

The purpose of this infographic is to attempt to portray the evolution of lie detection in a visibly appealing manner. In order to do so, the amount of text on the infographic had to be limited, and therefore only the dates that are key to the progression of lie detection are included. The focal point of the infographic was unavoidably the polygraph due to how widespread its existence and use is, but is not the sole topic of the graphic as other aspects within the evolution of lie detection are no less important.

Due to the history of lie detection being a varied and diverse one, much was not included on the infographic that could have been. For example, prior to the more modern scientific ventures into the world of lie detection, many cultures across many periods have attempted to find a functioning and reliable method- many more than could be fit into a single study¹. So, in an attempt to demonstrate the eclectic nature of detection, the choice was made to reference a number of methods rather than just choose one or two and go into more depth.

“Rice” refers to the Ancient Chinese invention of detection. This is where grains of rice are placed in the mouth of the suspected party who are then asked to chew. The theory behind such being that a dry mouth was a symptom of guilt and therefore dry grains that stuck to the mouth was indicative of a guilty person². “Body language” doesn’t quite have such a specific reference. This is a more general example, as all throughout history and into the present-day examples can be seen of people attempting to determine the truth based on physical characteristics and changes to behaviour³. An early example of such a detection method derives from a papyrus dating to around 900BC. On it detailed the behaviour of poisoners and how to conclude guilt from their actions- said actions including being evasive when questioned, pale skin and visible discomfort⁴.

Trials were also common methods of identifying guilt. Trials by Ordeal, Combat and the Sacred Ass were included because they encompass the three main areas of lie detection prior to physiological responses being used⁵. This is because before this, many ancient methods of detecting deception were based on superstition or the spiritual⁶. In both the Trials of Ordeal and Combat, it was believed that the innocent party would be saved by God and the guilty party would not be allowed to prosper⁷. The trial by the Sacred Ass was more psychological in the sense that no one was in any real danger. The tail of a donkey is covered in soot in a darkened room and the suspects are asked to go in and pull- they believe that those innocents would be in no danger of being kicked, so the guilty party would only pretend to pull. The innocent people would therefore have their skin covered in soot and the guilty party would be obvious⁸. In all, it evidences strongly how much faith people had in the spiritual and how much more their society relied on it to keep order.

This section detailing the events prior to the 20th century appears in the top left section of the infographic. The information is highlighted within a separate section because though significant, many do not have precise dates or enough events per century to warrant an entire section on the timeline whilst still maintaining the aesthetic of the infographic. The opposite is also true, so sweeping statements such as “Trial by Ordeal” were used as the topic itself is too intricate to delve

¹ Vicianova, 2015, p.522

² Vicianova, 2015, p.522

³ Trovillo, 1939, p.849

⁴ Trovillo, 1939, p.849

⁵ Trovillo, 1939, p.850

⁶ Trovillo, 1939, p.850

⁷ Vicianova, 2015, p.522

⁸ Katwala, 2019

into⁹. The purpose of the infographic was to give a sweeping overview of the progression of lie detection, and as a result too much space couldn't be afforded to one specific aspect. Furthermore, had an attempt been made to place them chronologically, the time progression would not have been readily viewable as too much time passes between. Depicting the data in this manner ensures that emphasis is still placed upon their importance to the history of lie detection whilst also signifying that they are different and not so heavily related to the more chronological scientific progression of the more modern dates.

The 20th century marked a turning point for the scientific study of lie detection, and is where a number of large changes started happening in relation to the study in swift progression¹⁰. As shown by the infographic, this is where the timeline truly begins in earnest- with a brief mention of an essay in 1730 to demonstrate the potential methods prior to machines¹¹. Per century, three key years are highlighted. These were chosen as the years in which the most notable events occurred, and therefore should one want to get a general overview of the history of lie detection, the dates most relevant to them.

