbearing, the gameplay was liable to suffer. Unsurprisingly, building a collaborative narrative requires a degree of cooperation and understanding that allows all parties fair input. Although Persiflage is designed to allow for open-ended play, some structure and an objective is required, where an end game gives both orchestrator and players an goal to play towards and provides a base on which a narrative can be built.

1.5 Contributions

Over the course of the work conducted for this thesis we were able to make a number of contributions which we summarize below.

- The implementation of Persiflage demonstrates that it is viable and practical to design and implement an orchestrated CRPG.
- Persiflage provides a platform that allows players to use open-ended dialogue in a CRPG. The implementation remains available for further research.
- The results of our study and the accompanying analysis provides insight on how groups of players and orchestrator utilize open-ended dialogue to construct an emergent narrative.
From our data analysis we provide guidelines to developers and researcher who intend to implement future orchestrated CRPGs. We share how our observations could inform the design of orchestrated CRPGs.

This document is organized as follows. In chapter 2 we survey literature that is relevant to our work. We first review the concept of orchestration and how it is applied in digital games. We then look at approaches to improving the flexibility of dialogue and conversations in digital games. Finally, we examine how others have studied concepts from traditional RPGs and improvisational theatre relating to how players and actors collaboratively form stories. In chapter 3 we describe our orchestrated game, *Persiflage* and discuss the design choices that we made in allowing us to address our research question. Chapter 4 outlines the study we run and its methodology, the results of which are presented in chapters 5 and 6. We first present how players and orchestrator utilize the freedom to speak in natural language and use open-ended dialogue in chapter 5. In chapter 6, we present our findings on how players and orchestrator collaboratively build a narrative and negotiate for its authorship during game play. Finally, in chapter 7 we give our analysis of these results and discuss their implications.
Chapter 2

Literature Review

In this chapter, we discuss techniques and approaches that have been employed to adapt and personalize the play experience of CRPGs, particularly the ways in which players engage with a game’s dialogue to reveal and construct a narrative. We are interested in work that closely explores our research question, that is, how players interact use natural language in conversational play, and to what extent this allows for customizable game narratives.

We first look at steps taken to allow stories to be adapted to and customized for audiences at runtime. These include approaches using artificial intelligence, and explorations in using natural language in games. We also review the idea behind game orchestration, how it has been applied to digital games, and how it can be adapted to CRPGs with the goal of enabling open-ended storytelling. Finally, we look at how techniques and ideas from traditional RPGs and improvisational theatre have been adapted and applied to dialogue and conversations in CRPGs.

Murray describes the idealized vehicle for interactive narrative as Star Trek’s fictional Holodeck [31], where users assume the role of characters in a holographic virtual reality and seamlessly interact with artificial agents using natural dialogue and gestures. Current digital games provide beautiful and immersive environments for players to explore, but narratives are limited by NPCs which are unable to convincingly interact with people in open-ended conversation. CRPGs make use of dialogue trees which allow players to choose and follow predefined story paths. Ultimately, players’ ability to guide conversation is limited to selecting among choices that have been provided by the game’s designer. Figure 2.1 is a typical example of
this form of interaction, the scene is from Mass Effect [4] where the player controlled protagonist

*Commander Shepard* is talking to an NPC. The player is given a choice of dialogue options

arranged on a wheel.

![Figure 2.1: The player chooses a path along a dialogue tree in Mass Effect, a modern computer roleplaying game.](image)

Two basic approaches have been investigated for moving beyond explicitly programmed
dialogue trees toward Murray’s ideal. Artificial intelligence can dynamically customize player
experience to enhance freedom of choice. Alternatively, a human can orchestrate the play of the
game, standing in for the game’s artificial intelligence.

### 2.1 Artificial Storytelling

Clicking through dialogue trees to advance conversations is a form of hypertext fiction.
Ryan describes the narrative structure of such fiction [36]: a story is created through a
combination of fragments (or *lexia*). Players make decisions by selecting which story-block to follow next. These blocks and the corresponding available choices must be carefully arranged to preserve the logical and temporal consistency of the resulting narrative arc [41]. While the player has agency around the choice of which story-block to select, their choices are limited to content created prior to delivery, and players lack any true sense of authorship over the resulting creation [50].

In practice, we would like to arrive at some middle ground between the as-yet impossible Holodeck and the current reality of restrictive hypertext fiction [31, 27]. Allowing players more agency to affect their in-game destiny can introduce inconsistencies into a pre-authored plot, whilst adjusting a narrative to accept and incorporate player input has proven challenging to implement algorithmically [12]. The prospective designer is faced with a trade-off between allowing players authorial control and maintaining a coherent and compelling storyline. Louchart and Aylett term this problem "the interactive dilemma" [25].

2.1.1 Adapting Dialogue Trees

One approach to making game progression more dynamic is to personalize narrative progression to the players. Peinado and Gervas proposes an algorithm that stitches story segments together to form a story that best matches the types of players in the adventuring party [33], based on Law’s seven gamer types [23]. Story fragments are chosen for features that would appeal to the types of players playing the adventure. A fighter would be given fragments with combat sequences, whereas a storyteller might be presented with side quests in addition to the main storyline.

The PaSSAGE system follows Peinado and Gervas’ approach of modelling players as weighted combinations of Law’s seven gamer types [42]. As the player progresses through the
story, their choices and reactions to events inform and update their player model. For instance, a player choosing riches over a powerful weapon as a quest reward results in their player model being adjusted toward the power gamer archetype, whereas the alternative would have weighted them towards the fighter archetype. In this fashion, the game dynamically adapts the player model at runtime, and selects story fragments accordingly.

Similarly, Yu et al. [50] employ a Drama Manager that polls players for feedback along nodes of a choose-your-own-adventure story path to better recommend future nodes in the narrative. Their work compares a number of algorithms that are used to select storylines and show that they are able to capture user preferences and generate coherent stories with their Drama Manager.

While personalizing story progression to the player’s type elicits a greater level of enjoyment, these approaches still rely on limited narrative trees and therefore do not enable open-ended conversation. To give players real authorial control over a game narrative, we turn to systems that are able to interpret natural language.

2.1.2 Natural Language

Allowing players to compose their own dialogue in natural language gives them the opportunity to explore conversations and stories that may not have been anticipated by the designers at runtime. The challenge to game developers lies in building a system that is able to interpret natural language both accurately and consistently.

Façade [28] is an investigation into natural language interaction. Players speak with AI agents Grace and Trip using typed dialogue (figure 2.2). As the façade of their relationship is revealed over the course of the developing narrative, players exercise their agency as a mediator and contribute to how the couple’s problems are resolved (or unresolved). The authors of Façade, Mateas and Stern, describe how players can freely interact with the two NPCs [29]:
Grace and Trip attempt to engage the player in psychological head games, for example, posing situations to the player in an attempt to force her to choose sides in an argument. However, the player is not limited to playing these psychological games; she can say anything she wants at any time. The characters are designed to respond robustly to a variety of open-ended dialog from the player, including questions and provocations.

Figure 2.2: Players interact with Grace and Trip in Façade using typed dialogue.

The authors describe their strategy to parse natural language where players’ utterances are mapped to discourse acts by a series of rules [30]. For instance, the phrases “Hello”, “How are you?” and “How’s it going?” all map to the same discourse act, a greeting. The discourse acts are then interpreted by the game’s system to elicit a response from the artificial agents, Grace
and Trip. To give the NPC agents believability, the agent's response not only considers the player's discourse acts, but also the discourse context (what the NPCs are doing during the scene) and “mix-ins” of prior acts and events from the story.

Lessard [24] in the LabLabLab project creates and uses games (figure 2.3) where players interact with NPCs using natural language to explore the affordances and constraints of this style of interaction. He discusses how playing in natural language allows players to role-play, contribute their own content, and engage in non-linear conversation, all of which enhances their creativity and enjoyment of the game. However, natural language games also suffer from drawbacks. Due to the limitations of current natural language interpreters, the illusion of artificial agents behaving as real people rapidly deteriorates. NPCs have failing memories of prior events, and give occasional nonsensical answers, resulting in narratives with overall weak coherence.

Figure 2.3: A Tough Sell, one of the three games from the LabLabLab project, players play the witch who must convince Snow White to eat the poisoned apple using natural language.
Current natural language interpreters cannot handle players’ potentially unrestricted input. Lessard recommends that if players remain in the conversational domain of the story, errors from the interpreter can be minimized. However, when errors inevitably arise, the experience can still be enjoyed if players are willing to accept and forgive them, taking the miscommunications in stride with a humorous air.

2.2 Orchestration

While artificial intelligence has helped with personalization of narratives, current techniques are still far from capable of conducting open-ended conversation supporting compelling narrative progression [30]. An alternative approach is game orchestration, where a human directs the operation of the game at runtime. Game orchestration has been explored in numerous contexts, including simulation, game sketching, and a multitude of asymmetric multiplayer game experiences [14].

The term orchestrator was coined by Crabtree et al. [11] to describe the people who read and responded to player messages, and managed the narrative and state of a large scale pervasive multiplayer game. Other examples of orchestrated AR games include Barbarossa [21] and Street Art Gangs [2].

In game sketching, an orchestrator manipulates the progression of a game in real-time, allowing testing of game ideas before they are fully implemented [1]. For example, in Raptorn, an orchestrator uses a tabletop interface to manipulate the content of a game world, while a play tester plays in real time [36].

2.2.1 Commercial Asymmetrical Games
Games with asymmetric roles allow humans to orchestrate experiences for other players [16]. Commercial titles such as *Natural Selection* [47], *Savage* [37] and *Nuclear Dawn* [19] all involve a player in a commander’s role, aiding and giving direction using a real-time strategy interface to direct players on the ground who play as individual units. The commander plays the role of orchestrator, modifying the objectives and victory conditions of the game on the fly. Nintendo’s *New Super Mario Bros. U* [32] shows how traditional platformers become collaborative experiences where an orchestrator creates “Boost Blocks” to help players at difficult junctures; in *Rayman Legends* [46] an orchestrator can reveal new areas for players to explore. Similarly, *Tabula Rasa* [15] allows an orchestrator to create platformer levels in real-time.

Orchestration can be used to provide a human element in simulation-based training. In OrMiS [7], military trainees issue orders to orchestrators playing the role of field commanders. The orchestrators in turn execute the orders using a collaborative tabletop computer that holds the state of the simulation.

### 2.2.2 Game Masters and Orchestration

One of the most-explored forms of game orchestration is the game master of tabletop role-playing games. Unlike digital games, tabletop RPGs are based on imagination; they do not involve visual representation of the game world, interaction through game controllers, or artificial intelligence for NPCs. Instead, the game master describes verbally what players see, and role-plays the characters they encounter. This allows the open-ended interaction that is absent from digital role-playing games.

Tychsen [44] discusses story synthesis in traditional RPGs and how authorial control is shared between players and the Game Master (GM). He finds that control varies over a play session, but lies mainly with the GM who has conceived a story from prepared material in
addition to game manuals and literature. Authorial control is shared with the players, but the GM is able to retain control whilst providing an illusion of choice to the players. This is likened to the situation in CRPGs where player choice is present but limited by the predetermined dialogue structures. Although a GM can impose their will on players, there is always some degree of improvisation and change in plans as the game progresses.

Studying the experience of players playing tabletop RPGs, CRPGs, and a CRPG with a GM toolset, Tychsen finds that the presence of a GM enhances players’ experiences in a CRPG [43]. However, the digital medium is restrictive compared to the wider operational space of tabletop RPGs which he finds provide the most immersive and enjoyable experience of the three.

There have been limited attempts to replicate this open-ended play in digital games. Notably, the AURORA toolset for Neverwinter Nights [5] allows players to create and orchestrate their own custom scenarios. Nonetheless, there have been no attempts to-date to combine truly open-ended interaction with the conventions of computer RPGs.

2.3 Improvisational Theatre

Generating emergent stories without predetermined plots and structure is a computationally complex problem. Current artificial agents struggle to create emergent narratives that are both interesting and coherent [31]. In the realm of improvisational theatre however, emergent narratives are consistently created by human actors playing characters on stage.

Swarjes and Vromen investigate how character behaviours in improvisational theatre allow and facilitate co-creation of emergent narratives [40]. They discuss that defining a set of ideals and goals for fictional characters can give them depth and allow actors to sympathize with their motivations. NPCs’ ideals and goals can therefore inform their behaviours and reactions in a
multitude of improvised scenarios. Additionally, the concept of *late commitment* is discussed whereby details of the world and its characters (particularly the causes of events) are delayed and left vague. This allows the actors to define open details at a later time in the play, allowing for flexibility and can provide dramatic effect.

Magerko et al. conduct an observational study of actors playing out a number of improvisational games and scenarios, looking for the techniques that they employ to construct believable narratives [26]. They discuss the independent mental models of a scene that each actor holds and how it is important that these must eventually converge in order to provide a coherent storyline. In further work, Hodhod and Magerko [17] show how it is possible for a human and artificial agent to ‘repair’ divergences in mental models using fuzzy logic. When they are able to successfully reach a consensus, they are creating truly co-authored and improvised storylines between a human and AI.

### 2.4 Summary

This chapter gives an overview of the existing research towards providing adaptable game narratives at runtime. We first look at approaches that use artificial intelligence to adapt storylines to their specific player audience as the narrative progresses. We then look at how artificial agents can interpret natural language and provide a limited illusion of understanding conducting free-form conversation. Moving away from artificial agents, we look at the work of orchestration and the role a human orchestrator plays in digital games. The orchestrator modifies player experiences in ways which are not suited to, or capable of artificial agents. An analogue to orchestration that is of particular interest is that of the Game Master of table-top RPGs. We also take interest in the techniques they use to guide players through a narrative. Similarly, we look at
work that explores how techniques in improvisational theatre allow multiple human agents to collaboratively author a story on stage and in real-time.

We see that artificial agents can adapt narratives in real time, however they do so without giving players real authorial contributions to the story. Game orchestration is a proven technique that allows a human agent to augment the play experience of a game at runtime. We leverage game orchestration in *Persiflage* to allow players to converse with NPCs in natural-language. An overview of the role of a traditional RPG’s Game Master and techniques used in improvisational theatre shows us how collaboratively authored stories can arise out of play.
Chapter 3

Persiflage

Our motivation for building *Persiflage* is to address our research question, “How do players and orchestrator make use of free-form dialogue and shared authorship in a digital roleplaying environment?” Persiflage is therefore conceived and designed as a conversational puzzle game where players must interview and negotiate with several NPCs in order to solve a murder mystery.

*Persiflage* is a two player orchestrated computer role-playing game. The non-player characters (NPCs) are played by the orchestrator and inhabit the fictional medieval town of *Northaven*. The players take on the role of investigators who have recently arrived in town pursuing a fugitive named *Helena*. They must explore *Northaven* and interact with its residents – the NPCs controlled by the orchestrator – to find and bring Helena to justice.

Players discover the world by moving their avatars around *Northaven*, engaging NPCs in conversation and trading items along the way. The gameplay is dialogue-focused and the players’ controls remain mechanically simple. Orchestrators use a special interface to move and animate NPCs and to play the NPC’s part in conversations with players. This removes the restrictions of rigid conversational systems, allowing players to express themselves as they choose. As the players discover and interact with the townsfolk, their conversations with the orchestrator form a collaborative and emergent story.

Although it may be tempting to draw comparisons between the orchestrator and the game masters of table-top RPGs, the orchestrator in *Persiflage* is tasked strictly to act for the NPCs, allowing them to communicate in natural language with the players. They do not perform the
other tasks that are traditionally taken up by game masters, such as narrating events or describing game scenes.

