HDAT9800 Visualisation and Communication of Health Data

Chapter 4

Drs James Farrow & Tim Churches

Collaboration

Working as a group

Tools for collaboration

Practices for collaboration

Resolving edit conflicts using *git*

Working as a group

Cooperation

- have a shared understanding
- don’t engage in ‘edit wars’

Share changes but protect against damage

- having a full project history helps here

Tools for collaboration

Email is not the best tool for all jobs

Shared file systems are not a good collaboration platform

Spreadsheets are not a good project management tool

Spreadsheets are not a good issue tracking tool

Databases are not a panacea

All of these things have their place but tend to be overused and ill-used

Issue tracking

Use a proper issue tracking system

- tickets: individual items *per* issue
- workflow: *new* → *in progress* → *reviewing* → *closed*

Email is not good for this

- a good issue tracking system will send email as an option

Email is not easily searchable for history and resolutions

Email is a *bad* communication tool for managing issues

Shared file systems

Good for static (bulk) data

It's clobberin' time!

Use a proper revision control system (like *git*) with *separate* copies

- **do not** use *git* on a shared system like a common drive or DropBox
- each user is meant to have their own repository, they are not shared

Shared file systems are a *bad* communication tool for sharing changes

Spreadsheets

If you are managing resources use *project management software*

If you are managing issues use *issue tracking software*

Spreadsheets combine all the bad features of email and shared data

That's not to say a spreadsheet can't be an artefact *within* a project

For a plot consider using *R* and a *knitr* document using *ggplot2*

Databases

Like spreadsheets, filesystems and email, databases have their place

Databases are good for what they're designed for

There are different types of databases

They are not a panacea for management tasks

Instead of writing a new tool see if one exists which does the job

New code and tools are *always* buggy use something mature

Practices for collaboration

How can we structure projects for best results?

Make projects modular

Have well defined responsibilities

Use revision control systems

- these ensure edits don't overwrite one another

Collaborating with yourself

The multiple ‘you’

- laptop
- desktop
- work computer
- home computer

Each of these can have a repository cloned on to it

Share edits using push/pull not a memory stick or email

Resolving edit conflicts using *git*

Working as a group

Tools for collaboration

Practices for collaboration

Resolving edit conflicts using *git*

Tracking changes

Git tracks changes using *context* not line numbers

As long as a few lines either side of an edit are the same *git* can locate where to apply your changes in another file

Chapter 1/inst/tutorials/dplyr/dplyr.Rmd

```
@@ -725,7 +725,7 @@ It's up to us to save the results we need somewhere.
725 725 This doesn’t lead to particularly elegant code, especially if you want to do many operations at once.
726 726 We have to do it step-by-step, saving each result
727 727
728     ```{r, eval=FALSE}
    728 ```
729 729 a1 <- group_by(flights, year, month, day)
730 730 a2 <- select(a1, arr_delay, dep_delay)
731 731 a3 <- summarise(a2,
@@ -736,7 +736,7 @@ a4 <- filter(a3, arr > 30 | dep > 30)
736 736
737 737 or if you don’t want to save the intermediate results, we need to next the function calls inside each other
738 738
739     ```{r, eval=FALSE}
    739 ```
740 740 filter(
741 741   summarise(
742 742     select(
```

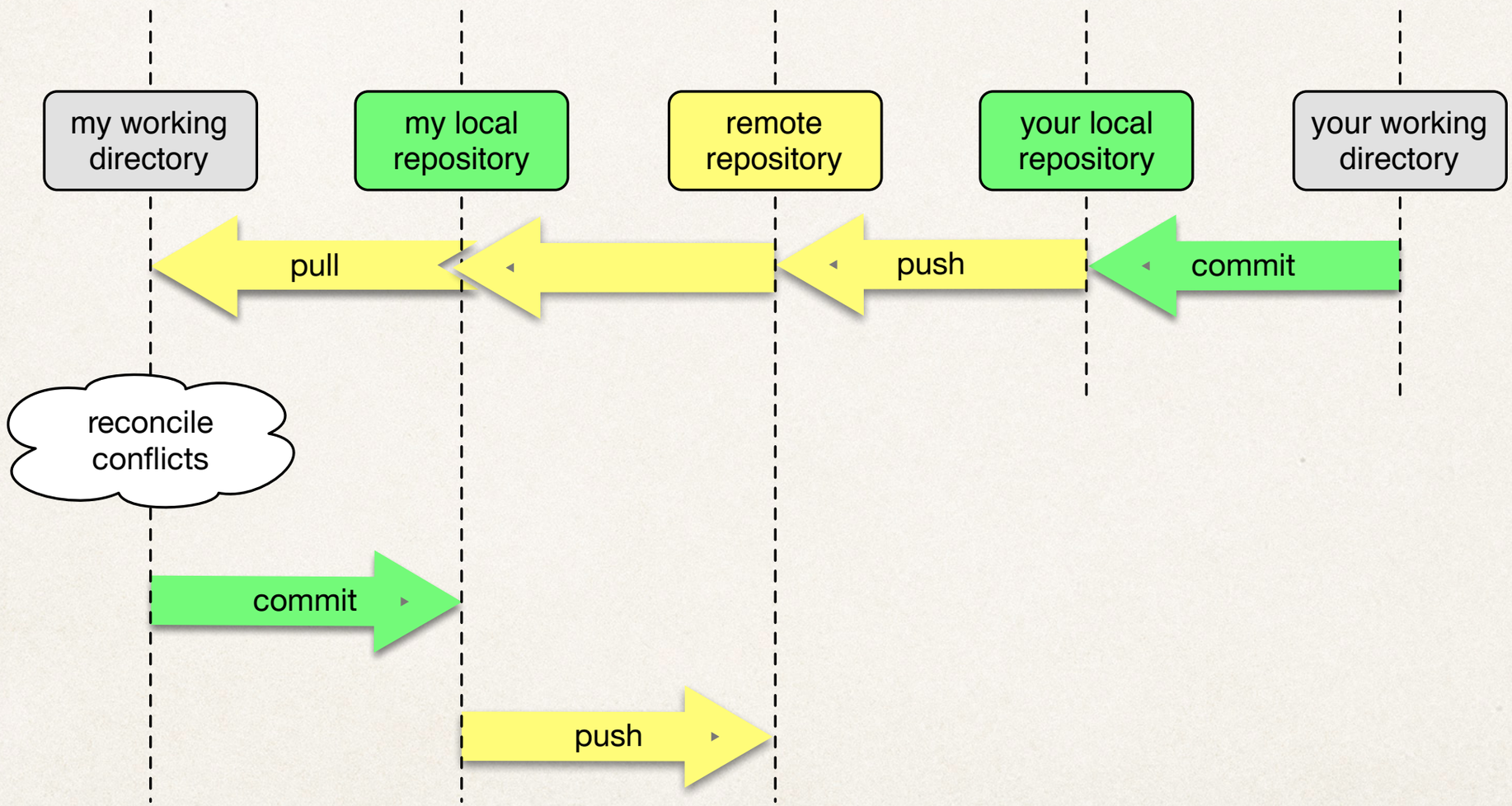
Edit conflicts

Edit conflicts arise when *git* can't work out how to apply a change

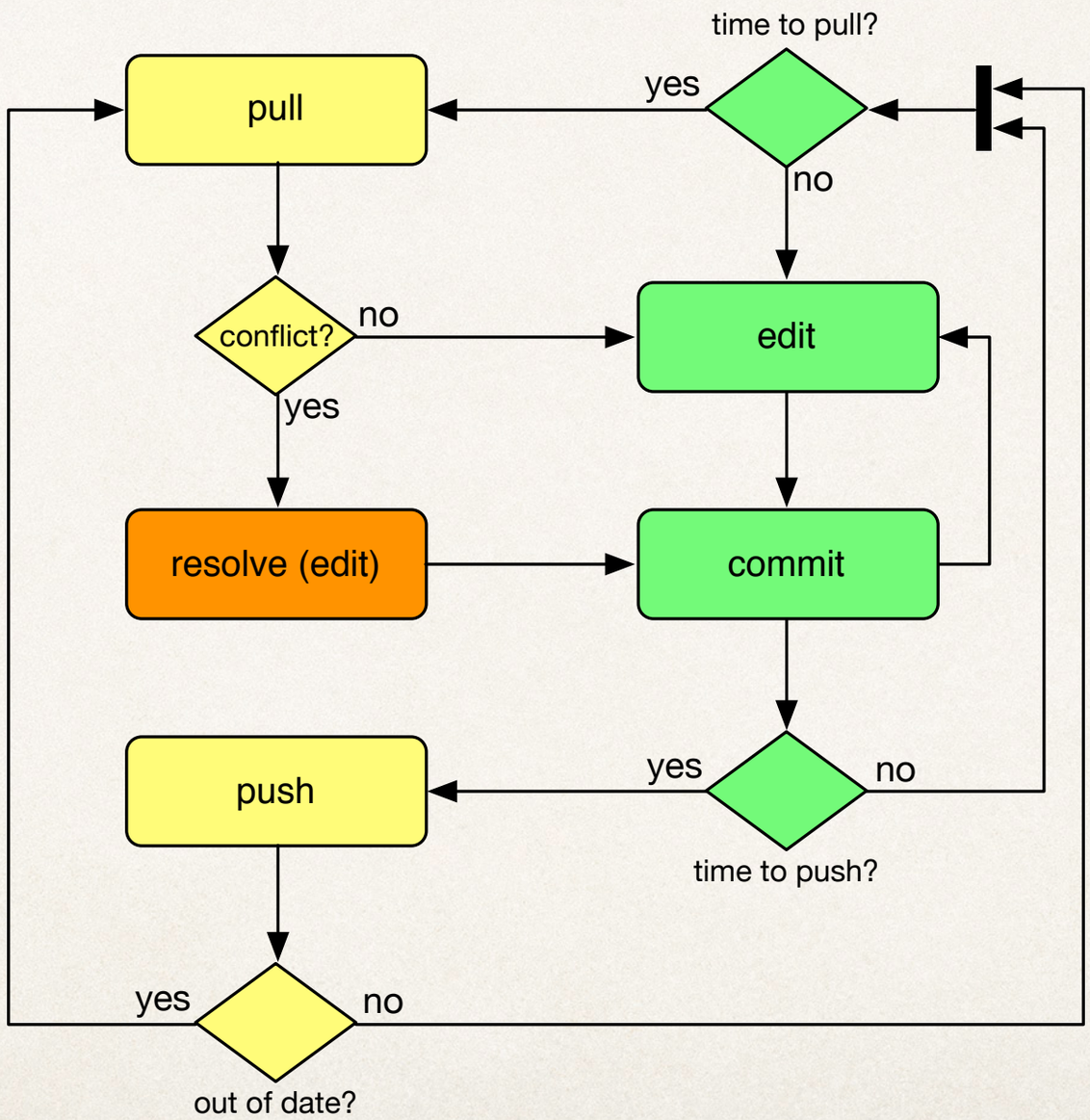
- the context has disappeared
- two changes need to be applied to the same section

