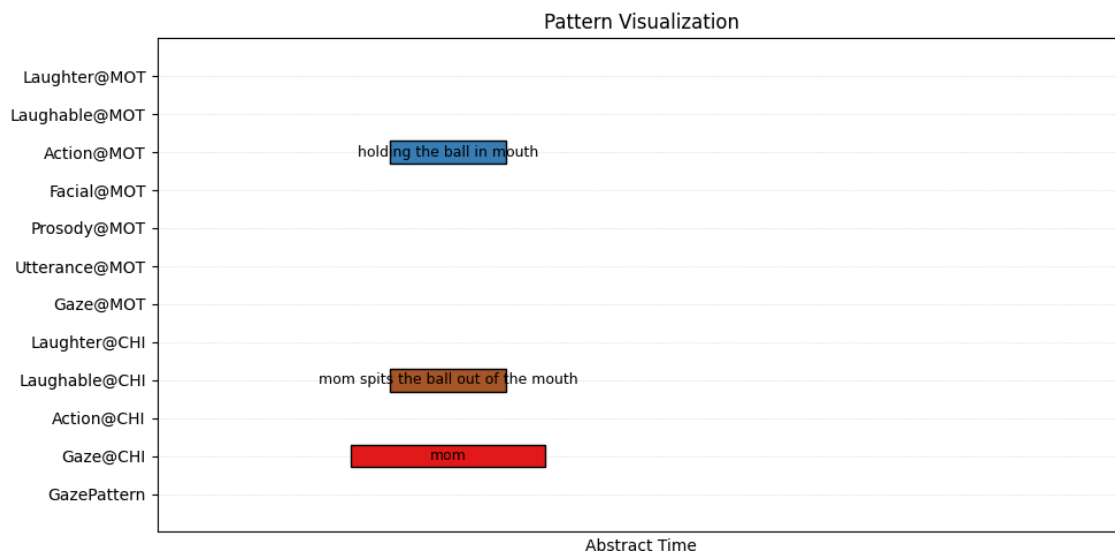


General Analysis - final

Looking at mother because she is doing something laughable



```
['Gaze@CHI(mom)-CONTAINS-Action@MOT(holding the ball in mouth)',  
'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',  
10],
```

Looking at the trigger of laughter

The child first laughter before looking at the object of laughable (context: mother did a laughable event with it) and then started laughing when looking at the ball (potentially the child was replaying the laughable event in her head)

Note: Laughter@CHI(L) refers to two different events

```
['Gaze@CHI(ball)-AFTER-Laughter@CHI(L)-1',  
'Gaze@CHI(ball)-OVERLAPPED_BY-Laughter@CHI(L)-2',  
9]
```

Looking at the trigger of laughter before laughing

Potentially in the context of already expecting the laughable event to happen.

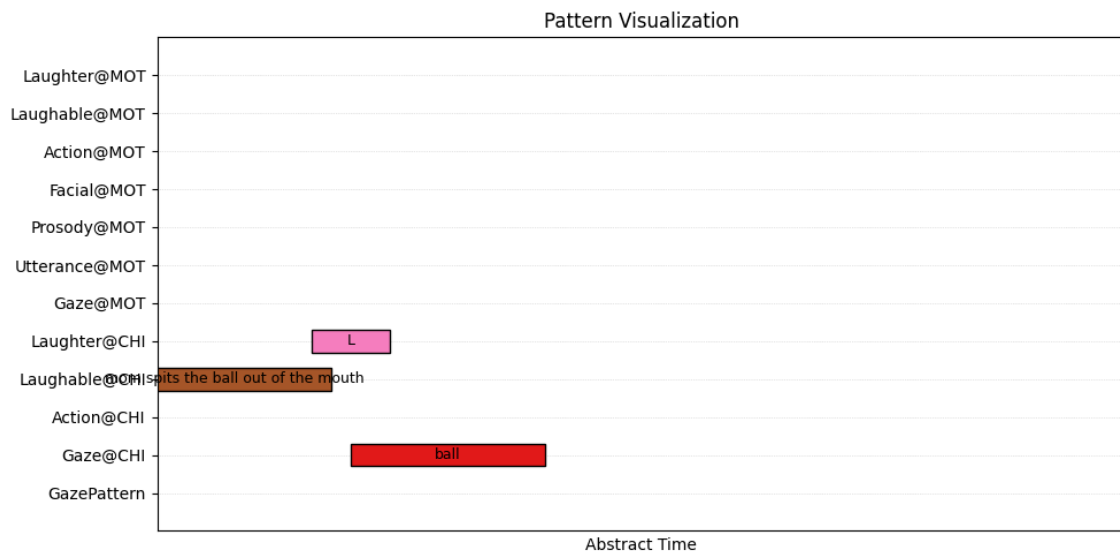
```
['Gaze@CHI(ball)-BEFORE-Laughter@CHI(L)',  
'Gaze@CHI(ball)-BEFORE-Arousal@CHI(high)',  
10]
```

Looking at mom during laughable event because she is doing something with the laughable object

Note: This pattern does not reflect the relation between two mother's actions.

