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“Supposing that truth is a woman, what then?”

The Lie Detector, The Love Machine and the Logic of Fantasy

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Abstract

One of the consequences of the public outcry over the 1929 St Valentine's Day massacre was the establishment of a Scientific Crime Detection Laboratory at Northwestern University. The photogenic “Lie Detector Man”, Leonarde Keeler, was the Laboratory's poster boy and his instrument the jewel in the crown of forensic science. The press often depicted Keeler gazing at a female suspect attached to his “sweat box”; a galvanometer electrode in her hand, a sphygmomanometer cuff on her arm and a rubber pneumograph tube strapped across her breasts. Keeler's fascination with the deceptive charms of the female body was one he shared with his fellow lie detector pioneers, all of whom met their wives – and in William Marston's case his mistress too – through their engagement with the instrument. Marston employed his own “Love Meter”, as the press dubbed it, to prove that “brunettes react far more violently to amatory stimuli than blondes”. In this paper I draw on the psychoanalytic concepts of fantasy and pleasure to argue that the female body played a pivotal role in establishing the lie detector's reputation as an infallible and benign mechanical technology of truth.

Keywords: lie detector, polygraph, love machine, fantasy, ideology, jouissance.

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“What sentimentalists men of science are!” exclaimed Father Brown, “and how much more sentimental must *American* men of science be! Who but a Yankee would think of proving anything from heart-throbs? Why, they must be as sentimental as a man who thinks a woman is in love with him if she blushes!”
- G.K. Chesterton (1914), ‘The Mistake of the Machines’.

“Every ideology attaches itself to some kernel of *jouissance* which, however, retains the status of an ambiguous excess.”
- Slavoj Žižek (1997/2008, p.63)

Introduction

Nancy sent her sweetheart an ingenious Valentine’s Day card in 1931. The interactive card depicts a Shirley Temple lookalike sitting on a stool, a blue satin bow in her blonde curly hair. (Figure 1) Blushing as she coquettishly points to her lips, at first the young girl’s eyes are closed, which is odd, considering the inscription on the red love heart behind her: “EYES” LOOKIN’ YOU OVER FOR MY *Valentine* – AND THAT’S no LIE!’ Her right forearm is attached with a cuff and two wires to a large brown cabinet labelled ‘LIE DETECTOR’. When you gently pull her leg, she flutters her eyelashes and opens her eyes. But those big blue eyes don’t return your gaze. Despite ‘lookin’ you over’, the pretty girl does not make eye contact.

Insert Figure 1 about here

Figure 1: Valentine's Day card (1931), before and after you pull the girl's leg.

What are we to make of this intriguing artefact? It surely indicates that by 1931 the lie detector was sufficiently famous in the United States for it to feature on a risqué Valentine's Day card.¹ It depicts the instrument as a mysterious box, albeit one that perhaps should not be taken too seriously. And the girl's coy attitude and refusal to look directly at you are hints that she might be in possession of an intriguing secret: *she knows something*. But what?

Nancy's ambiguous love token is a good starting point for launching the theme of this essay, namely, the relationship between lies and love in the history of mechanical technologies of truth. As historians of science and technology have documented, the lie detector's reputation as an objective technology of truth relied on the deployment of a series of obfuscations, myths and downright lies (Alder, 2007; Littlefield, 2011). Lie detection was 'spectacular science', a form of science whose functioning was contingent on its sensationalist depiction in the press, in movies, pulp fiction and other ephemeral products of American pop culture (Gibson, 2001; Bunn, 2007). The mass media depicted the lie detector as being able to detect hitherto inscrutable emotions and uncovering profound secrets. Moreover, it could do so without having to subject its suspects to a painful 'third degree' ordeal. An evidently harmless and painless interrogation technology (compared to the 'third degree' at least), the machine merely left marks on graph paper, not on those who were obliged to take the test. In the first part of this paper, I examine a hitherto unexplored aspect of this technology: the persistent positioning of women in lie detector discourse. I do this by analysing newspaper and magazine accounts of the lie detector during the period 1920-1940 when the instrument became famous in the United States. I shall show that popular culture often

explained its functioning in terms of its ability to act as a love machine, a detector of intimate secrets. The uncannily omniscient contraption was evidently capable of contributing to every stage of the romantic process. Erotic desire, one of the most profoundly experienced emotions, is also one of the most private and closely guarded. That a mechanical device could detect it was a compelling claim.² At first glance, and because many more men are always accused of committing crime compared to women, the consistent presence of women in lie detector discourse might be thought of as itself a deceptive obfuscation, an unnecessary excess, an elision of the truth. But, I shall argue, there is something revealing, something *telling*, about the way women feature so often in such depictions.