Manual intervention is required when this happens

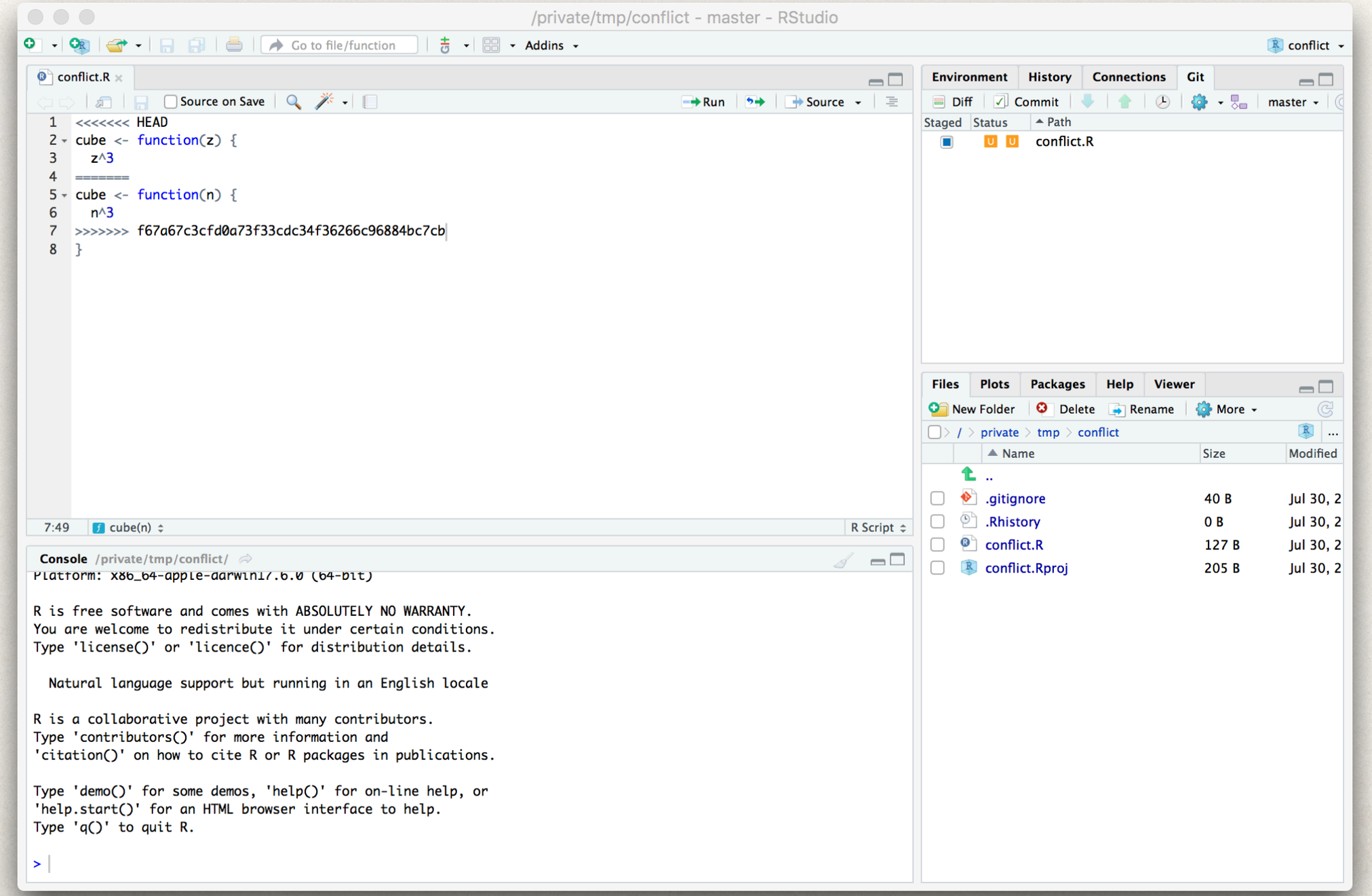
Collaborative workflow



Collaborative workflow



Conflicts in RStudio

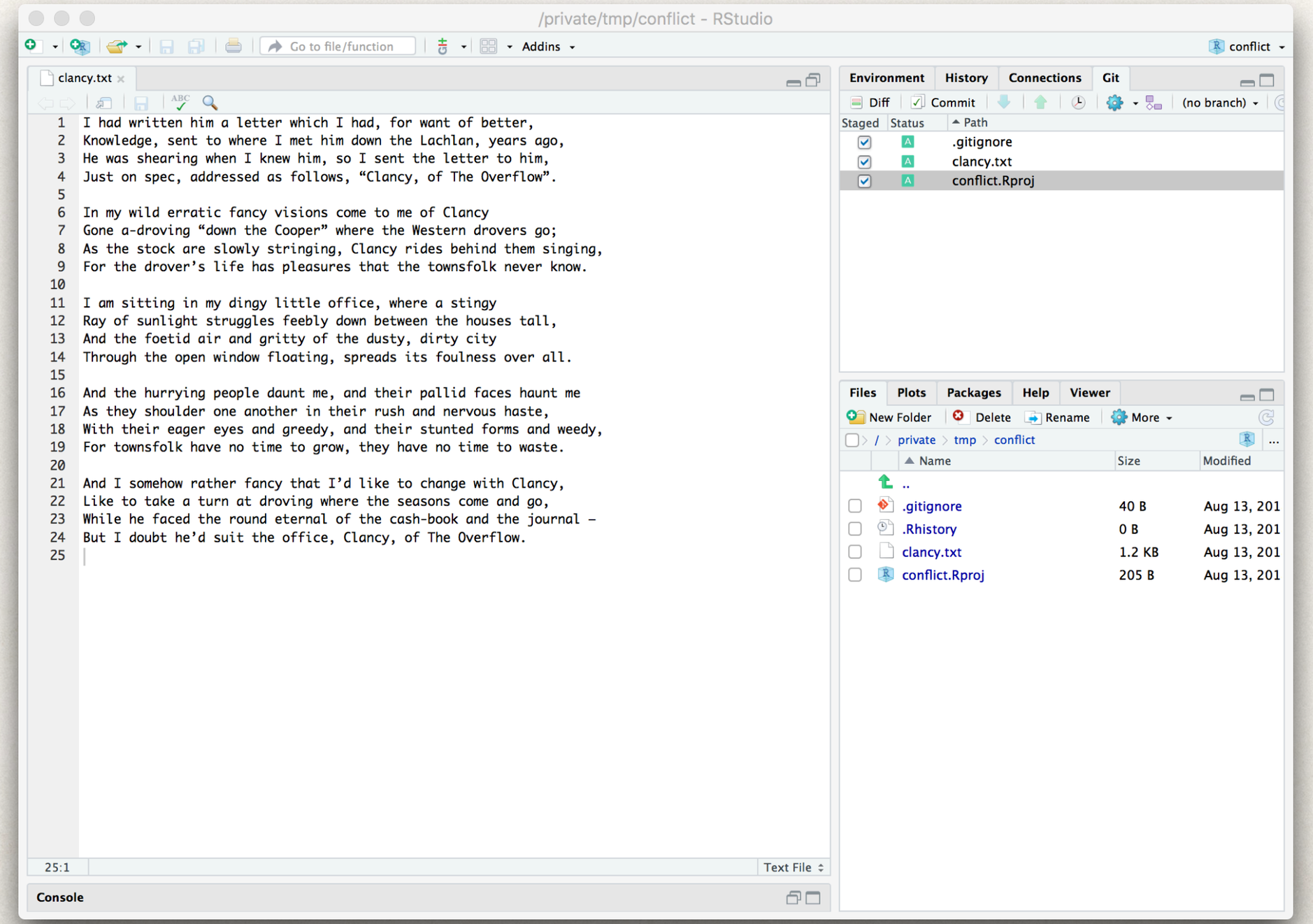


Resolving a conflict: a case study

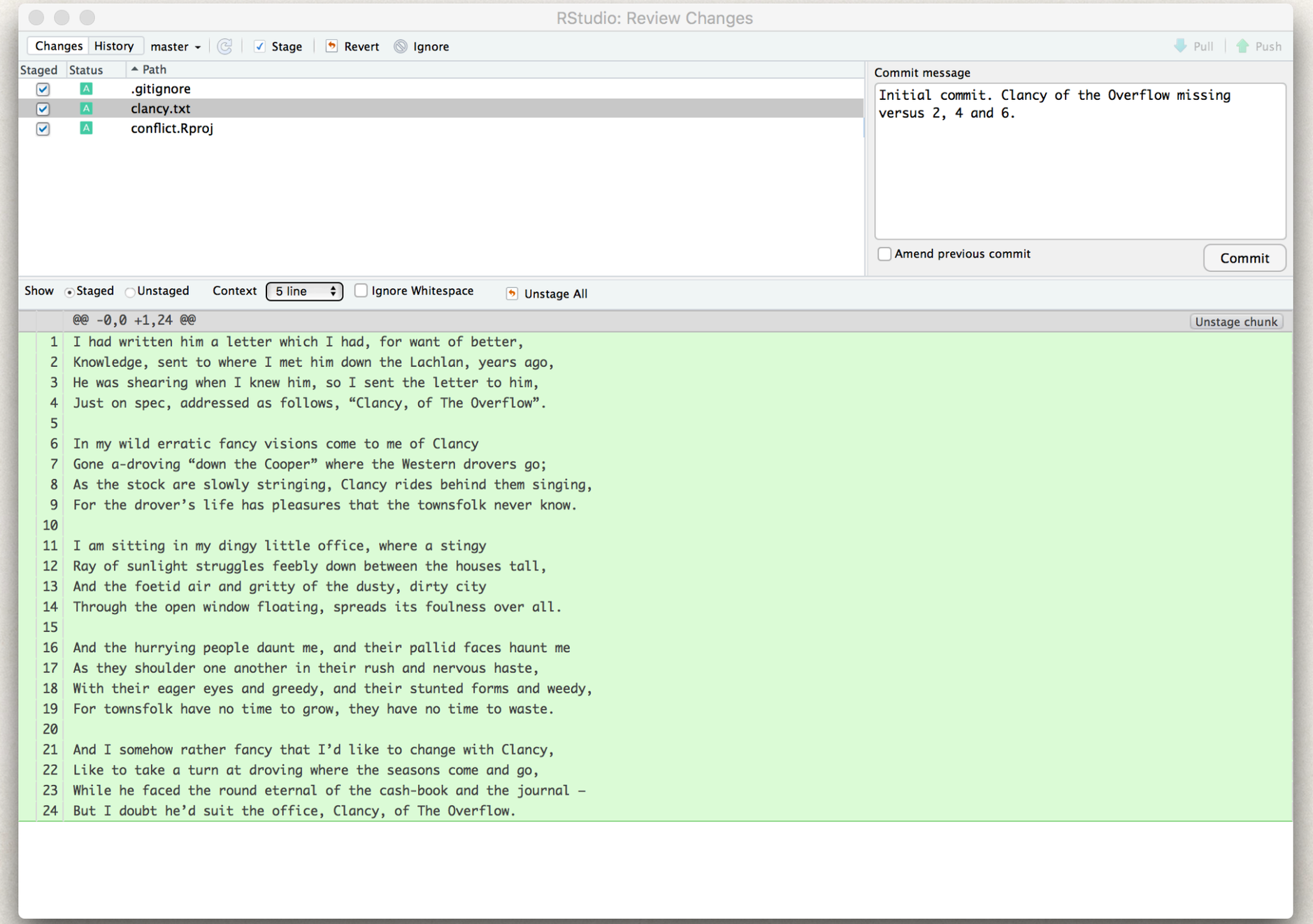
Clancy of the Overflow

- one user types the text but omits verses 2, 4 and 6 and pushes
- another user clones the project and adds 4 and an alternative 6
- the second user pushes
- the first user adds the correct 2, 4 and 6 and tries to push
- local repository is out of date so must pull
- conflict!

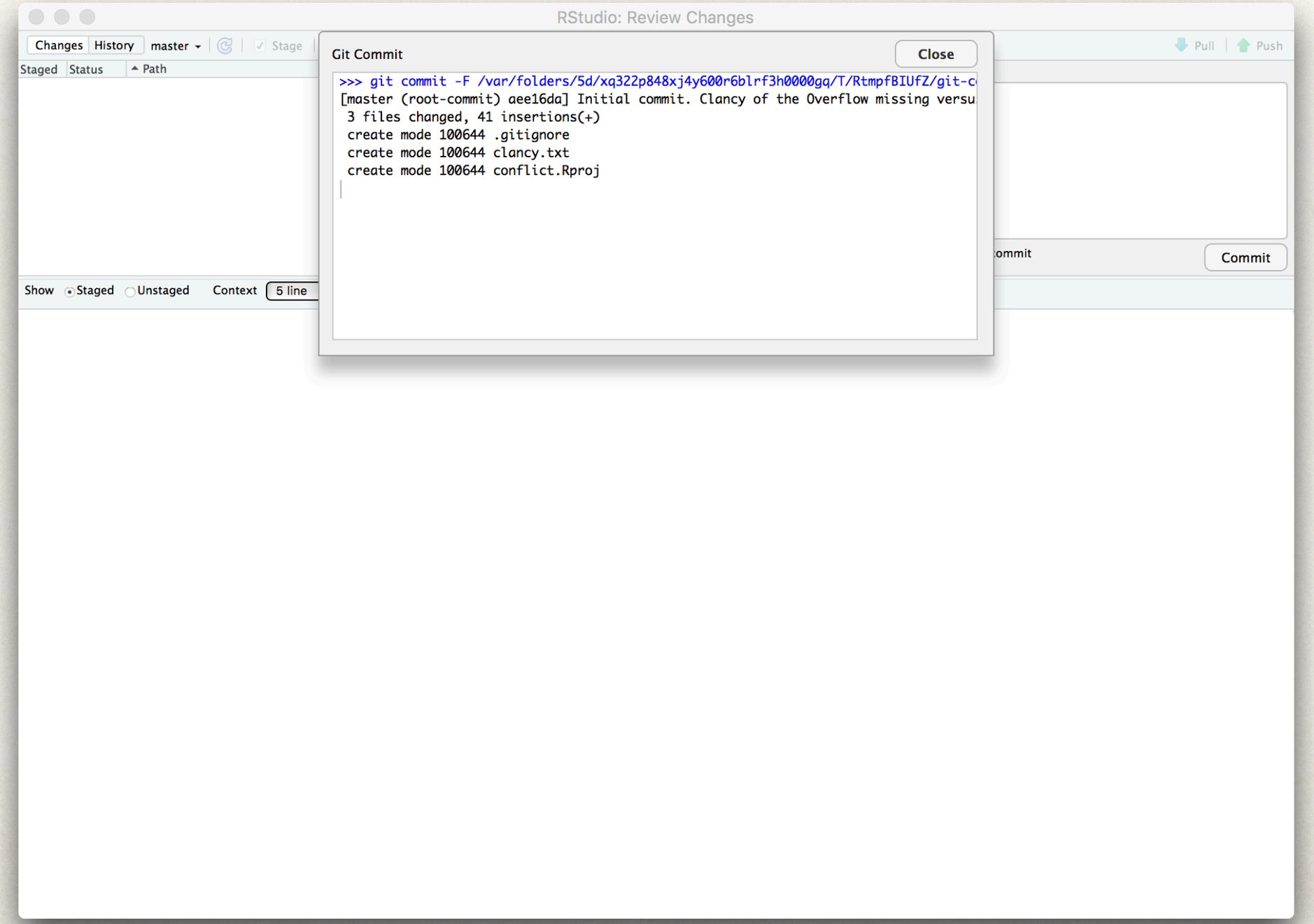
User 1: initial text



User 1: commit



User 1: commit



User 1: push

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master origin/master Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-1 of 1

SHA aee16daf
Author James Farrow <james@fn.com.au>
Date 2018-08-13 04:58
Subject **Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.**

.gitignore
clancy.txt
conflict.Rproj

.gitignore View file @ aee16daf

```
@@ -0,0 +1,4 @@
.Rproj.user
.Rhistory
.RData
.Ruserdata
```

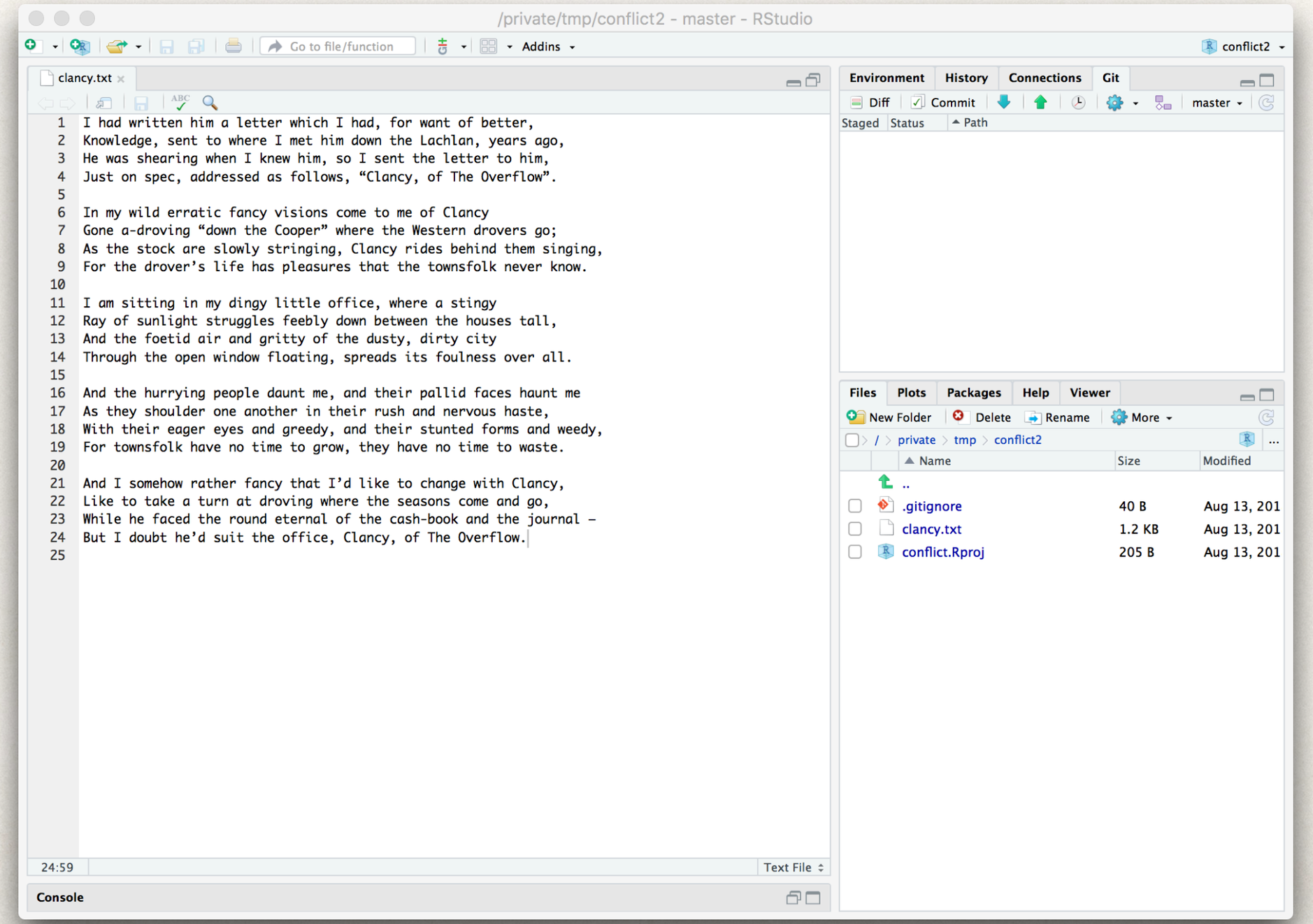
clancy.txt View file @ aee16daf

```
@@ -0,0 +1,24 @@
I had written him a letter which I had, for want of better,
Knowledge, sent to where I met him down the Lachlan, years ago,
He was shearing when I knew him, so I sent the letter to him,
Just on spec, addressed as follows, “Clancy, of The Overflow”.

In my wild erratic fancy visions come to me of Clancy
Gone a-droving “down the Cooper” where the Western drovers go;
As the stock are slowly stringing, Clancy rides behind them singing,
For the drover’s life has pleasures that the townsfolk never know.

I am sitting in my dingy little office, where a stingy
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all
```