3.1 Arranging Players and Orchestrator

3.1.1 Players’ Perspective

As they would when playing a CRPG, the two players each control an avatar using a standard game controller. Players are collocated, seated on a couch, sharing a single wall mounted television display (figure 3.1). Persiflage is set in a three-dimensional cartoon-style fantasy village, containing streets and buildings (figure 3.2). Various NPCs are located around the village. To advance the game’s plot, the players must speak to the villagers to gather information towards the goal of solving a murder mystery.

Figure 3.1: Players playing Persiflage.
Figure 3.2: The players’ view of Northaven. Their characters are dressed in blue and red. Two NPCs in brown await their attention.

3.1.2 Orchestrator’s Perspective

The orchestrator sits at a desk in another room, and uses a special interface to control the NPCs (figure 3.3). By separating the orchestrator and players we maintain the illusion that players are interacting with the NPCs on screen rather than their friend who is orchestrating. The orchestrator’s interface (figure 3.4) gives an overhead view of the game world showing the village, the players, and NPCs. The orchestrator’s interface includes additional functionality to control the game. The orchestrator can draw a path for an NPC to follow, and can trigger NPC animations (e.g., talking, waving) using buttons on the interface. For context, the orchestrator sees an inset view of the players’ current view.
Figure 3.3: Orchestrator sits at a desk using a mouse, keyboard and headset.

Figure 3.4: The orchestrator’s interface. The NPC in the centre follows the path traced out in red. The blue buttons trigger speaking and waving animations. Each NPC has an inventory which is currently empty. The window inset in the top-right shows the players’ view; the players (dressed in blue and red wearing top hats) are currently conversing with an NPC. The orchestrator can drag items from the panel in the top left into the game world.
Players and orchestrators speak to voice their characters. The conversation is transmitted between the two rooms using a Voice over IP (VoIP) channel. The orchestrator’s voice plays through the speakers on the television, helping to convey that the NPC is talking as they would in CRPGs. Players, however, understand that a human orchestrator is playing the NPCs, as their friend’s voice is transmitted unmodified over the VoIP channel.

3.2 Digital Northaven

*Persiflage* is set in *Northaven*, a fantasy-style mediaeval town consisting of homes, farms, a church, an inn, and a market square. Inhabiting the *Northaven* are six NPCs; they are *Hamish*, a grocer, *Annie*, Helena’s sister, Magistrate *Rufus*, Northaven’s governor, Father *Andrew*, a priest, *Beatrice*, an inn-keeper, and *Helena* herself who is not dead but in hiding. Four generic items (a book, a vial of red liquid, a skull, and a wheel of cheese) can be placed in the game world by the orchestrator and carried and traded by the players. The townscape is still and lifeless until the orchestrator starts moving the NPCs and engaging the players in conversation. The items in game are deliberately generic and can take on different meanings with different players under different situations. A vial of red liquid might be an ominous sample of blood or a potent truth serum; a bound tome can become Helena’s diary or a priest’s lost bible. We leave it to the orchestrator and players to build their own stories using the digital pieces.

The opportunity for open-ended interaction poses a challenge to both the orchestrator and players. The players are invited to be inventive in the portrayal of their characters and are free to creatively explore ways in which to successfully solve the mystery. The orchestrator on the other hand, must be ready to react to unforeseen player requests.
3.3 Conversations in Persiflage

The goal of our study is to explore the use of natural language and open-ended conversation in digital games. We therefore designed a game to be dialogue centric, where progress in the game is achieved through conversational interactions. *Persiflage* is a murder mystery with story-driven gameplay where players need to question, coerce, and beg the NPCs for information and clues. Interaction between players and NPCs is the essential core of gameplay.

Players can engage NPCs in conversation by virtually walking up to them and pressing the “A” button on their controller. The interface zooms to focus on the NPC’s face (figure 3.5). The orchestrator can activate talking and waving animations, giving the impression that when the orchestrator talks the NPC’s is speaking. Zooming onto the NPC during conversation further encourages the players to focus on the interaction, rather than allowing them to wander off to walk and talk at the same time.

![Figure 3.5: The players’ view zooms in on the NPC that they are conversing with.](image-url)
None of the dialogue in game is scripted outside of notes that the orchestrator has prepared. Players are initially aware only of the fact that they are searching for a fugitive named Helena, and must invent all their conversation on the fly. The orchestrator must also improvise dialogue during play in response to the players’ questioning. This allows players to express their creativity without being restrained by scripted dialogue. Without a predetermined structure for conversation, we can explore how players and orchestrator approach open-ended conversations in CRPGs. Without restrictions on the players’ dialogue choices, we can explore how they contribute to a collaborative narrative.

3.5 Summary

*Persiflage* is an orchestrated CRPG designed specifically to explore how players and orchestrator interact using natural language and conduct open-ended conversations. To this end, the gameplay in *Persiflage* deliberately emphasizes dialogue; players are on the hunt for a fugitive name *Helena* and must interact with a host of NPCs to discover her whereabouts. The orchestrator plays the role of the NPCs by voicing their dialogue, triggering their animated behaviours, and moving them about the village.

*Persiflage* preserves the affordances and setting of a digital game. Players play from the comfort of a living room couch using standard game controllers and view the action unfold on a wall mounted television. The NPCs’ voices, although clearly human, emanate from screen’s speakers as they would normally in digital RPGs. The orchestrator and players are physically separated to preserve the illusion of NPCs rather than an orchestrator speaking to the players.

Orchestration of NPC behaviours allow open-ended conversations between players and NPCs in *Persiflage*. This allows us to explore how players and orchestrator use free-form dialogue and build emergent narratives in a digital CRPG setting.
Chapter 4

The Study Procedure

We ran a study using Persiflage to address our research question, “How do players and orchestrator make use of free-form dialogue and shared authorship in a digital roleplaying environment?” The first goal of the study is to look for interesting behaviours that can inform orchestrators’ and players’ approach and attitudes when playing conversational games with natural language. The study’s second goal, is to observe how authorial control is shared between players and orchestrator and the effects on the game story’s emergence and evolution over the play session.

Our research question and goals are exploratory, and we approach the research question without a hypothesis. We chose to run an exploratory study to gather insight into whether players are willing to suspend their disbelief to play an orchestrated CRPG, and what kind of game experience this results in for both players and orchestrator.

To observe players’ behaviours playing a CRPG, we allowed them to play through a half hour session of Persiflage, recording their dialogue and actions as they did so. The orchestrators attended an hour-long session to familiarize themselves with the game and the story, one day before the play session. We conducted a brief group interview with all three participants after the play session so that they could share their thoughts on the play experience. The study received approval from the Queen’s University General Research Ethics Board (appendix F).

4.1 Recruiting

Five groups of three players were recruited from the Queen’s university community using an advertisement posted on Facebook. We solicited participants who were familiar with digital
role-playing games. To avoid participants automatically adopting conventions of pen-and-paper roleplaying games, we excluded participants who have extensive experience playing them. Participants were asked to form their own groups of three members and to choose amongst themselves who would play the roles of players and orchestrator.

Participants ranged from 19 to 27 years in age with a mean of 23 years. 6 participants were female, and 9 male. All participants currently play, or had played video games, and were familiar with, and comfortable using console-style game controllers.

4.2 Training Session

On the day before the play session, the orchestrator attended a training session to familiarize themselves with the story and the game’s orchestrator interface. The orchestrator was presented with a document (appendix D) outlining the murder mystery story: the two players play detectives in pursuit of Helena, a woman wanted for an unspecified crime. Their chase has led them to the town of Northaven where some of the villagers have conspired to fake her death. The document briefly describes each of six NPCs. After reviewing the document, the orchestrator was asked to provide at least one additional fact to build upon the character of each NPC, and to further modify the story as they chose. This was to encourage the orchestrator to view the document as a starting point that they could and should elaborate in the game.

The orchestrator was shown how to move NPCs, activate their animations, engage in conversation with players, and create, move, and destroy items (figure 3.4). They were given a chance to use and familiarize themselves with these functions until they reported that they felt comfortable using the interface. The training sessions took between thirty minutes and an hour.
4.3 Playing Persiflage

*Persiflage* is a networked game running over a local area network. The game server, which also runs the orchestrator’s interface was run on a Mac Mini connected to a 55 inch Visio wall mounted television. The orchestrator is seated at a desk and uses a wireless mouse, keyboard, and headset to perform their orchestration duties. The player client was run on an MSI Dragon Series gaming laptop which is connected to another 55 inch Visio wall mounted television in the opposite room. A conference call microphone was used to capture their dialogue. A camera is placed in each room to capture video and sound. A schematic of the study arrangement is given in figure 4.1.

![Diagram showing the arrangement of hardware and players for the study.](image)

Figure 4.1: Diagram showing the arrangement of hardware and players for the study.

At the beginning of the play session, the game and its user interface were demonstrated to the players. They learnt how to move their characters, enter and exit a conversation with an NPC, and pick up, drop, and trade items. They were then allowed to experiment and familiarize
themselves with the controls, until they reported that they were comfortable and ready to begin play. During this time, the orchestrator could reorient themselves with the notes and experiment with the interface with the players. This took approximately five minutes. The players were given the premise of the game, and instructed to solve the mystery as best they could. The play session was allowed to run to its conclusion or for thirty minutes, whichever occurred first.

4.4 Data Collection

The play session was recorded with two separate video cameras, one recording the players and the other, the orchestrator. The audio from the Skype VoIP call between the parties and a screen capture of the orchestrator’s screen was also captured. The post session interviews were also recorded. Finally, the orchestrator’s notes modifying the game’s narrative and characters were also preserved.

A transcript of their speech during the session was taken from the recordings and coded for interesting behaviours. We used BORIS, the Behavioral Observation Research Interactive Software, to code speech from the players and orchestrator [13]. The transcribed dialogue was split into utterances on which we employed an open coding approach [39] to identify interesting speech patterns. The orchestrator’s notes and additions to the game’s narrative and characters were also preserved and coded.

4.4.1 Open Coding

Khandkar describes coding as a process that allows us to derive meaning from a textual data source by identifying patterns of ideas and concepts [22]. As the data is examined, similar and repeated concepts and ideas are identified. These areas of data are marked, or coded, for their relevance. The process is often iterative and must be repeated as data will have to be re-examined.
for ideas that are identified later in the process. Eventually common concepts can be categorized together and we can identify patterns in the data.

We analysed the video recordings of our study sessions using this process and derived 14 codes, listed in table 4.1 below:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slang</td>
<td>The speaker uses modern colloquialism, vernacular, or jargon.</td>
</tr>
<tr>
<td>External Reference</td>
<td>The speaker makes a reference to modern ideas or themes, such as pop-culture or current events.</td>
</tr>
<tr>
<td>Period Language</td>
<td>The speaker deliberately uses language to suggest a different time-period.</td>
</tr>
<tr>
<td>Storytelling</td>
<td>The speaker makes an utterance that develops the game’s narrative.</td>
</tr>
<tr>
<td>Coordination</td>
<td>The speaker is planning or discussing the game with other participants.</td>
</tr>
<tr>
<td>Banter</td>
<td>The speaker is making small talk such as jokes or references.</td>
</tr>
<tr>
<td>Offer: Flavour</td>
<td>The player opens a possibility to add detail and flourish to the game’s narrative without affecting the direction of the story.</td>
</tr>
<tr>
<td>Offer: Story</td>
<td>The player’s offer would require that the story narrative be rerouted or amended if accepted by the orchestrator.</td>
</tr>
<tr>
<td>Offer: Game</td>
<td>A player makes an offer that would change the game’s goal.</td>
</tr>
<tr>
<td>Improvising: Acting</td>
<td>The orchestrator improvises without prompting from players.</td>
</tr>
<tr>
<td>Improvising: Reacting</td>
<td>The orchestrator acknowledges a player’s speech, responding in a neutral manner.</td>
</tr>
<tr>
<td>Enabling</td>
<td>In reaction to a player’s offer, the orchestrator accepts and allows the story to change with the offer.</td>
</tr>
<tr>
<td>Blocking</td>
<td>In reaction to a player’s offer, the orchestrator declines and shuts off the story path.</td>
</tr>
<tr>
<td>Directing</td>
<td>The orchestrator suggests an action to the players to follow.</td>
</tr>
</tbody>
</table>

Table 4.1: Codes derived from Play Session Dialogue

We coded the orchestrator’s preparatory notes by separating their writing into sentences; each sentence was then coded for at least one of three concepts:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backstory</td>
<td>Describes the history of a character, prior to the events of the game.</td>
</tr>
<tr>
<td>Relationship</td>
<td>Defines a relationship between one character and another.</td>
</tr>
<tr>
<td>Game Action</td>
<td>Describes an action that the character is liable to perform during play.</td>
</tr>
</tbody>
</table>

Table 4.2: Codes derived from Orchestrator’s notes.
These codes form the basis of the analysis which is presented in the following two chapters. In chapter 5 we discuss the patterns we find relating to how players and orchestrators exercise their freedom to choose their own words and dialogue during conversation. In chapter 6 we see how players and orchestrator collaborate to form an emergent story through conversations between the players’ characters and NPCs.
Chapter 5

Results: On Character Presentation

*Persiflage* was created to introduce natural language interactions to CRPGs, enabling open-ended dialogue between players and NPCs played by an orchestrator. This chapter deals with the first part of our research question, “How do orchestrators and players exercise the freedom to choose their own words in open-ended conversation?” In *Persiflage*, our participants use their own speech instead of pre-set utterances, and this freedom manifests itself in multiple ways. Not only are the topics of discussion open and flexible, but also the way in which players and orchestrator present their characters. Participants are also not forced to take strict turns to speak and we see aspects of free-form conversation such as interruptions and laughter make its way into Persiflage’s gameplay.

Using the coding method described in section 4.4.1, we identified six codes that we group into two categories, both of which are relevant to our research question. The first three codes pertain to the language and style that players and orchestrators employ whilst playing their characters: *slang*, *external reference*, and *period language*. We discuss these language and style choices in section 5.1.

The second set of codes indicate the purpose and intent behind the participants’ speech during play. The three codes relevant to this section are *storytelling*, *coordination*, and *banter*. We will see that players spend roughly 45% of their utterances toward building the narrative, whereas orchestrators spend 85% on average. The results of this aspect of their gameplay are presented and discussed in section 5.2.

Finally, from the counts of words and utterances spoken by each player and orchestrator in a group we see how groups develop different interaction patterns or group dynamics. We
discuss the three different dynamics that we see arise and their consequences to gameplay in *Persiflage* in section 5.3.

### 5.1 Language Choices

The style and language that players use to converse informs us on their attitudes toward the gameplay of *Persiflage*. Just as film and theatre might be comedic or dramatic, the mood and ambience of games can also be varied. By looking at how players and the orchestrator chose to present their characters, we can see the attitude and tone they intend to impart on their play experience. Three codes stood out as particularly interesting and informative in this regard: the use of *slang*, *external references*, and *period language*.

