

What to Why to How: A Game Design Speedrun

Ruben R. Puentedura, Ph.D.

1. *What*

Formal Definition of **Play** (Salen & Zimmerman)

“Play is free movement within a more rigid structure.”

Formal Definition of **Game** (Salen & Zimmerman)

“A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.”

Working Definition of **Sandbox** (Puentedura)

“A sandbox is the result of relaxing one or more of the definitional aspects of a game.”

Formal Definition of **Game** (Salen & Zimmerman)

“A game is a **system** in which players engage in an artificial conflict, **defined by rules**, that results in a quantifiable outcome.”

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2. *Why*

Successful Games (Koster)

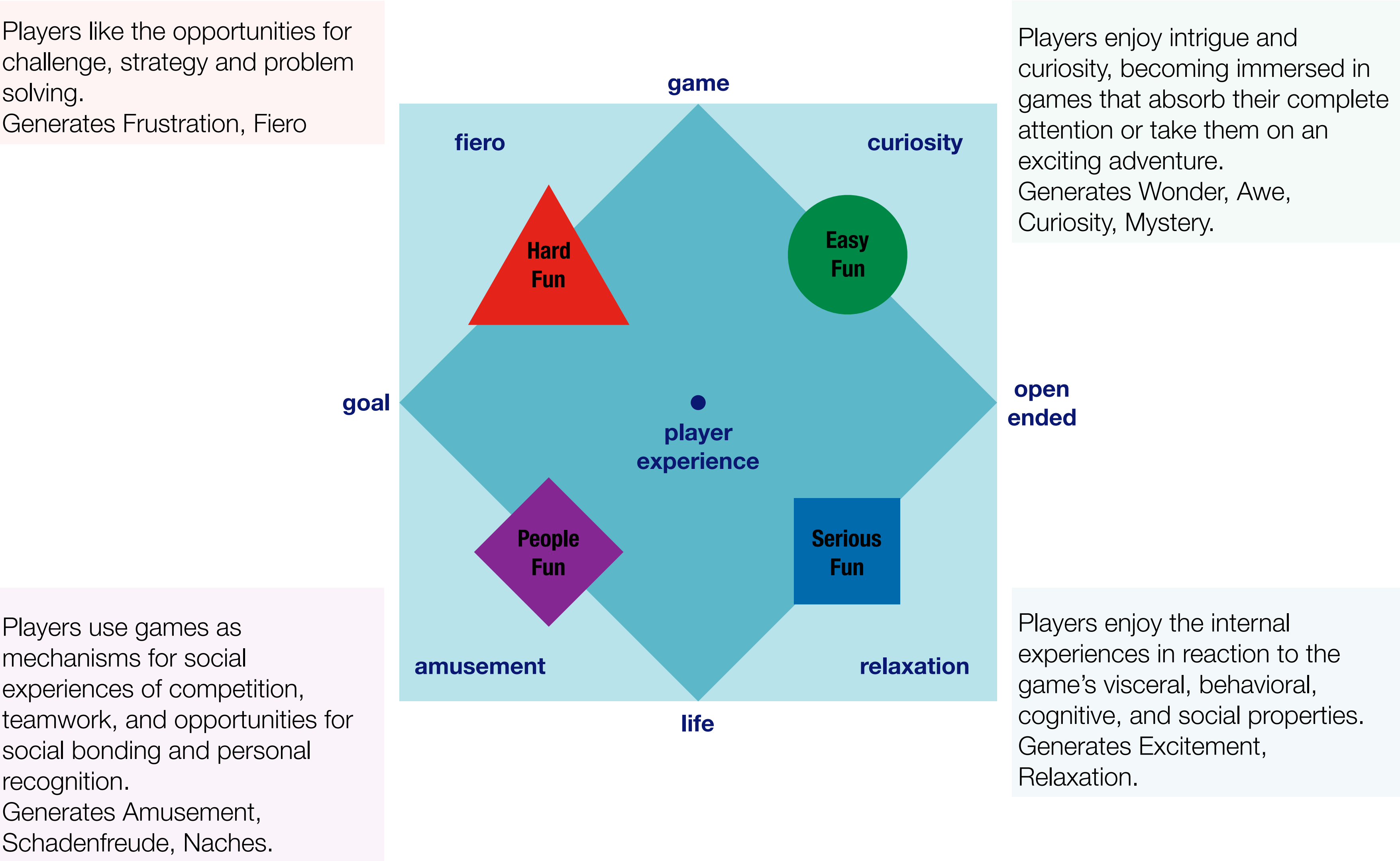
Successful Games	
Include These Items...	...To Avoid
Preparation before challenges	Results due to pure chance
A sense of a game space	The perception of the game as trivial
A solid core mechanic	The game not being perceived as a game
A range of challenges	The game being exhausted too quickly
A range of required abilities	The game being perceived as simplistic
Skill in using the required abilities	The game being perceived as tedious

Also Have...	...Because
Variable feedback	Players like to see greater skill result in greater rewards
Ways to accommodate beginners & experts	Beginners need not get clobbered, or experts “bottom feed”
A definite cost for failure	Players feel cheated by “never-lose” games

Boring Games (Koster)

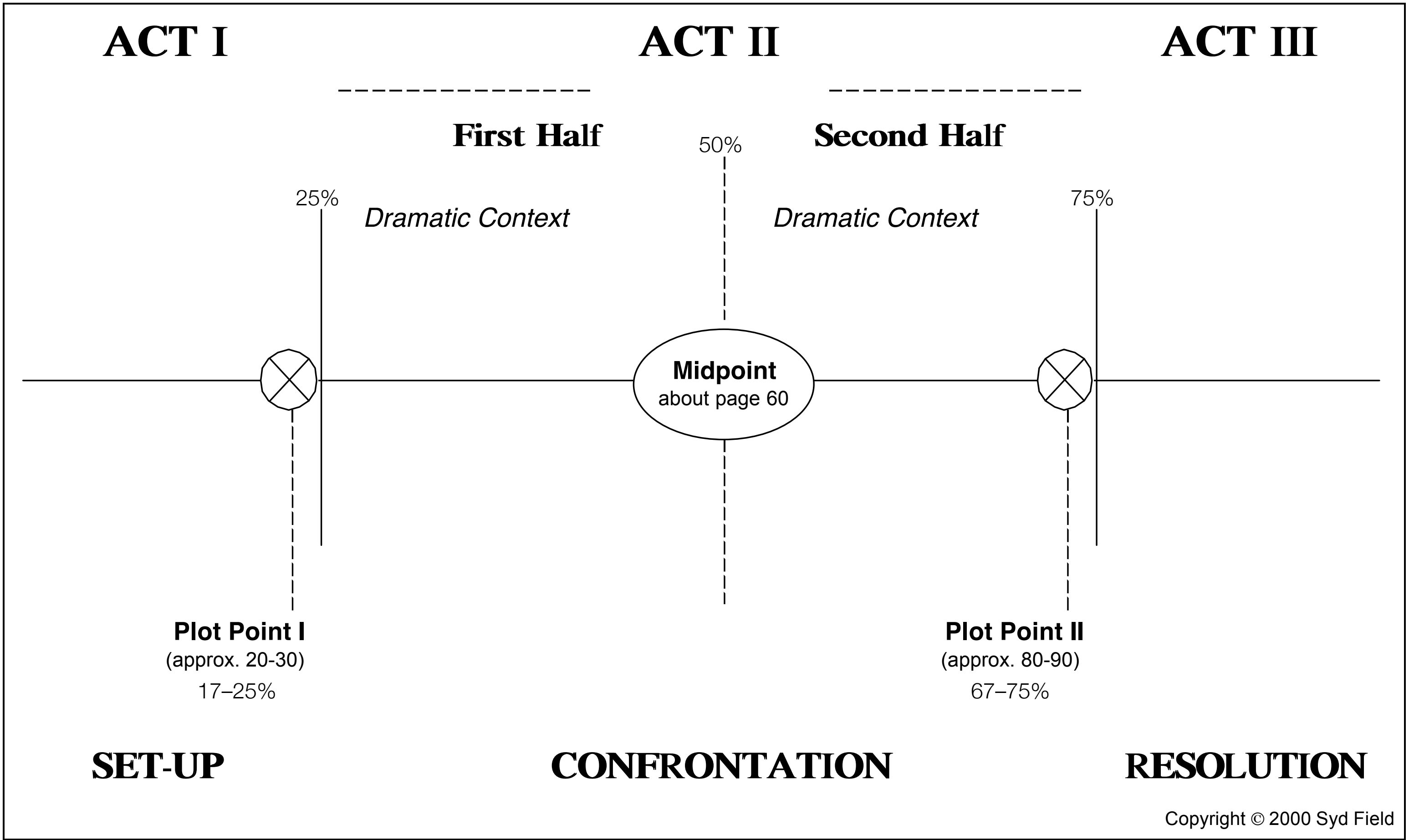
In Boring Games	
When Players Say...	...They Mean
The game is too easy	Game patterns are too simple
The game is too involved	They are uninterested in the info required to detect patterns
The game is too hard	Patterns are perceived as noise
The game becomes too repetitive	New patterns are added too slowly
The game becomes too hard	New patterns are added too fast
The game runs out of options	All game patterns are exhausted

