

Reflection on *An Elementary Resolution of the Liar Paradox* and *Playing Games with Games: The Hypergame Paradox* .

I appreciate how James Walker starts the article *An Elementary Resolution of the Liar Paradox* with the example of the liar paradox with the simple statement 'This statement is false' . I remember when I was younger, my brother brought up this paradox in a conversation, though his was simplified to just 'I am lying'. At the time, I thought it was fun to think about but I definitely wasn't thinking about it in a mathematical context and what implications paradoxes impose in mathematics.

The liar paradox also makes me think about conditional statements in software engineering and how often times a block of code is executed or looped through on the notion that some statement isn't true, but it is necessary to make a true statement using the false statement. I understand it is not an exact correlation but the thought was still brought to my mind. In fact, after reading the paradox I was thinking to myself that it would probably be fairly easy to write the paradox in a simple recursive function but on attempting to do so I found that

```
def liar_paradox(boolean):  
    statement = False  
  
    # If the statement is false like stated, then the  
    # claim that it is false is true  
    if (!boolean):  
        return "This statement is %r" % (liar_paradox(!boolean))  
  
    # Otherwise, if the statement is true, their  
    # claim that it is false is false.  
    else:  
        return "This statement is %r" % (liar_paradox(boolean))
```

As for Zwicker's paper *Playing Games with Games: The Hypergame Paradox*, I will admit that it went a bit over my head during the first reading. Even after another read I know I am only getting a fraction of what it has to offer. In the end, what I got from it was that not all paradoxes take the same shape and that context surrounding a statement can change the state of a paradox, such as it can be given a complete solution or even a partial solution. I believe this is what he is referring to when he suggests that a paradox can have a "change of gestalt". I believe this phrase is used to note when the state of a paradox changes to one of the four stages mentioned. Walker touches on the same idea in his paper by suggesting that the context of a paradox should be considered, especially when attempting to find a solution.

If we take, for example, the barber paradox which states that a male barber shaves the face of all men in town who do not shave their own faces and only those who meet this condition. The paradox is that if the barber shaves his own face, he himself no longer meets the condition stated. However, if we add additional context to the paradox, we can perhaps change its state to a point where it is no longer a paradox. An example may be to state that the barber has a condition that results in not being able to grow any facial hair of his own, and thus not having a need to shave. This alone offers scenario where the statement can be true, and not have a contradiction. When considering the four state Zwicker presented, this would be considered an 'Artificial fix', as it certainly couldn't be assumed from the detail originally given and does not necessarily make the problem more sensible than it was originally, it just offers one possibility.