User 2: clone


/private/tmp/conflict2 - master - RStudio
Go to file/function
Addins
conflict2
clancy.txt
I had written him a letter which I had, for want of better,
Knowledge, sent to where I met him down the Lachlan, years ago,
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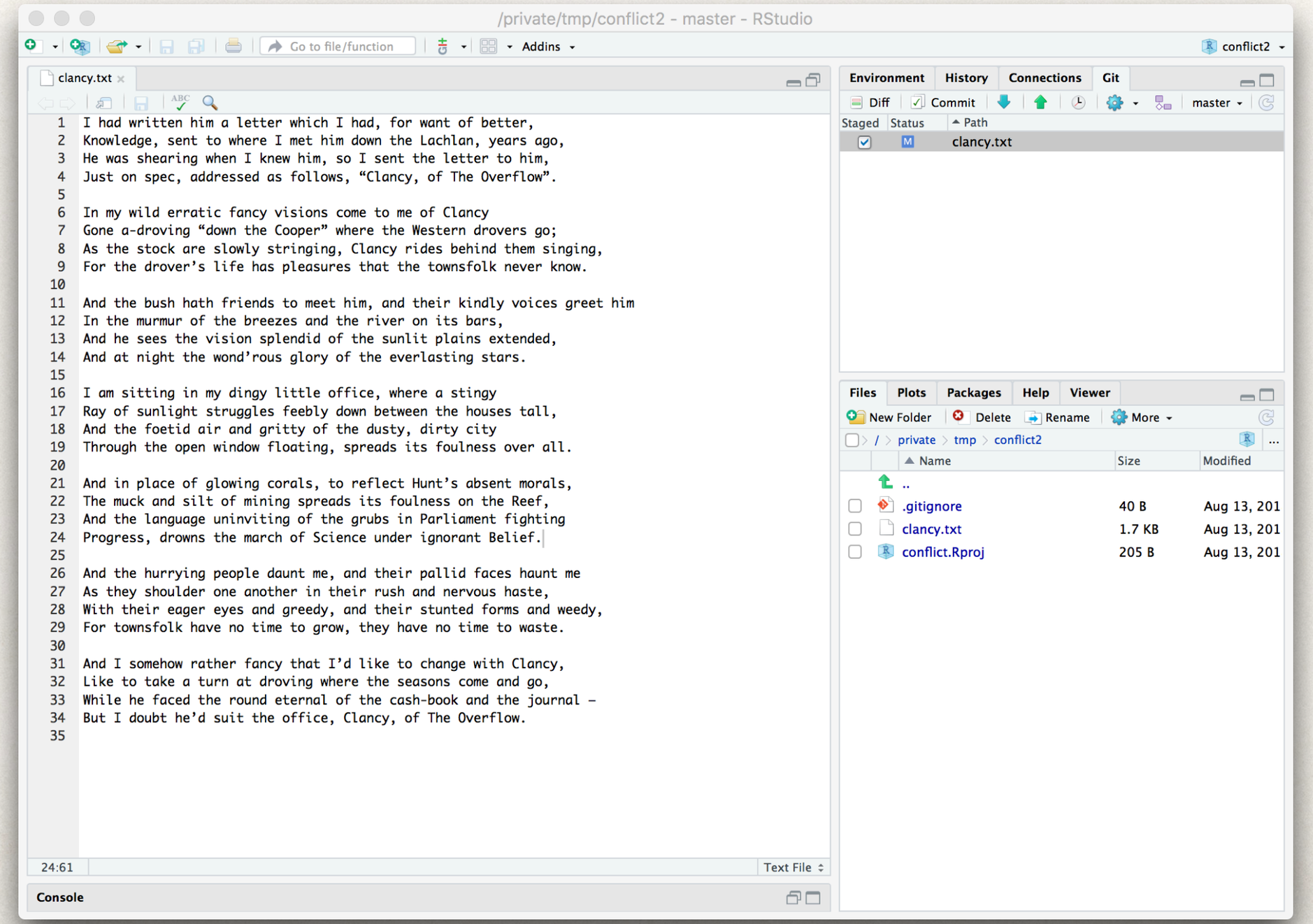
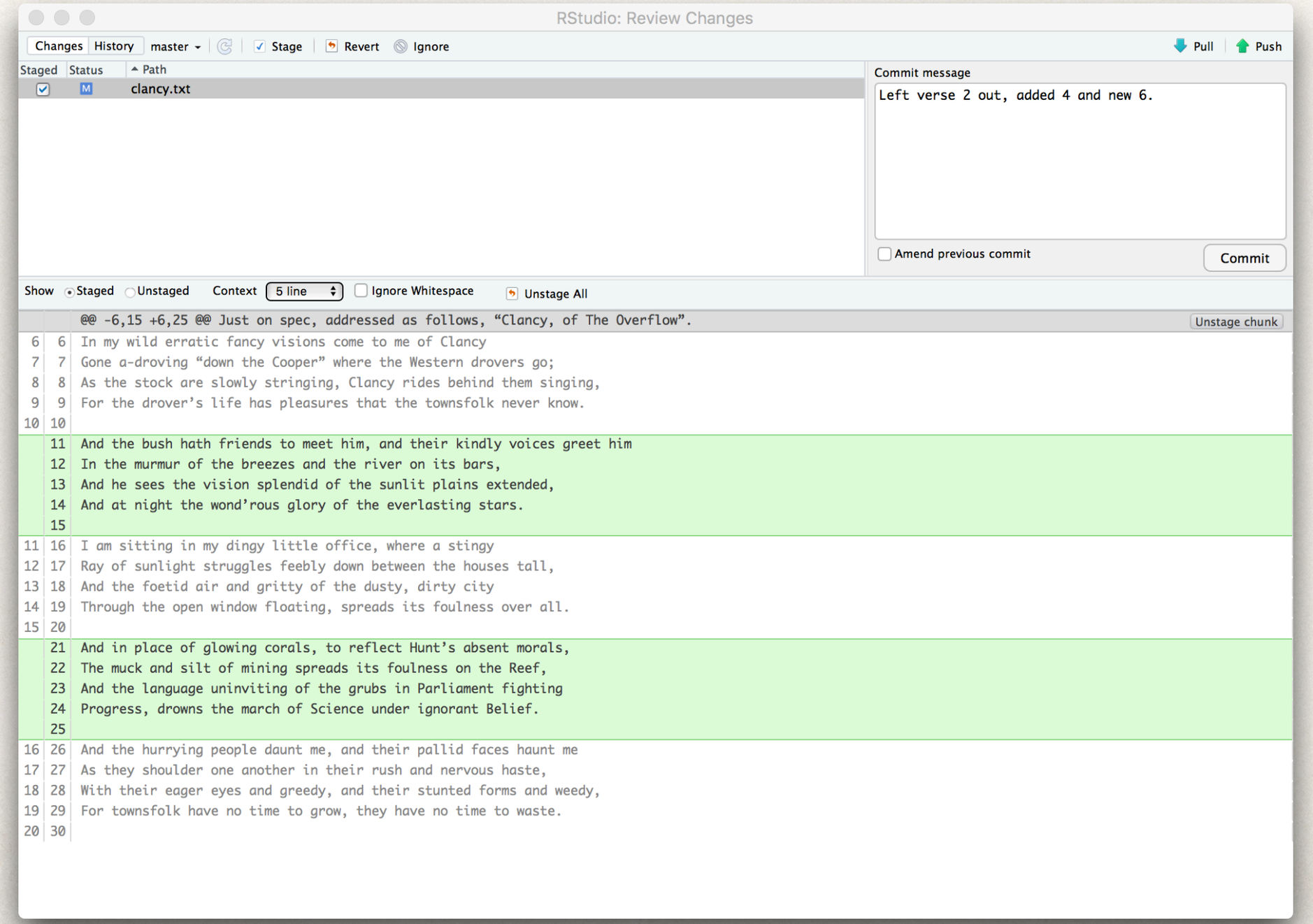
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all.
And the hurrying people daunt me, and their pallid faces haunt me
As they shoulder one another in their rush and nervous haste,
With their eager eyes and greedy, and their stunted forms and weedy,
For townsfolk have no time to grow, they have no time to waste.
And I somehow rather fancy that I’d like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cash-book and the journal –
But I doubt he’d suit the office, Clancy, of The Overflow.
24:59
Text File
Console
Environment
History
Connections
Git
Diff
Commit
master
Staged
Status
Path
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
/ private tmp conflict2
Name
Size
Modified
..
.gitignore
40 B
Aug 13, 201
clancy.txt
1.2 KB
Aug 13, 201
conflict.Rproj
205 B
Aug 13, 201

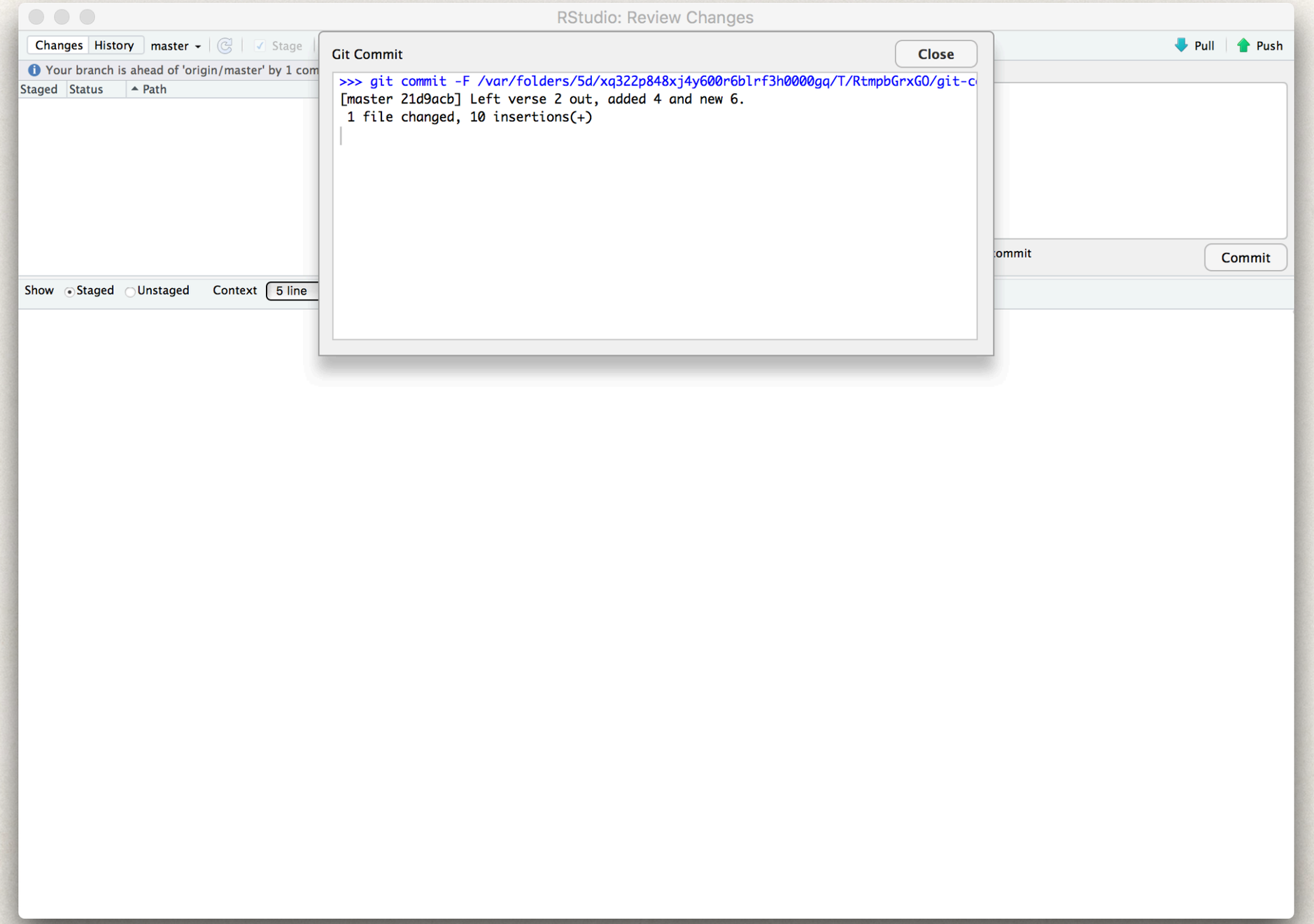
User 2: edit (adds vv. 4 and 6)



User 2: commit



User 2: commit



User 2: commit history (pre push)

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master Left verse 2 out, added 4 and new 6.	James Farrow <james@fn.com.au>	2018-08-13	21d9acb4
origin/master Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-2 of 2

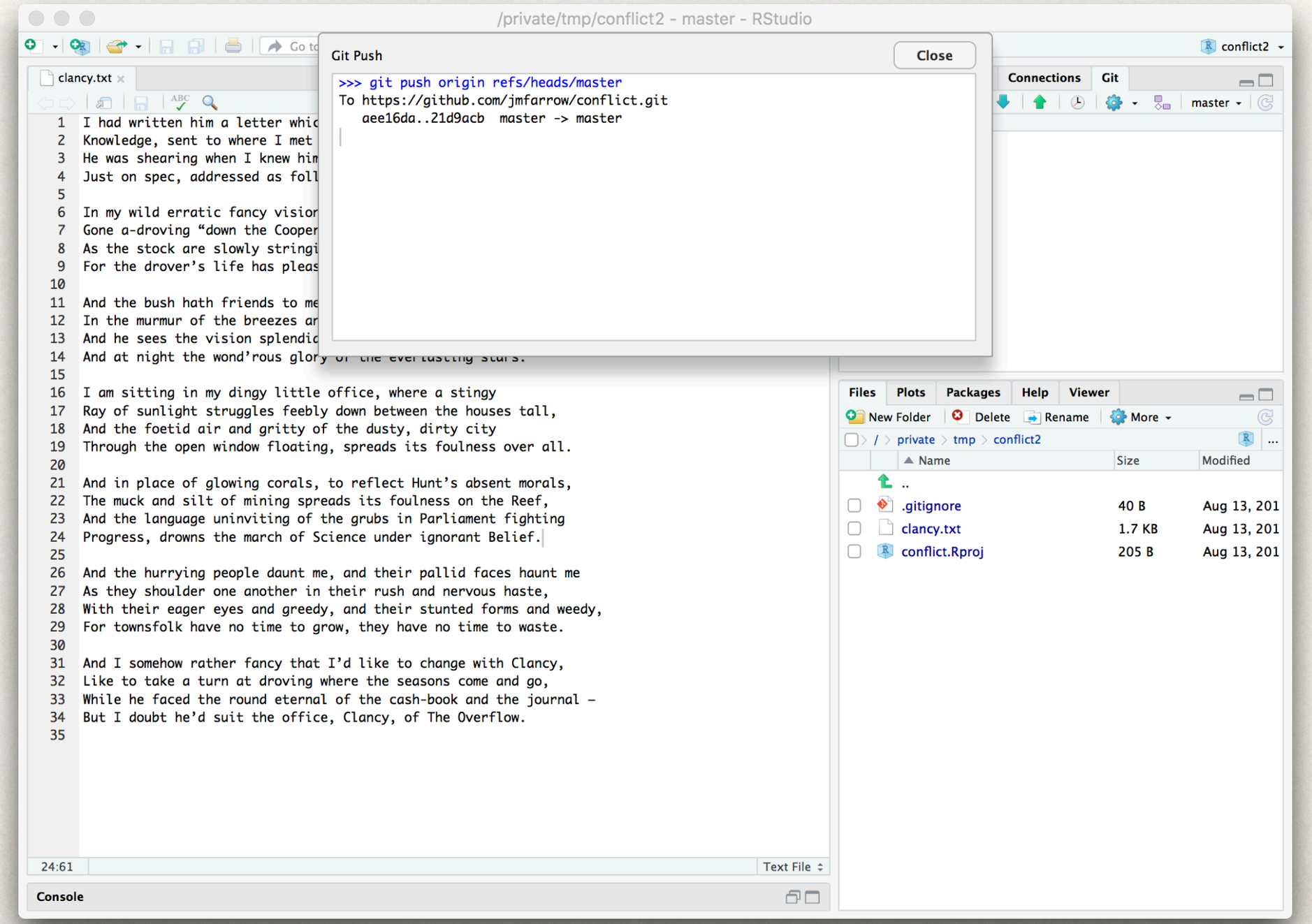
SHA 21d9acb4
Author James Farrow <james@fn.com.au>
Date 2018-08-13 05:06
Subject **Left verse 2 out, added 4 and new 6.**
Parent aee16daf

clancy.txt

clancy.txt View file @ 21d9acb4

```
@@ -8,11 +8,21 @@ Gone a-droving "down the Cooper" where the Western drovers go;
 8  8  As the stock are slowly stringing, Clancy rides behind them singing,
 9  9  For the drover's life has pleasures that the townsfolk never know.
10 10
   11  And the bush hath friends to meet him, and their kindly voices greet him
   12  In the murmur of the breezes and the river on its bars,
   13  And he sees the vision splendid of the sunlit plains extended,
   14  And at night the wond'rous glory of the everlasting stars.
   15
11 16  I am sitting in my dingy little office, where a stingy
12 17  Ray of sunlight struggles feebly down between the houses tall,
13 18  And the foetid air and gritty of the dusty, dirty city
14 19  Through the open window floating, spreads its foulness over all.
15 20
   21  And in place of glowing corals, to reflect Hunt's absent morals,
   22  The muck and silt of mining spreads its foulness on the Reef,
   23  And the language uninviting of the grubs in Parliament fighting
   24  Progress, drowns the march of Science under ignorant Belief.
   25
16 26  And the hurrying people daunt me, and their pallid faces haunt me
17 27  As they shoulder one another in their rush and nervous haste,
18 28  With their eager eyes and greedy, and their stunted forms and weedy,
```

User 2: push


/private/tmp/conflict2 - master - RStudio
Git Push
Close
>>> git push origin refs/heads/master
To https://github.com/jmfarrow/conflict.git
aee16da..21d9acb master -> master
clancy.txt
I had written him a letter whic
Knowledge, sent to where I met
He was shearing when I knew him
Just on spec, addressed as foll
In my wild erratic fancy visior
Gone a-droving "down the Cooper
As the stock are slowly stringi
For the drover's life has pleas
And the bush hath friends to me
In the murmur of the breezes ar
And he sees the vision splendic
And at night the wond'rous glory
I am sitting in my dingy little office, where a stingy
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And I somehow rather fancy that I'd like to change with Clancy,
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While he faced the round eternal of the cash-book and the journal –
But I doubt he'd suit the office, Clancy, of The Overflow.
24:61
Text File
Console
conflict2
Connections
Git
master
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
/ private tmp conflict2
Name
Size
Modified
..
.gitignore
40 B
Aug 13, 201
clancy.txt
1.7 KB
Aug 13, 201
conflict.Rproj
205 B
Aug 13, 201

User 2: commit history (post push)

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master origin/master Left verse 2 out, added 4 and new 6.	James Farrow <james@fn.com.au>	2018-08-13	21d9acb4
Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-2 of 2

SHA 21d9acb4
Author James Farrow <james@fn.com.au>
Date 2018-08-13 05:06
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clancy.txt View file @ 21d9acb4

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    11  And the bush hath friends to meet him, and their kindly voices greet him
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    23  And the language uninviting of the grubs in Parliament fighting
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16 26  And the hurrying people daunt me, and their pallid faces haunt me
17 27  As they shoulder one another in their rush and nervous haste,
18 28  With their eager eyes and greedy, and their stunted forms and weedy,
```

User 1: commit history (revisited)

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master origin/master Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-1 of 1

SHA aee16daf
Author James Farrow <james@fn.com.au>
Date 2018-08-13 04:58
Subject **Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.**

.gitignore
clancy.txt
conflict.Rproj

.gitignore View file @ aee16daf

```
@@ -0,0 +1,4 @@
.Rproj.user
.Rhistory
.RData
.Ruserdata
```

clancy.txt View file @ aee16daf