Four Keys to Emotion in Games (Lazzaro)

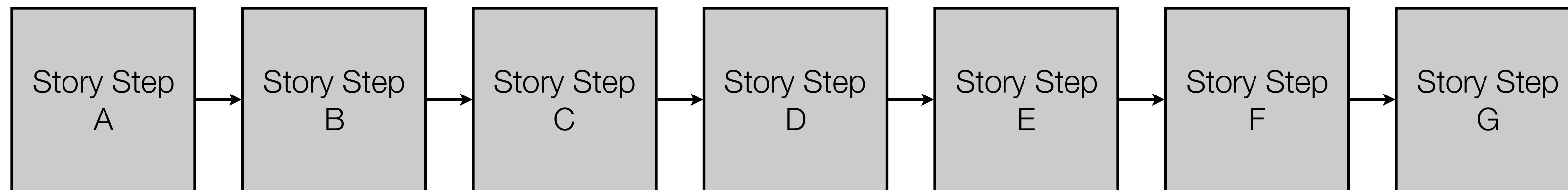


3. *How*

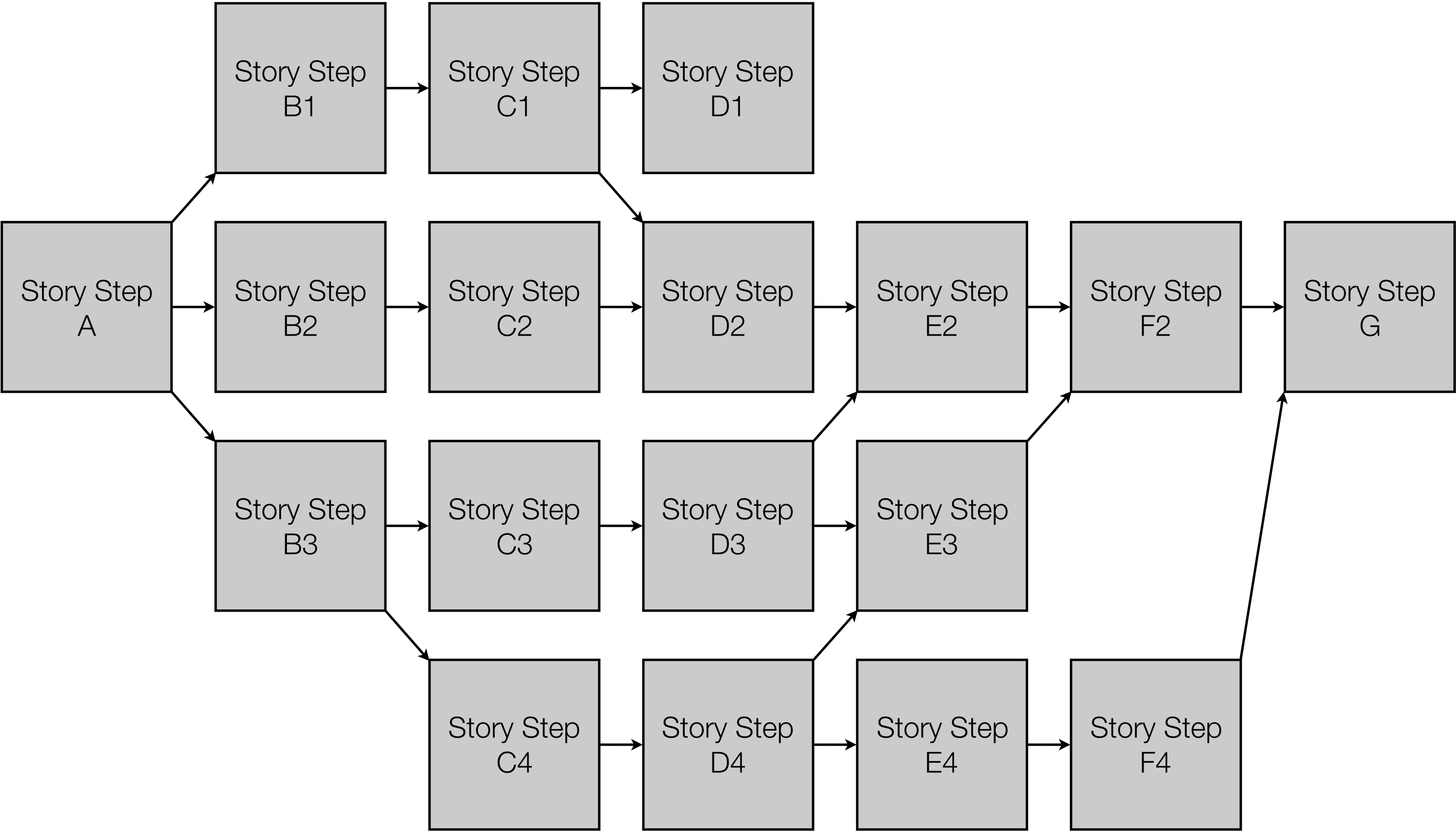
Basic Screenplay Design (Field)



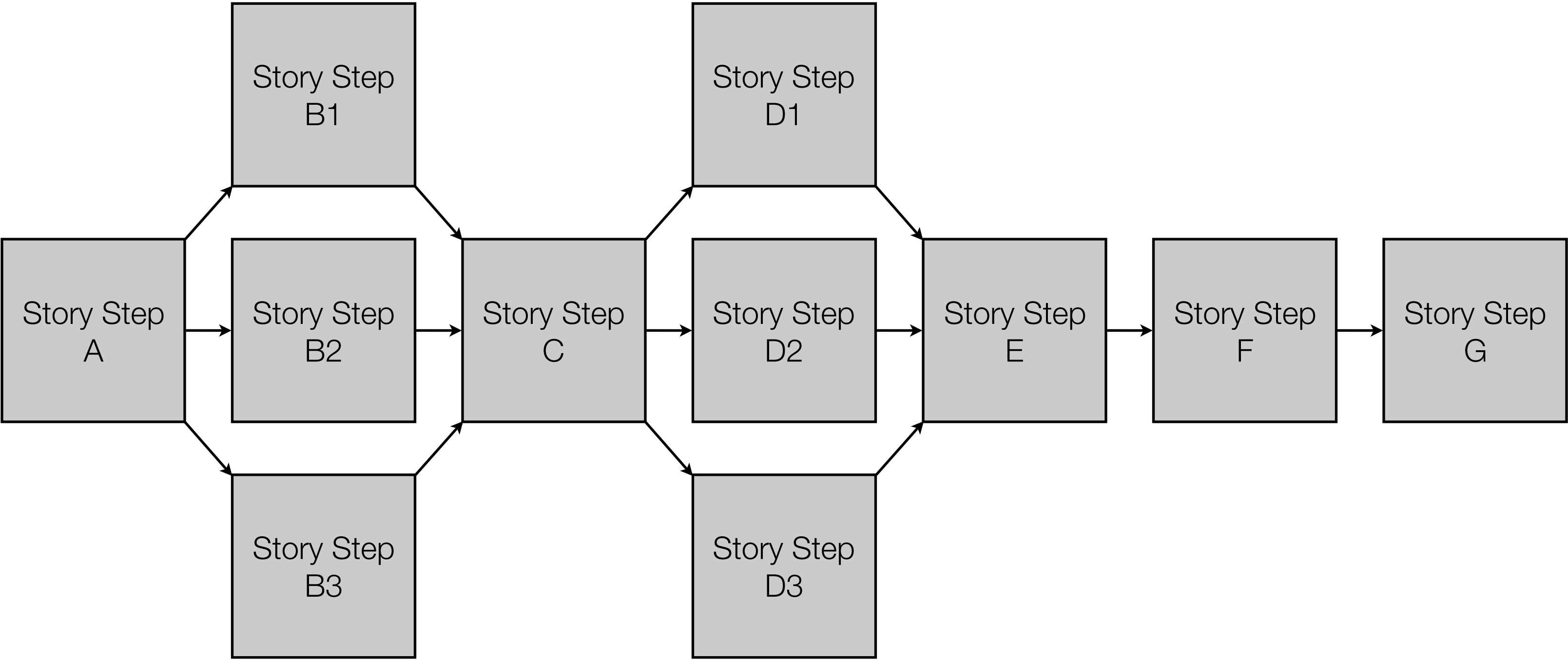
Storytelling for Games (Sheldon) – Linear Storytelling