In the second part of this paper I show that the lie detector inherited from criminal anthropology a fascination with the mysteries of the female body; namely its purportedly close connection to nature, its capacity for deceptiveness, its inherent emotionality and its inscrutability. The mysteries of the female body encapsulated the enigma of criminality for criminal anthropology and for detection of deception technology alike. The female body was both intrinsically legible and yet at the same time provocatively elusive. I will discuss this apparent paradox in terms of Slavoj Žižek's (1989) theory of ideology. Žižek argues that having first scrutinised the structural antagonisms of any discourse, the analysis of ideology should then proceed to locate those fantasy elements that emerge from the discourse. The history of the mechanical detection of deception, Melissa Littlefield (2011, p.37) has pointed out, was 'fraught with questions of legitimacy and inclusion' and internal strife. In an earlier study (Bunn, 2012, pp.175-192), I analysed the dilemmas of science and governance that structured the lie detector's discursive architecture. In the present paper I complete this analysis by following Žižek's exhortation to understand fantasy as the 'necessary counterpart to

the concept of antagonism': 'In other words, *fantasy is a means for an ideology to take its own failure into account in advance.*' (Žižek, 1989, p.142, emphasis in original) My aim is to conceptualise the lie detector's fascination with the female body as the 'surplus remainder' that outlived criminology's replacement of an anthropometric approach to crime with a psychological one.

'Lie Detector Proves It Can Measure Love'

Valentine's Day 1929 was a distinctly unromantic day for seven members of "Bugsy" Moran's North Side gang. Men acting on the orders of South Side boss Al Capone lined their rivals up against a Chicago garage wall and executed them. One of the consequences of the public outcry over the St Valentine's Day massacre was the establishment of Northwestern University's Scientific Crime Detection Laboratory. Appalled by the killings, two Chicago business owners, Burt Masseur and Walter Olson, resolved to counteract what they perceived as a rising wave of criminal activity in the city. With the encouragement of Dean John Henry Wigmore, the nation's principal expert on the law of evidence, the laboratory opened in 1930. Science was to lead the fight against crime. Ballistics expert Colonel Calvin Goddard was appointed the lab's Director and Leonarde Keeler – already famous as the "Lie Detector Man" – was hired as the resident polygraph operator (Alder, 2007: 113).

The new scientific criminology was glamorous and newsworthy, and the photogenic Keeler had an easy confidence when it came to dealing with the police and the press. His sister later recalled that while he had already gained a great deal of experience, not to say notoriety, he was still "waiting in the wings." The "stage was set, the actors ready," she wrote, "but the curtain had not yet risen on the big show" (Keeler,

1983: 28). The theatrical metaphor was appropriate for a man who was equal parts scientist and showman. The Scientific Crime Detection Laboratory afforded Keeler a base from which he could develop both his machine and his business. His fame increased steadily throughout the 1930s, partly because his students and followers depicted the “Keeler Polygraph” as synonymous with the lie detector (Inbau, 1935). By 1948 he was sufficiently well-known to play himself in the Jimmy Stewart noir thriller movie, *Call Northside 777* (Hathaway, 1948).

Keeler’s flair for publicity was useful for establishing the lie detector’s credibility as a benevolent disinterested technology of truth. The instrument’s authority depended on an aura of scientific objectivity. Although he lacked any formal academic qualifications, so-called “Professor” Keeler was a competent amateur magician. His trick was to ask a potential suspect to select a playing card from the deck, hook her up to the machine, instructing her to deny that each card in turn was her chosen one. Keeler claimed the lie detector could pick out the correct card in 58 out of 60 trials. This ‘Stim Test’ was itself a simple sleight of hand forced card conjuring trick (Alder, 2007: 82-3). Magic nudged people into thinking the machine possessed an uncanny agency. Its function was to create an unsettling sense of near infallibility and therefore intimidate potential suspects into spontaneously producing the most important outcome of all: a confession.

Although a confession was the most desirable outcome of the test, popular discourses usually depicted the polygraph as being capable of accessing the biological commotions occasioned by guilt. The classic polygraph examination involves the simultaneous measurement and recording of a suspect’s blood pressure, breathing rate and electrical skin conductance whilst the interrogator asks a series of questions that require the suspect to issue only yes or no answers.³ But this ostensibly objective

process was undermined not only by the machine's failure to unequivocally detect lies on its own, but also by the absence of a coherent theory of the lie that assayed the relative contribution of the three physiological measures towards the ascertainment of guilt. Contrary to popular depictions of the lie detector's uncanny agency to detect the discrete lie – as when a light pings on or a buzzer sounds – the machine's operator must make an informed guess, having first examined the charts, as to whether a suspect is telling the truth or not.⁴ Subjective human judgement was unavoidable. The instrument's advocates therefore had to confront a dilemma brought about by this credibility gap: the human agency that made the machine function at all had to be hidden in order to maintain the fiction of mechanical integrity. As I argue below, the result of having to address this credibility dilemma was an intense fascination with the erotic potential of the female body.