**Slang** indicates that an utterance contains modern vulgarisms or vernacular that are out of place in the game’s mediaeval setting. We will see that players colloquially greet NPCs with phrases such as, “’Sup?” or “What up?” and interrogate NPCs using vernacular by asking, “Where she at?” An utterance coded as an *external reference* alludes to knowledge or ideas outside the game world. *External references* usually take the form of an allusion to current events or pop-culture. As we shall see, our participants draw comparisons between in-game NPCs to modern politicians, or talk as if their characters have knowledge of currently airing television shows. We coded utterances for *period language* when the speaker deliberately used language or accents outside of colloquial norms to suggest a different setting and era. Such language need not be an accurate representation of mediaeval speech; Daniel Reichert has coined the term “RPG-Dialect” to describe faux-period language “that makes liberal use of ‘thous’, ‘thees’, and ‘mi’lords’” [35]. Whilst the use of *slang* and *external references* adds modern anachronisms and humour to the gameplay, the purpose of *period language* is to attempt to create an authentic experience.
5.1.1 Code counts for Slang, External References, and Period Language

Figure 5.1 summarizes the occurrence of slang, external references, and period language over all five study sessions. The use of slang is by far the most prevalent of the three codes described, and is seen in all five groups. We see 33 (6.2%), 6 (1.4%), 33 (9.1%), 33 (5.1%), and 70 (14.4%) utterances that contain slang in groups one through five respectively. Of the 175 total utterances coded for slang, 116 came from players and 59 from orchestrators. Notably, orchestrators from groups three and five were comfortable using slang whereas those from groups one, two, and four tended to shy away from it.

External references were seen in four of the five groups. Groups one, three, four, and five made 11 (2.0%), 14 (3.8%), 23 (3.5%), and 6 (1.2%) external reference utterances respectively. Of 54 utterances coded as such, 8 were made by orchestrators and 46 by players. As with slang, players made many more external references than orchestrators.

Period language was present in all five groups, with 45 (8.4%), 7 (1.6%), 22 (6.1%), 23 (3.5%), and 2 (0.4%) occurrences across the five groups. The use of period language was higher in groups one, three, and four, and notably lower in groups two and five. We can see that it’s use is heavily favoured by orchestrators over players and we observed 89 of 99 occurrences of period language in orchestrators’ utterances compared to only 10 in players’ utterances.

The above numbers show that players made use of slang and external references more liberally than orchestrators, who in turn were more likely to employ period language.
5.1.2 Examples

We present two excerpts of transcribed dialogue from the study sessions that show how slang, external references, and period language feature in conversations between players and NPCs. Our first example from group one shows the players using slang whilst the Orchestrator uses more formal language:

Player Left: What up? [SLANG]
Player Right: <laughter>
Orchestrator (as Magistrate): What are you doing in my town? [PERIOD LANGUAGE]
Player Left: We’re looking for Helena, where she at? [SLANG]
Player Right: <stifled laughter> ...where she at...
Orchestrator: As far as I know, Helena’s passed away. [PERIOD LANGUAGE]

Player Left greets the magistrate using slang, and the orchestrator sternly responds modeling his character’s speech to the game setting. Despite the orchestrator’s suggestion that the game occurs in a past era, the player insists on using another colloquialism, “where she at?”. The resulting dialogue is asymmetric, with an element of comedic dissonance between the player’s
and orchestrator’s speech. The absurdity of the interaction is not lost on Player Right as shown by
her reactions and laughter throughout the dialogue.

A second example shows how players use an **external reference** that relates to the game
world. Player Left compares the Magistrate of Northaven, an antagonistic authority figure, to then
U.S. presidential candidate Donald Trump:

**Player Left:** Are you the mayor?
**Orchestrator (as Magistrate):** I’m the magistrate.
**Player Left:** Is your name Donald Trump? **[EXTERNAL REFERENCE]**
**Player Right:** <laughter>
**Orchestrator:** Uh, it’s actually Rufus.
...
**Player Left:** Where’s Donald Trump, aww geez, oh.

This example shows Player Left using her knowledge of the outside world to inject
humour into the game. The humour is well-received, as shown by Player Right’s laughter. The
juxtaposition of modern people and ideas with the setting of a sleepy mediaeval village adds
levity to the dialogue. The resulting experience is not unlike a pantomime play where a classic
story is presented with a modern and cheery slant, making liberal use of anachronistic references
to current events and culture. Whilst the reference in the example above is anachronistic and
introduces knowledge that the character would not possess, it nevertheless relates to the events
and characters in game world, in this case by drawing an analogue between the fictional character
and the real-life politician.

**External references** and **slang** are both used to provide humour and a personalized game
experience leveraged from the modern social zeitgeist. **Period language** conversely, indicates a
desire to play in character and to provide a more (or possibly mock) authentic game experience.
Players overwhelmingly display a higher propensity to use **slang** and **external references** than
orchestrators, whilst the inverse is true for period language. Orchestrators are more invested in authenticity whilst players are content to make jokes and enjoy the experience less rigidly.

5.2 Storytelling

When studying the dialogue throughout a play session, we noted how players and orchestrator expressed their purpose as they played. By looking at the content and intent of their speech, we see how players engage with Persiflage’s world and where their focus lies during gameplay. Utterances were coded for one of three categories; storytelling, coordination, and banter, indicating what the speaker is trying to achieve when speaking.

A storytelling utterance seeks to advance the game’s narrative. They usually take the form of a player questioning the orchestrator-controlled NPCs, or conversely, the orchestrator responding to players’ questions. An utterance that helps participants plan or otherwise coordinate their activities is coded as coordination. These mostly involve players summarizing their gathered knowledge, or planning their next step in their adventure. An utterance is coded as banter if it represents some form of repartee that does not contribute towards the game goals. This could include inserting a joke or an external reference into conversation. Figure 5.2 shows the distribution of utterances coded for storytelling, coordination, and banter over the five groups.
Of the three categories, **storytelling** utterances are the most common, accounting for 313 (58.6%), 259 (61.1%), 232 (64.1%), 359 (56.5%), and 251 (51.5%) of total utterances over the five groups. Orchestrators devote proportionally more of their utterances towards **storytelling** than the players, averaging 86.4% and 44.3% of total utterances respectively. **Storytelling** utterances represent the core mechanic of *Persiflage*, where players interrogate, beg, and intimidate the NPCs for information and clues. The fact that almost half of players’ utterances are related to storytelling indicates that despite the levity noted earlier, players were seriously engaged in trying to solve the mystery.

**Coordination** utterances account for 10.3%, 16.9% 8.3%, 23.0% and 17.1% of all utterances in groups one through five. In theory, these utterances ought to be produced exclusively by players. We expected players to summarize and plan without the involvement of orchestrators who play exclusively in character as NPCs. However, on occasion, we see orchestrators contributing their own **coordination** utterances, commenting on players’ observations or correcting their erroneous assumptions. These **coordination** utterances by orchestrators account for only eight utterances across all five study sessions.

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Figure 5.2: Counts for occurrences of Storytelling, Coordination, and Banter
Three groups engaged in significant banter; in groups one, four, and five, banter accounted for 11.9%, 14.5%, and 17.2% of total utterances respectively. The other two groups engaged in little banter, accounting for 3.3% and 5.2% of total utterances in groups two and three. We observed bantering as a behavior more frequently in players than in orchestrators. In all groups, the players on average made proportionately more banter utterances (13.0%) than their orchestrator (4.9%).

This is a typical example of in-game banter. Players joke with Hamish about a wheel of cheese. While the exchange does not advance the story, it stays within context of the game:

Player Left: Hey.
Orchestrator (as Hamish): Hello again, it's me Hamish.
Player Left: Hey Hamish, so what's up?
Orchestrator: Uh, I've just been enjoying that cheese you gave me, it's quite tasty. Although it was a little dusty from the floor you found it on. [BANTER]
Player Left: It's not really our fault, it's the only place that people put cheese around here. [BANTER]
Orchestrator: Well it's mostly your fault. [BANTER]
Player Left: Quiet now. [BANTER]
Orchestrator: <laughs>
Player Right: So, we lost the diary... [STORYTELLING]

The orchestrator responds to the open query, “Hey Hamish, so what’s up?” by recalling a previous interaction and introducing some humour from the absurdity of finding cheese on the floor. This sets off an exchange between Player Left and the Orchestrator which does not advance the story, but adds humour to the conversation. The example concludes with Player Right redirecting the interaction back to storytelling. While the intent of banter is generally to add humour to the gameplay and does not advance the story, it remains topically rooted within the game world.
Similarly, players are happy to mix banter and coordination in conversation with each other:

**Player Left:** You know it’s kind of funny, ’cuz she sounded a lot like... it’s weird, they all have the same voices. [BANTER]

**Player Right:** Hehe yeah, they must be inbred. [BANTER]

**Player Right:** Where are we going? [COORDINATION]

**Player Left:** Pure Instinct, pure instinct. [BANTER]

**Player Right:** The field, the field. We can catch a Pikachu. [COORDINATION], [BANTER]

Here the players have just finished talking with NPC Annie, and they jokingly comment on her voice, the same voice which their orchestrator uses for all NPCs. They make small talk in between deciding which area to explore next. Notice that the banter, which in this case contains an external reference, “We can catch a Pikachu” is uttered in the same sentence with coordination.

Orchestrators devote most of their play to storytelling, accounting for approximately 85% of their utterances on average. The players ask the NPCs questions, but tend to contribute fewer storytelling utterances. This is not entirely surprising considering that orchestrators hold all the facts of the mystery and slowly reveal them to the players over the course of the game. Players on the other hand, must interact with their co-player to coordinate in addition to talking with the NPCs. We see that participants are content to mix in banter whilst both progressing the narrative and coordinating between players. Players drive most of the bantering, which is consistent with our earlier observations that players adopt a less formal attitude than orchestrators towards playing Persiflage.
5.3 Group Dynamics

Open-ended dialogue introduces not only natural language interactions, but also relaxes the structures and syntax of the game’s dialogue structures. Players vary the length of their sentences, speak in and out of turn, and interrupt and laugh at each other to create nuanced and textured conversation. By looking at how group members interact, we can see how the game experience is affected by a group’s dominance dynamics.

![Figure 5.3: Utterance and word counts](image)

Figure 5.3 shows the distribution of utterances and spoken words among the players and orchestrators in the five study groups. The breakdown by word count (figure 5.3 - right) reveals three distinct group dynamics, which we have named single-player dominance, orchestrator dominance, and player co-dominance. In single-player dominant interactions (groups one and five), one player speaks significantly more than the other. Orchestrator dominance (groups two and three) is marked by orchestrators speaking significantly more than the players. Group four was unique in that the two players were co-dominant, where the players both produced more words and utterances than the orchestrator.

5.3.1 Single-Player Dominance
Groups one and five exhibited single-player dominance. An excerpt from group one shows how single-player dominance expresses itself in conversation. Here, the players meet the NPC Beatrice:

**Player Left:** ‘Sup?

**Orchestrator <female voice> (as Beatrice):** Oh hello, what handsome young men.

**Player Right:** <laughs>

**Player Left:** <laughing> Are you Beatrice?

**Orchestrator:** I am Beatrice, the inn keeper. And who are you? We don't get visitors around these parts much.

**Player Right:** We're...

**Player Left <interrupting>:** We're FBI!

**Player Right:** <laughs>

**Orchestrator:** <laughter> Ooh FBI, what business would you possibly have in Northaven?

**Player Left:** Well, we're here about Helena.

**Orchestrator:** Helena? I thought she died four days ago.

**Player Left:** Alright, what's going on here!?

**Player Right <throws up her hands>:** What...?

In this example, Player Left’s utterances are substantial, where she speaks in full sentences, posing a question or advancing the conversation with each sentence. Player Right’s utterances in contrast are reactionary, with two being solely laughter. We see Player Left interrupting Player Right when the orchestrator asks them who they are, another indicator of dominance [20].

As the orchestrator produces a clue regarding when Helena supposedly died, “Helena? I thought she died four days ago?”, Player Left’s reaction “Alright what’s going on here!?!” is more articulated than Player Right’s simple “What...?”. Player Left plays an active role in constructing the narrative, whilst Player Right adopts an audience or observer role. This dynamic shows that
despite both players having equal agency in the game, players can organize themselves into leading and reactive roles.

### 5.3.2 Orchestrator Dominance

Interactions in groups two and three were dominated by their orchestrators. Orchestrator-dominated exchanges are characterized by long utterances from the orchestrator during which players have little or no input. This is illustrated in the following excerpt where group two’s players question NPC Annie about Helena’s supposed death:

**Player Left:** Where was she found when she died?

**Orchestrator (as Annie):** Where was she found? Like buried?

**Player Left:** Yes, no, not buried. Like where did they find her body?

**Orchestrator:** No, she passed away here, like she uh, she came to me for her final few days, she says she has this illness, cancer, terminal stage, doctors say she doesn't have much time left and uh you know, she just wanted to live with her family for her final few days. So, she just came here, y' know.

**Player Right:** Okay, do you know where she came from before?

**Orchestrator:** Um she’s kind of like, she’s kind of nomad in that sense, I know she’s been travelling a lot, I really don't have her address or anything, but she calls me tons of times, but I don't really have her address or anything. As I said she travelled a lot but umm yeah...

The orchestrator responds to players’ questions in long, multi-clause sentences. There is hesitation in the language emphasized by the speech dysfluencies “uh”, “umm”, and “like”. Additionally, the wording chosen by the orchestrator is repetitive. We see the phrase “her final few days” recurring in the first block response and “I really don’t have her address or anything” as well as her “travelling/travelled a lot” in the second.

A result of an orchestrator-dominated dynamic is that the players can feel frustrated and relegated to a spectator role. In this second example from group three, the orchestrator dominates
the interaction as he plays out a scene with multiple arguing NPCs while players watch and express their confusion:

**Orchestrator (as Beatrice):** Eh, bud just a heads up if you... you touching my pockets eh mate? Eh don't touch my pockets. Eh are you searching me? Are you searching me bud? Okay there you go. You want it, you want it!? There!

**Orchestrator (as Hamish):** What are you looking at me for?

... 

**Orchestrator (as Magistrate):** Eh what’s that, what’s that on the ground right there? Yo, yo, check your... check what’s on the ground!

**Player Left:** Stick to a voice [Orchestrator’s Name].

**Player Right:** Is that cheese?

**Orchestrator (as Magistrate):** Yo, it’s the cheese

**Orchestrator (as Hamish):** Eh it’s the cheese...

**Player Left:** You dropped the cheese...

**Orchestrator (as Hamish):** Oi, I think that Beatrice is up to no good, I think she dropped the cheese.

**Player Left <shaking head, confused> <to Player Right>:** I don't know who's talking.

**Player Right <shaking head, confused>:** <laughs>

**Orchestrator (as Beatrice):** Hey bud, hey Hamish, ah... help.

**Player Left, Player Right: <laughs>**

Halfway through the interaction Player Left, confused, addresses the orchestrator by his given name and asks him to use one voice as multiple voices have become difficult to follow. Eventually both players give up and resign themselves to letting the spectacle unfold. Player Right from this group stated in the post session interview, “I knew that there was a set story that [the orchestrator] had created for us.” When the orchestrator is dominant, players have and expect less room to exercise their own creativity.
5.3.3 Player Co-Dominance

Group four was unique in that both players took equally active roles in the gameplay. They both participated fully in the questioning and were not shy about calling out or interrupting, as illustrated in the following excerpt where they interrogate NPC Annie about a skull.

**Player Left:** Where did you get her skull?
**Player Right <interrupting>:** From her head.
**Orchestrator (as Annie):** Well I got it, umm, from her grave.
**Player Left:** Where’s her grave?
**Orchestrator:** Well that’s umm...
**Player Right <interrupting>:** Inconsequential information.
**Orchestrator:** ...inconsequential information.
**Player Left, Player Right:** <laughs>
**Player Right:** Thank you God.
**Player Left <to Player Right>:** Aren’t we trying to find Helena?
**Player Right <to Player Left>:** Trying to find who killed Helena.
**Player Left:** We’re trying to find who killed Helena...
**Player Right:** But then again, if we had her grave we can find some clues as to you know, cause of death...
**Player Left:** But if you have her skull, you kind of like, just took that out of her grave?
**Orchestrator:** Well I mean I guess...
**Player Right <interrupting>:** That’s kind of fucked up yo...
**Orchestrator:** I guess, I guess you guys aren't...
**Player Right <interrupting>:** Isn't grave robbing a serious offense in this, like culture?