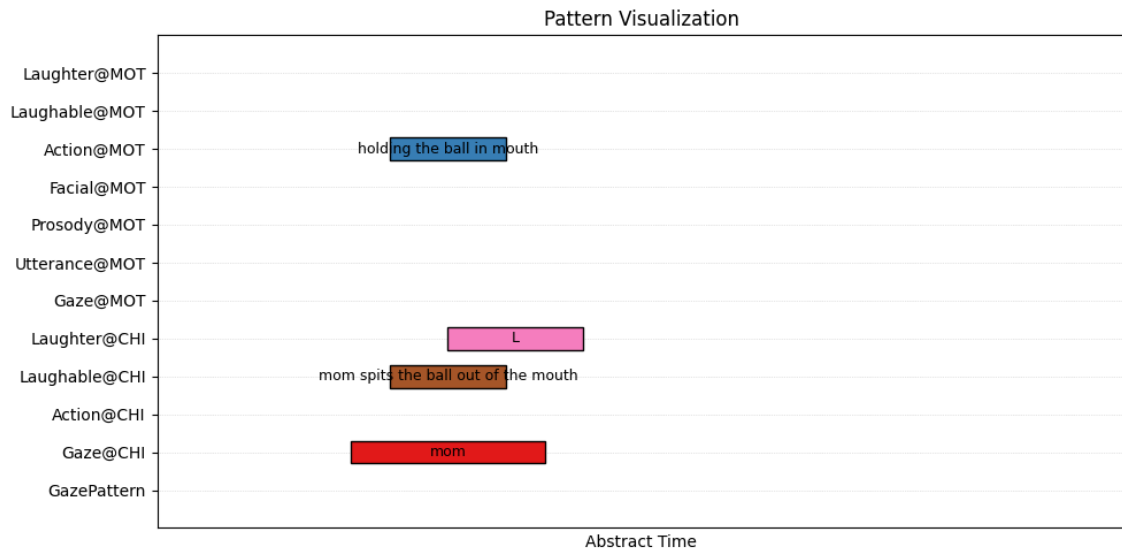
```
[ 'Gaze@CHI(mom)-CONTAINS-Action@MOT(holding the ball in mouth)',  
  'Gaze@CHI(mom)-CONTAINS-Action@MOT(spitting out the ball)',  
  'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',  
  9]
```

Looking at the ball after laughable and during the laughter



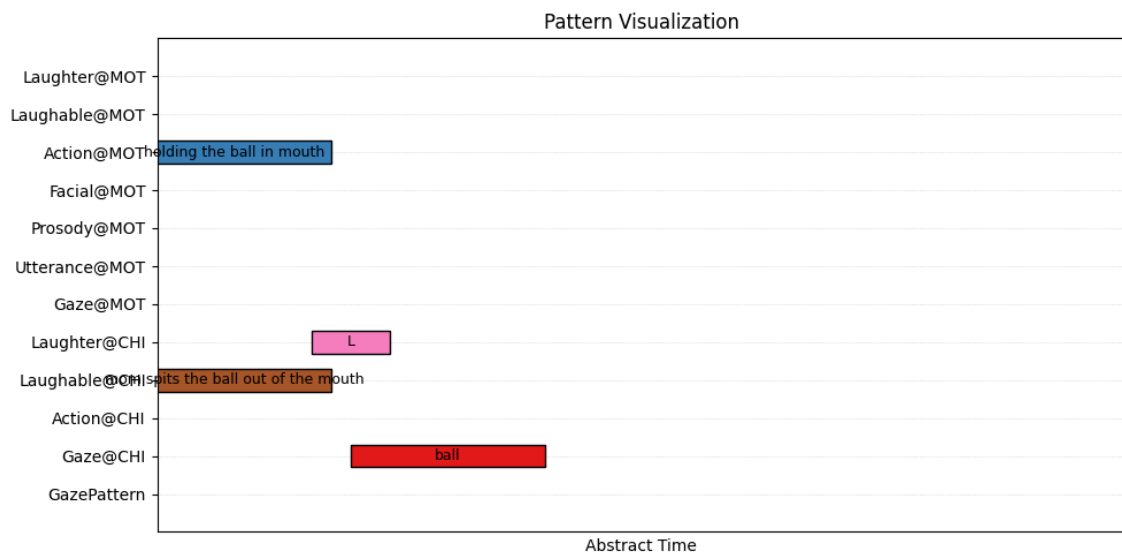
```
[ 'Gaze@CHI(ball)-OVERLAPPED_BY-Laughter@CHI(L)',  
  'Gaze@CHI(ball)-AFTER-Laughable@CHI(mom spits the ball out of the mouth)',  
  8],
```

The child looks at the mother while she is holding and spitting out the ball (laughable event)



```
[ 'Gaze@CHI(mom)-CONTAINS-Action@MOT(holding the ball in mouth)',
  'Gaze@CHI(mom)-OVERLAPS-Laughter@CHI(L)',
  'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',
  8],
```