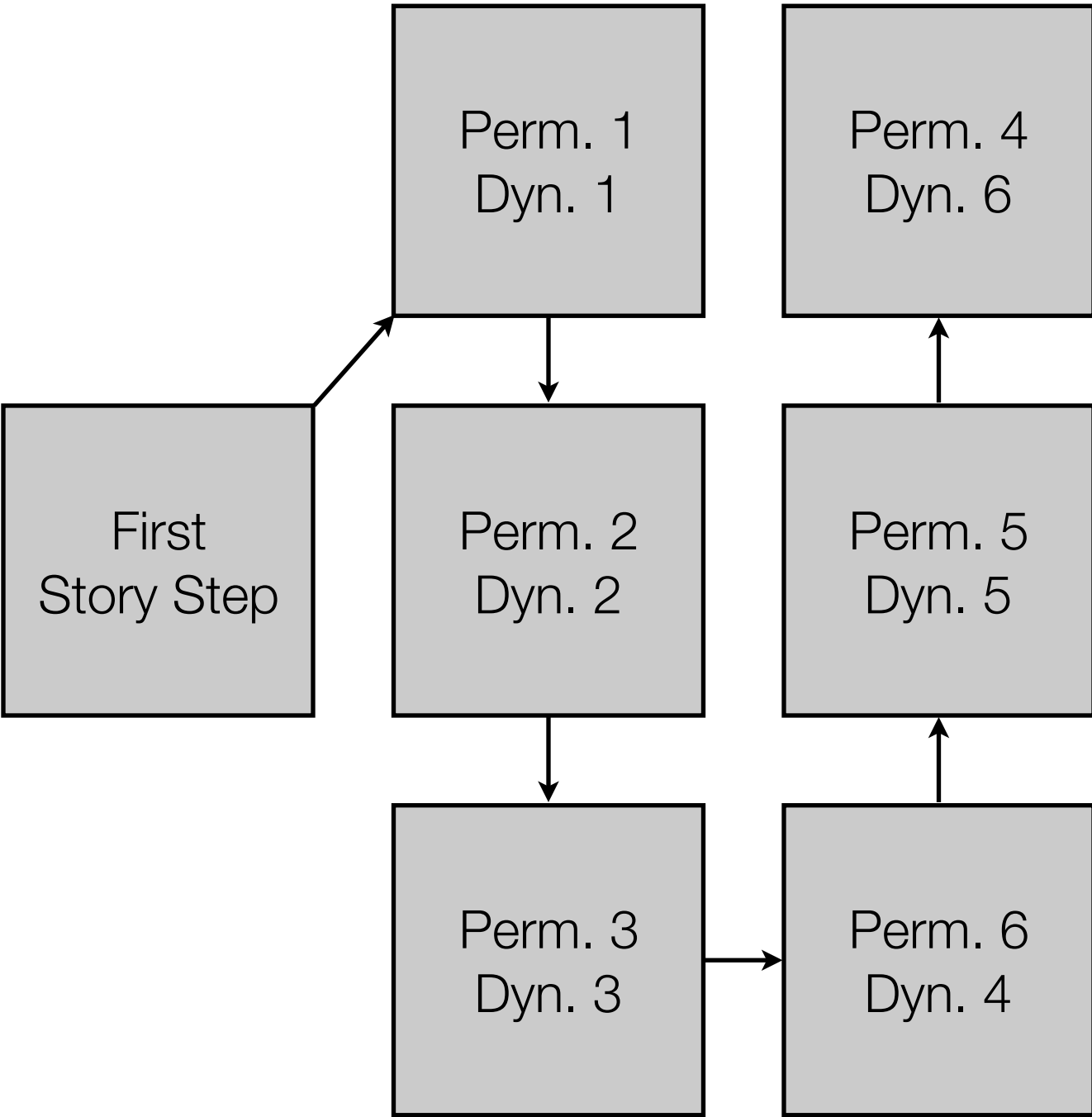
Branching Stories



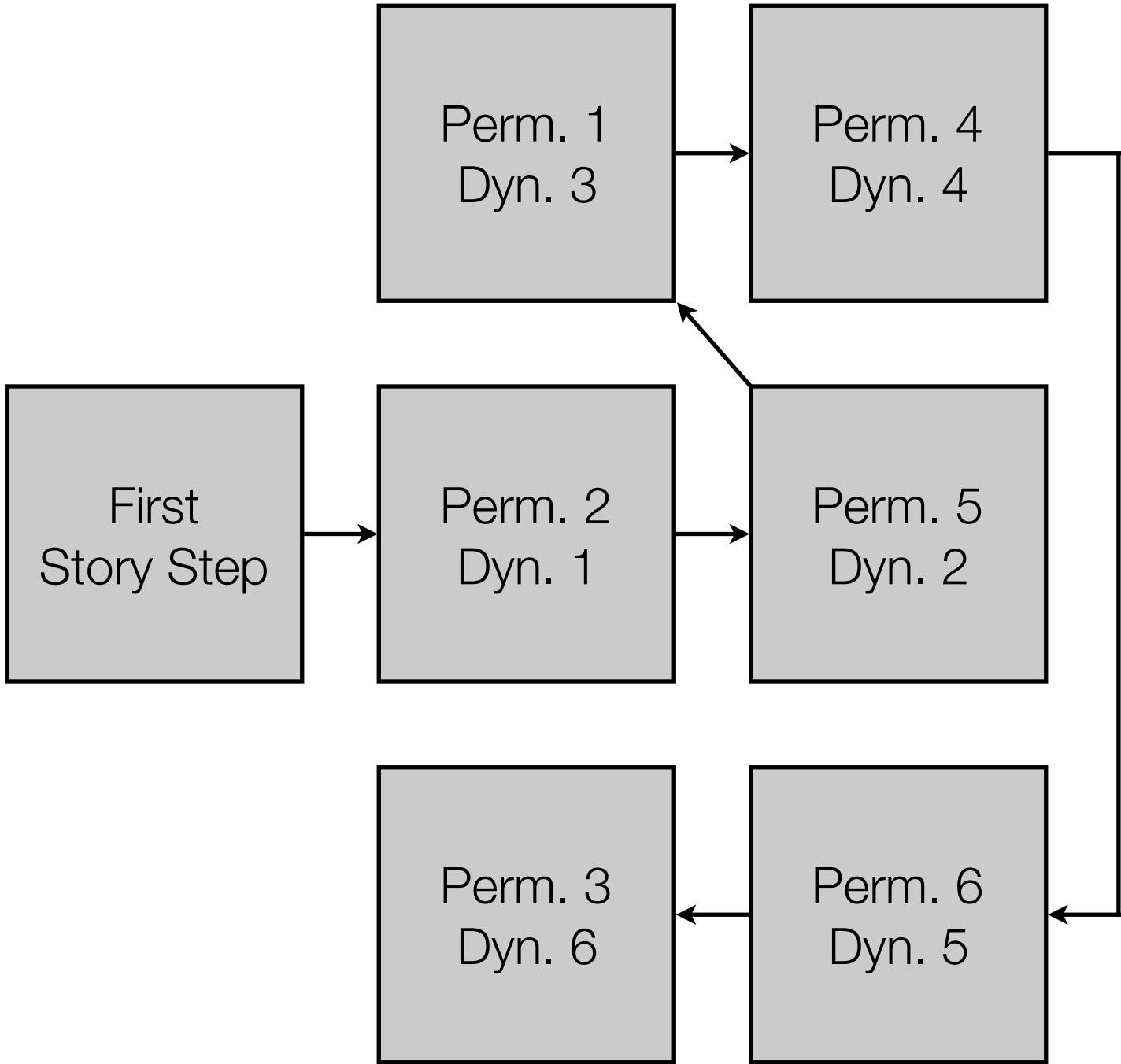
Controlled Branching



Modular Storytelling

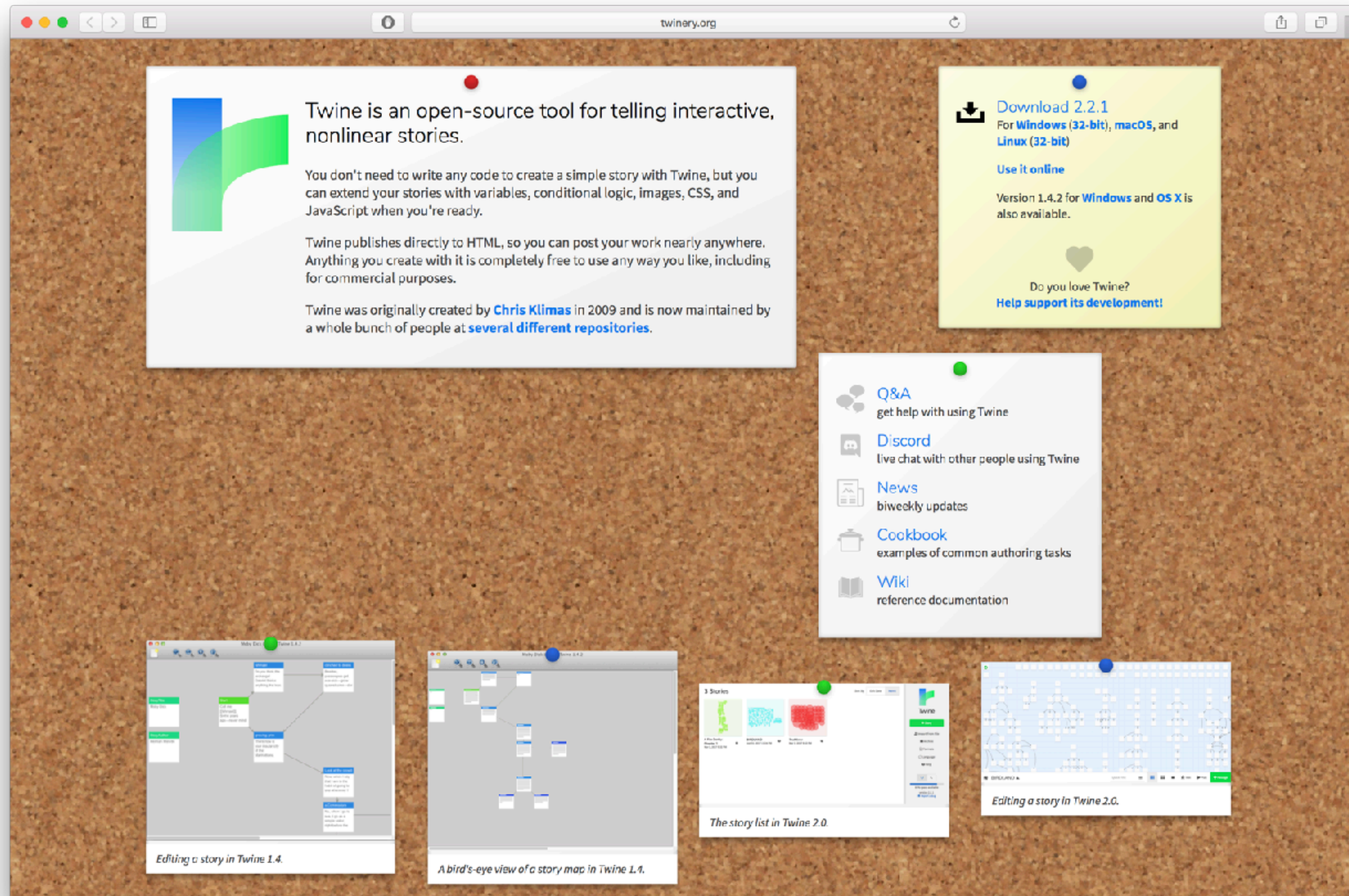


Player A



Player B

Twine – <http://twinery.org>



hippasus.com

Watson's First Case: The Game Is Afoot

Ruben R. Puentedura -

Based on characters
created by Sir A.C. Doyle