In contrast to orchestrator-dominated interactions, the above excerpt contains numerous and longer utterances from the players who both actively participate in the questioning. Additionally, we see both players speak between comparatively shorter responses from the orchestrator. Player Right also interrupts the orchestrator four times in this short excerpt. In this group, the orchestrator sometimes felt overwhelmed.
In summary, three distinct interaction dynamics arose from five groups. This shows that groups can play the game differently, indicating that the open-ended nature of the gameplay extends not only to the choice of words used conversations, but also to the groups’ dynamics and more nuanced aspects of conversation. When the orchestrator was heavily dominant (groups two and three), the players were less able to participate in the game, and it became less interactive. Conversely, when both players aggressively engaged in conversation (group four), the orchestrator became overwhelmed and struggled at times to convey a story. The game played well with one dominant and one non-dominant player (groups one and five), albeit at the cost of one player taking a less active role.

5.4 Chapter Summary

In this chapter, we have described and illustrated three ways in which players using natural language affects the way that CRPGs are played. Firstly, we see that players are very content to import their own personalities and external knowledge into the game world. The prevalence of slang and external references show us that players do not preoccupy themselves with authenticity. The orchestrator as the provider of an experience will more often use period language to emphasize the game’s setting. The clash of styles makes for comical and entertaining interactions.

Secondly, we find that players and orchestrators remain rooted in the game world for the duration of the play session. Whether players are storytelling, coordinating, or bantering, they remain in context of playing Persiflage. Orchestrators are more focused on storytelling than players but will occasionally join in with banter. Players tend to make more external references whilst the bantering from orchestrators is more topical to the game world.
Finally, when players interact with open-ended conversation, we see conventions and syntax of natural conversational become part of the dialogue. Consequently, we see group dynamics take form during play. In five groups, we identify three different dynamics, *single player dominant*, *orchestrator dominant*, and *player co-dominant*. These all affect the play of Persiflage in different ways. Orchestrator dominated groups removed some of the players’ agency and at times reduced them to observers. The player dominated group saw the orchestrator overwhelmed at times, struggling to keep the narrative on track. The single-player dominant groups seemed to play with the most harmony. Although one player was notably less interactive than the other, there was notably less friction in the way the stories developed in these groups.
Chapter 6

Results: On Shared Authorial Control

In the previous chapter, we saw how the game’s affordance of open-ended dialogue enables players to insert their own personalities into the game. Players are free to present their characters with a modern twist, and to banter and joke in between advancing the storyline. This chapter will look at the second portion of our research question, “How is authorship of the game narrative shared between the orchestrator and players in an orchestrated game environment?”

We will see how the unrestricted open-ended conversation in Persiflage allows players to choose their own lines of investigation. The players’ questions manifest themselves as ‘offers’ (to borrow a term from improvisational theatre) [40] to alter the game’s storyline which the orchestrator in turn can accept or reject.

Orchestrators, having conceived a story in the preparatory session (as described in section 4.2), and as the person who holds the solution to the game’s puzzle, is the original author of the game’s narrative. In section 6.1 we examine the orchestrator’s preparatory documents and see how the histories and relationships they give their characters manifest themselves during play. We see that defining a character’s history and relationships can inform and translate to their behaviours and actions in game.

We then look at how players, over the course of playing the game, impart their influences on the story. As players question the NPCs through the game, they make offers to the orchestrator to divert the story. The nature of these offers and how they might affect the story plot is addressed in section 6.2. We will see that some offers add details and minutiae to the game whereas others seek to change the goal of the game itself.
Finally, we look at whether the orchestrator is willing or able to adapt the narrative to the players’ offers, and to what extent they do so, depending on the severity to the change to the storyline. As we will see, orchestrators generally tend to prefer to stay with their own story, but will at times acquiesce to the players. This is discussed in section 6.3.

6.1 Enriching the Story

In this section, we look at how the orchestrator constructs a narrative from the outline (appendix D) that they are given in the preparatory session. We will first discuss the types of information the orchestrators adds in their notes and how they give *Persiflage* a story. We then illustrate with some examples, how their story makes its way into the game as it unfolds.

6.1.1 Coding Enrichment

We parsed the orchestrator’s notes from each group into sentences and coded for the type of information that they conveyed. Figure 6.1 shows the results of coding the preparatory notes.

![Figure 6.1: Coded sentences from orchestrator’s enrichment document](image)

Figure 6.1: Coded sentences from orchestrator’s enrichment document
In total, the number of sentences written in these enrichment documents ranged from 9 to 40, with an average of 22 per group. We found that they fell into one of three categories that we coded as backstories, relationships, and game actions. Backstories give details of an NPCs history and past as well as traits detailing how they might behave in certain situations. Relationships outline an existing social network of the characters inhabiting the town of Northaven. Game Actions are actions which NPCs are liable to perform in game, which together may form a series of clues that help players along in progressing the story.

We found that the most common notes were backstories, with 10, 5, 20, 18, and 6 notes in groups one through five respectively. Notes outlining relationships and game actions were less common occurring mostly in the single digits. We found 3, 6, 5, 6, and 1 occurrences of relationship notes and 2, 1, 7, 16, and 2 occurrences of game action notes in groups one through five respectively. Group four’s orchestrator was the exception, making 16 notes describing possible game actions. The following sections illustrate these enrichment notes in more detail and how they manifest in the story plot during gameplay.

6.1.2 Backstories and Histories

Backstories give the NPCs of Northaven a historical context informing their personalities and behaviours that the orchestrator can then relay and portray to the players in game. For instance, group four’s orchestrator writes of Magistrate Rufus:

*Rufus is an outsider, a bureaucrat who stepped on the wrong toes and was forced to become an official here. But he does his best to do the right thing for the town, even if it makes some of them dislike him.*

The orchestrator tries to express these facts in a conversation with the players during gameplay:
Orchestrator (as Magistrate Rufus): Well yeah I am quite young actually, I’m actually not from this town, I’m an outsider...

Player Right <interrupting>: Are you a Frenchman?

Player Left: Are you wearing a straitjacket?

Player Left, Player Right: <laughing>

Orchestrator: ...but yeah, I’m basically from the outside. Basically, I stepped on the wrong toes politically and now I’m here.

Player Right: ...and became a governor!?

Player Left: Yeah what did you do?

Player Right: Were you a King before?

Player Left: Whose toes did you step on?

Orchestrator: Well some pretty important people.

The orchestrator playing Rufus relays to the players that he is not a native of Northaven as outlined in his notes. Due to the players’ constant tangential questioning, he does not manage to convey that this leaves him at odds with the rest of the villagers. Interestingly he had not prepared the particulars of why he has been exiled to Northaven. When the players press him further on the matter, he waves them away with a half-hearted explanation lacking in detail, “well some pretty important people”. This indicates to us that outside of prepared material, orchestrators can struggle to improvise new and consistent information.

In the above example, we see that the orchestrator is reliant on his notes, and when they eventually fail to anticipate the players’ questions, he becomes lost, giving a vague answer. This excerpt comes from group four which in section 5.3 we identified as a player dominant group. As a result of the players’ interruptions and constant questioning, the orchestrator struggles to convey all of Rufus’ character in the conversation.

In the following example, we see how group five’s orchestrator gives Beatrice an outlandish and quirky persona and how she manifests this during the play session:
Beatrice loves conspiracy theories, and has far-fetched ideas about how there are secret spies planted in town and fairies control the government. Most people brush off her crazy theories, but she happens to be right when she guesses that Helena faked her own death.

The orchestrator then works in Beatrice’s planned personality traits as the players question her about Helena.

**Player Left:** Oh, uh, so we hear there’s a lot of mystery going on, a little bit of murder, and we were wondering, how do you feel about the whole Helena killing her husband thing?

**Orchestrator (as Beatrice):** Oh yeah I love conspiracy theories, I think she secretly murdered him and ran away. She’s definitely faked her own death. Also, people that faked their own death include Elvis and J.D. Salinger. I love conspiracy theories.

**Player Left:** Oh my God, I love you!

**Player Left, Player Right:** <laughing>

**Player Left:** J.D. Salinger definitely...

**Player Right:** So um, uh, does this make you happy that Helena is still alive or no?

**Orchestrator:** I knew it, I totally called it, I’m always right. Umm sure, yeah, she’s cool. We hung out sometimes.

Interestingly, the orchestrator voluntarily offers Beatrice’s love of conspiracy theories to the detectives. The orchestrator has prepared a character that she knows will amuse the players and insists on including her traits in the game. She also takes this opportunity to work in an external reference to the animated series *Bojack Horseman* [6] which further exemplifies how her NPCs are prepared with her friends in mind. The reference to the cartoon is one that they pick up on enthusiastically. When the players confront Beatrice with the information that Helena is still alive, the orchestrator’s reaction plays true to the persona outlined in their notes proclaiming, “I knew it, I totally called it, I’m always right.”

In both these examples, we see the orchestrator leveraging information in their prepared notes on NPC backgrounds to give their characters personality and depth. The players happily
interact with these traits and sometimes challenge the orchestrator to expand upon them. This gives life to the characters in *Persiflage* and make the game more than a mechanical conversational puzzle.

6.1.3 NPC Relationships

In addition to back stories and personalities, a second theme amongst the orchestrators was that they established relationships between NPCs. This allows orchestrators to construct a coherent social network in the town of *Northaven* which explains and motivates NPCs’ actions during the play session. In the outline of the story, we had already established that Annie and Helena are sisters, but the orchestrators could, and do supplement this narrative.

For instance, the orchestrator from group three decided to make the priest (*Father Andrew*) Annie and Helena’s father. The whole family appears to be thieves:

**Father Andrew**
- Is actually Helena and Annie’s father.
- Used to be a big-time thief, retired to escape the law.

**Annie**
- Steals goods and gives them to Hamish, who resells them.

**Helena**
- Been framed for murdering a prominent statesman (Big Daddy Donohue) and taking his priceless sapphire pendant.

This family history is then exposed in dialogue during gameplay, and *Father Andrew* is naturally protective of his daughter:

**Orchestrator (as Father Andrew):** You know I used to... people say I was in for you know giving kids the business but I actually used to be a big-time thief myself. And Big Daddy Donohue, he was our number one target and his big cheese. you know what they say when you talk about big cheese big money, he literally had a massive block of cheese.

**Player Left, Player Right:** <laughs>

...
Orchestrator (as Father Andrew): Shit alright, I’m uh hmm, I’m actually Helena’s father.
Player Right: Woah...
Orchestrator: Yeah you wouldn’t have expected it.
Player Right: This is a turning point.
Orchestrator: I’m actually her dad, but I wanted you to know, even though she has a criminal history and even though she’s one of the greatest thieves to ever live, she’s innocent in this. She did not kill big Daddy Donohue, and she did not steal that big cheese. Someone else did and she’s been setup, I swear it.

When portraying Father Andrew, group three’s orchestrator reveals first his history as a thief, and then his relationship to Annie and Helena. Being Helena’s father, the priest is protective of his daughter and tries to convince the players of her innocence. This protective nature is not explicitly outlined in the orchestrator’s notes, but is assumed and dictated by the familial bond between the two characters.

Like their backstories, relationships between NPCs inform their attitudes and motivations towards each other and the players’ characters. In the above example, we see that the orchestrator uses relationships to guide characters’ behaviours and attitudes towards each other during play. Relationships can serve as a unifying glue that allows the orchestrator to maintain a coherent narrative over the course of the play session.

6.1.4 A Trail of Clues

In all groups to some extent, the preparatory documents provide an outline to a potential story path that the players might follow in discovering the truth about Helena. These took the form of clues coded as game actions in the enrichment documents that the orchestrators prepared.

For instance, group four’s orchestrator laid out a series of clues that the players can exploit to obtain a diary from the priest:

Hamish
- Sells cheese
- Knows that Andrew (the priest) loves cheese

Beatrice
- Sells sleeping tonic

Father Andrew
- Has diary of Helena (when she was young)
  o Refuses to show it
  o To read it, need to give him cheese with sleeping tonic
- Loves Cheese

In this case, the trail of clues laid out by the orchestrator was followed and explored by the players; we see them drug the priest by hiding the tonic in the cheese during the play session:

Player Left: How do we get the book from you?
Orchestrator (as Father Andrew): Well you’re not.
Player Right: Okay, okay, but how do we though!?
Player Left: Do you want a sleeping potion? Because you look like you need some rest, and we’ll trade it for the book.
Player Right: Fuck it, fuck it, I have an idea, here let’s just put the potion in the cheese and give him the cheese.
Player Left: Wait, can we just kinda toss the potion on this guy?
Orchestrator: Actually, you can do that, what [Player Right’s name] said.
...
Player Right: Okay, they’re mixed, okay here, have some cheese fool!
Orchestrator: Oh cheese wow, how did you know that I’d like it? Thank you very much.
...
Player Right: Hey look, a book!
Player Left: He dropped the book, he passed out.

Player Left initially attempts unsuccessfully to trade items to Father Andrew in exchange for Helena’s diary, meanwhile Player Right comes up with the idea of drugging the cheese, and the orchestrator helps them along by letting them know that this is a valid action in the game. The players follow this course and are rewarded with the book as per the orchestrator’s notes.
This example illustrates that the orchestrator is eager for players to experience the game as he had envisioned, and therefore liable to aiding players toward what they deem the ‘correct’ solution. When the players arrive at the decision to drug the cheese, an idea that the orchestrator had anticipated and prepared, he immediately breaks character facilitate this by saying, “Actually, you can do that, what [Player Right] said.”

Not all avenues of investigation were followed by the players. Groups five’s orchestrator for instance had prepared a series of clues that would lead the players to the murder weapon Helena had used to kill her abusive husband:

Hamish
- Remembers selling a bunch of canned food, new clothes, and a knife to a hooded woman.

Annie
- Loves gardening, and the knife Helena used to murder her Husband is buried underneath her geraniums.

Although she drops a clue about her gardening and tries to direct the players towards this line of investigation, they do not take up the hint:

Player Right: When was the last time you saw your sister alive?
Orchestrator (as Annie): Uh like a week ago, I think, yeah
Player Left: Umm...
Orchestrator: Just been hanging out, doing some gardening.
Player Left: So... why... your sisters on the run, how on earth do you know she killed herself?
...
Player Left: Okay let’s go, let’s get the heck outta here.
Player Left: This lady’s not helpful.

In this example, the orchestrator tangentially mentions that she (as Annie) has been gardening, hoping that the players inquire more about her flowers. The players ignore the comment and eventually leave Annie without paying it any more mind. The attempt to draw the
players towards a prepared clue again shows us that the orchestrator is trying to draw the players into a story line that she has prepared.

### 6.1.5 Conclusion

Orchestrators built a game world for their players to explore and a murder mystery to solve by completing the details of a template story that we provide to them. Different groups took advantage of this session to different extents; some orchestrators were more precise in defining details, using forty sentences to expand their game world, whereas others made do with as few as nine. Orchestrators made additions to NPC descriptions that we coded into one of three categories: **backstories**, **relationships**, and **game actions** (behaviours).