The child looks at the ball after the mother held it in her mouth and spit it out



```
[ 'Gaze@CHI(ball)-AFTER-Action@MOT(holding the ball in mouth)',
  'Gaze@CHI(ball)-OVERLAPPED_BY-Laughter@CHI(L)',
  'Gaze@CHI(ball)-AFTER-Laughable@CHI(mom spits the ball out of the mouth)',
  7],
```

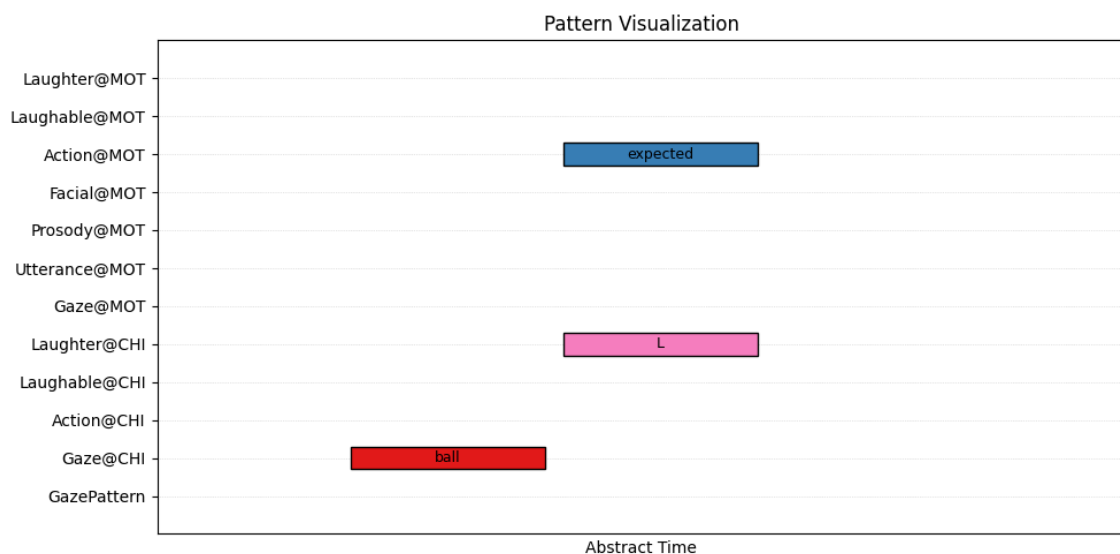
Note: This pattern does not reflect the relation between mother's actions.

```
[ 'Gaze@CHI(ball)-AFTER-Action@MOT(picking up the ball)',
  'Gaze@CHI(ball)-AFTER-Action@MOT(putting the ball in mouth)',
  'Gaze@CHI(ball)-AFTER-Action@MOT(holding the ball in mouth)',
  'Gaze@CHI(ball)-AFTER-Action@MOT(spitting out the ball)',
  7],
```

Adding categorised actions

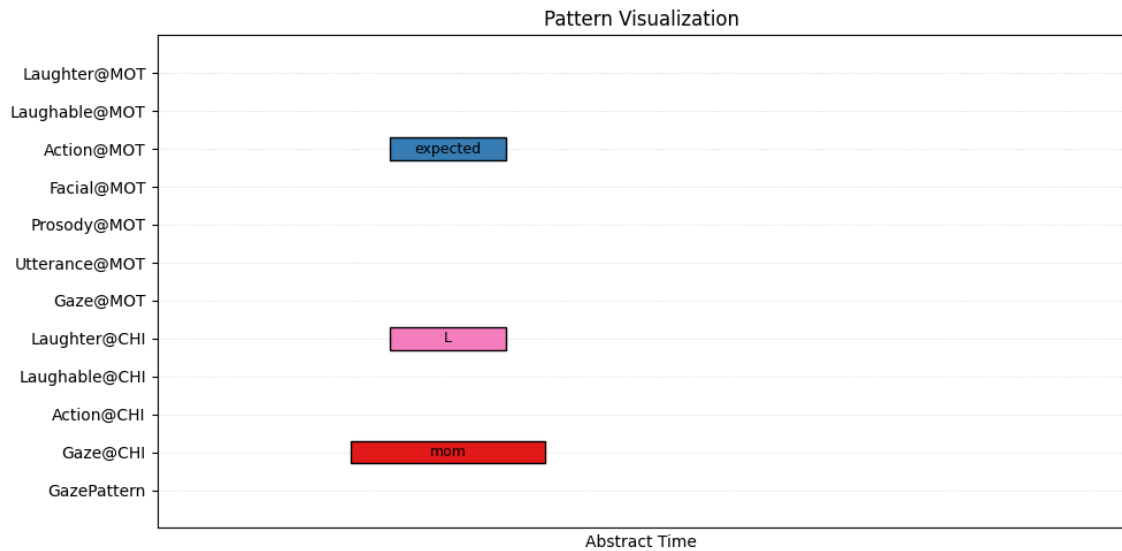
Looking at the ball of laughter trigger before the expected action