```
@@ -0,0 +1,24 @@
I had written him a letter which I had, for want of better,
Knowledge, sent to where I met him down the Lachlan, years ago,
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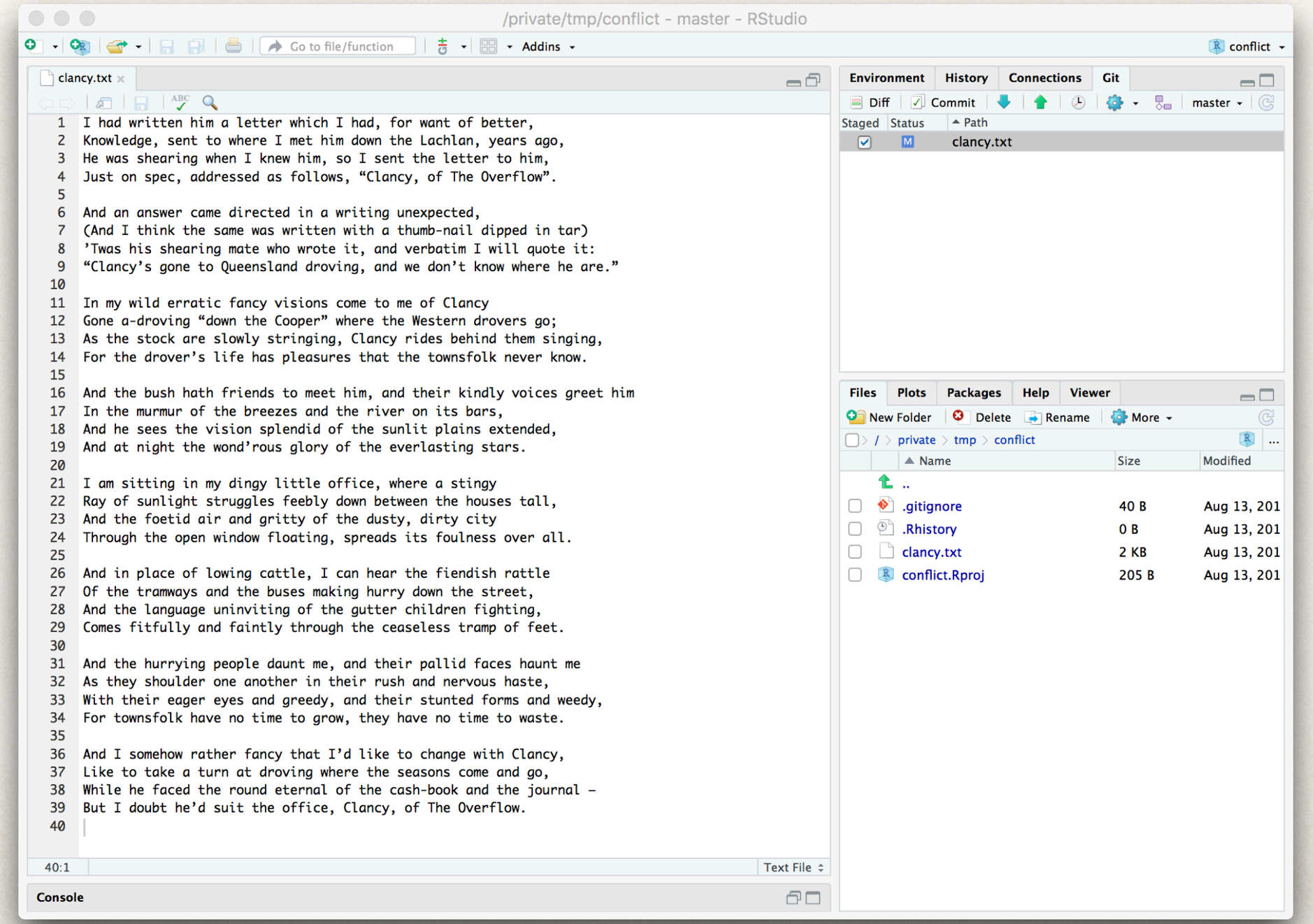
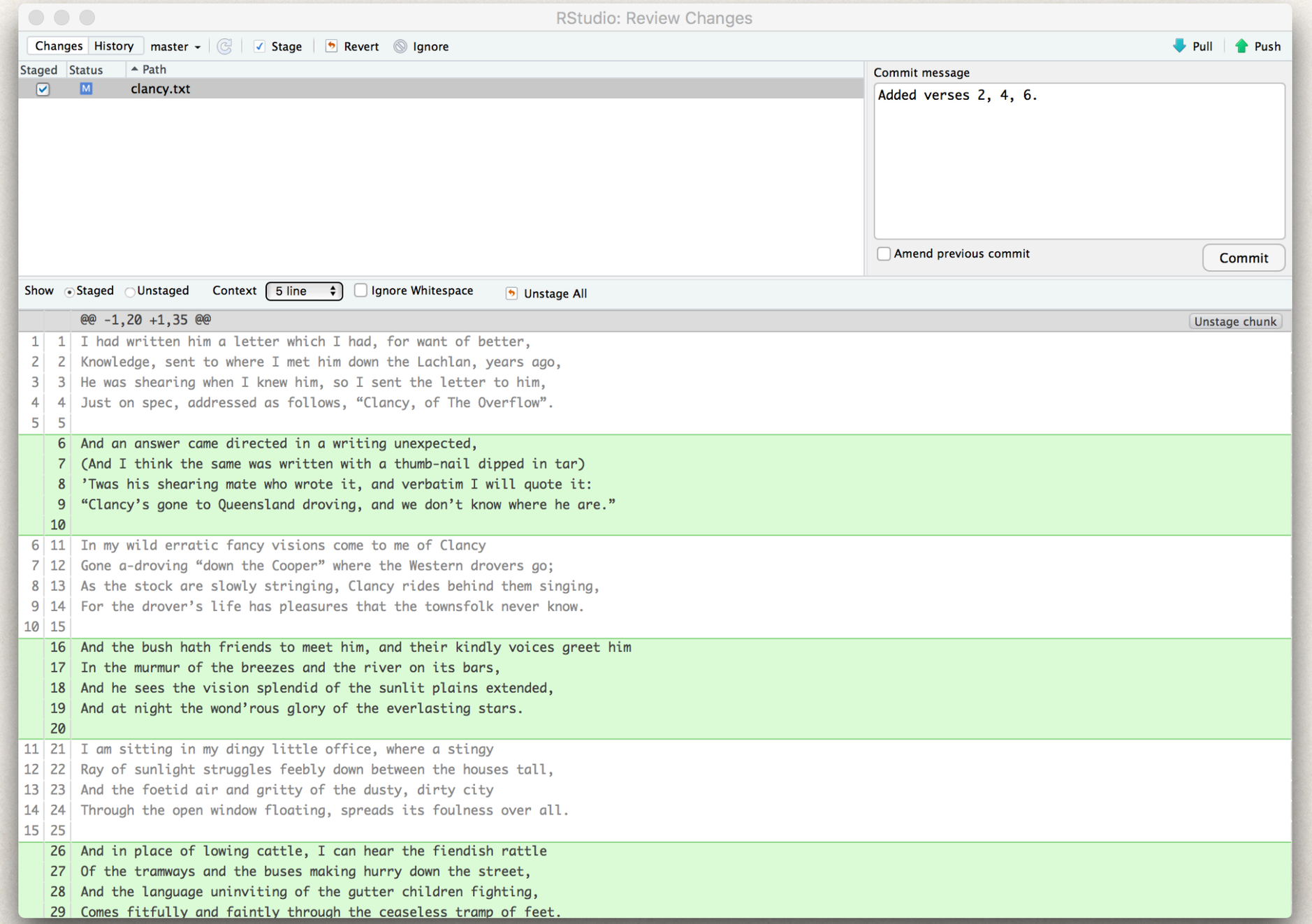
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all
```

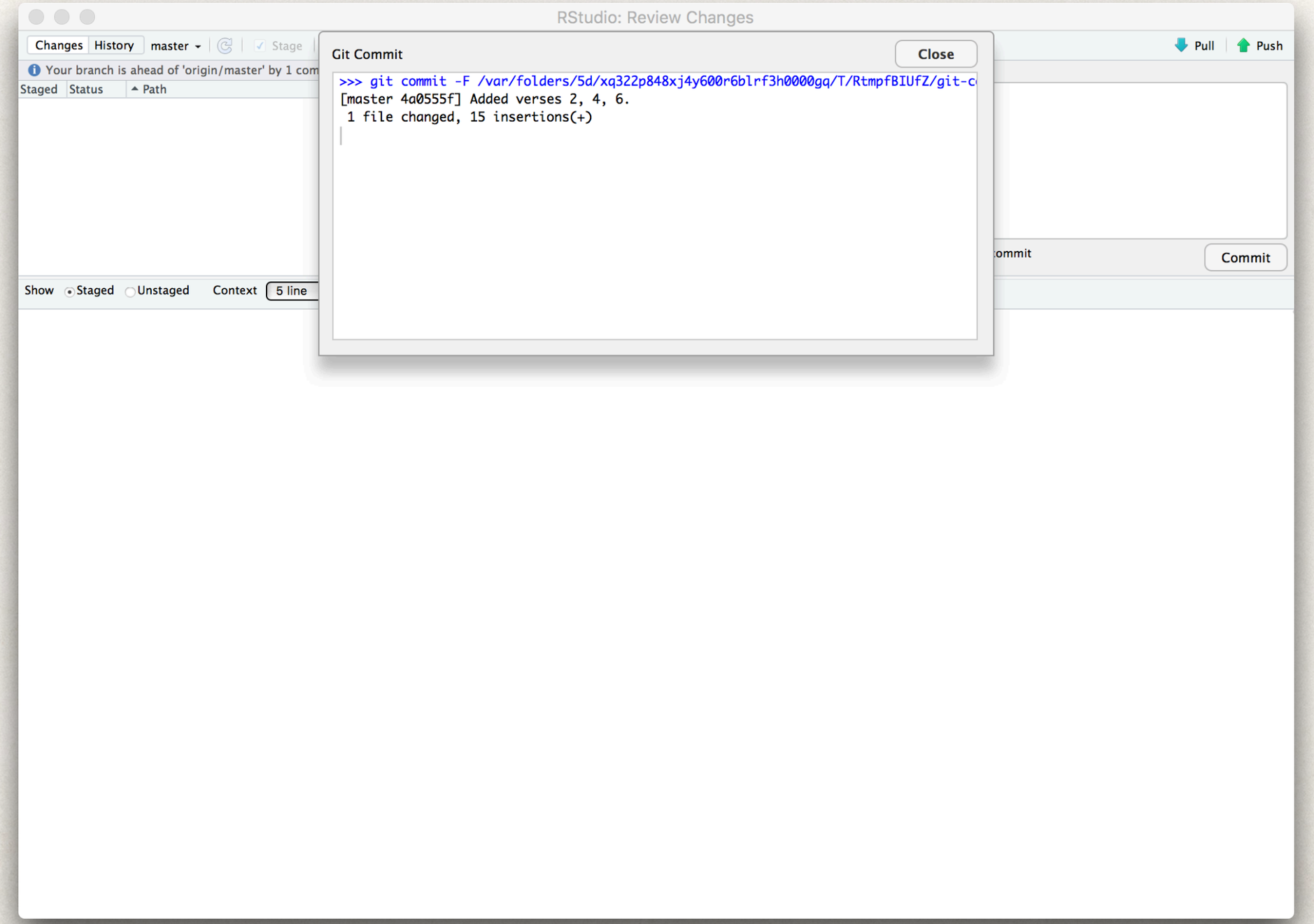
User 1: edit (adds vv. 2, 4 and 6)



User 1: commit



User 1: commit



User 1: commit history

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master Added verses 2, 4, 6.	James Farrow <james@fn.com.au>	2018-08-13	4a0555f8
Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-2 of 2

SHA 4a0555f8
Author James Farrow <james@fn.com.au>
Date 2018-08-13 05:21
Subject **Added verses 2, 4, 6.**
Parent aee16daf

clancy.txt

clancy.txt View file @ 4a0555f8