Rewind

Restart

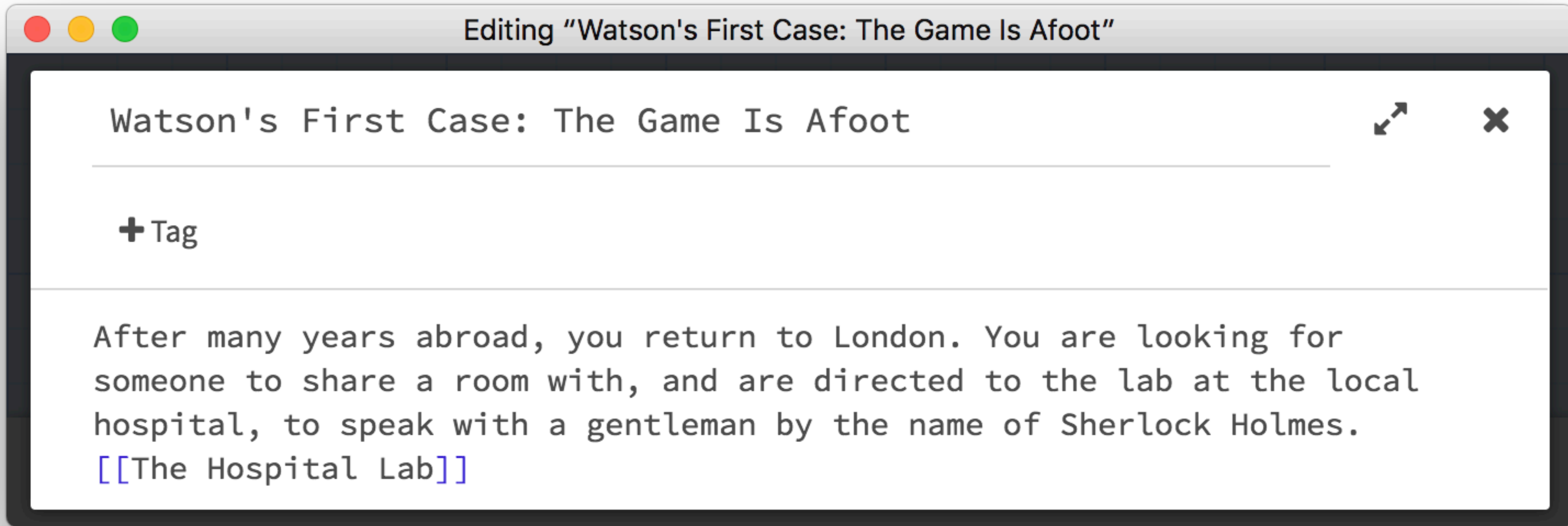
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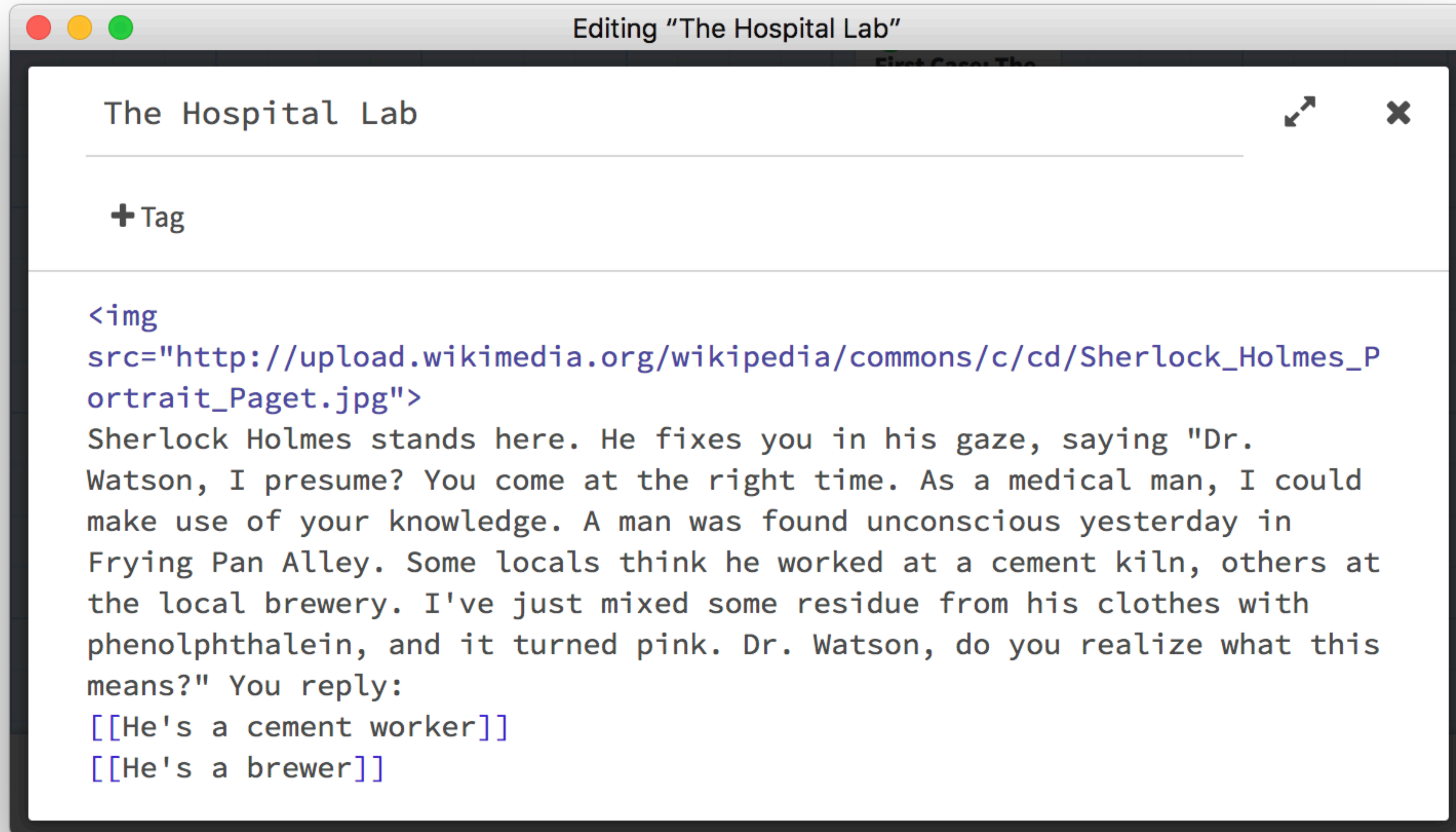
After many years abroad, you return to London. You are looking for someone to share a room with, and are directed to the lab at the local hospital, to speak with a gentleman by the name of Sherlock Holmes.