Potentially, predicting the event



```
[ 'Gaze@CHI(ball)-BEFORE-Action@MOT(expected)',
  'Gaze@CHI(ball)-BEFORE-Laughter@CHI(L)',
  10],
```

Looking at the mom before she started doing expected action (predicting the event) and during it

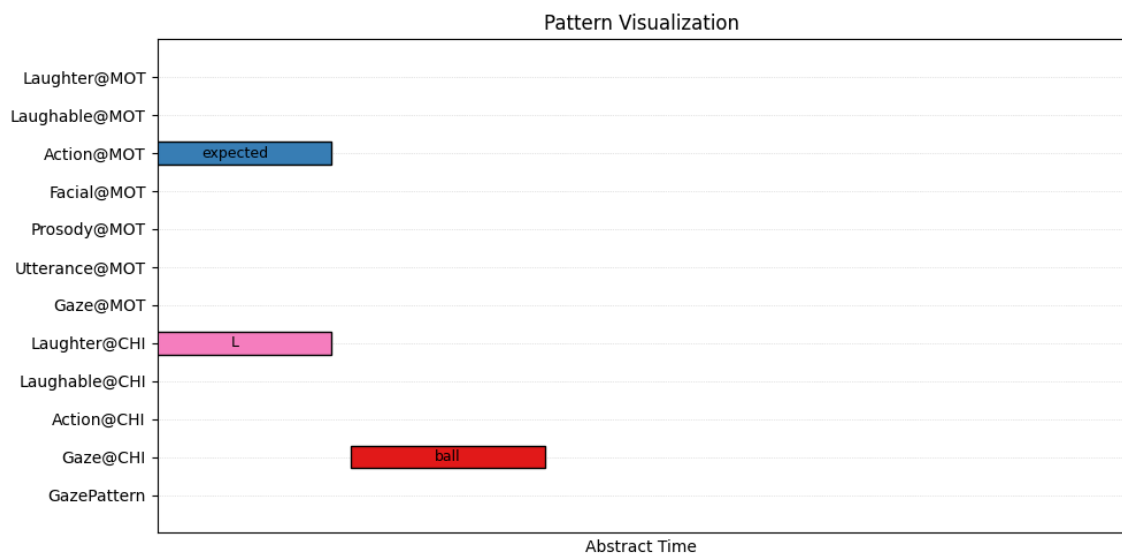


```
[ 'Gaze@CHI(mom)-CONTAINS-Action@MOT(expected)',
  'Gaze@CHI(mom)-CONTAINS-Laughter@CHI(L)',
  9],
```

Similar pattern:

```
[ 'Gaze@CHI(mom)-CONTAINS-Action@MOT(expected)',
  'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',
  8],
```

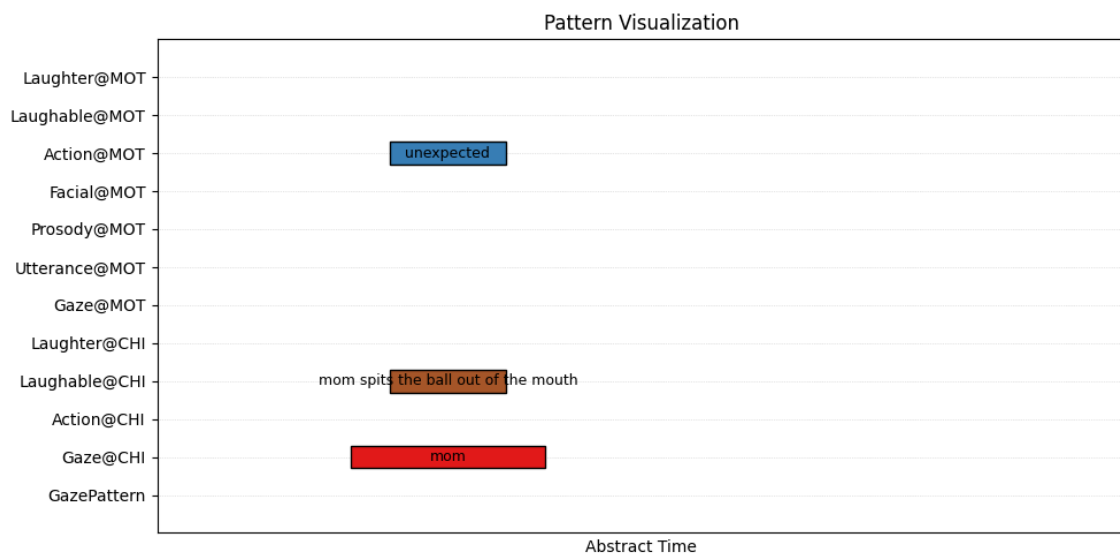
Looking at the ball (object of laughter trigger) after the expected action



```
[ 'Gaze@CHI(ball)-AFTER-Action@MOT(expected)',
  'Gaze@CHI(ball)-AFTER-Laughter@CHI(L)',
```

8],

Looking at the mom during the unexpected laughable action



```
['Gaze@CHI(mom)-CONTAINS-Action@MOT(unexpected)',  
'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',  
6],
```