**Backstories** serve to give a character flavour and depth, making them more than avatars inhabiting a virtual village. Sometimes these details are tailored specifically with the players in mind and we observe them interacting with these character traits as a result. **Relationships** inform NPC’s attitudes, behaviours, and actions towards one another. The orchestrators build scenarios and NPC dialogue based on these relationships. **Game actions** serve as breadcrumbs that orchestrators lay out as viable clues intended to lead the players towards the puzzle’s solution. Orchestrators leave these hints in their dialogue with the players to aid them in advancing their progress.

We see that in every session, a portion of these plot enriching facts make their way into conversations as the game plays out. This tells us that in addition to familiarizing themselves with the basic story, the orchestrators take ownership of their supplemented story and actively incorporate it into their play through their NPCs’ dialogue. As in the examples above, we even see that they often encourage and help their players into following their prepared storylines. We also saw examples where orchestrators consciously prepare and adapt characters to appeal to their friends as players and go out of their way to bring out character traits for humour. We see that at
times, some clues went unfollowed or some character traits were ignored or were never materialized in game.

6.2 Player’s Authorial Contributions

In this section and the next, we discuss how the orchestrator and players in a group collaborate to form a story together. This section will look at how the players influence the game’s narrative from their perspective and the next (section 6.3) deals with the way in which the orchestrator handles the players’ inputs to the game.

In order to better understand how a collaborative narrative can emerge from interactions between players and orchestrator, we take a brief look at the idea of ‘offers’ in improvisational theatre. The concept of an offer enables actors to bring and merge ideas, actions, and events into a scene accumulating in an emergent narrative.

We then look at and discuss how we code players’ offers in Persiflage, separating them by the degree with which they would affect the game’s story. They are sorted into three codes, flavour, story, and game. We then present examples of offers from each code and give a discussion of how they arise as a course of conversational gameplay.

6.2.1 Player Direction and Offers in Improvisational Theatre

Players exert their agency over the story’s direction over the course of the game by questioning NPCs during gameplay. With some rare exceptions, we do not observe players explicitly demanding a change in storyline. Instead, we see their desires manifested in the conversations and questioning that they conduct with NPCs over the course of their investigation.

For instance, players do not ask that a dentist be placed in the game if they wish to visit one. Rather, they may ask the magistrate whether a dentist lives in town (so that they can use Helena’s dental records to verify the authenticity of a skull). In this fashion, their bids to change the game’s
direction are interwoven directly into the gameplay. We should note this implies players are very much subconscious and dynamic about altering gameplay; they do not make explicit demands for character appearances or events to occur, but rather make suggestions towards the direction that they wish to explore in order to solve the mystery.

Borrowing the concept from improvisational theatre, the questions that players ask of NPCs can be compared to ‘offers’. An offer is defined as an action or dialogue that seeks to advance the emergent narrative being played out by improvisational actors [40]. For instance, addressing a fellow actor as ‘father’ defines a relationship between the two characters, or miming a shivering motion is an offer that the scene occurs in a cold environment. Accepting an offer is often followed by presenting another offer. In this way, cumulative offers allow actors to refine their characters and environment, thereby constructing a scene.

This process between improvisational actors is sometimes given the informal term “Yes, and…” where ‘yes’ refers to accepting an offered premise and ‘and’ to the will to build upon it. This forms the cornerstone of improvisational acting [26].

As actors make offers they continually (re)define the reality of the scene. Similarly, as players pose their questions to NPCs, they are making offers to the orchestrator to carry the storyline in a direction of their questioning. We will use this concept of offers and how orchestrators accept or refuse them in this and the following chapter.

### 6.2.2 Coding Player’s Offers

We sorted these offers or bids by players to change the game’s direction into three categories varying by degrees of severity with which they would affect the storyline. We coded them as **flavour**, **story**, and **game**. Each code describes how they might change the storyline. An utterance coded for **flavour** tells us that the player’s suggestion adds description and detail to dialogue without altering the course of the story. A **story** code indicates that the player’s change
in game direction requires that the storyline take a twist or develop a new branch. The **game** code indicates that players’ utterances demand a radical change in the game’s goal such that the objective is no longer to find Helena.

![Player Offers](chart.png)

**Figure 6.2: Instances of improvisation by the players, or ‘offers’**

Figure 6.2 shows us the coded instances of improvisation separated by group and severity. We find 17, 26, 3, 49, and 10 player utterances coded for improvisation in groups one through five respectively.

We see a large degree of variation between groups in the frequency of players making these bids to alter the course of the game. They range from as low as 3 (group three) to as high as 52 (group four) occurrences over the session with an average of 21 instances per session. Unsurprisingly, these extremes coincide with the most orchestrator and player dominated groups respectively (section 5.3). We see that most utterances for player direction fall either in the **story** and **flavour** subcategories accounting for 51% and 43% of all coded instances of improvisation.
respectively. **Game** utterances are comparatively rare with a total of six instances which appear in only two out of five groups.

The most prevalent code that we saw was **story** with 54 instances over all five groups, accounting for 51% of all utterances coded for player direction. Over the course of questioning, players are quite likely to make suggestions that could significantly alter the story path. Group three presents an anomaly to this trend where the player made no attempts to divert the story path. But then the players in this group only made three utterances containing offers in total.

Utterances coded for **flavour** were almost as common as those for **story**, with 46 coded instances over five sessions, accounting for 43% of all utterances. However, a large majority of these, 27 instances, are concentrated in group four, with groups one, two, three, and five presenting only 5, 6, 3, and 1 **flavour** utterances respectively. Recall that group four had the most player dominant dynamic and it follows unsurprisingly that they inject the most amount of their own personalities into their gameplay.

**Game** utterances account for the fewest of all three categories, with only six occurrences over all five sessions, split between groups one (2 instances) and five (4 instances). A **game** utterance proposes a complete change in game’s objective. In both groups where they are seen, the **game** offers were made after the players had already solved the murder mystery and discovered *Helena’s* whereabouts. This indicates that players are focused on accomplishing the game’s goals, but once that is complete, they seek other objectives to explore, in this case setting goals for themselves. This further shows that players are invested in the game’s narrative.

In this chapter, we give some representative examples showing how player offers from each category make their way into dialogue between players and NPCs.

**6.2.3 Flavour**
Utterances categorized under the **flavour** code are where we see players make offers that would minimally affect the storyline. These changes do not divert the story’s progression but rather, as the code suggests, adds flavour to an interaction by emphasising or expanding on details.

In this interaction, the newly arrived players question *Hamish* about his run in with a person whom they suspect might be *Helena*.

**Player Right:** So, we noticed that uh, it’s only you and this other guy who’s in town right now. Did you notice a girl that was in this small town a little while ago?

**Orchestrator (as Hamish):** Uh a little while? Like, how, how long?

**Player Left:** Like not too long, a couple days? [**FLAVOUR**]

**Player Right:** Three days, within the past three days. [**FLAVOUR**]

**Orchestrator:** Umm, well there was this girl, like some week ago who came here but like she... she came from outside but she passed away, I dunno if you’re talking about her. I dunno.

**Player Right:** Okay. Do you remember what she looks like? [**FLAVOUR**]

**Orchestrator:** Umm, well you know, average looking, you know...

**Player Right:** Aged woman? Old? Young? [**FLAVOUR**]

**Orchestrator:** I mean young, yeah, not that old... middle aged.

As they question *Hamish*, the players and orchestrator enter into an exchange which by itself stays within the game’s main storyline, but it makes a demand on both sides of the conversation to provide details of the game world. The orchestrator asks the players to provide a timeframe for *Helena’s* appearance in *Northaven*, which after some hesitation and negotiation they arrive at three days. The players then push for a physical description from the orchestrator, who apparently unprepared for this line of questioning, fumbles through an answer. The players in turn help him along by prompting possible descriptions.

Both players and orchestrator are playing in character and stay in context of the game, trying to achieve the goal of finding *Helena*. The conversation and questioning is consistent with
investigators looking for a suspect. By asking for details and both sides prompt each other to improvise specifics of the scene (the timeframe of Helena’s arrival to town and her physical appearance) in real time. This is an example of a back and forth interaction where players and orchestrator collaboratively improvise to construct the game world one detail at a time.

The following example differs from the one above in that the players are not actively collaborating with the orchestrator and illustrates how players can more directly inject facts and events with their personal flavour into the game.

**Player Right:** You! Bearded fellow! This is an extortion! Give us whatever you have! [FLAVOUR]

**Orchestrator (as Father Andrew):** I have absolutely nothing, uh, of interest. Actually, if you want some stuff, then you can go see Beatrice down south, but I do recommend that you go see Annie first.

**Player Left:** Let’s go see Annie, let’s go see this girl. Let’s go see what’s happening.

**Player Right:** We’ll come back and we’ll torture him later. I am wearing red, that means we’re the Spanish Inquisition. [FLAVOUR]

In this instance, Player Right opens the dialogue with *Father Andrew* with unprovoked aggression and leaves shortly after with a threat of torture, posing as the Spanish Inquisition. Contrasted with the former example where the players and orchestrator prompt each other for details, here the player exercises their agency unilaterally. Player Right does so in the example by adopting an aggressive attitude and behaviour for his character without waiting for the orchestrator’s input. Notice again that the player stays in context of an investigator questioning a witness for information, in this case with an air of intimidation.

In both these examples, the players add elements to the story that would not exist without their involvement. In one, the players collaboratively build details of the game world through a conversation with the orchestrator. In the second, the players impose their own vision of their character and behaviour to the story. Details of characters, events, and the larger game world are
supplied through these interactions. The game’s plotline and objective however remain unchanged and so we code these interaction with flavour.

6.2.4 Story

A player’s offer coded for story either actively diverts the current story trajectory or precipitates a branch to a tangential storyline. The following example shows how players might achieve this through their line of questioning.

**Player Left:** Do you have her dental records? [STORY]

**Orchestrator (as Magistrate):** What?

**Player Left:** Dental records! Most of the teeth seem to be attached to the skull. <laughing>

[STORY]

**Orchestrator:** Um I’m not a scientist but, but, what does that mean?

**Player Left:** Ok, it’s fine, is there like a local dentist we could talk to? [STORY]

**Orchestrator:** Uh we, we, this is a small town we don’t really have a dentist here. You probably have to go to the bigger cities for that.

**Player Left:** ...Okay.

Here the players try to verify the authenticity of a skull in their possession. They ask the magistrate first for dental records, and then failing that, for a dentist in town. In both cases, had the orchestrator acquiesced to their requests he would have had to alter the storyline, either by producing dental records in some form, or by assigning the role of the dentist to another NPC with whom the players could then speak.

This is an offer coded for story because we see players exercising their own agency in following investigative lines that they think of on the fly rather than following a suggestion by the orchestrator. They offer that the skull has most of its teeth intact and follow up by asking for means of verification. Like before, it is important to note that the conversation remains in context of gameplay. The players remain in character as investigators following clues to discover
Helena's fate. Their suggestion of finding a dentist is not so much a demand as questioning the possibility of this avenue of investigation. In this case (and as we shall see in most similar cases) their offer is refused by the orchestrator.

The following excerpt illustrates how players can assert their offers in a more direct and aggressive fashion. Unlike the previous example where players question the possibility of characters and events, this one shows that players can be accusatory and gauge the orchestrator’s response for clues.

**Player Left:** So why did you kill your sister? [STORY]

**Orchestrator (as Annie):** What are you talking about? I didn't kill my sister. She's gone now, she’s passed away.

... 

**Player Right:** What did you learn from the autopsy? [STORY]
**Orchestrator:** I have proof that she is dead. This is her skull that I have dropped right here.

**Player Left:** Oh okay.

This example is interesting because Player Left’s opening allegation of Annie murdering her own sister opens the door to many possible storylines. On the surface, the utterance seems like an accusation by the player to throw off Annie off, it however presents the possibility for the orchestrator to play along in several ways. Annie could have confirmed the statement, or perhaps claimed to have witnessed Helena’s death in an accident, with the intent to misdirect the players. In either case a new story branch would have had to be developed.

This is one of multiple examples where we see players dispute the veracity of NPCs’ statements. This type of interaction will naturally arise due to the nature of the murder mystery game where some NPCs will be characteristically deceptive in order to throw the players off the scent. As before, these possibilities for plot changes again arise from the normal actions of playing an investigator trying to arrive at the truth in a murder mystery adventure.
The second utterance that we coded for story in this excerpt is when Player Right asks Annie what she was able to learn from the autopsy. The question carries an implied offer that an autopsy was conducted, the details of which the orchestrator would have to fabricate and divulge if he chose to follow the players’ suggestion by accepting the offer. Instead, the orchestrator sidesteps the question and offers the players a skull that he explains is proof of Helena’s death. Similar to our first example, where the players ask the orchestrator for dental records; a tangential storyline would have to be constructed to accommodate the players’ suggestions.

Note that in both instances the orchestrator declines to humour the players’ offers. As we shall see in the following section dealing with orchestrator improvisation, story utterances that require the orchestrator to deviate and fabricate new storylines are generally left unexplored.

6.2.5 Game

Whereas the previous examples might force the orchestrator to amend the game’s story or create new branch to the story, the code game indicates that a player suggests a more drastic change. The player’s offer is to change the game’s objective such that it is no longer the original one assigned, where players seek to discover Helena’s fate.

We saw only six utterances that fit this code appearing in two of the five groups. They resulted in two new game objectives that were explored by groups one and five. In both instances, the players had already completed the main goal of discovering Helena’s whereabouts and her motivations for faking her death. They then decide to continue play by setting themselves new objectives.

The following example is from group one’s play session. They set themselves a new goal of reuniting Helena with Hamish.

Player Left: You should probably go talk to Hamish because he really likes you. [GAME]

...
Orchestrator (as Helena): Uh oh, it appears as if I’m stuck in a tree, but I assure you I will talk to Hamish very soon.

Player Left, Player Right: <laughs>

... 

Player Left: ...We have to talk to Hamish, come on Helena. [GAME]

Orchestrator: Is there more to do?

Player Right: We need to get Hamish and Helena back together. [GAME]

Player Left: Yeah.

Here the players have discovered Helena and want to tidy up the game’s ending by reuniting her with Hamish the grocer, who in this narrative has amorous feelings for her. They coax her out of the forest where she has been hiding and try to get her to follow them to Hamish (the new goal they have set for themselves).

Interestingly the orchestrator breaks character and asks “Is there more to do?” as he had thought the game would conclude with Helena’s discovery. He does however go on to accommodate the players and plays out the reunification scene between the NPCs.

Similarly, group five also sets themselves a new objective of reintegrating Helena into town life in Northaven after discovering her and sympathizing with her reasons for disappearing.

Player Left: Umm, how can we put you back into society? how can we help you? [GAME]

Orchestrator (as Helena): Umm, I don't think anyone understands that I did what I had to do because I was fearing for my safety. So maybe convince them that it was in self-defence, and maybe go talk to the magistrate or something.

The players suggest that they want to help Helena by reintegrating her into society. As with group one, we see from the orchestrator’s response that she is happy to accommodate the players’ new goals into the game. She even gives them suggestions as to how they might go about accomplishing their new objective.
Unlike the utterances coded in the story category, we see that the orchestrator is much more accommodating to players after their prepared story arc is complete (orchestrators accepted both game offers that were made in the study). It would seem that orchestrators are generally resistant to players changing the direction of their prepared story plot, but once that is complete, and the game becomes more open ended, the orchestrators have no qualms letting players fabricate and explore their own stories, and indeed, are quite happy to accommodate their agency.