The Hospital Lab

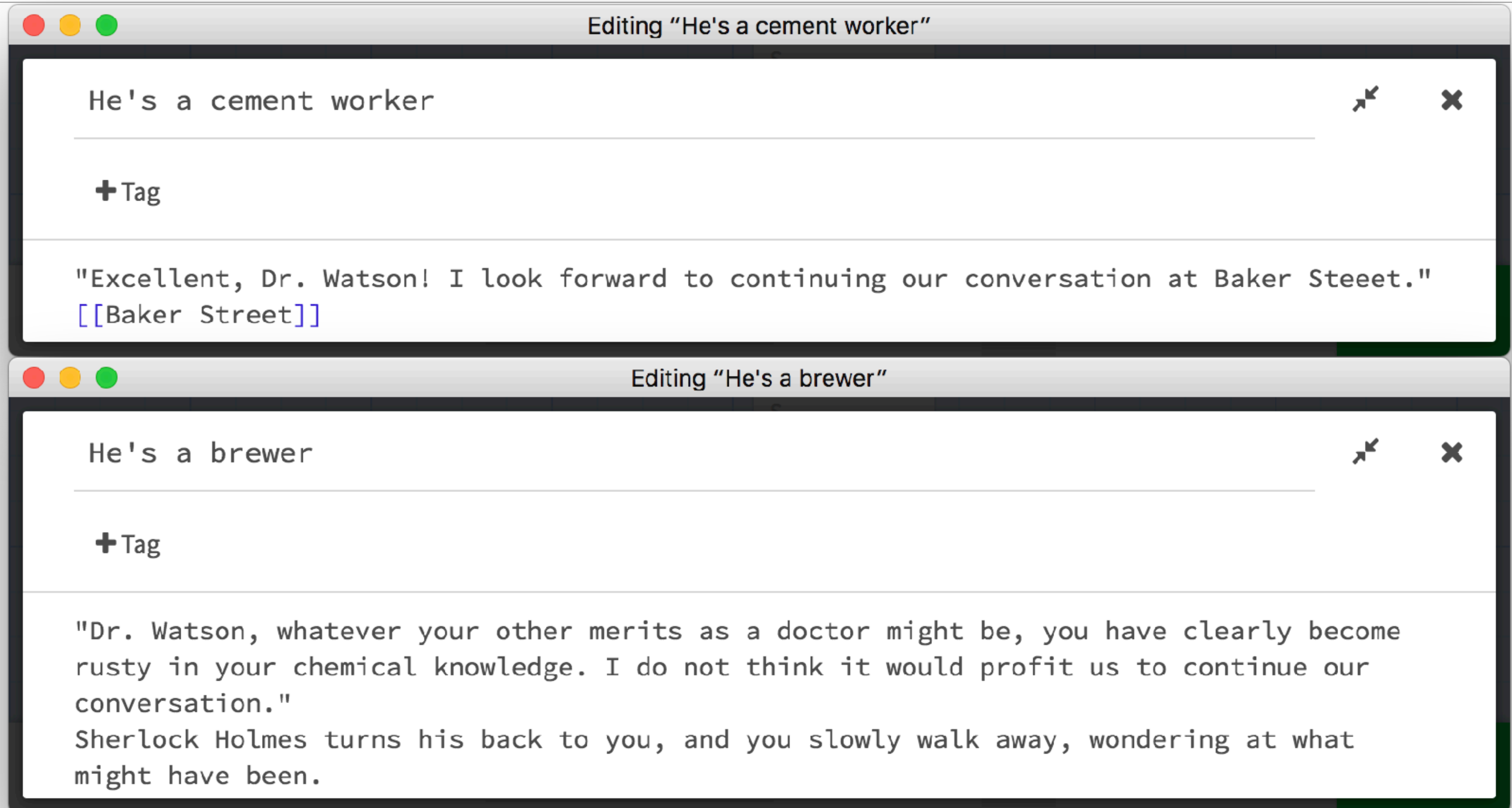
Setup



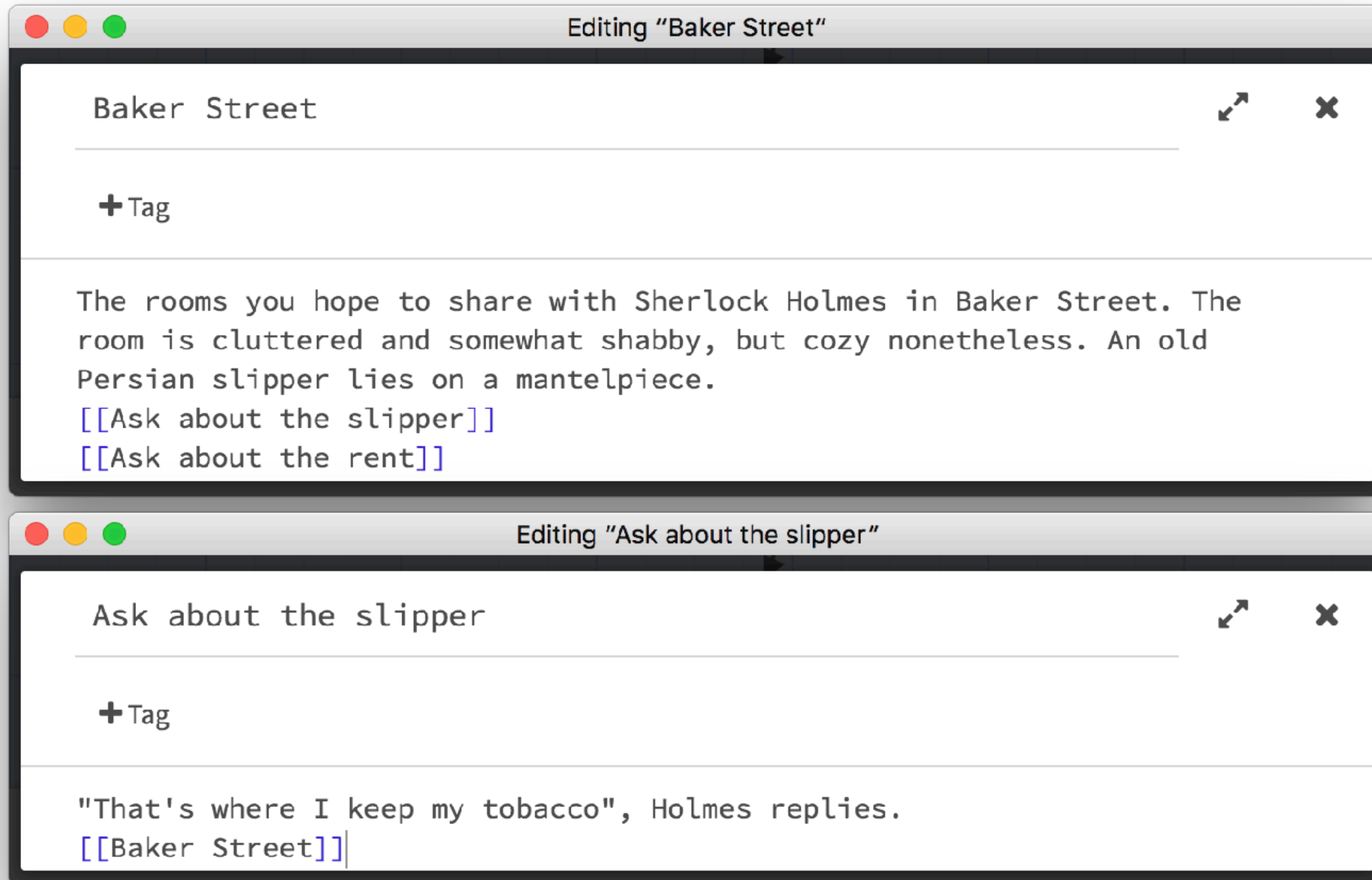
Branching and inserting media