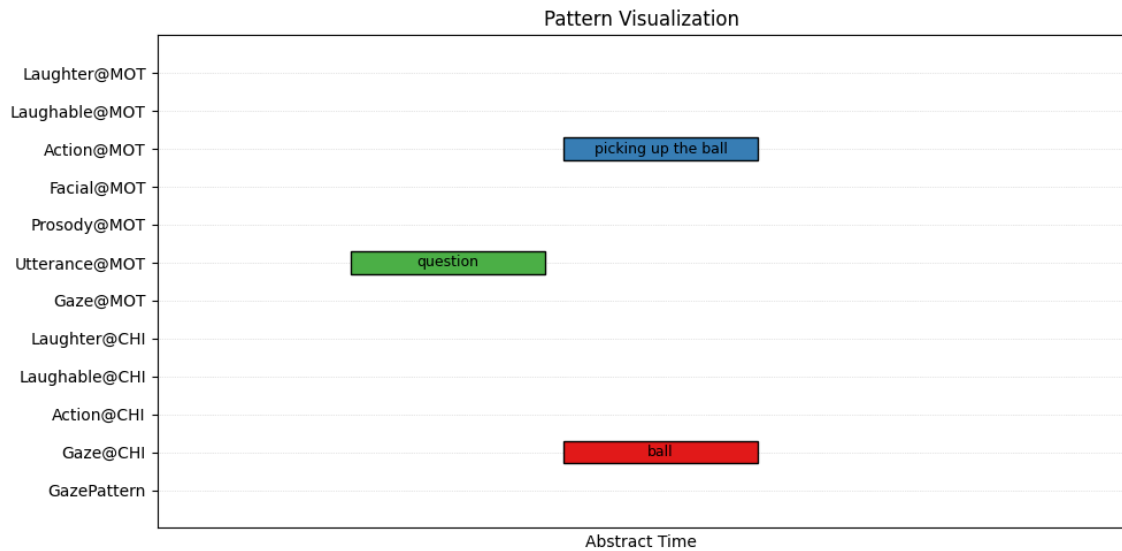
Adding ActionTemporal

Looking at mother while she is performing actions with the main object of the game.

```
['Gaze@CHI(mom)-CONTAINS-Action@MOT(putting the ball in mouth)',  
'Gaze@CHI(mom)-CONTAINS-ActionTemporal@MOT(holding the ball in mouth-FOLLOWED_BY(putting the ball in mouth)-FOLLOWS(spitting out the ball))',  
6],
```

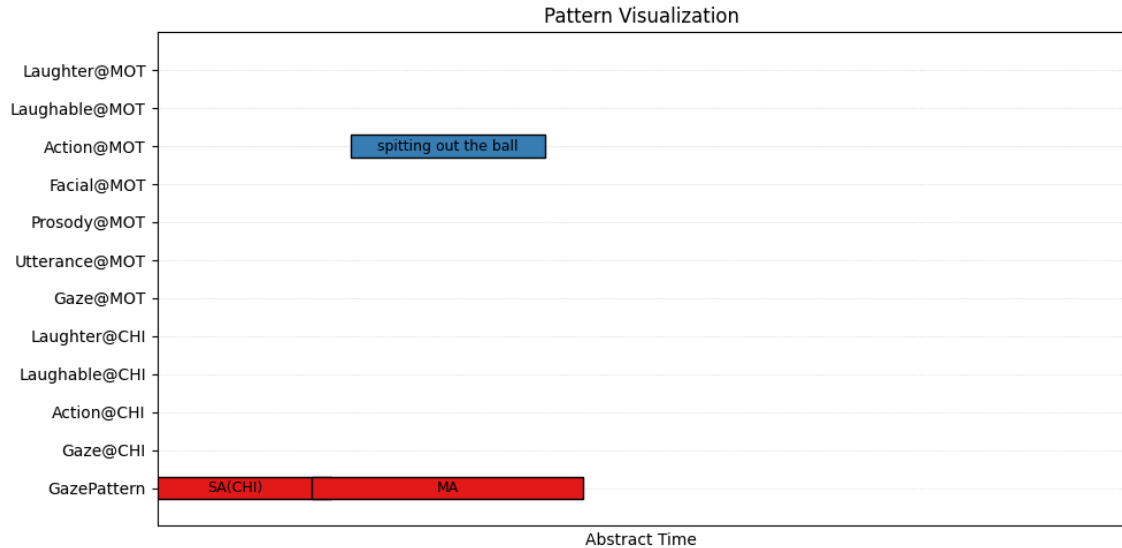
Question

Child is looking at the ball when mother is picking up the ball after asking a question ("Ready?")



```
[ 'Utterance@MOT(question)-BEFORE-Action@MOT(picking up the ball)',
  'Utterance@MOT(question)-BEFORE-Gaze@CHI(ball)',
  3],
```

Adding GazePattern (Gaze Relation)



Child is looking at the mother while she is performing actions with the a ball. The gaze shift from SA(CHI) to MA.

```
[ 'Action@MOT(spitting out the ball)-AFTER-GazePattern(SA(CHI))',
  'Action@MOT(spitting out the ball)-DURING-GazePattern(MA)',
  7],
```