As is the case with flavour and story, game utterances are made by players quite naturally in the course of play. Both examples above arise from in character conversations with NPCs; these suggestions to alter the game goals emerge fluidly and organically during the course of play. Players additionally do not break character when altering the game goals and as with the other categories of suggesting their own direction, the process is almost subconscious and integrated into gameplay.

6.2.6 Conclusion

When playing Persiflage, we see groups tell a story collaboratively. The game’s world, characters, and their histories are prepared by the orchestrator, but the players’ ideas and personalities percolate into and contribute to the game’s overall flow and atmosphere as it plays out. The players’ contributions occur naturally as an integral part of the gameplay dialogue. Suggestions of characters and events arise through the course of questioning NPCs whilst playing towards achieving the game’s goals.

We classified player’s contributions into three major categories: flavour, story, and game. Players tended to probe the story for different directions most often (story) and felt free to make their own superficial contributions (flavour). Players rarely decided to run off-piste and change the game’s objective completely (game), and did so only in two instances when the game’s original goal had already been achieved. Orchestrators tended to be much more
accommodating to players making game contributions than story ones as we shall see in more detail in the following section.

### 6.3 Improvising Orchestration

The previous two sections of this chapter dealt with how the orchestrator laid out the foundations of the game’s story (section 6.1) and how the players exert their influences on the story through offers (section 6.2). In this section, we look at how the orchestrators react to and choose to accommodate players’ offers.

We created Persiflage to explore how players and orchestrators engage in open-ended interaction to engage in storytelling gameplay and create game narratives. Players speaking with their own words and voice necessitates orchestrators to respond in real time with improvised and original dialogue that is consistent with both players’ dialogue and the game’s story so far. Whereas the previous chapter looked at how players used offers to direct and influence the game’s storyline, this section explores how the orchestrators adapt to and accommodate these offers during gameplay.

In this section, we will look at five codes, acting, reacting, enabling, blocking, and directing, which give us insight on how orchestrators improvise with players and direct play. Generally, we find that when given the choice, orchestrators are more likely to redirect the game’s story back towards lines that they have prepared and are therefore familiar with.

We find that there are a number of possible reasons for this. The load on the orchestrator is lessened when they are not forced to ad-lib on the fly, all the while maintaining consistency with the game’s existing plot and setting. The constraints of the game session being limited to thirty minutes and the limited possibilities provided by Persiflage’s digital environment forces the orchestrator to prohibit the players from exploring certain story avenues. Finally, we also see that
orchestrators are willing to block players from certain routes of play in favour of providing an experience that they had envisioned.

### 6.3.1 Improvisation Codes

The documents prepared during the pre-session (as outlined earlier in this chapter in section 6.1) by the orchestrators play an essential role in identifying and coding the orchestrator’s improvisational behaviours. We characterize improvisation as the introduction of facts, ideas, or themes that were not explicitly outlined in the preparatory document. Utterances carrying improvised content are further separated into one of four categories: **acting**, **enabling**, **blocking**, and **reacting**. A fifth code, **directing** is also discussed in this section. Although it does not strictly code improvisation by the orchestrator, it is related to the topic.

**Acting** codes spontaneous improvisation by the orchestrator without direct prompting or input from players. This generally includes unprepared information, themes, and ideas being introduced by the orchestrator on the fly. Specific examples could be an inside joke that is related to the current discussion, or additional details to give supplementary flavour to an NPC’s dialogue. The **reacting** code captures that an orchestrator’s utterance responds to players in a neutral manner. The orchestrator acknowledges and responds to players’ dialogue without either advancing or hindering the request (if one exists).

**Enabling** and **blocking** codes denote an orchestrator’s improvised utterances that are in response to players’ narrative offers. **Enabling** indicates that the orchestrator is playing along with and accommodating a players’ suggestions, whereas **blocking** encodes the opposite, that a player’s request has been deflected, denied, or postponed by the orchestrator. The **directing** code captures the orchestrator’s intent to influence the players’ actions. Figure 6.3 shows us the distribution of all five coded utterances over the five study groups.
Figure 6.3: Instances of orchestrator’s improvisation.

Over the five-session study, we saw between 11 to 45 utterances coded for improvisation by each orchestrator, with an average of 26 utterances per session. Group three saw a markedly low amount of improvisation with only 11 utterances. Interestingly, and perhaps not coincidentally, we saw in chapter 5.3 that group three is the most orchestrator dominated group and in section 6.2 that the players in group three made the fewest offers.

In all four groups, reacting utterances comprise a large proportion of improvisation; overall, they account for 55% of all improvised utterances. As we shall see, this is not entirely unexpected. The orchestrator frequently acknowledges and reacts to player input as a normal part of conversation and this form of interaction is natural and does not require the orchestrator to alter the game’s narrative. In these instances, the orchestrator has minimal new information to interpret and amalgamate into an existing story.

When dealing with players’ offers that have the potential to affect the storyline, we see many more occurrences of blocking than enabling. Over five sessions, orchestrators made 36
utterances coded for **blocking** compared to only 6 for **enabling**. Finally, orchestrators ad-libbing unprompted ideas was rare. Almost all the **acting** utterances originated from group one’s orchestrator, who made 8 of the 11 utterances we saw in all five groups.

73 utterances over all five sessions were coded for **directing**. Group three showed the most instances with 25 and group five the least with 6.

The rest of this chapter delves into the details of each of these categories and discusses how the different forms of improvisation manifest themselves in-game and ultimately affect how the game plays and its outcome.

### 6.3.2 Reactive Improvisation

When players initiate a line of questioning including themes and topics that were not prepared or predicted by the orchestrator, the orchestrator’s response is categorized as reactive improvisation. That is, they are forced to improvise as a reaction to the players. The resulting dialogue sees the orchestrator ad-lib responses to players’ unanticipated questions. Alternatively, if the orchestrator leverages their prepared material into the conversation, it is not considered improvisation.

This example of reactive improvisation occurs when the players question the orchestrator about Helena’s supposed remains.

**Player Left:** We found a skull.

**Orchestrator (as Father Andrew):** Yeah that’s probably her, cause, you know...

**Player Left:** <laughs>

**Player Right:** Why is it not buried, it was just on the ground, I thought you buried her?

**Player Left:** <laughs>

**Orchestrator:** Umm... I don’t know, probably like the... you know like soil erosion or something...

[REACTING]

**Player Left, Player Right:** <laughs>
**Orchestrator:** ...like we did buried [sic] her. But it's just from the rain or something, it's been raining for a while. **[REACTING]**

**Player Left:** Where's the rest of her body then?

**Orchestrator:** Wha... Oh come on, why are you asking me this? This is up to the, like I... I told you she was buried there, what do you want me to say? Like it's up to the, I don’t know, the microbes or something? **[REACTING]**

**Player Left:** <laughing> Okay.

We can see that the orchestrator did not anticipate this line of questioning from the responses he gives to the players. He struggles to give an adequate explanation to the players’ questions as the players probe him for more details on Helena’s supposed remains. This is made evident by the use of the phrases “I don’t know...” and “…or something” on multiple occasions through the example. From these phrases and the orchestrator’s syntax we can see that the orchestrator struggles to fluidly respond to players when unprepared for their questions.

Hesitant and awkward dialogue is a trend we see across all five groups when the orchestrator is reactive to the players’ questioning, especially when the orchestrator is caught off guard. Although orchestrators can accommodate player’s natural language, they seem to struggle to do so smoothly and convincingly without prior preparation. As we see from the laughter from the players, this contributes to the comical and relaxed nature of the gameplay.

Similarly, when confronted with a player attempting to redirect the game plot, orchestrators generally resisted and pushed players back into prepared and familiar storylines. By staying within storylines where they have prepared material, the orchestrator avoids the task of amalgamating the players’ offers into the existing game plot and provide a smoother interaction.

Orchestrators achieve this by employing directing and blocking techniques to reorient players towards certain storylines which we discuss in the next section.
6.3.3 Enabling/Blocking Improvisation

When the orchestrator must make an active choice in how they react to player direction, we categorize the behaviour as either enabling or blocking. Enabling indicates that the orchestrator improvises a scenario and reroutes a story to accommodate a player’s request or offer. Blocking encodes the opposite, where the orchestrator acknowledges and then rejects the player’s proposed story direction. The orchestrator usually tries to do this by improvising an excuse consistent with the game and story world.

This first example from group two where players are trying to barter some cheese for clues initially illustrates blocking followed by enabling.

**Orchestrator (as Hamish):** Oh, hello guys.

**Player Left:** Hello fine sir, would you like to purchase some cheese to sell at your market stall?

**Orchestrator:** Well you probably remember me, but I’m the grocery guy so uh no. You guys should be buying from me. [BLOCKING]

**Player Left, Player Right:** <laughs>

**Orchestrator:** ...I get my supplies from out of town. [BLOCKING]

**Player Left:** But see we can sell to you at a lower price, so that you can sell it to everyone else at a higher price...

**Orchestrator:** Uh yeah, you know what yeah that’s a good deal, I can take that. [ENABLING]

The players approach *Hamish* and asks if he will purchase their cheese. At first, he refuses them by explaining that he only sells goods and does not buy them, following up by stating that he imports his goods. Both these utterances reject the players’ attempt to trade their cheese with him. However, after Player Left reasons to *Hamish* that he can make a profit on the cheese, the orchestrator acquiesces and accepts his reasoning, accepting their offer.

In this example, the players must spell out and justify to the orchestrator that their action is logical and consistent with *Hamish’s* character. Without this justification, he was unwilling to explore the exchange. The act of adapting to unforeseen storylines and the prospect of having to
further expand on them may seem daunting on the orchestrator and it is possible that this extra effort could incur a heavy cognitive load. Often, they will simply reject storylines rather than venture into unprepared territory. We can draw the parallel here to the improvisational actor struggling to accept an offer that changes their perceived version of the game world.

Over five play sessions we coded only six utterances for enabling. Orchestrators are much more comfortable staying within the confines of their prepared story and redirecting players back into these storylines. This is illustrated by the more frequent occurrence of blocking utterances of which we see thirty-six in total.

The following example is typical of when the orchestrator blocks a line of investigation by the players. The players are interested in examining Helena’s body, which the orchestrator effectively declares off limits with two utterances that we coded for blocking.

**Player Left:** Well uh... where is she now? Do you know here her body is? Because Anna said you know.

**Orchestrator (as Beatrice):** Her body's in the grave which is uh, outside the map. [BLOCKING]

**Player Right:** Listen B...

**Player Left <interrupting>:** Okay so Anna wouldn't tell us where the grave was, do you know why that might be?

**Orchestrator:** The grave is really far away from here, I don't think you'll have time... [BLOCKING]

**Player Left:** Okay so she’s not in the grave, so, so far you and Anna are guilty of something you’re not telling us... Obstructing justice!

The orchestrator’s first utterance in response to the players is especially remarkable because he uses the phrase “outside the map”. This hints to us that he is too preoccupied to rapidly invent a contextual reason as to why the players may not be able to reach the grave. The utterance breaks the performance convention of the fourth wall by acknowledging that the group is currently playing a game which takes place on a map. In his second utterance, the orchestrator
reverts to playing *Beatrice* in character and provides a more plausible reason for why the players cannot visit *Helena’s* grave.

This example is interesting because *Persiflage* does not allow the players to eventually find a body (other than a skull). Moreover, in the story, *Helena* is not actually dead and the townsfolk have conspired to fake her death to mislead the players. Had the orchestrator provided a location for *Helena’s* supposed resting place, he would have had to then deny them the opportunity to exhume her remains, or perhaps set up a scene where they discover that the townsfolk have been deceiving them. If the orchestrator is set on following a prepared plot or if they are not able to rapidly imagine and prepare scenarios that are coherent with the game, it may seem that some amount of blocking is necessary to maintain the cohesion and direction of the game.

### 6.3.4 Directing

We could consider that blocking and directing are two sides of the same coin. Whereas orchestrators use the former to stop players exploring unprepared storylines, the latter encourages them to enter prepared ones. The following example from group one shows us how blocking and directing are used in concert with each other.

**Orchestrator (as Father Andrew):** Uh she spoke to me in a confession booth. I can't give you any more information than that. [blocking]

**Player Left:** Come on... we’ll trade you?

**Player Right:** <laughing> What were her confessions?

**Orchestrator:** Sorry?

**Player Right:** Nothing, tell us her confessions.

**Player Left:** Please tell us.

**Player Right:** She's dead.

**Orchestrator:** That would be against the priest's code. [blocking]

**Player Left:** She's dead...
**Orchestrator:** The only way you'll ever get that out of me is if you have a truth serum.

**[DIRECTING]**

...

**Player Right:** <laughs>

**Player Left:** We'll be back.

In this situation, the players know that *Father Andrew* has information that they need. As they attempt to get him to divulge it, the orchestrator blocks them in favour of the method that he has decided is the ‘correct’ one (obtaining and using a truth serum). When it is apparent that this method is not obvious to the players he directs them to the correct solution whilst still in character. This makes for a comical and ridiculous situation where the NPC being interrogated is helping the players along, drawing a laugh from Player Right.

We can see that the orchestrator is set on players using the tools and following the track that he has provided in game. He could easily have acquiesced to the player’s bribery attempts or their reasoning that *Helena* was deceased to give them the information, but instead he insists on them finding and using the truth serum. This orchestrator wanted the players to experience *Persiflage* in full, stating in the post session interview, “*I wanted them [the players] to use all the items and talk to every character.*”

It appears that orchestrators have their own agenda when playing *Persiflage* and aim to guide their players through this vision. In order to do so, they employ blocking and directing tactics, whilst rarely enabling player directions if it conflicts with or adds complexity to their prepared path. We must not forget that the orchestrator in *Persiflage* is also very much playing a game and has their own goals and agenda for fun.
6.3.5 Acting Improvisation

When the orchestrator introduces an unprepared idea or theme into the game, we coded the utterance for **acting**. In contrast with **reacting** utterances as these are unprompted by the players. Recall that **reacting** utterances are reactions brought on by players’ demands, questioning, and actions during gameplay. Contrastingly **acting** utterances are ideas that orchestrators introduce on their own initiative.

The occurrence of **acting** utterances is low with only eleven coded utterances over all five sessions of the entire study. Eight of these occur in group one, where the orchestrator fabricated a recurring clue. The conspiring villagers are confused over the date of Helena’s supposed death, providing the players with a hint that something was amiss. The following excerpts are snippets of conversations where the orchestrator plays different characters, giving the players conflicting information.

**Player Left:** Okay, only if you trade us for some information and cheese.
**Player Right:** ...about Helena

**Orchestrator (as Annie):** Information? my sister Helena died three days ago. Unfortunately, that’s all the information I can give you.

**Orchestrator (as Annie):** I don’t know what scheme you’re talking about, Helena died one day ago.
**Player Left:** You said three days ago!
**Orchestrator:** Err, did I now? I don’t think so, she died yesterday.
**Player Right:** Hmmm, liar.

**Orchestrator (as Hamish):** Yes it broke my heart to hear it, but I’ve been in love with Helena ever since she first left this town for the royal city. And once she was back I was so excited and I’ve just been devastated ever since she passed away two days ago.
**Player Left:** Two days ago!?
**Player Right:** What, are people like changing it?
**Player Left:** Well we're here about Helena.

**Orchestrator:** Helena? I thought she died four days ago.

**Player Left:** Alright, what's going on here?

**Player Right <throws up her hands>:** What...

The orchestrator has set up a clue that spans over multiple interactions, and so accounts for eight utterances in total. The confusion amongst the NPCs was not outlined in the orchestrator’s preparatory notes and unprompted by the players, therefore we coded it as **acting** improvisation. Additionally, he proudly mentions in the post session interview that this is an idea that he thought during the play sessions of and introduced it as the game unfolded.