As shown on the timeline, although the emergence of the 20th century saw the increase in development of various lie detection machines- most noticeably the polygraph, so too did it signal the beginning of the increase of questions about the morality and accuracy of said machines¹². The first empirical review of the polygraph was conducted in 1965 and concluded that "There is no lie detector, neither man nor machine"¹³. And again in 2003, the National Academy of Sciences conducted a review and came to the conclusion that there was "little basis for the expectation that a polygraph test could have extremely high accuracy"¹⁴. Many more reviews have been done over the years, and demonstrate that despite their depiction in most media, polygraphs and other various types of lie detection are definitely not infallible¹⁵. This, therefore, leads to the moral question of their use- if certainty cannot be achieved, how can they be trusted to be used within a situation where the truth is essential- such as in a criminal investigation.

This hesitancy was clearly shown when President Reagan issued a National Security Decision Directive in 1983¹⁶. This authorised the use of polygraphs within federal agencies in order to attempt to determine whether the employees were leaking secrets¹⁷. It was met with a review by the Office of Technology Assessment and a lot of protest- so much so that within three months the directive was rescinded¹⁸. This demonstrates a lack of faith in the polygraph and though since 2015, the US Intelligence Community is authorised to use the polygraph test once more, this lack of faith can still be found within the scientific community and beyond¹⁹.

This lack of faith is definitely valid and supported by many- both within the field of study and out of it²⁰. This is because though, as the infographic demonstrates, the progression of lie detection has

⁹ Vicianova, 2015, p.522

¹⁰ Synnott *et al*, 2015, p.61

¹¹ Katwala, 2019

¹² Synnott *et al*, 2015, p.62

¹³ Synnott *et al*, 2015, p.61

¹⁴ National Research Council, 2003, p.2

¹⁵ National Research Council, 2003, p.55

¹⁶ Synnott *et al*, 2015, p.59

¹⁷ Synnott *et al*, 2015, p.59

¹⁸ Synnott *et al*, 2015, p.59

¹⁹ Synnott *et al*, 2015, p.59

²⁰ National Research Council, 2003, p.57

become increasingly scientific, depictions within media and the general public mean that their accuracy is often overstated, and much more varied geographically than some may first think²¹. However, as evidenced by the timeline, the 21st Century has so far been a wealth of reviews and assessments about how trustworthy the data gained from tests could be considered, and whether the chance of getting a false positive is morally worth the risk²². This lack of faith in the polygraph specifically- due to it being repeatedly debunked and criticised- also provided the motivation of attempting to create one more accurate²³. This led to the 21st Century progression and to 2014 and where an example of such an attempt is shown. The multi-modal device being used to detect truth or lie within the context of border control is definitely a large step forward and indicates further areas of contention²⁴. With AI becoming more prominent as the years pass, it yet again sparks the question of 'when is too far?' Different psychologists and scholars of various disciplines have different ideas about that, but most tend to agree that there is definitely a balancing act that needs to be done- a risk and reward²⁵. What is the percentage of failure that is 'morally acceptable'? As stated by Synott et al, "current scientific opinions pertaining to the polygraph are polarized" and they are even more so in regards to other methods of detection- whether it be different tactics when using the polygraph or a new machine all together²⁶.

Overall, the timeline demonstrates key moments in the history of lie detection, with an emphasis on how eclectic and spiritually-based it was in ancient periods compared to the scientific drive and progression of more modern times. It shows the trend of scientific advancement in the 20th century followed by the continued discussion of just how far it could or should be used. When laid out as such, its clear that there will always be intense discussion surrounding the field, but there will also be a drive to use the devices and find a way to engineer a more accurate one. Lie detection throughout history has always been the goal, and negative reviews have not, and will not, slow the process down.

²¹ Widacki, 2019, p.136; National Research Council, 2003, p.57

²² National Research Council, 2003, p.12

²³ Katwala, 2019

²⁴ Katwala, 2019

²⁵ Katwala, 2019

²⁶ Synnott *et al*, 2015, p.75

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