With Action categorised

```
['Action@MOT(expected)-AFTER-GazePattern(SA(CHI))',
 'Action@MOT(expected)-DURING-GazePattern(MA)',
 8],
```

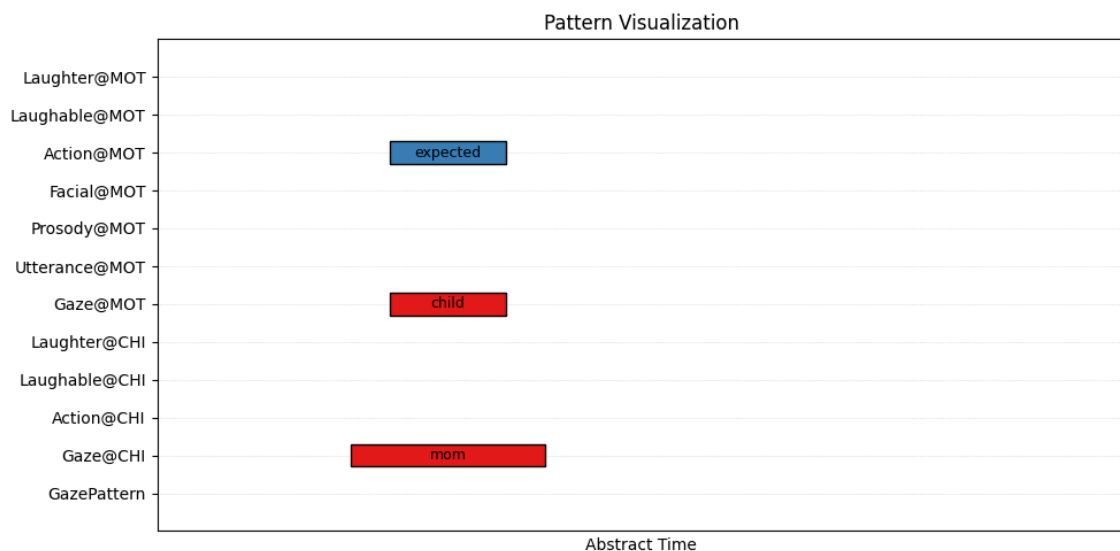
```
['Action@MOT(expected)-AFTER-GazePattern(SA(CHI))',
 'Action@MOT(expected)-OVERLAPS-GazePattern(MA)',
 7],
```

```
['Action@MOT(expected)-AFTER-GazePattern(SA(CHI))',
 'Action@MOT(expected)-OVERLAPS-GazePattern(MA)',
 7],
```

```
['Action@MOT(unexpected)-OVERLAPS-GazePattern(MA)',
 'Action@MOT(unexpected)-BEFORE-GazePattern(SA(CHI))',
 7],
```

```
['Action@MOT(expected)-AFTER-GazePattern(SA(CHI))',
 'Action@MOT(expected)-OVERLAPPED_BY-GazePattern(MA)',
 'Action@MOT(expected)-CONTAINS-GazePattern(SA(CHI))',
 6],
```