With only three total utterances coded for **acting** improvisation outside of the above example, we see very little initiative by orchestrators to introduce new ideas whilst the game is in progress. Where they are present, they are usually small isolated facts that add flavour or humour, or give additional explanations for situations, without significantly changing storylines. This may be another indication that orchestrators are more comfortable playing the game in their own prepared story space.

**6.3.6 Conclusion**

Coding for improvisation relies on the orchestrator’s pre-session enrichment documents to identify prepared material versus improvised ideas and storylines. When coding for improvisation, we divide the occurrences into four categories.

Orchestrators are **reacting** when presented with unforeseen lines of questioning and dialogue and is forced to respond coherently and contextually. **Acting** is improvisation that the orchestrator performs on their own volition without the players triggering with their investigative action. **Enabling** and **blocking** both deal with how the orchestrator handles players’ initiatives.
**Enabling** codes behaviour where orchestrators are flexible, allowing and accommodating players in their chosen direction. Conversely, **blocking** represents the opposite where orchestrators redirect players back into the prepared story path. **Directing** is not a form of improvisation, but is also representative of this behaviour where the orchestrator is actively directing them through the story, either by way of clues or with explicit directions.

**Reacting** is the most common form of improvisation representing slightly over fifty percent of all improvised utterances by orchestrators. The prevalence of **blocking** and **directing** over **enabling** and the minimal use of **acting** might be indicative of orchestrators generally being more comfortable playing within their prepared stories than exploring unprepared lines. We venture to attribute three reasons why an orchestrator would prefer the game to stay in prepared storylines. Firstly, we speculate that the cognitive load might be heavier when having to mentally prepare a new story whilst carrying an ongoing conversation with players. Secondly, orchestrators were aware of the limitations of *Persiflage’s* game environment and time constraint of the study session. Three of the five orchestrators stated in the post-session interview that they felt they were forced into staying within the storyline at least for the purpose of the study and in order to allow the players to complete the game within the half hour time limit. Finally, orchestrators may have wished to guide players through the game experience that they had imagined and prepared. When players depart from this, the orchestrator decided to redirect them back towards a storyline that they want played out.

### 6.4 Chapter Summary

In this chapter, we look at how a narrative develops and emerges when *Persiflage* is played. The game’s story is conceived by the orchestrator before play begins. Orchestrators personalize and enrich a skeletal outline of a plot that we provide to them, incorporating the
game’s characters and items into the story. We find that the information in their notes helps the orchestrators build mental models for the inhabitants of Northaven, defining their character traits and relationships with each other. This information will inform how the NPCs behave in game. Some clues are also defined in these notes, which if followed will lead players towards the puzzle’s solution. We see that this information materializes in the play sessions, showing that the orchestrators are invested in, and take ownership of these stories.

Players make bids to alter the course of the story as natural consequence of playing the game and questioning the NPCs. We compare these bids with the concept of offers from improvisational theatre. The players’ offers are coded for **flavour**, **story**, and **game**. Each of these types of offer affects the game’s narrative differently. **Flavour** offers adds colour and flourish to the events and characters in Persiflage, **story** offers challenges the orchestrator to redevelop the game’s storylines on the fly, and **game** offers give the players new objectives after their main goal has been accomplished.

As players make offers, the orchestrators must respond and attempt to resolve them. Improvisational utterances from orchestrators are coded into one of four categories, **acting**, **reacting**, **enabling**, and **blocking**. **Acting** occurs when orchestrators decide to improvise unprompted by the players and on their own accord. This type of improvisation is rarely seen. **Reacting** is the most common form of observed improvisation where orchestrators answer the players queries. When the players follow threads that the orchestrator had not prepared for, they are forced to improvise. **Enabling** and **blocking** tend to be reaction to story and game offers from players, that seek to alter the game’s narrative in potentially complex ways. Along with **directing**, we see much more **blocking** than **enabling** behaviours from orchestrators. This serves to retain the game in prepared storylines. We venture to ascribe these to the facts that
orchestrators want to minimize the complexity of their task and that they take ownership of their prepared story which they want the players to experience.
Chapter 7

Discussion

7.1 Playing Inside a Magic Circle

To better understand the concept of how players verbally engage with Persiflage we can look to the concept of the magic circle. Johan Huizinga coined the term “magic circle” to denote a boundary, not only in space and time, but also as a societal construct, that delimits where and how a game and play occurs [18]. The magic circle establishes behaviours, etiquettes, regulations and their adherent consequences that form the terms of a game, separate from society as a whole.

In the context of playing a character, behaviours within the circle are those that an in-game character might exhibit. Behaviours outside of the circle are those that we would expect the player outside of the game to show, but that their assumed characters could not exhibit. For example, contextually leaving the game and discussing a school assignment breaks the magic circle. Williams et al. argue that roleplay cannot exist without a strong magic circle [49]. However, both Consalvo [10] and Castronova [8] show that in the expansive ecosystems of massively multiplayer online role-playing games, the magic circle is porous. A culture of cheating, meta-gaming, and real-currency markets for in-game goods exists that straddle the game and real worlds.

We observe in our study that players and orchestrators use natural language interactions in full confidence that they will be understood by their conversational partners. Participants are aware that they are playing a game with friends, and stretch the magic circle as such. They take ownership of the game and incorporate their own ideas, views, and experiences to entertain both themselves and their peers. Rather than finding the magic circle porous, we find it to be expansive and elastic, stretching beyond the borders of Northaven to include colloquial vernacular and
references to modern day pop-culture and politics. Yet the magic circle is strong enough that players and orchestrator stay rooted in the game for the duration of the play session. Figure 5.1 shows that players are the principal instigators in stretching the magic circle with jokes and slang whilst period language originates almost exclusively from orchestrators. The clash of styles makes for humorous and entertaining dialogue exchanges.

Even though orchestrators are not as active in expanding the magic circle, examples presented earlier show that they tend to be accommodating and play along when the players do so. For example, orchestrators happily acknowledged the absurdity of finding cheese on the ground or the presence of the FBI in a medieval village (sections 5.2 and 5.3.1).

Both players and orchestrator committed fully to play. When playing Persiflage, all participants gave their full attention to the game. Banter and external references unfailingly alluded to in-game devices or events. We observed no events where players or orchestrator opened topics unrelated to the ongoing game.

Although both orchestrators and players are considered game-players, their roles are inherently asymmetric. Orchestrators provide an experience in which players explore and play, spending most of their time developing the game’s narrative as shown in figure 5.2. Players also spend their time progressing the story, but they have the additional task of coordinating with their fellow player, and devote some utterances to this end. During both coordination and storytelling portions of dialogue, we see that both players and orchestrators are content to mix in banter.

As we saw earlier, orchestrators stretch the edges of the magic circle to a lesser extent than players. The banter they engage in is topical to the game setting, providing idiosyncrasies to their characters, and making small talk and gossip that one might expect in a quaint medieval village. Players, on the other hand, incorporate pop-culture and current politics in the service of humour.
7.2 Personalities and Group Dynamics

Depending on the personalities involved and whether a participant played as a player or orchestrator we saw three different group dynamics arise organically over the course of the study. Figure 5.3-right shows the relative dominance of participants based on the number of words spoken. We saw that a dominant orchestrator might stifle player creativity and may frustrate their efforts at exercising their agency. On the other hand, co-dominant players could overwhelm the orchestrator.

More study would be required to generalize these patterns, but in our sample of five groups, we saw that groups with a dominant orchestrator (two and three) were less successful in involving the players. Although, brief and passing, there was periods of friction between players and the orchestrator. Group four, unique in that both players were co-dominant, saw the orchestrator at times become overwhelmed and express frustration. This group successfully completed the game, albeit sidetracking and disruption from the players. Groups one and five were both single player dominant and seemed most harmonious in that they achieved a good balance of joking and teasing whilst playing to the game objectives.

7.3 Preparing Persiflage’s Story

Persiflage’s narrative is conceived by the orchestrator during the preparatory session (chapter 4.2). The orchestrators take a large degree of ownership in their stories; in every group the orchestrator’s personal twists on Persiflage’s story from their preparatory notes appears in the game during play. Over the course of a play session, the orchestrator at times will relinquish
authorial control of the narrative to the players who make their own contribution to the story in the form of ‘offers’.

Tychsen in his study of the way game masters share authorial control with players in traditional RPGs writes [44],

*The smaller the degree of pre-definition of the game story, the more challenging it is for the GM to keep the game story under his/her control, and the more the players will be able to impact the story. Further increasing player freedom reduces the GM to establishing the fictional game world and possibly some key situations or NPCs, but otherwise falls back to a role where he/she reacts to the actions of the players and attempts to improvise a story.*

That is, if the prepared portion of the game’s narrative is loosely defined, the players are given a greater amount of agency to affect the story. The orchestrator (or game master) has fewer pre-conceived facts that need to be reconciled with players’ offers as the gameplay unfolds.

Our data follows this trend. The orchestrators from groups one and five defined their story with comparatively fewer coded sentences (15 and 9 respectively). During the play session, they also produced a lower combined blocking and directing utterances (19 and 8 respectively). The orchestrators from groups three and four, used 32 and 40 coded facts to prepare their story which results in 25 and 31 blocking and directing utterances in their play session. Group two is anomalous in that it does not follow this trend; the orchestrator used only 12 coded statements to prepare the narrative, but made a combined 28 blocking and directing utterances during play.

When players make authorial contributions, they do so in context of the game, when they question the NPCs for information that could lead them to Helena. Their intent when questioning is not so much to tell a story, but to solve the murder mystery puzzle. This is consistent with our earlier finding of players (and orchestrator) remaining within the magic circle by staying in character and focusing on the game for the duration of the play session.
7.4 Sharing Authorial Control

When coding for players’ offers, we found that around 40% of them fell in the flavour category. Further, more than half of orchestrator’s instances of improvisation fell into the reacting category. Together, these figures show us that a large portion of the emergent aspect of Persiflage’s stories are superficial; the players and orchestrator inject their own personalities and flourish into the narrative whilst the underlying story structure remains unchanged. These findings are also consistent with the previous findings that both players and orchestrator are happy to banter and joke in between storytelling. The fact that orchestrators made six times as many blocking utterances than enabling ones no doubt contributes to the unchanging underlying story.

In section 6.3 we saw that orchestrators generally reject players’ offers by blocking rather than enabling them. Recall that in section 6.2 we compared players’ bids to alter the storyline to the concept of offers in improvisational theatre. When accepting an offer, an improvisational actor embraces its truth and proceeds to develop the story around it. A principle followed by improvisational actors is to, “accept all offers” in the spirit of producing a collaborative and emergent performance [40].

Although the player-orchestrator dynamic in Persiflage is similar to improvisational theatre in that players and orchestrator collaboratively build a story in character, they are not equivalent. The orchestrator, in particular, has prepared a narrative arc for the game and an end goal to guide the players towards (chapter 6.1) and therefore takes initial ownership of the story. Whereas improvisational actors creating a scene on stage are equal participants, the player-orchestrator dynamic is inherently asymmetrical.
The most challenging offers to handle are those that carry information altering existing character traits or other previously established facts in the scene [40]. This is because it requires the actor to believably reconcile conflicting pieces of information in a way that is consistent to the ongoing narrative.

The orchestrators may find themselves in a such a situation; where the players’ offers conflict with their pre-conceived story. In these cases, it may be altogether easier to disallow and reject these offers, rather than having to do the work of consolidating the additional information with a prepared game plan. Tychsen describes how game masters navigate similar scenarios by giving the players an “illusion of authorial control.” [44]

E.g., a player may direct a character to perform an action that eliminates an NPC, and have the credibility to do so. However, the GM may subsequently decide to resurrect the opponent NPC, or introduce a different NPC with similar importance to the game story. The player may not ever realize that his/her action did not result in a substantial alteration of the game story, merely a change in the delivery of it.

The orchestrators in this study did not exhibit this level of flexibility with their stories, opting rather to deny the possibility of a player action that would have ruined their game plan. However, recall that we deliberately recruited players who were not experienced with traditional RPGs (section 4.1). With more practice at Persiflage and improvisational interactions in general, orchestrators may begin to more elegantly resolve troublesome offers from the players.

7.5 Implications for Design

Persiflage demonstrates that open-ended interaction through orchestration provides a successful way of enhancing player creativity in digital games. Players exercise their creativity by playing the game on their own terms, using modern language and importing anachronisms on top
of the game’s setting, whilst staying rooted in the game world. References and jokes relate back to the events and characters of Northaven. Players remain engaged and eagerly follow the game towards its objectives. This work shows that it is possible to create games that follow the conventions of computer role-playing games, while supporting creative and open-ended interaction.

It was important to the success of this approach that we provided an objective to help structure this open-ended play. Players overwhelmingly directed their efforts towards resolving the murder mystery and all groups ultimately played with the intent of finding Helena. A precise goal gives the players direction and some structure for the orchestrator to build a story around.

The preparation that the orchestrator puts into the game’s narrative affects the way that the game plays and the degree to which players are able to make authorial contributions. Players can make more contributions when the orchestrator’s plans are sparse, perhaps because their offers are less likely to conflict with orchestrator’s plans. A loosely defined story allows for more open-ended play, but requires greater investment from both players and orchestrator.

Persiflage uses an orchestrator to role-play NPCs, who very much engages in play while performing her duties. The orchestrator accommodates, jokes, and banters with the players, helping them when they get stuck. It is critical for the game’s mechanics to allow the orchestrator to be as engaged and invested in the experience as the players.

Because the orchestrator is such an integral part of the Persiflage’s open-ended storytelling, the game and the players’ experience change significantly between groups. Collaborative storytelling is very much a cooperative effort [44], requiring the orchestrator and players to find a balance of authorship, banter, and storytelling. Whilst all the study groups reported in the post-session interview that the experience was an enjoyable one, we saw that some of the narratives were more streamlined than others.
In the same vein that players with quick reflexes fare better at action games and players capable of rapid decision making excel at strategy games, players who work well in groups may simply be better suited to Persiflage’s collaborative style of game play. Despite being unenforceable in game, parties may benefit by arriving at an understanding that the orchestrator will accommodate player’s creative liberties, but that these liberties are not limitless. An orchestrator should share authorial control with players, but players pushing too far from the story that the orchestrator has prepared can introduce friction, inhibiting the orchestrator’s ability to maintain a coherent narrative.
Chapter 8

Conclusion

This thesis has introduced and demonstrated that an orchestrated computer roleplaying game provides a viable and enjoyable vehicle for players to exercise their creativity and play through a collaborative and emergent story experience with an orchestrator. Using our implementation of an orchestrated CRPG, which we named *Persiflage*, we ran an exploratory study with the goal of investigating aspects of play centered around the research question, “*How do players and orchestrator make use of free-form dialogue and shared authorship in a digital roleplaying environment?*”

Five groups of two players and one orchestrator played *Persiflage* for thirty minute sessions, during which we recorded their dialogue. We used an open-coding process to find patterns in their dialogue pertinent to our research question.

We find that players enjoyed gameplay by personalising the experience through using their own jargon and vernacular and importing references to their own experiences. This manifested in game as an abundant use of slang in the players’ dialogue as well frequent references to modern pop-culture and current events. The orchestrator was accommodating to the players, but they themselves tended to play the NPCs more to the setting of the game by employing faux period language. The juxtaposition of the clashing styles made for humorous and absurd interactions which serve to entertain both players and orchestrator.