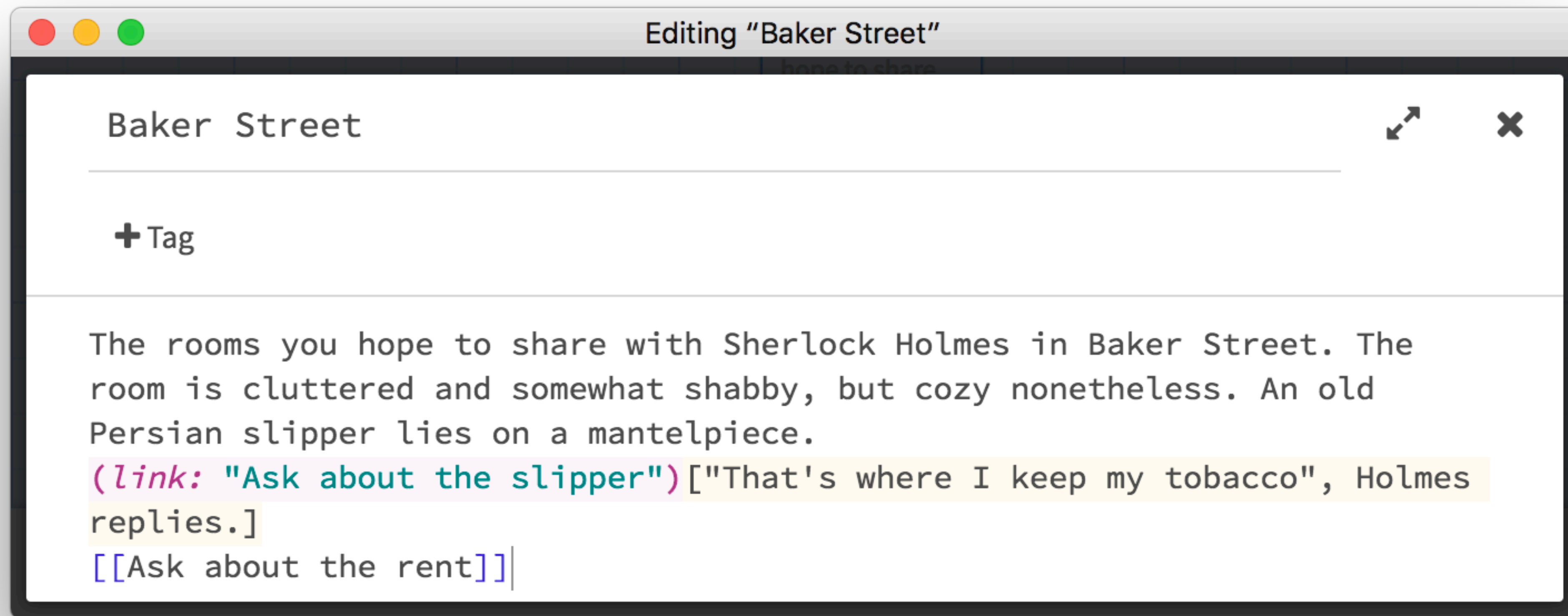
Puzzles and endings



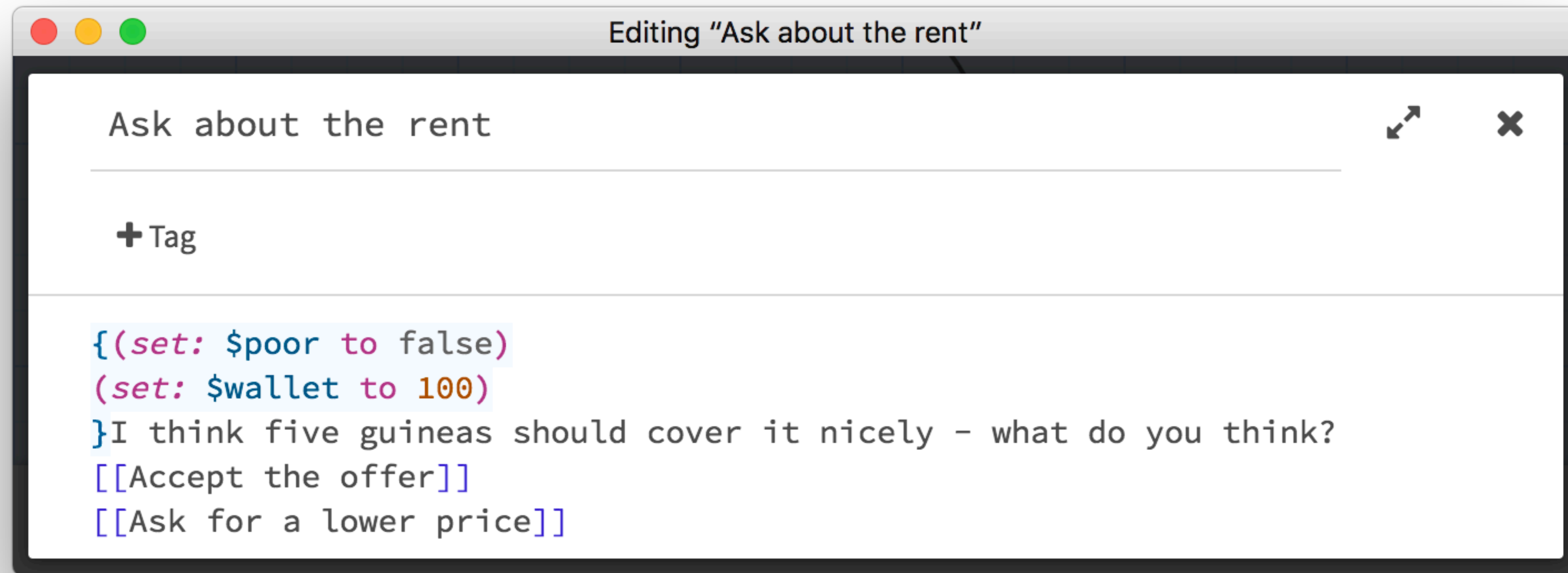
Choices: Take 1



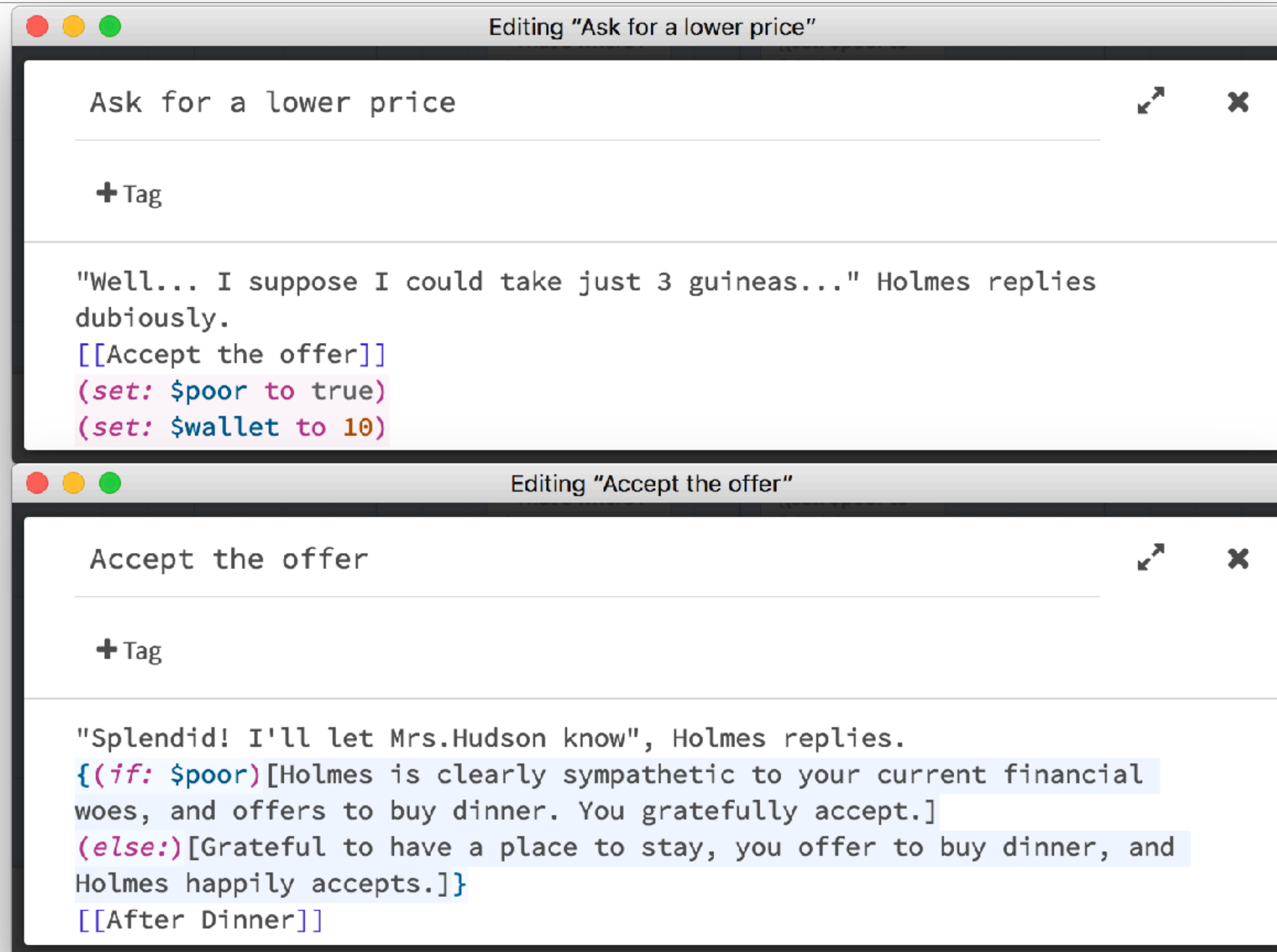