```
@@ -3,16 +3,31 @@ Knowledge, sent to where I met him down the Lachlan, years ago,
 3  3  He was shearing when I knew him, so I sent the letter to him,
 4  4  Just on spec, addressed as follows, “Clancy, of The Overflow”.
 5  5
    6  And an answer came directed in a writing unexpected,
    7  (And I think the same was written with a thumb-nail dipped in tar)
    8  ’Twas his shearing mate who wrote it, and verbatim I will quote it:
    9  “Clancy’s gone to Queensland droving, and we don’t know where he are.”
   10
 6 11  In my wild erratic fancy visions come to me of Clancy
 7 12  Gone a-droving “down the Cooper” where the Western drovers go;
 8 13  As the stock are slowly stringing, Clancy rides behind them singing,
 9 14  For the drover’s life has pleasures that the townsfolk never know.
10 15
   16  And the bush hath friends to meet him, and their kindly voices greet him
   17  In the murmur of the breezes and the river on its bars,
   18  And he sees the vision splendid of the sunlit plains extended,
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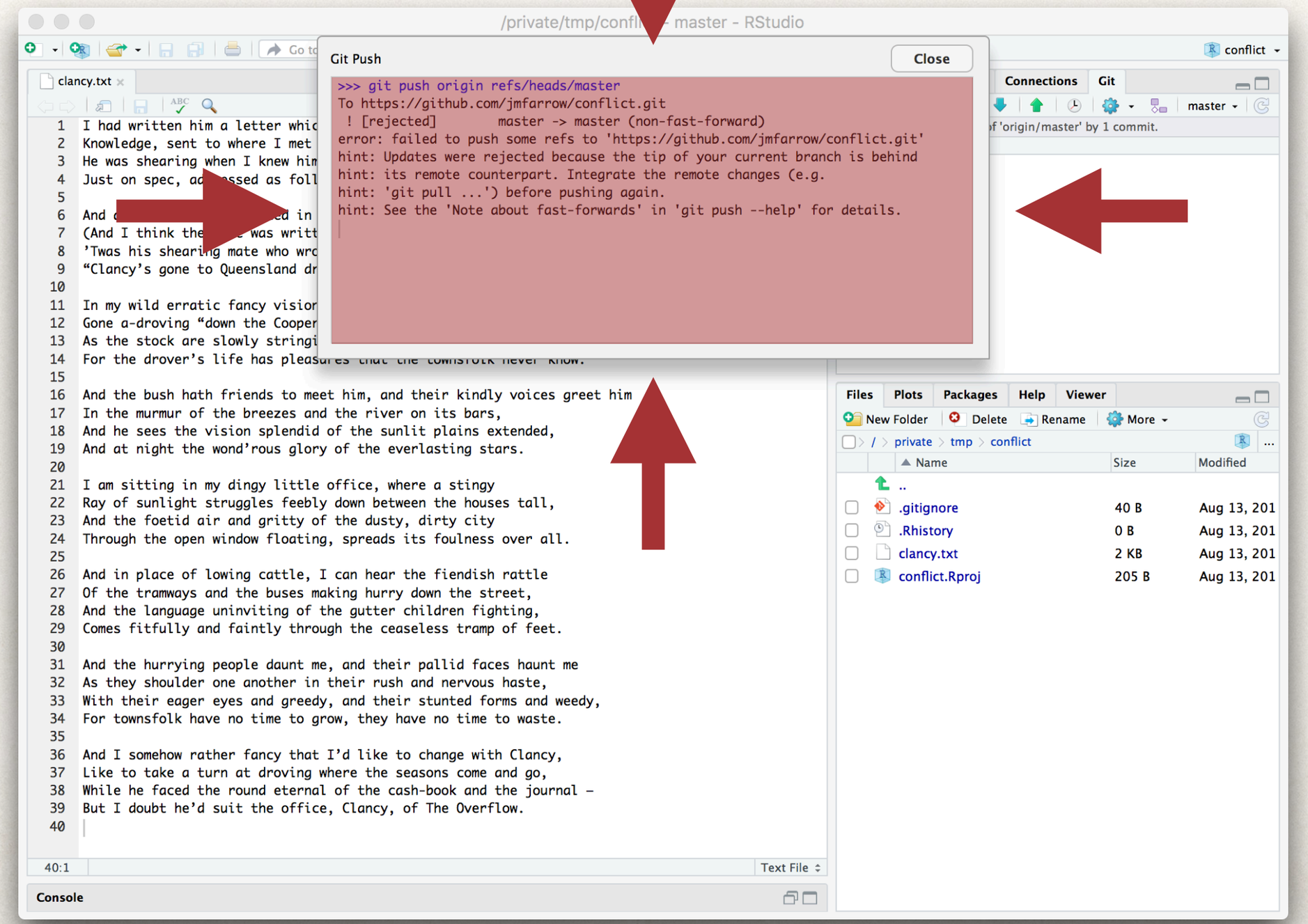
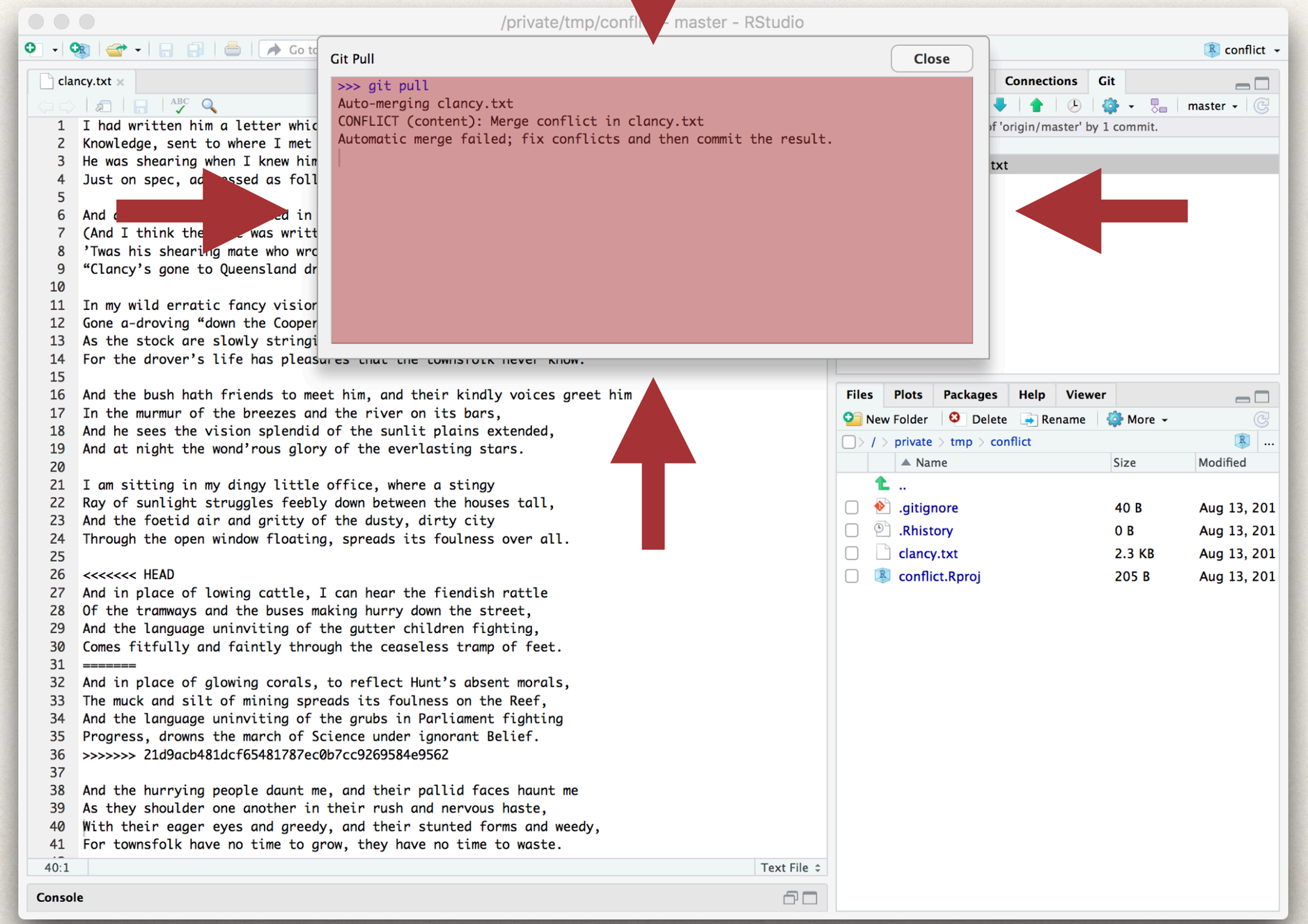
   20
11 21  I am sitting in my dingy little office, where a stingy
12 22  Ray of sunlight struggles feebly down between the houses tall,
13 23  And the foetid air and gritty of the dusty, dirty city
```

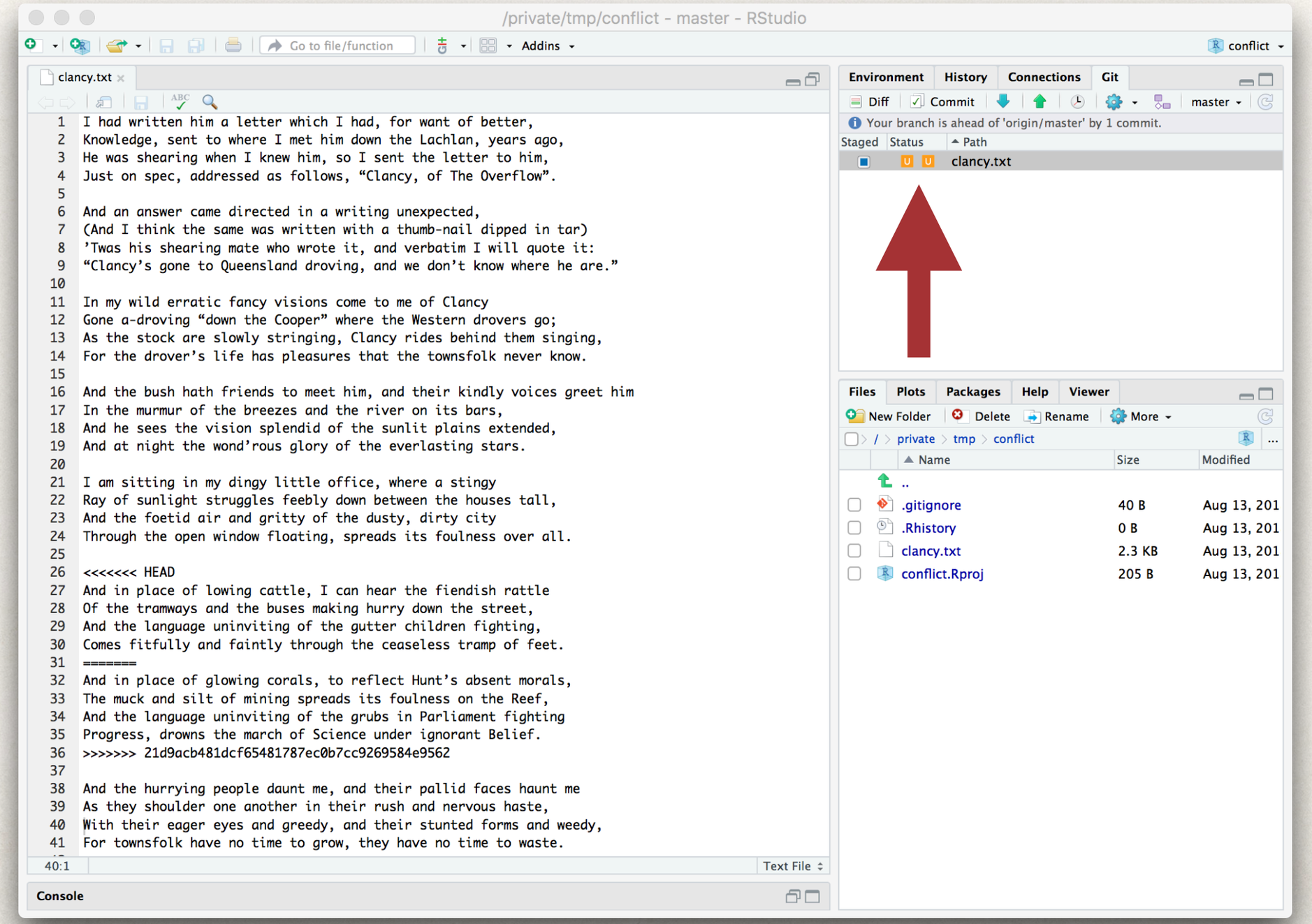
User 1: push (attempt fails)



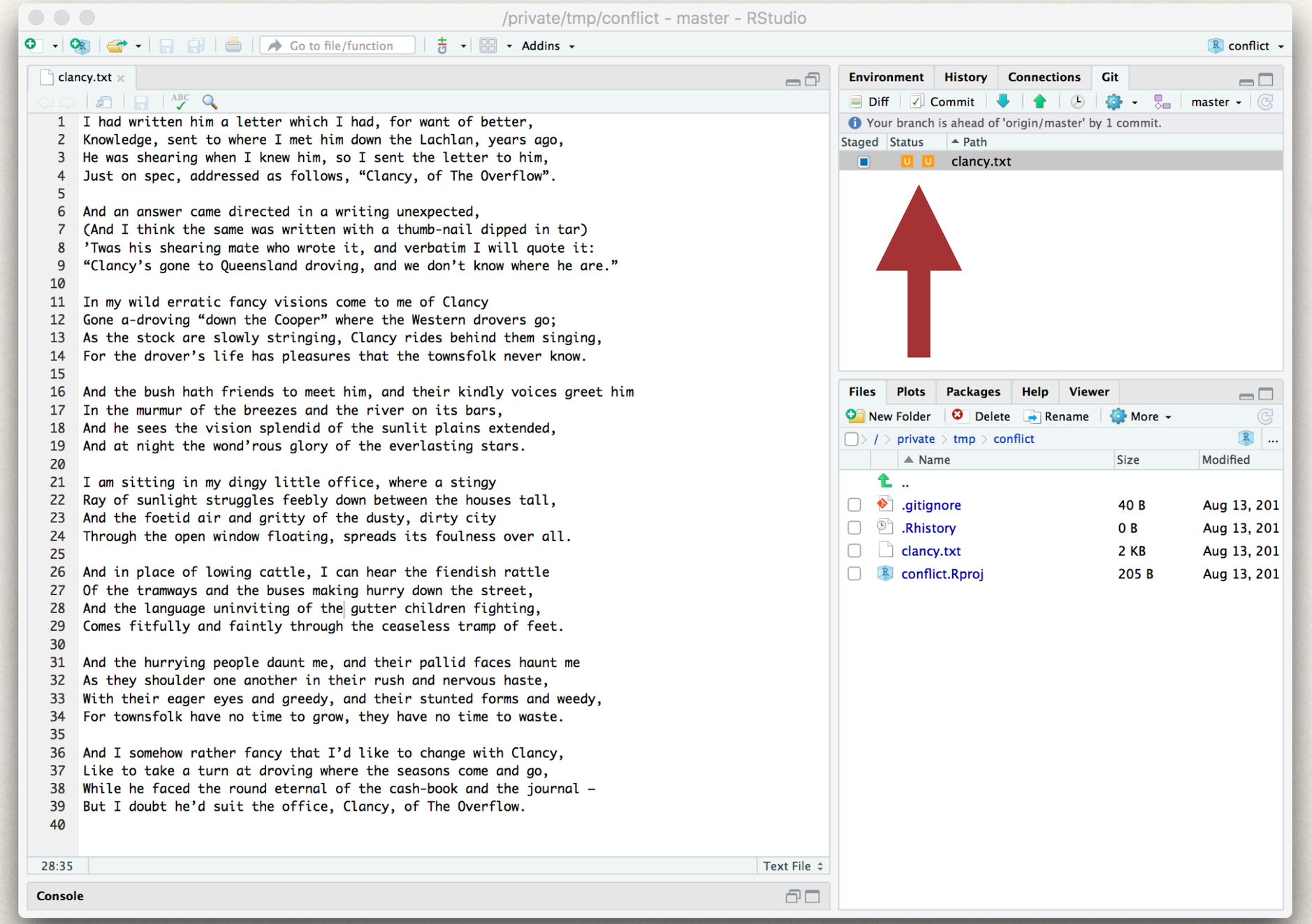
User 1: pull → conflict



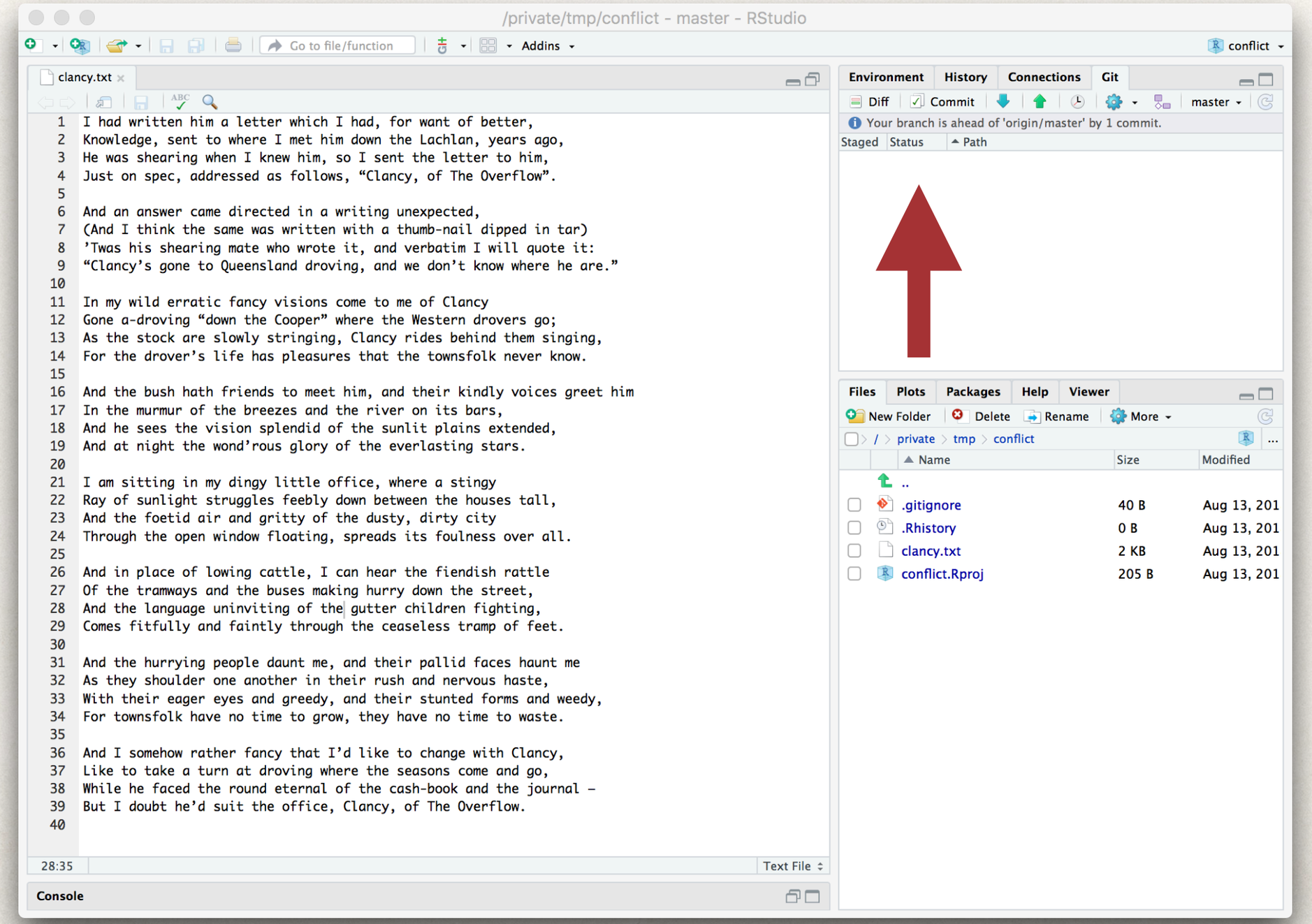
User 1: conflict



User 1: edit (to resolve conflict)



User 1: add


/private/tmp/conflict - master - RStudio
Go to file/function
Addins
conflict
clancy.txt
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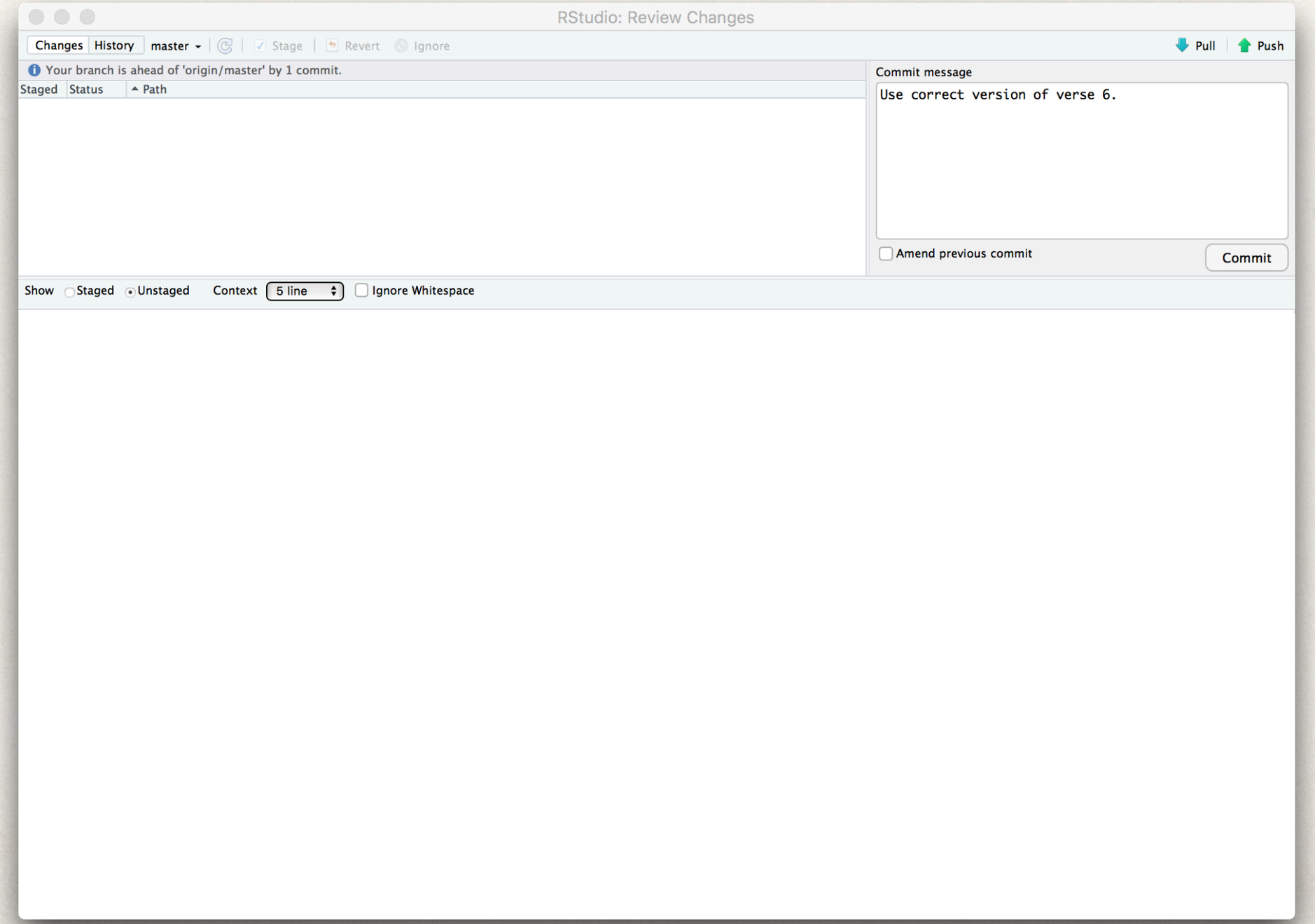
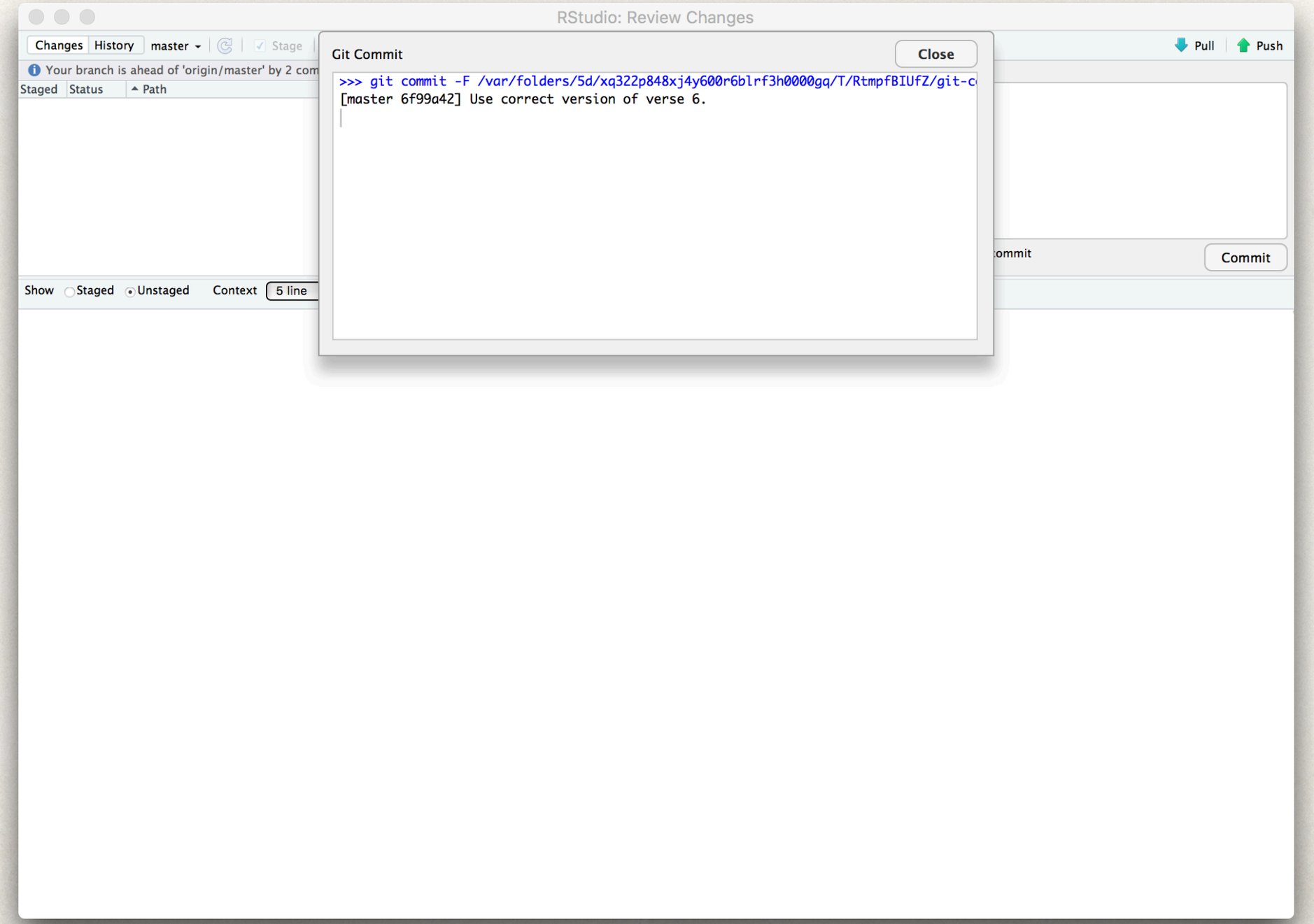
(And I think the same was written with a thumb-nail dipped in tar)
’Twas his shearing mate who wrote it, and verbatim I will quote it:
“Clancy’s gone to Queensland droving, and we don’t know where he are.”
In my wild erratic fancy visions come to me of Clancy
Gone a-droving “down the Cooper” where the Western drovers go;
As the stock are slowly stringing, Clancy rides behind them singing,
For the drover’s life has pleasures that the townsfolk never know.
And the bush hath friends to meet him, and their kindly voices greet him
In the murmur of the breezes and the river on its bars,
And he sees the vision splendid of the sunlit plains extended,
And at night the wond’rous glory of the everlasting stars.
I am sitting in my dingy little office, where a stingy
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all.
And in place of lowing cattle, I can hear the fiendish rattle
Of the tramways and the buses making hurry down the street,
And the language uninviting of the gutter children fighting,
Comes fitfully and faintly through the ceaseless tramp of feet.
And the hurrying people daunt me, and their pallid faces haunt me
As they shoulder one another in their rush and nervous haste,
With their eager eyes and greedy, and their stunted forms and weedy,
For townsfolk have no time to grow, they have no time to waste.
And I somehow rather fancy that I’d like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cash-book and the journal –