Despite this aloofness to the game’s setting, the players were very much focused on the gameplay and objectives of *Persiflage*. We find that both players and orchestrator remained rooted in the game world and devoted their efforts to solving the murder mystery. Although
banter and joking were a frequent occurrence in the game’s conversations, we saw that they remained in context of the game world.

By allowing open-ended conversations, we see that dialogue becomes non-rigid as one might expect if using set utterances. Players and orchestrators included laughter and interruptions in their conversations which made for more dynamic interactions. This open environment allowed a number of different group dynamics to arise. Dominant orchestrators could crowd out players and reduce their opportunities to exercise their agency. Conversely, overly boisterous players could make it difficult for the orchestrator to realize their vision of the game narrative. A slightly more dominant player coupled with a more reserved partner seemed like a good balance that the orchestrator was able to handle and produced the experiences with the least friction.

We find that orchestrators invested in the preparation of the game. Character traits and behaviours which they had described were reflected and realized in the play sessions. Orchestrators were eager for players to experience the game as they had envisioned it and to help players along over the course of play by dropping clues and suggestions.

Players made authorial contributions over the course of the conversational gameplay by questioning the NPCs. The conversations between players and NPCs incrementally reveal the game world as they attempt to discover Helena’s fate. We compare players’ questioning to offers in improvisational theatre which prompts orchestrators to react and improvise to players’ requests. Through conversations, orchestrators collaboratively expanded the game’s narrative with players. However, if pushed for too much detail or asked to modify their prepared story structure to a large extent, they tended to reassert authorial control and redirect the game to prepared storylines.

Based on these findings, we proposed guidelines for designing orchestrated CRPGs:
Although Persiflage is open-ended, some structure is required and a story and objective allows the game to be grounded around a goal that can be achieved. The structure of the story can be variable and if loosely defined allows more agency on the part of the players.

The orchestrator although not a player in the same sense as other two players is still very much a game player with goals to achieve, deriving enjoyment from roleplaying the NPCs. The game should be engaging for the orchestrator as much as for the players.

As with other roleplaying games, players need to suspend their disbelief while embarking on this form of adventure. Players can test the boundaries of believability and do so frequently for the sake of humour, but if there is too much disruption the experience can be affected adversely. Collaborative storytelling is, ultimately a cooperative endeavor and happens best when there is good chemistry within the group.

Future work might be focused around allowing orchestrators more adaptability and a greater ability to improvise with the players. For instance, expanding Persiflage’s toolset to allow custom characters or items to be created at runtime might allow orchestrators to be more accommodating to players’ offers. Players’ abilities might also be expanded to allow more actions than walking, talking, and trading items. Almost all players were curious if they could run or jump, and some players wanted to engage in combat. Permitting these possibilities would allow us to see what sorts of narrative might emerge when players and orchestrator are given freedoms beyond conversation.

It might also be of interest to see how players behaved if they were asked to interact with what they believe is an artificial natural language interpreter. Instead of using speech to communicate with the players, the orchestrator could interact using typed dialogue to hide the fact that they were human. Both Mateas et al. and Lessard report that players of Façade [28] and the games of LabLabLab [24] would test the limits of the interpreter with increasingly complex or
nonsensical inputs. If we present the players with what appears to be an artificial intelligence capable of human levels of comprehension and communication, we might be able to see how players would behave using open-ended dialogue with a more traditional style of CRPG.
References


Appendix A: Letter of Consent

CONSENT FORM:
Exploring Game Orchestration in the context of storytelling.

I have read the letter of information describing this study being conducted by Bernard Cheng and Nicholas Graham of the School of Computing at Queen’s University. I understand that I will be participating in a research project whose structure and procedures are described in the attached letter of information. I have had the opportunity to ask questions related to this study, and have received satisfactory answers to any questions.

I am aware that my participation is voluntary and that I may withdraw my study participation at any time without penalty by advising the researcher. I understand that all data will be kept confidential and will be securely stored.

I understand that I may address any questions about study participation to Bernard Cheng (2bc1@queensu.ca), or Nicholas Graham (graham@cs.queensu.ca, 613-533-6526) and that any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board (chair.GREB@queensu.ca or 613-533-6081).

Please circle one Please initial your choice

I consent to the use of non-identifying quotations in academic publications, talks, presentations, and promotions.

YES NO __________

I consent to the use of video and still images recorded during the play session in academic publications, talks, presentations, and promotions.

YES NO __________

_________________ _______________ _______________
Participant Name Signature Date

Please retain a copy of the letter of information and consent form.
Appendix B: Orchestrator’s Letter of Information

Letter of Information (Orchestrator)
You are invited to participate in a research project directed by Bernard Cheng and Nicholas Graham (EQUIS Laboratory, School of Computing) at Queen’s University. The following document describes the study procedure including the tasks that you will be asked to perform. Should you have any questions after reading this letter, we will be happy to address them.

This study’s aim is to explore the interaction techniques associated with game orchestration. You are one participant in a group of three. As the orchestrator, you will be asked to manage the game experience and flow of the game from behind the scenes. Prior to the play session, you will attend an introductory session without the players, in which you will be given a chance to familiarize yourself with the orchestrator’s interface as well as some overview of the game story and basic instruction on how to accommodate player actions. No recording or actual experimentation will take place during this session. This session is expected to last roughly thirty to forty-five minutes and will not exceed an hour. A second experimental session will follow which will involve the players. You will play through a game session whilst being recorded. During this second session you will also be asked to complete three questionnaires as well as participate in a semi-structured interview that will be conducted as a group. The play session will be recorded for both audio and video data. The gameplay will not exceed thirty minutes in duration and the questionnaires and interview together will take roughly another thirty minutes for an approximate total of sixty minutes for the second session.

You will receive $40 ($20 per session) as thanks for giving your time as a study participant. Your participation is voluntary, and you may withdraw at any time during the study by alerting the experimenter. Should you choose to withdraw, you must do so before the conclusion of the study session, in which case all data obtained from withdrawn participants will be destroyed.

We ask your permission to use still images, short video clips, as well as quotes generated from your play session and subsequent interview in academic publications, presentations, and publicity for the project. Quotes will be anonymized and your name will not appear in published materials. You may decline to offer permission in which case we will not use any media you are associated with. Any and all data will be made secure and made available only to the researchers associated with the project; all digital data will be stored on a password protected encrypted drive, and any physical copies stored under lock and key in the EQUIS Laboratory at Queen’s University.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen’s policies. This research has been approved by Queen’s University General Research Ethics Board. However, the final decision about participation is yours alone.

Any questions about study participation may be directed to members of the research team: Bernard Cheng (2bc1@queensu.ca), or Nicholas Graham (graham@cs.queensu.ca, 613-533-6526). Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREB@queensu.ca or 613-533-6081.

Please retain a copy of the letter of information and consent form.
Appendix C: Player’s Letter of Information

Letter of Information (Players)
You are invited to participate in a research project directed by Bernard Cheng and Nicholas Graham (EQUIS Laboratory, School of Computing) at Queen’s University. The following document describes the study procedure including the tasks that you will be asked to perform. Should you have any questions after reading this letter, we will be happy to address them.

This study’s aim is to explore the interaction techniques associated with game orchestration. You are one participant in a group of three. As one of two players, you will play through a murder mystery style game using a game controller to navigate the game world and interact with a number of non-player characters. The game will be orchestrated by the third member of the party, the orchestrator. The play session will be recorded for both audio and video data. As part of the study you will also be asked to complete three questionnaires as well as participate in a semi-structured interview that will be conducted as a group. The gameplay will not exceed thirty minutes in duration and the questionnaires and interview together will take roughly another thirty minutes for an approximate total of sixty minutes for the session.

You will receive $20 as thanks for giving your time as a study participant. Your participation is voluntary, and you may withdraw at any time during the study by alerting the experimenter. Should you choose to withdraw, you must do so before the conclusion of the study session, in which case all data obtained from withdrawn participants will be destroyed.

We ask your permission to use still images, short video clips, as well as quotes generated from your play session and subsequent interview in academic publications, presentations, and publicity for the project. Quotes will be anonymized and your name will not appear in published materials. You may decline to offer permission in which case we will not use any media you are associated with. Any and all data will be made secure and made available only to the researchers associated with the project; all digital data will be stored on a password protected encrypted drive, and any physical copies stored under lock and key in the EQUIS Laboratory at Queen’s University.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen’s policies. This research has been approved by Queen’s University General Research Ethics Board. However, the final decision about participation is yours alone.

Any questions about study participation may be directed to members of the research team: Bernard Cheng (2bc1@queensu.ca), or Nicholas Graham (graham@cs.queensu.ca, 613-533-6526). Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREF@queensu.ca or 613-533-6081.

Please retain a copy of the letter of information and consent form.
Appendix D: Persilage’s Story Outline

Dear Orchenator,

In this study, you will tell a collaborative story with two of your friends. We hope that you will be able to create and play out a story that is both compelling and enjoyable. This document provides a skeleton story. We ask you to fill out and customize the characters and plot to your liking. As the orchestrator your in game task is to develop and adapt the story as the players. Keep in mind that the play session is limited to half an hour.

The story takes place in the sleepy town of Northaven. It is a quiet mountain town which sees few visitors. So it is unusual when two investigators by the names of Smythe and Wiggins (played by the players) arrive in pursuit of an escaped felon known only as Helena. It appears that they have reached a dead end on their quest as it is in Norhaven that Helena has met her end...

There are a number of inhabitants in Northaven. As the town is small, they are well acquainted with one another and familiar with the town gossip. We ask you as the orchestrator and “director” of the story to fill in at least one additional detail about each character and further define their relationships with each other.

Helena is a fugitive on the run, she has arrived in Northaven barely ahead of her pursuers and is now in hiding. She has come to this town in particular because she believes she can find help here.

Add an interesting fact about Helena: What grave crime has Helena committed that two investigators are sent to apprehend her? Maybe she hasn’t committed a crime at all and is being framed for someone else’s misdeed?
**Annie** is a young woman who lives in the north end of the town. Secretly she is Helena's sister and with the aid of some of the townsfolks has faked her (Helena's) death. The townspeople hope that they can convince the outsiders that Helena is dead she can live on in peace after they have left the town.

*Add an interesting fact about Annie:* Perhaps Annie is secretly in love with Hamish the grocer? Or maybe Annie likes to garden, and loves talking about different flowers? Perhaps she supplements her income by illegally selling stolen goods together with Beatrice the tavern-keeper?

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**Hamish** is the local grocer. He runs a stall in the town center selling odds and ends from food to day to day supplies. Consequently, he meets most of the townsfolk on a daily basis. His manner is gruff and common, but he is friendly enough.

*Add an interesting fact about Hamish:* Describe some of the goods that he sells, maybe he is a cheese merchant? Give him some gossip about the townsfolk to share with the players. Does he see Magistrate Rufus as a cheap taw-totter?
**Magistrate Rufus** is the official who governs Northaven. He is stoic and rigid and has a penchant of following rules to the letter. He does not know that Helena is alive and would never approve of such a scheme. He has few friends in town.

*Add an interesting fact about Rufus:* Why is he so sullen? Does he have family troubles at home? Maybe he is an outsider who has been sent here to govern Northaven and has never really fit in with the locals.

![Image of Magistrate Rufus]

**Father Andrew** is the priest of the local church. He is elderly and kind which shows in his soft speech and relaxed demeanor. He is a co-conspirator in Annie's and Helena's deception because he believes that Helena is inherently a good person and being wrongfully persecuted. However, he has some misgivings about the whole affair.

*Add an interesting fact about Andrew:* What is his motivation for helping Annie and Helena? Perhaps he knew them since birth and is a bit of a father figure to them?
**Beatrice** is a kindly matronly type who owns the tavern on south road out of town. She is jovial and friendly and an excellent cook. Her role as a tavern keep means she interacts with the few travelers who pass through Northaven. She recalls that someone resembling Helena's description stopped by a few days ago.

**Add an interesting fact about Beatrice:** Is she in on the plot faking Helena's death? Maybe she has a backroom in her tavern where Helena is currently in hiding. Or maybe she does not know about the plot at all and her natural gossipy nature eggs the players on to possible clues.

Recall that as the orchestrator your interaction with the players is limited to conversation with the players whilst roleplaying the non-player characters and trading the set of items available in game. Avoid acting as a third person narrator to players by describing their surroundings to them, and giving them details that are not apparent in the game world.

It is your task to sell to the players that Helena is dead through character conversation while leaving (somewhat obvious) clues that she may actually be in hiding. For instance, the investigators may be presented with a skull as proof of Helena's demise, but an inability to produce the rest of the body when further questioned. Perhaps the townspeople have conflicting and incoherent versions on how Helena actually succumbed to her death. Magistrate Rufus might be oddly suspicious and literally spell out his suspicions to the players.

We wish to give the players a sense of agency. In addition to giving players leads and clues, allow them to pursue leads of their own. If for instance they want to torture a character they suspect of lying for the truth (which is not possible given the in game tools), try your best to accommodate them (perhaps suggest a truth serum instead to avoid some of the more gruesome details!).

At the conclusion of the story allow the players to decide the fate of Helena. Annie and Andrew will advocate for her; maybe they can convince the players that her original crime was not so great (perhaps she was merely stealing food from rich nobles to feed her starving little sister Annie...) Magistrate Rufus may argue that the crime is unforgivable and justice must be done. Give the players a viable alternative in either direction.
Appendix E: GREB Approval Letter

June 03, 2016

Mr. Bernard Cheng
Master’s Student
School of Computing
Queen’s University
Kingston, ON, K7L 3N6

GREB Ref #: GCOMP-087-16; Romeo # 6018515
Title: "GCOMP-087-16 An exploratory investigation on orchestrated storytelling games"

Dear Mr. Cheng:

The General Research Ethics Board (GREB), by means of a delegated board review, has cleared your proposal entitled "GCOMP-087-16 An exploratory investigation on orchestrated storytelling games" for ethical compliance with the Tri-Council Guidelines (TCPS 2 (2014)) and Queen’s ethics policies. In accordance with the Tri-Council Guidelines (Article 6.14) and Standard Operating Procedures (405.001), your project has been cleared for one year. You are reminded of your obligation to submit an annual renewal form prior to the annual renewal due date (access this form at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Annual Renewal/Closure Form for Cleared Studies"). Please note that when your research project is completed, you need to submit an Annual Renewal/Closure Form in Romeo/traq indicating that the project is 'completed' so that the file can be closed. This should be submitted at the time of completion; there is no need to wait until the annual renewal due date.

You are reminded of your obligation to advise the GREB of any adverse event(s) that occur during this one year period (access this form at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Adverse Event Form"). An adverse event includes, but is not limited to, a complaint, a change or unexpected event that alters the level of risk for the researcher or participants or situation that requires a substantial change in approach to a participant(s). You are also advised that all adverse events must be reported to the GREB within 48 hours.

You are also reminded that all changes that might affect human participants must be cleared by the GREB. For example, you must report changes to the level of risk, applicant characteristics, and implementation of new procedures. To submit an amendment form, access the application by at http://www.queensu.ca/traq/signon.html; click on "Events"; under "Create New Event" click on "General Research Ethics Board Request for the Amendment of Approved Studies". Once submitted, these changes will automatically be sent to the Ethics Coordinator, Ms. Gail Irving, at the Office of Research Services for further review and clearance by the GREB or GREB Chair.

On behalf of the General Research Ethics Board, I wish you continued success in your research.

Sincerely,

[Signature]

John Freeman, Ph.D.
Chair
General Research Ethics Board

c: Dr. Nicholas Graham, Supervisor