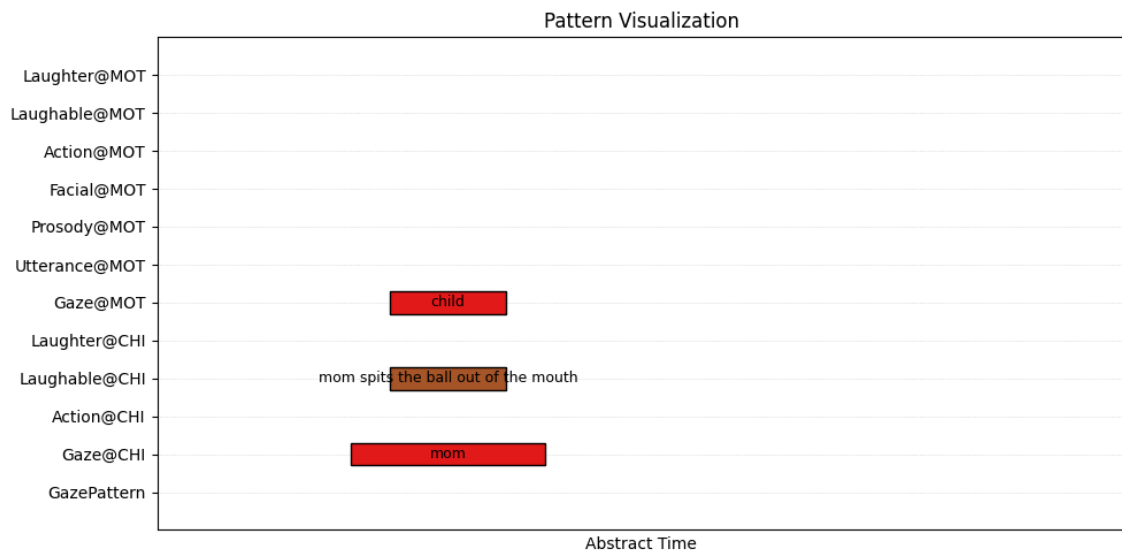
Mutual Attention



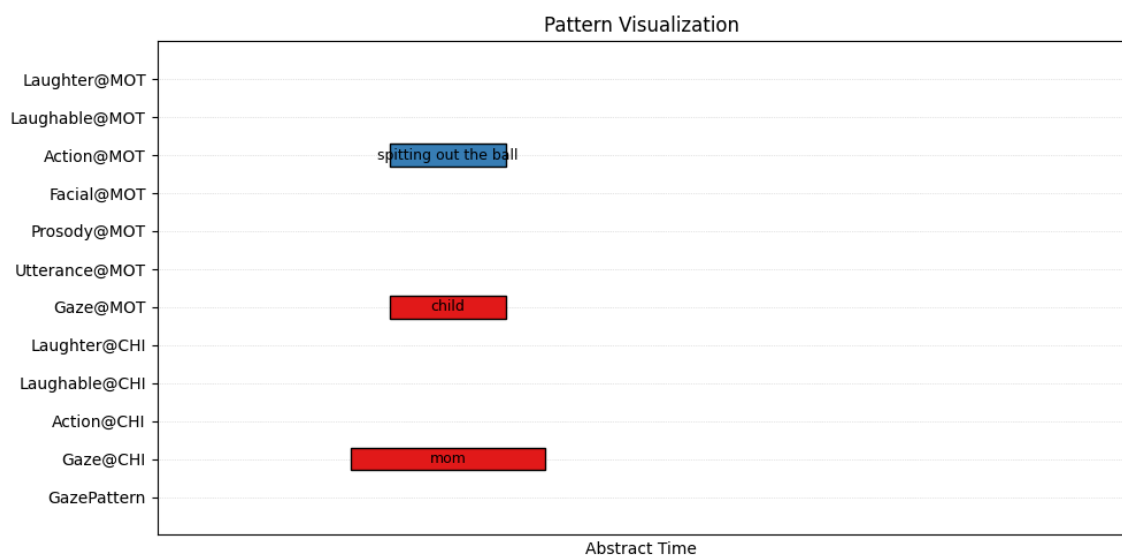
```
['Gaze@CHI(mom)-CONTAINS-Gaze@MOT(child)',
 'Gaze@CHI(mom)-CONTAINS-Action@MOT(expected)',
```


8]

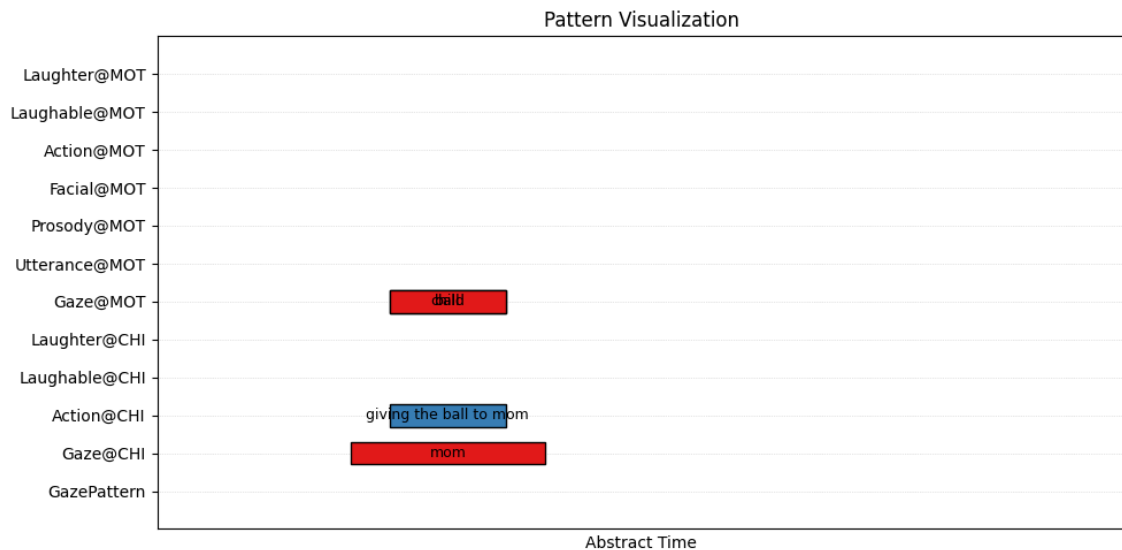
['Gaze@CHI(mom)-CONTAINS-Action@MOT(unexpected)',
'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(child)',
5],



['Gaze@CHI(mom)-CONTAINS-Gaze@MOT(child)',
'Gaze@CHI(mom)-CONTAINS-Laughable@CHI(mom spits the ball out of the mouth)',
7]



```
['Gaze@CHI(mom)-CONTAINS-Gaze@MOT(child)',  
'Gaze@CHI(mom)-CONTAINS-Action@MOT(spitting out the ball)',  
6]
```