But I doubt he’d suit the office, Clancy, of The Overflow.
28:35
Text File
Console
Environment
History
Connections
Git
Diff
Commit
master
Your branch is ahead of 'origin/master' by 1 commit.
Staged
Status
Path
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
/ private tmp conflict
Name
Size
Modified
..
.gitignore
40 B
Aug 13, 201
.Rhistory
0 B
Aug 13, 201
clancy.txt
2 KB
Aug 13, 201
conflict.Rproj
205 B
Aug 13, 201

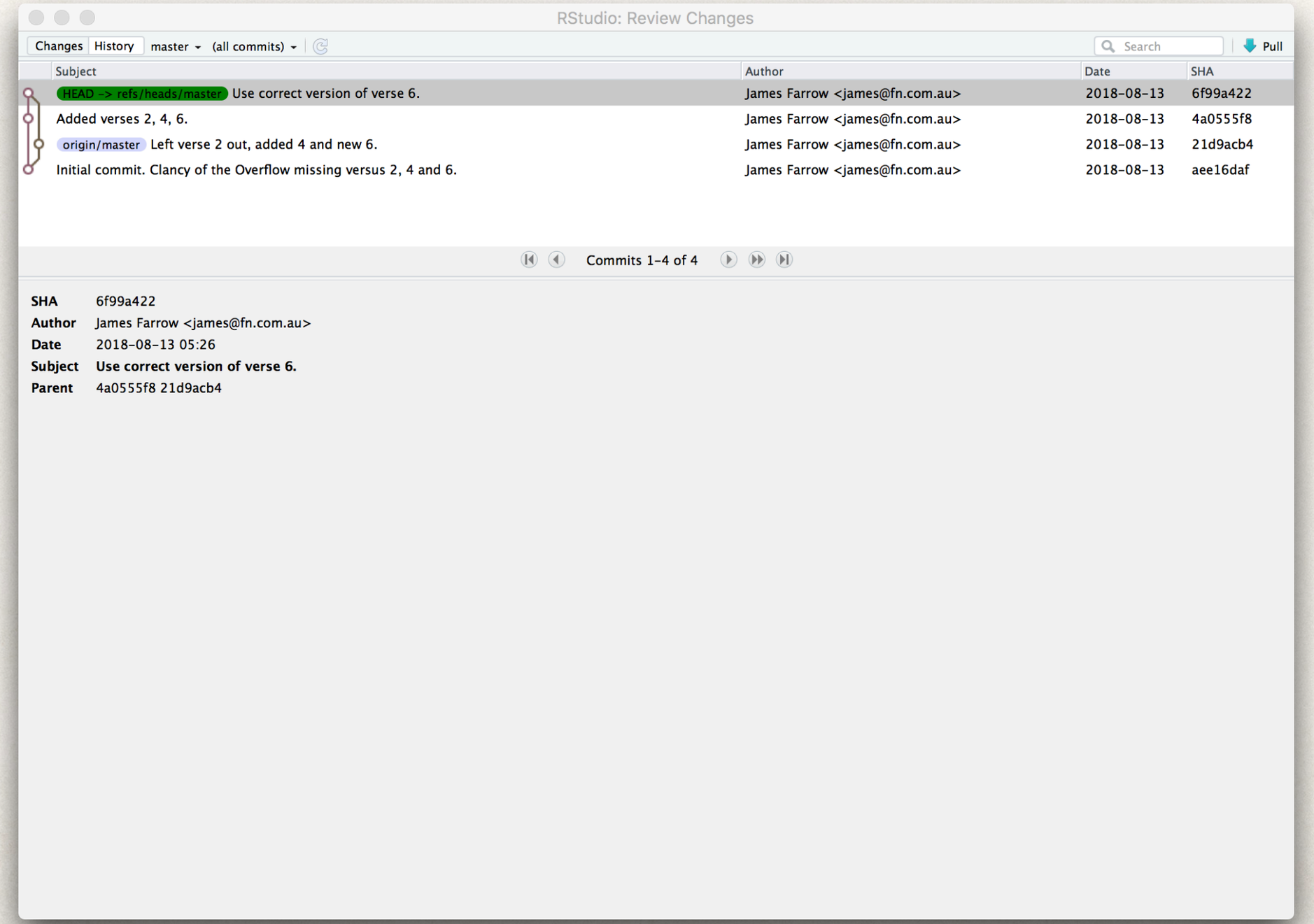
User 1: commit



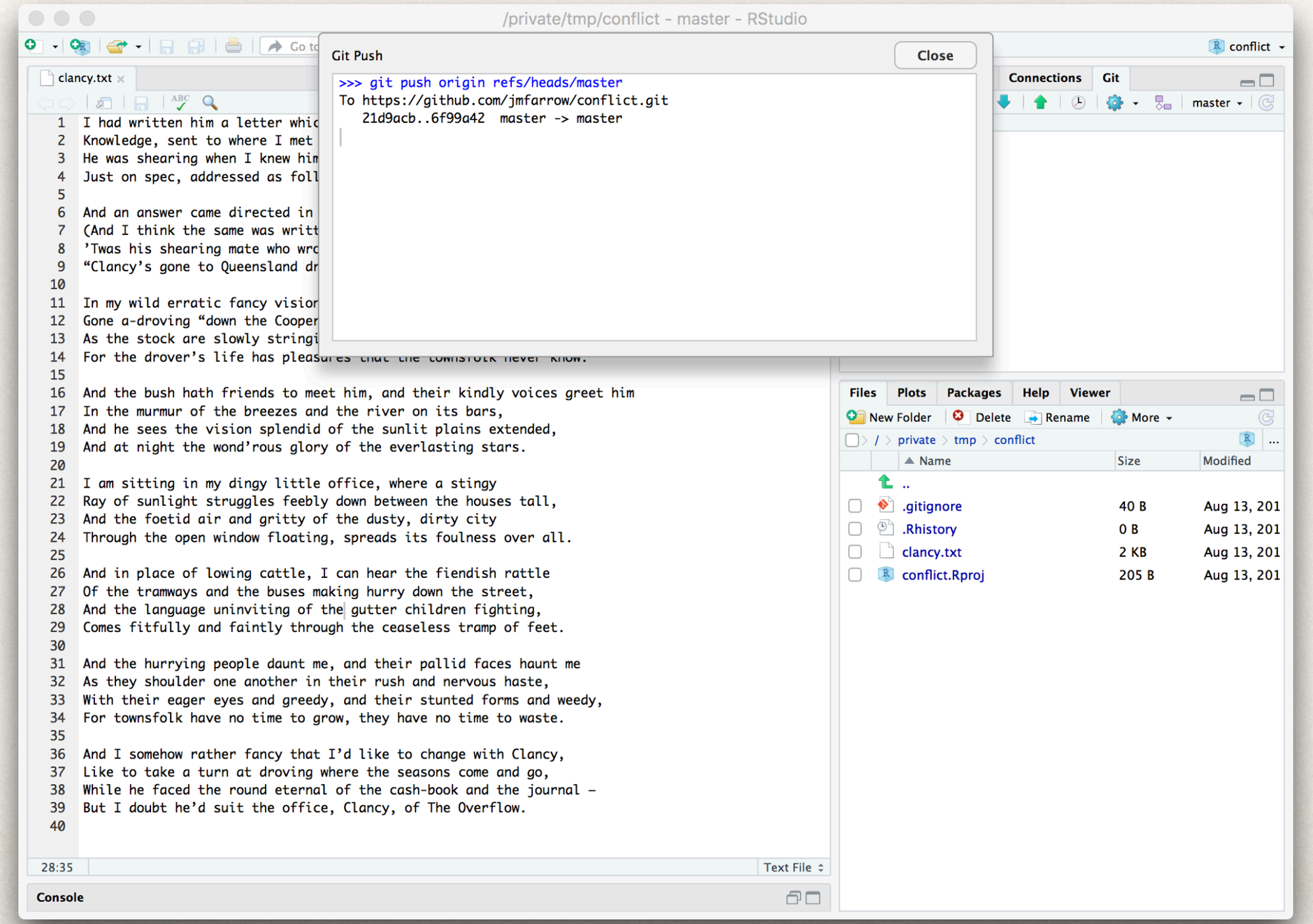
User 1: commit



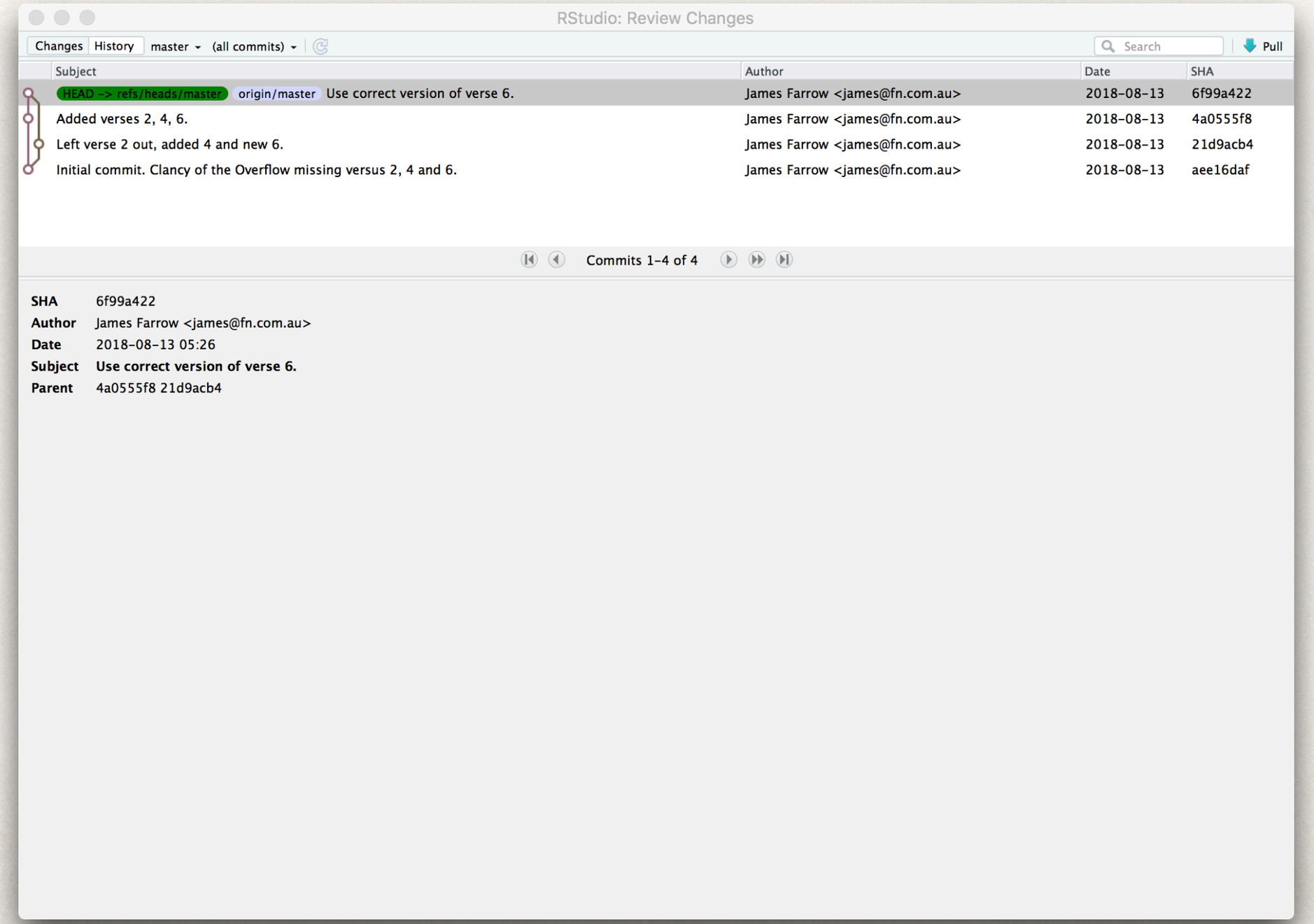
User 1: commit history



User 1: push


/private/tmp/conflict - master - RStudio
Git Push
Close
>>> git push origin refs/heads/master
To https://github.com/jmfarrow/conflict.git
21d9acb..6f99a42 master -> master
clancy.txt
I had written him a letter whic
Knowledge, sent to where I met
He was shearing when I knew him
Just on spec, addressed as foll
And an answer came directed in
(And I think the same was writt
'Twas his shearing mate who wro
"Clancy's gone to Queensland dr
In my wild erratic fancy visior
Gone a-droving "down the Cooper
As the stock are slowly stringi
For the drover's life has pleasures that the townsfolk never know.
And the bush hath friends to meet him, and their kindly voices greet him
In the murmur of the breezes and the river on its bars,
And he sees the vision splendid of the sunlit plains extended,
And at night the wond'rous glory of the everlasting stars.
I am sitting in my dingy little office, where a stingy
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all.
And in place of lowing cattle, I can hear the fiendish rattle
Of the tramways and the buses making hurry down the street,
And the language uninviting of the gutter children fighting,
Comes fitfully and faintly through the ceaseless tramp of feet.
And the hurrying people daunt me, and their pallid faces haunt me
As they shoulder one another in their rush and nervous haste,
With their eager eyes and greedy, and their stunted forms and weedy,
For townsfolk have no time to grow, they have no time to waste.
And I somehow rather fancy that I'd like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cash-book and the journal –
But I doubt he'd suit the office, Clancy, of The Overflow.
28:35
Text File
Console
conflict
Connections
Git
master
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
/ private tmp conflict
Name
Size
Modified
..
.gitignore
40 B
Aug 13, 201
.Rhistory
0 B
Aug 13, 201
clancy.txt
2 KB
Aug 13, 201
conflict.Rproj
205 B
Aug 13, 201

User 1: commit history (post push)



User 2: commit history (revisited)

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master origin/master Left verse 2 out, added 4 and new 6.	James Farrow <james@fn.com.au>	2018-08-13	21d9acb4
Initial commit. Clancy of the Overflow missing versus 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	aee16daf

Commits 1-2 of 2

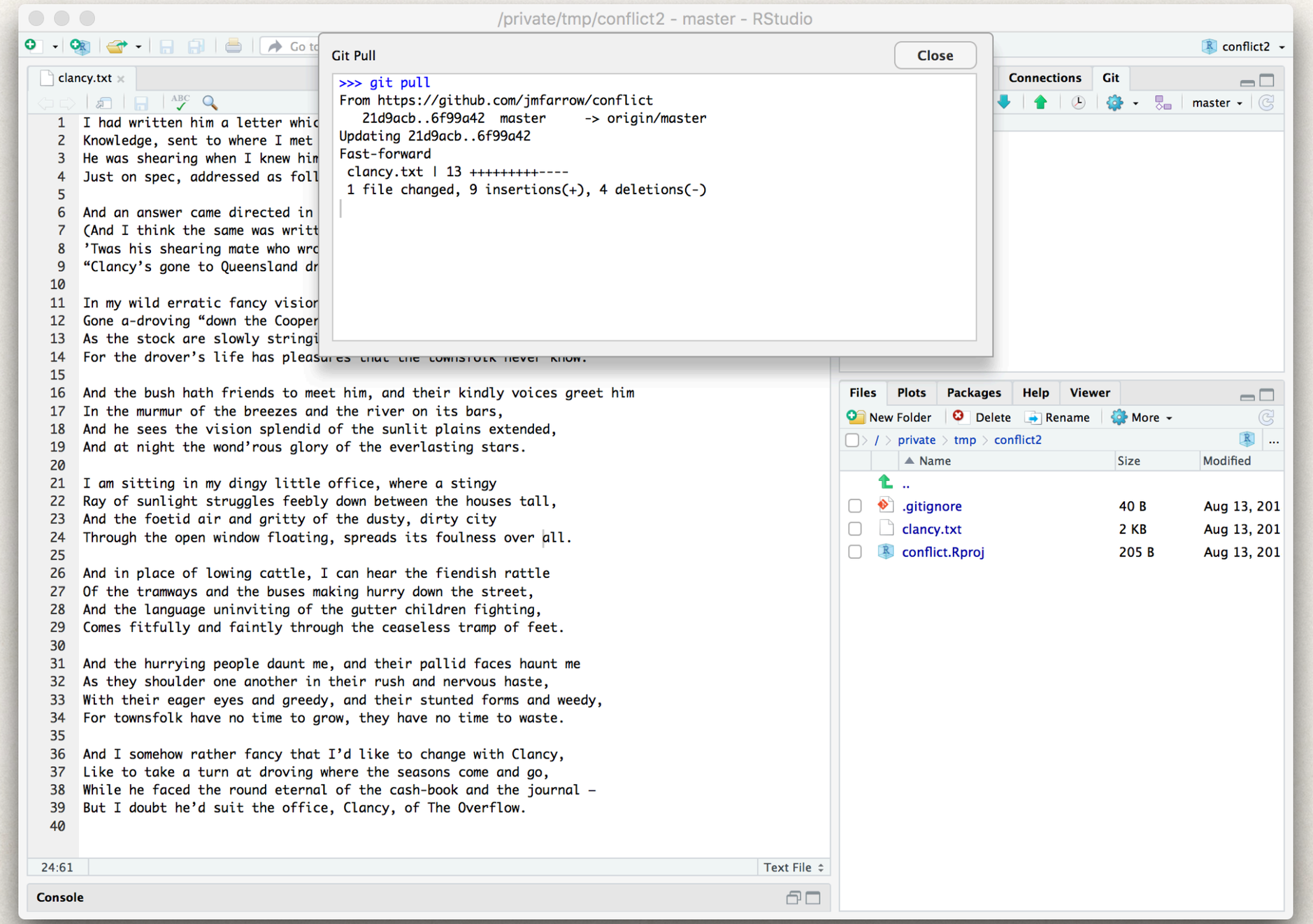
SHA 21d9acb4
Author James Farrow <james@fn.com.au>
Date 2018-08-13 05:06
Subject **Left verse 2 out, added 4 and new 6.**
Parent aee16daf

clancy.txt

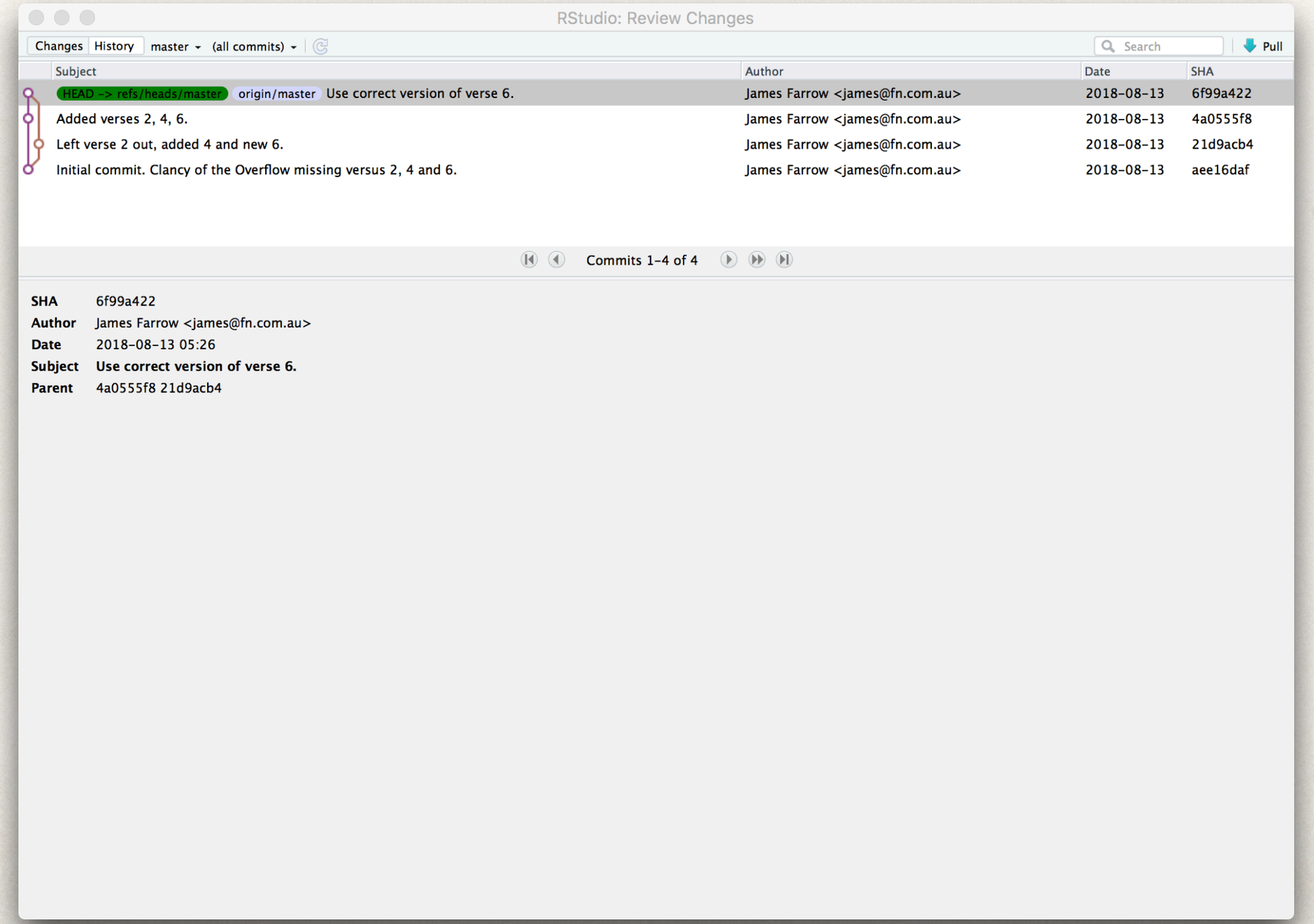
clancy.txt View file @ 21d9acb4