Choices: Using a *macro* and a *hook*



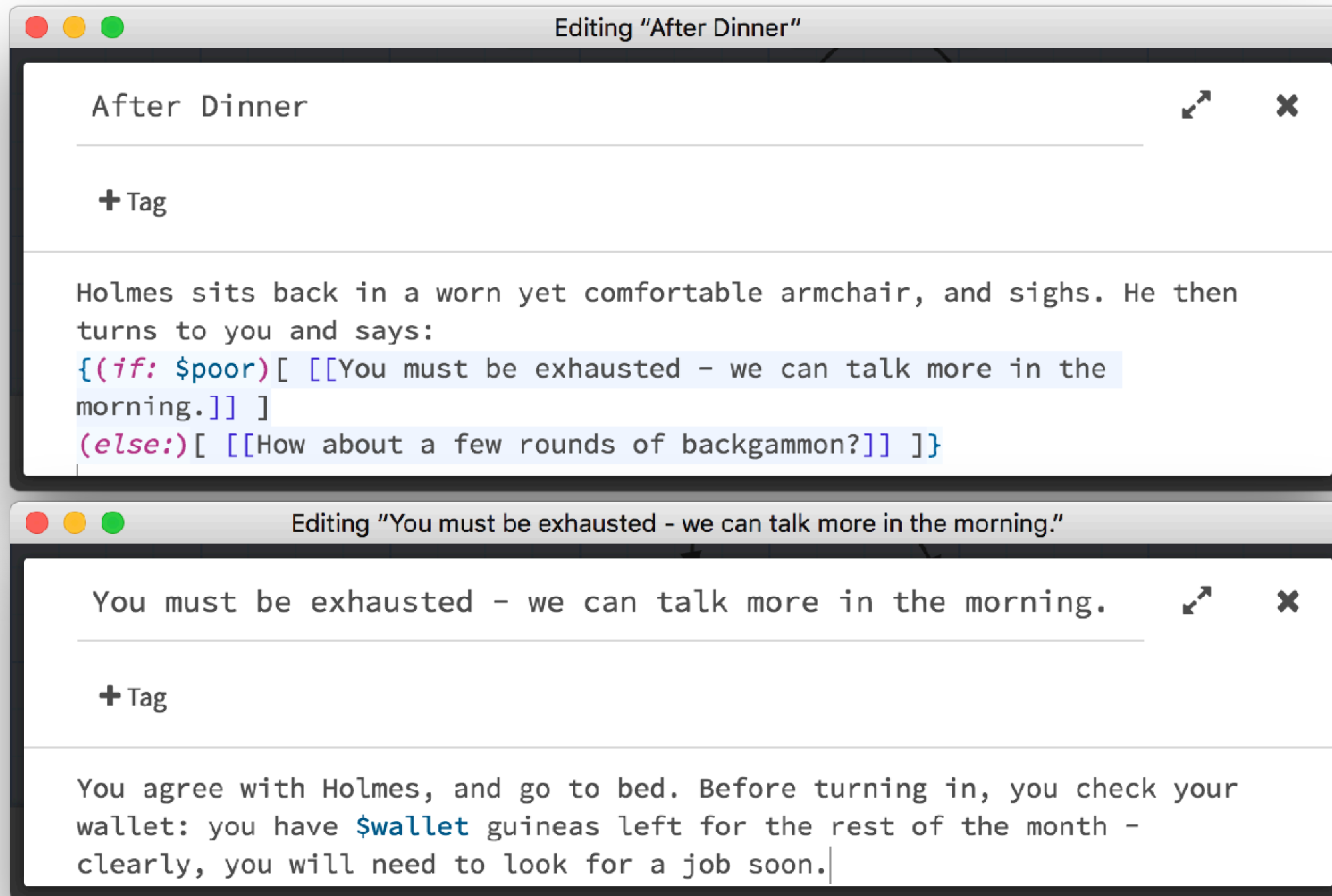
Creating variables and collapsing whitespace