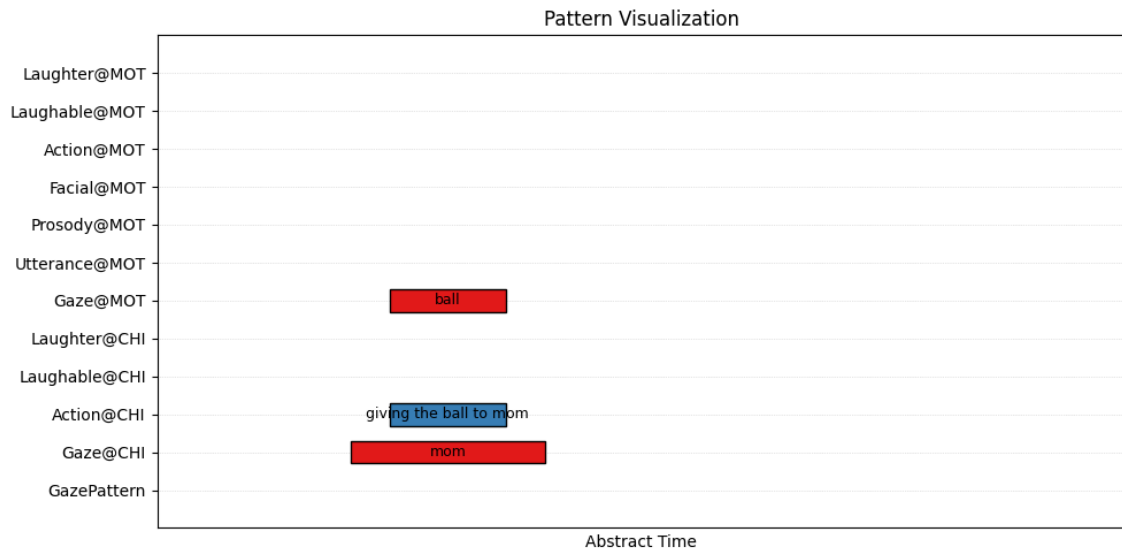


Note: no relation between mother's gazes

```
['Gaze@CHI(mom)-CONTAINS-Action@CHI(giving the ball to mom)',  
'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(child)',  
'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(ball)',  
3],
```

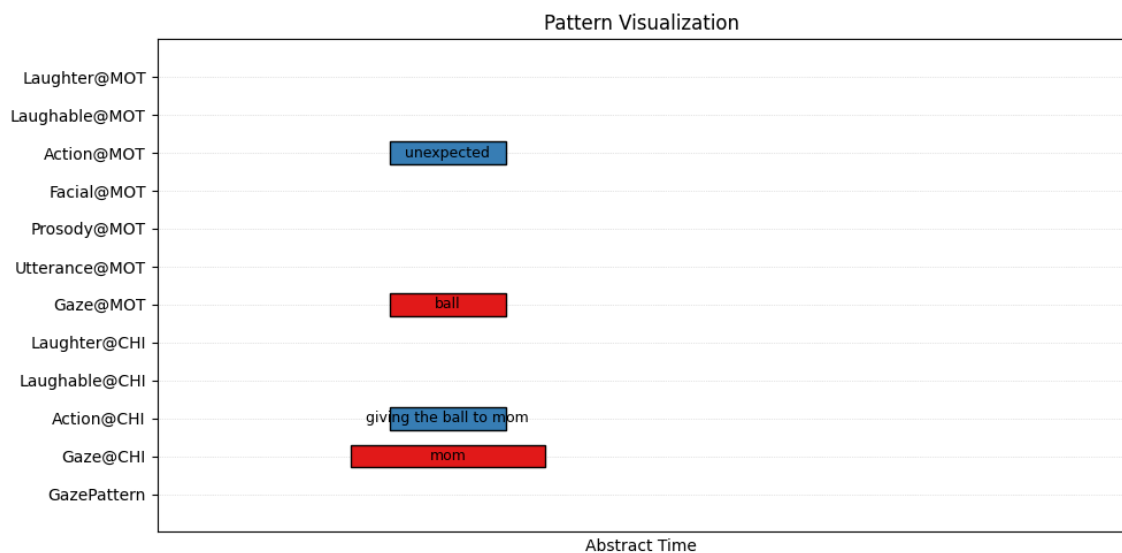
SA(CHI)

A child is triggering (starting) the game by giving the ball to the mother and she is looking at her to understand her reaction and actions.



```
[ 'Gaze@CHI(mom)-CONTAINS-Action@CHI(giving the ball to mom)',  
  'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(ball)',  
  6]
```

```
[ 'Gaze@CHI(mom)-CONTAINS-Action@MOT(unexpected)',  
  'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(ball)',  
  4]
```



```
[ 'Gaze@CHI(mom)-CONTAINS-Action@CHI(giving the ball to mom)',  
  'Gaze@CHI(mom)-CONTAINS-Action@MOT(unexpected)',  
  'Gaze@CHI(mom)-CONTAINS-Gaze@MOT(ball)',  
  3]
```