```
@@ -8,11 +8,21 @@ Gone a-droving "down the Cooper" where the Western drovers go;
 8  8  As the stock are slowly stringing, Clancy rides behind them singing,
 9  9  For the drover's life has pleasures that the townsfolk never know.
10 10
    11  And the bush hath friends to meet him, and their kindly voices greet him
    12  In the murmur of the breezes and the river on its bars,
    13  And he sees the vision splendid of the sunlit plains extended,
    14  And at night the wond'rous glory of the everlasting stars.
    15
11 16  I am sitting in my dingy little office, where a stingy
12 17  Ray of sunlight struggles feebly down between the houses tall,
13 18  And the foetid air and gritty of the dusty, dirty city
14 19  Through the open window floating, spreads its foulness over all.
15 20
    21  And in place of glowing corals, to reflect Hunt's absent morals,
    22  The muck and silt of mining spreads its foulness on the Reef,
    23  And the language uninviting of the grubs in Parliament fighting
    24  Progress, drowns the march of Science under ignorant Belief.
    25
16 26  And the hurrying people daunt me, and their pallid faces haunt me
17 27  As they shoulder one another in their rush and nervous haste,
18 28  With their eager eyes and greedy, and their stunted forms and weedy,
```

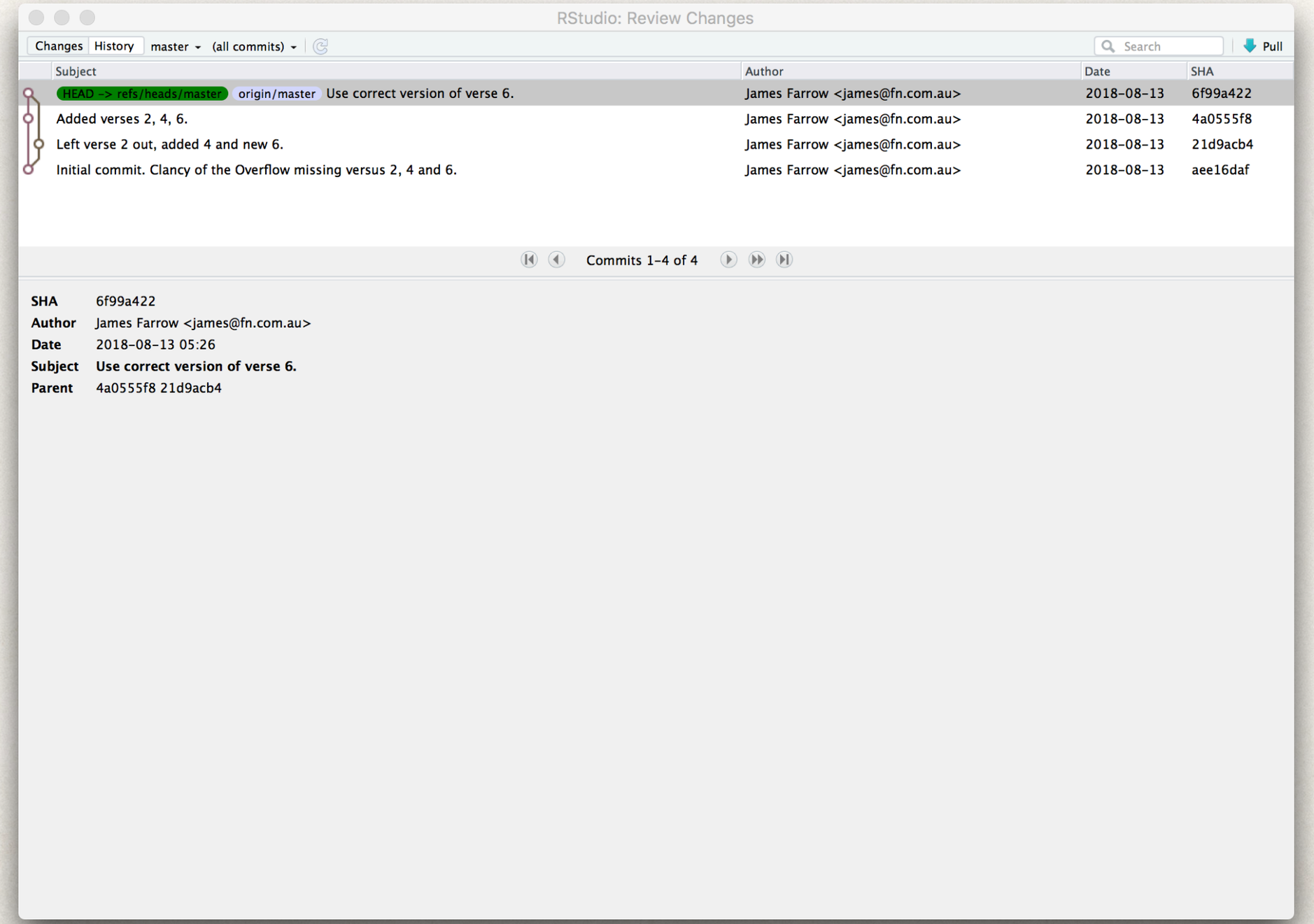
User 2: pull


/private/tmp/conflict2 - master - RStudio
Git Pull
Close
>>> git pull
From https://github.com/jmfarrow/conflict
21d9acb..6f99a42 master -> origin/master
Updating 21d9acb..6f99a42
Fast-forward
clancy.txt | 13 +++++++++----
1 file changed, 9 insertions(+), 4 deletions(-)
clancy.txt
I had written him a letter whic
Knowledge, sent to where I met
He was shearing when I knew him
Just on spec, addressed as foll
And an answer came directed in
(And I think the same was writt
'Twas his shearing mate who wro
"Clancy's gone to Queensland dr
In my wild erratic fancy visior
Gone a-droving "down the Cooper
As the stock are slowly stringi
For the drover's life has pleasures that the townsfolk never know.
And the bush hath friends to meet him, and their kindly voices greet him
In the murmur of the breezes and the river on its bars,
And he sees the vision splendid of the sunlit plains extended,
And at night the wond'rous glory of the everlasting stars.
I am sitting in my dingy little office, where a stingy
Ray of sunlight struggles feebly down between the houses tall,
And the foetid air and gritty of the dusty, dirty city
Through the open window floating, spreads its foulness over all.
And in place of lowing cattle, I can hear the fiendish rattle
Of the tramways and the buses making hurry down the street,
And the language uninviting of the gutter children fighting,
Comes fitfully and faintly through the ceaseless tramp of feet.
And the hurrying people daunt me, and their pallid faces haunt me
As they shoulder one another in their rush and nervous haste,
With their eager eyes and greedy, and their stunted forms and weedy,
For townsfolk have no time to grow, they have no time to waste.
And I somehow rather fancy that I'd like to change with Clancy,
Like to take a turn at droving where the seasons come and go,
While he faced the round eternal of the cash-book and the journal –
But I doubt he'd suit the office, Clancy, of The Overflow.
24:61
Text File
Console
conflict2
Connections
Git
master
Files
Plots
Packages
Help
Viewer
New Folder
Delete
Rename
More
/ private tmp conflict2
Name
Size
Modified
..
.gitignore
40 B
Aug 13, 201
clancy.txt
2 KB
Aug 13, 201
conflict.Rproj
205 B
Aug 13, 201

User 2: commit history (post pull)



User 1: commit history (revisited)

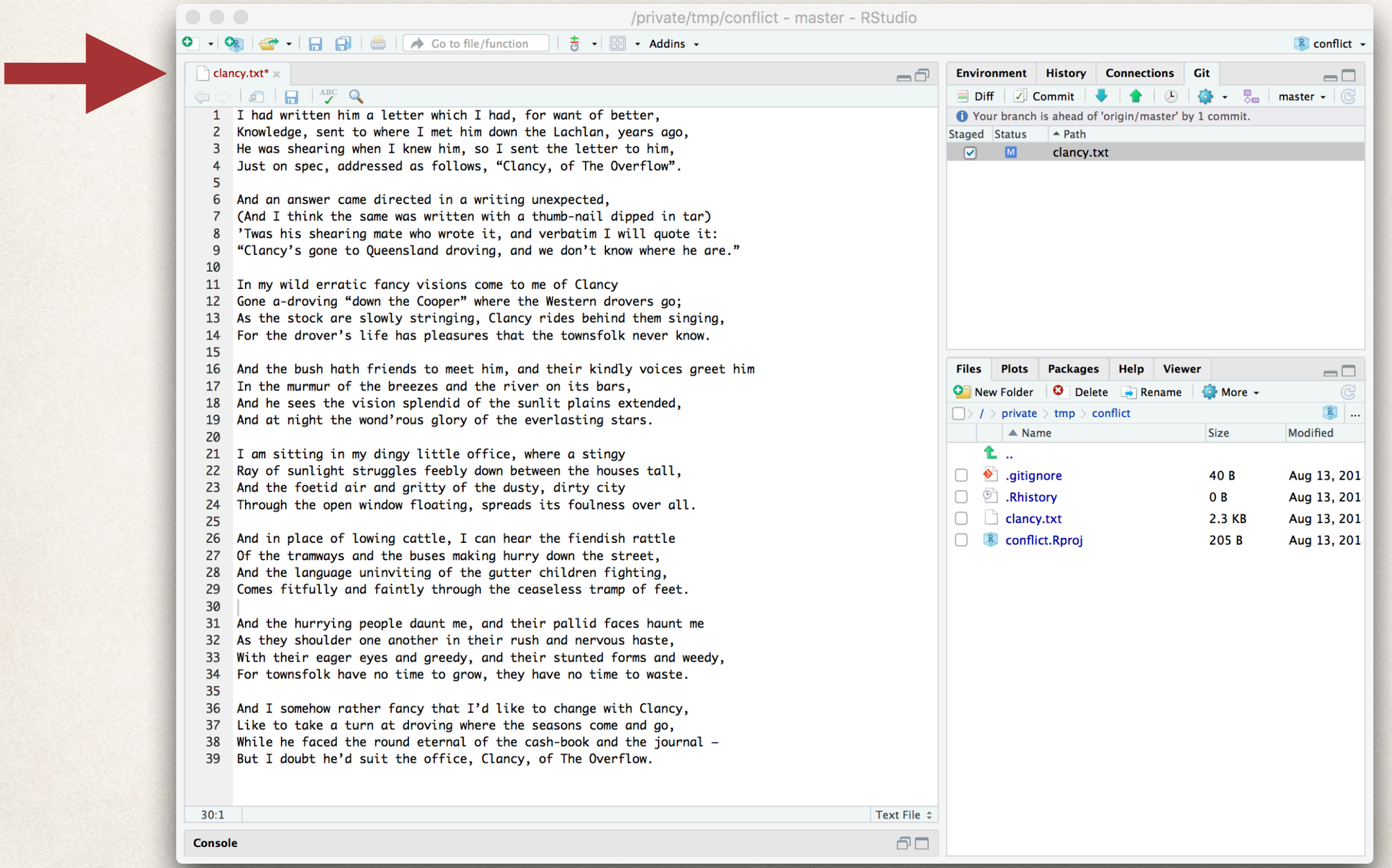


A cautionary tale

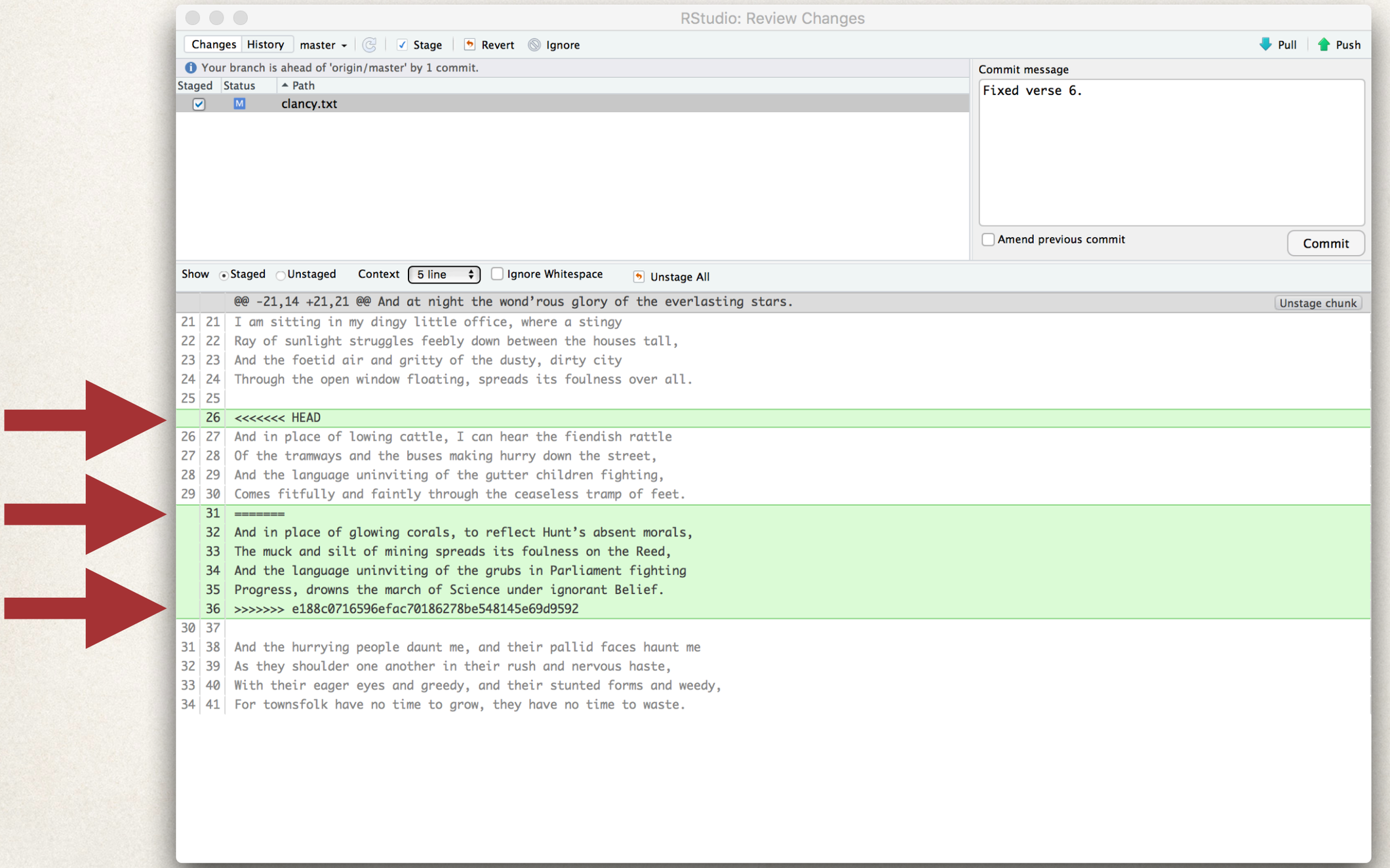
Always remove all conflict markers ‘<<<<<<<’, ‘=======’, ‘>>>>>>>’

Don’t forget to save

Resolved pre-commit



The commit had conflict markers



The conflict was committed

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master Fixed verse 6.	James Farrow <james@fn.com.au>	2018-08-13	6808b93a
Added (correct) verses 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	c7d2d192
origin/master Kept verse 2 out, added verse 4, added alternative verse 6.	James Farrow <james@fn.com.au>	2018-08-13	e188c071
Initial commit with verses 2, 4 and 6 missing.	James Farrow <james@fn.com.au>	2018-08-13	66ed18a4

Commits 1-4 of 4

SHA 6808b93a
Author James Farrow <james@fn.com.au>
Date 2018-08-13 03:12
Subject **Fixed verse 6.**
Parent c7d2d192 e188c071

clancy.txt

clancy.txt View file @ 6808b93a