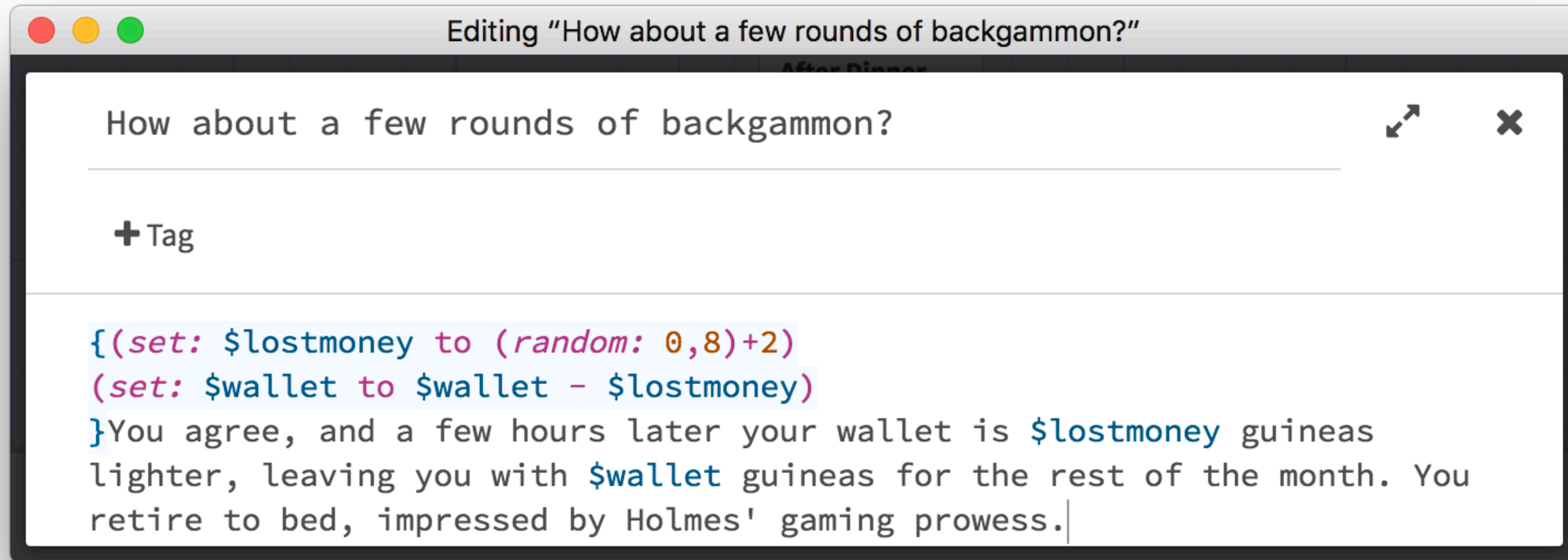
Using variables and *if/else* macros



Including links within hooks and displaying variables



Using variables in calculations



Some Text Formatting Options

Formatting	Source Code	Appears As
Italics	//text//	<i>text</i>
Boldface	"text"	text
Superscript	meters/second^^2^^	meters/second ²
Horizontal line	---	<hr/>

Some More Macros

- Variables:
 - `_mytvar`: temp variable
 - `$mypvar`: persistent variable
- Data Structures:
 - Array: (a: "Fred", "Mary", "John", "Jane")
 - Example: (set: \$namearray to (a: "Fred", "Mary", "John", "Jane"))
 - To create an array filled with consecutive numbers, use (range:1,5)
 - Example: (set: \$numberarray to (range:1,5))
 - To retrieve a particular item in an array, use the item's number: (2) of \$namearray
 - Example: (set: \$firstfemalename to (2) of \$namearray)
- Loops:
 - Over an array: (for: each _name, ...\$namearray)
 - Over a set of numbers: (for: each _i, ...(range:1,5))
- Conditionals:
 - If: (if: \$myvar is \$myresult)[TheHook]
 - Else: (else-if: \$myvar is \$myotherresult)[AnotherHook]
 - Final Else: (else:)[TheLastHook]
- User Input:
 - Yes/No: (confirm: "The question")
 - Text: (prompt: "The request", "The default answer")
 - To convert text to a number: (num: (prompt: "The request", "The default answer"))
- Parallelism:
 - Live: (live: 0.3s)[TheChangingHook]
 - Stop: (stop:)

Editing "Arrays"

Arrays

+ Tag

- (set: \$namearray to (a: "Fred", "Mary", "John", "Jane"))
- (set: \$numberarray to (range:1,5))
- (set: \$firstfemalename to (2) of \$namearray)
- \$namearray
- \$numberarray
- \$firstfemalename
- [[Loops]]

Editing "User Input"

User Input

+ Tag

- (set: \$useranswer to (confirm: "Would you like to play a game?"))
- (if: \$useranswer)[
- (set: \$userguess to (num: (prompt: "What number am I thinking of?","0")))
- (if: \$userguess is 7)[You got it!] (else:)[Nope, that's not it.]
-]
- (else:)[OK, maybe another time.]
- [[Parallelism]]

Editing "Loops"

Loops

+ Tag

- (set: \$myarray to (a: "A","B","C"))
- (for: each _myitem, ...\$myarray)[_myitem
]
- (for: each _i, ...(range:1,3))[_i
]
- [[Conditionals]]

Editing "Parallelism"

Parallelism

+ Tag

- (set: \$stoprolling to false)
- (live:0.3s)[
- (set: \$dieroll to (random: 1,6))The current number is: \$dieroll
- (if: \$stoprolling)[(stop:)]
-]
- (link: "Stop rolling")[(set: \$stoprolling to true)]

Editing "Conditionals"

Conditionals

+ Tag

- (set: \$myvar to -1)
- (if: \$myvar < 0)[\$myvar is a negative number]
- (else-if: \$myvar is 0)[\$myvar is zero]
- (else:)[\$myvar is a positive number]
- [[User Input]]

itunes.apple.com


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Game And Learn: An Introduction to Educational Gaming – Audio/video

By Dr. Ruben Puentedura

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Description

Game And Learn: An Introduction to Educational GamingVideogames can provide learners with rich worlds and complex narratives that both enhance and transform their educational experience. Harnessing this potential calls for understanding the principles underlying successful games, and how to apply them in the classroom. This 14-part podcast series, created by Dr. Ruben Puentedura as part of a joint research project between MLTI and the Ewing Marion Kauffman Foundation, will provide educators the knowledge needed to successfully use educational gaming in their classroom. Dr. Ruben Puentedura, Founder and President of Hippasus, has implemented transformative applications of information technologies for over twenty years in educational institutions, hospitals, and arts organizations. He has worked with the MLTI since 2003, and is the creator of the SAMR model for selecting, using, and evaluating technology in education, as well as research on educational gaming and digital storytelling.

	Name	Description	Released	Price	
1	What Is A Game?	Professional Develop...	7/5/2009	Free	View in iTunes
2	What Is A Good Game?	Professional Develop...	7/6/2009	Free	View in iTunes
3	A Menagerie Of Genres	Professional Develop...	7/8/2009	Free	View in iTunes
4	Games And Learning	Professional Develop...	7/8/2009	Free	View in iTunes
5	Games And Education	Professional Develop...	7/12/2009	Free	View in iTunes
6	Critical Gaming	Professional Develop...	7/14/2009	Free	View in iTunes
7	Games And Storytelling	Professional Develop...	7/14/2009	Free	View in iTunes
8	Games And Players	Professional Develop...	7/16/2009	Free	View in iTunes
9	Games And Assessment	Professional Develop...	7/19/2009	Free	View in iTunes
10	The Design Perspective	Professional Develop...	7/20/2009	Free	View in iTunes
11	Case Study: Scratch	Professional Develop...	7/21/2009	Free	View in iTunes
12	Case Study: Inform 7	Professional Develop...	7/23/2009	Free	View in iTunes
13	Serious Games	Professional Develop...	7/26/2009	Free	View in iTunes
14	TPCK, SAMR, And Gam...	Professional Develop...	7/27/2009	Free	View in iTunes

14 Items

Hippasus



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