```
@@@ -3,11 -3,6 +3,11 @@@ Knowledge, sent to where I met him dow
 3  3  3  He was shearing when I knew him, so I sent the letter to him,
 4  4  4  Just on spec, addressed as follows, “Clancy, of The Overflow”.
 5  5  5
 6     6  And an answer came directed in a writing unexpected,
 7     7  (And I think the same was written with a thumb-nail dipped in tar)
 8     8  ’Twas his shearing mate who wrote it, and verbatim I will quote it:
 9     9  “Clancy’s gone to Queensland droving, and we don’t know where he are.”
10    10
11  6 11  In my wild erratic fancy visions come to me of Clancy
12  7 12  Gone a-droving “down the Cooper” where the Western drovers go;
13  8 13  As the stock are slowly stringing, Clancy rides behind them singing,
@@@ -23,10 -18,10 +23,17 @@@ Ray of sunlight struggles feebly down b
23 18 23  And the foetid air and gritty of the dusty, dirty city
24 19 24  Through the open window floating, spreads its foulness over all.
25 20 25
      26  <<<<<<< HEAD
26    27  And in place of lowing cattle, I can hear the fiendish rattle
27    28  Of the tramways and the buses making hurry down the street,
28    29  And the language uninviting of the gutter children fighting,
29    30  Comes fitfully and faintly through the ceaseless tramp of feet.
      31  =======
```

No disaster: just fix it

RStudio: Review Changes

Changes | History | master | (all commits) | Search | Pull

Subject	Author	Date	SHA
HEAD -> refs/heads/master origin/master Commit unsaved changes.	James Farrow <james@fn.com.au>	2018-08-13	8a045fc6
Fixed verse 6.	James Farrow <james@fn.com.au>	2018-08-13	6808b93a
Added (correct) verses 2, 4 and 6.	James Farrow <james@fn.com.au>	2018-08-13	c7d2d192
Kept verse 2 out, added verse 4, added alternative verse 6.	James Farrow <james@fn.com.au>	2018-08-13	e188c071
Initial commit with verses 2, 4 and 6 missing.	James Farrow <james@fn.com.au>	2018-08-13	66ed18a4

Commits 1-5 of 5

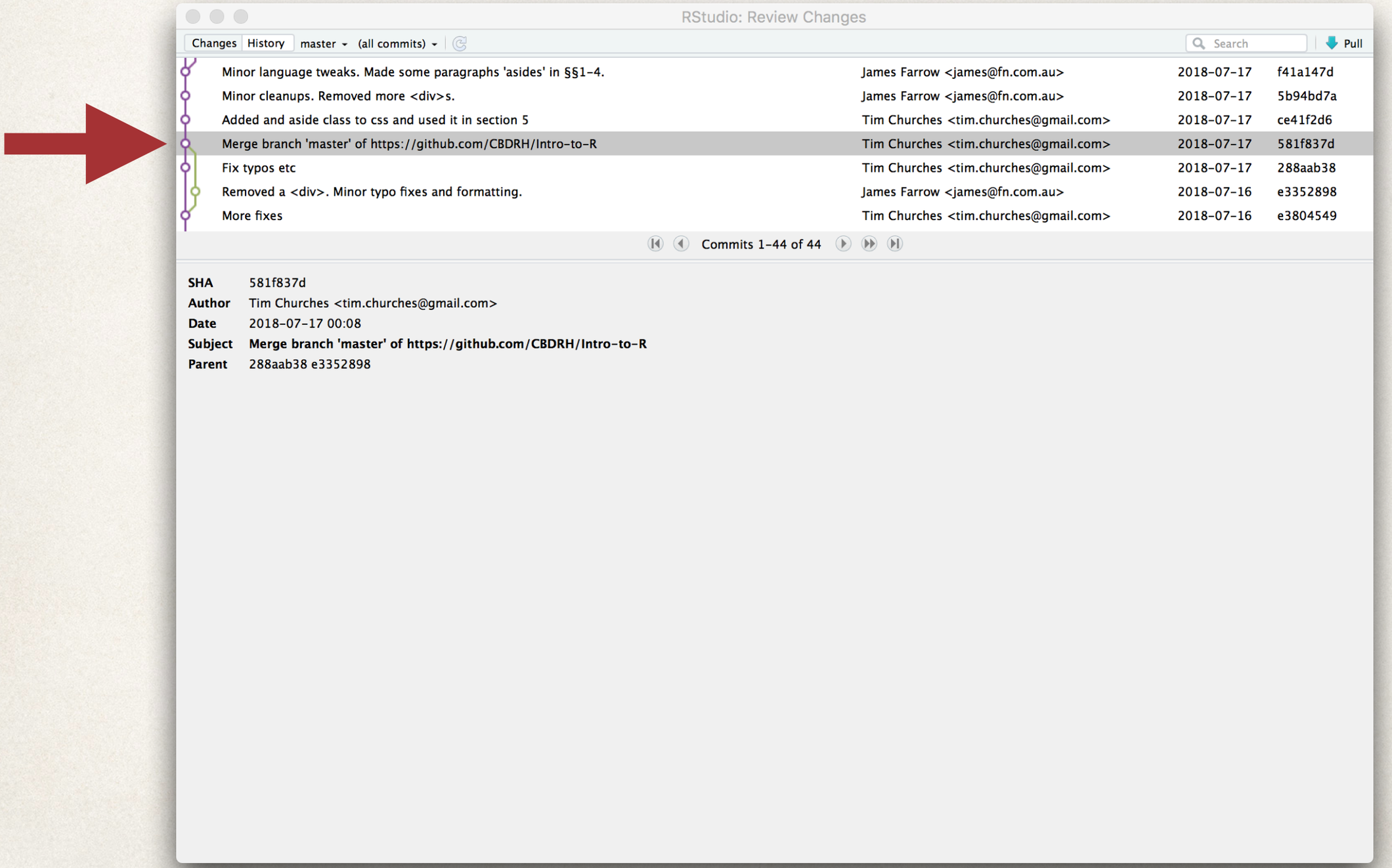
SHA 8a045fc6
Author James Farrow <james@fn.com.au>
Date 2018-08-13 03:48
Subject **Commit unsaved changes.**
Parent 6808b93a

clancy.txt

clancy.txt View file @ 8a045fc6

```
@@ -23,17 +23,10 @@ Ray of sunlight struggles feebly down between the houses tall,
23 23 And the foetid air and gritty of the dusty, dirty city
24 24 Through the open window floating, spreads its foulness over all.
25 25
26    <<<<<<< HEAD
27 26 And in place of lowing cattle, I can hear the fiendish rattle
28 27 Of the tramways and the buses making hurry down the street,
29 28 And the language uninviting of the gutter children fighting,
30 29 Comes fitfully and faintly through the ceaseless tramp of feet.
31    =======
32    And in place of glowing corals, to reflect Hunt's absent morals,
33    The muck and silt of mining spreads its foulness on the Reed,
34    And the language uninviting of the grubs in Parliament fighting
35    Progress, drowns the march of Science under ignorant Belief.
36    >>>>>>> e188c0716596efac70186278be548145e69d9592
37 30
38 31 And the hurrying people daunt me, and their pallid faces haunt me
39 32 As they shoulder one another in their rush and nervous haste,
```

Merge commits added by *git*



Never fear, *git* is here

As long as you commit work nothing is lost

Everything can be repaired

You can always roll back

You can always compare versions