Insert Figure 2 about here

Figure 2: The Postometer. 'Among other things Mr Post has found the most "meaningless thing in the world" is the act of two women kissing. That does not even make the needle quiver.' (*Life* magazine, 1939)

From newspapers and magazines to movies and comic books, the evidently omniscient 'black box' promised to assist in every stage of the fraught process of romance from initial flirtations through to the relationship's eventual dissolution; from

assaying initial sexual attraction between couples, nurturing courtship and solemnising the marriage ceremony, up to uncovering infidelity and gathering evidence for divorce proceedings. As with the entangled histories of lies and love themselves, lie detectors and love detectors have always been on intimate terms. As *Life* magazine put it in 1939, 'Famous for catching criminals, the "lie detector" is actually an emotion detector. It registers with equal truth the emotional response to lying, kissing or looking at a pretty painting' ('Lie detector measures kiss reactions', 1939; Figure 3). In 1939, a university professor used the apparatus to help a Madison Avenue newspaperman decide where his true affections lay. ('Love Used as the Key', 1939). The mention of one girl's name caused the machine's needles to vibrate rapidly but the names of two others also produced a consistent reaction. "A fellow doesn't always know himself which one of his girls he feels strongest for", the professor concluded. In 1936, 'dancing sweethearts of the films' Jackie Coogan and Betty Grable submitted to lie detector tests to prove that a jewel robbery they had reported had not been a publicity stunt ('Coogan and Fiancee Robbed in Chicago', 1936). Seizing the opportunity to interrogate her fiancé about a previous girlfriend, Miss Grable was delighted when he confessed to being no longer in love with the former object of his affections. Grable vowed to 'save the lie detector graphs among her souvenirs.' In 1938, one of the lie detector's inventors, William Moulton Marston, appeared in a *Look* magazine photostory titled "Would YOU Dare Take These Tests? Real Life Stories From a Psychologist's Files": "From the field of crime, the "Lie Detector" has entered the fields of love. It now tells whether or not your wife or sweetheart loves you, or you her. Dr. William Moulton Marston, the inventor, reports success with his device in solving marital or other domestic problems and adds that it will disclose subconscious secrets of which the subject is utterly unaware" ('Would YOU Dare Take These Tests?', 1938). (Figure 3) Not only did Marston's

instrument discover that “the neglected wife and her roving husband” still harbored some affection for each other, but it also revealed that a young couple were in love, despite being engaged to other people. United by the “disinterested truth-finder”, the happy couple thanked Marston for recommending marriage.

Insert Figure 3 about here

Figure 3: “To test the wife’s affections, Dr. Marston arranged to have an attractive young man kiss her. The graph indicated a strong emotional reaction to the stranger’s kiss.” (*Look* magazine, 1938)

Science and Invention magazine examined four different ways to determine scientifically if a marriage would succeed or fail in 1924 (Novak, 2012). The magazine’s cover depicted an embracing couple, the girl gazing up into her lover’s eyes, both of them attached to a complex assemblage of dials, wires and electrical components. (Figure 4) ‘At present, marriage is a lottery’, the writer asserted. Thankfully, there were ‘certain basic tests which can be made today and which will give one a reasonable assurance of married happiness’. The ‘Physical Attraction Test’ involved wrapping a pneumograph tube around each person’s chest to measure breathing and attaching electrodes to their wrists so that an “electrical sphygmograph” could record the pulse.

Insert Figure 4 about here

Figure 4: 'We take extreme care in breeding horses, dogs and cats, but when we come to ourselves we are extremely careless and do not use our heads nor the means that science puts in our hands for scientific breeding.' (*Science and Invention* magazine, April 1924)

Radio Craft Radio-Electronics magazine explained how to build a 'Kiss Meter' in September 1948. (Figure 5) The amorous couple are shown kissing whilst connected to an 'electronic osculation indicator', a large black box with a prominent dial on the front. The first person to investigate kissing scientifically apparently had been the German biologist Karl Friedrich Burdach, who defined it as a "Galvanic contact between a positively and negatively electrified body: it increases sexual polarity and permeates the entire body." *Radio Craft's* Kiss Meter was "a scientific instrument designed to measure osculation reaction. With it you can tell whether blondes have more resistance than brunettes or redheads. An adept Lothario can probably find this out without the aid of science, but the meter gives us a good insight into biological electronics." (Greenlee, 1948) *Radio Craft's* writer might have been inspired by Marston's psychological research on personality and emotional responsiveness ('Blondes Lose Out in Film Love Test,' 1928). In 1939, Marston had been the source of *Look* magazine's feature that asked, 'How smart are You About BLONDS BRUNETS RED-HEADS'.⁵ ('How smart are You', 1939). A questionnaire helped readers assess their knowledge of the three 'personalities'. According to Marston, 'Blonds find brunet men (who will dominate them) most interesting.' Photographs of celebrities Katherine Hepburn, Helen Wills Moody and Betty Grable illustrated the article. On this occasion, cheerfully steering a

scooter whilst wearing a bathing suit, Betty Grable demonstrated 'pride in showing her figure...a trait typical of fair-haired girls – who are more likely to be tom-boyish'.

Insert Figure 5 about here

Figure 5: 'It has been shown experimentally that during the act of kissing there is an actual exchange of electrical potential' (*Radio Craft*, September, 1948)

A Chicago couple were married whilst strapped to Northwestern University's lie detector in 1932. "Young moderns aren't so casual about their marriage vows as they've been painted...The bridegroom's blood pressure sank steadily throughout the ceremony, and the bride's rose," reported the *Brooklyn Daily Eagle*: "The bride's heart – but not the bridegroom's – nearly stopped when the judge asked him "Do you take this woman?" "The newlyweds really loved each other', according to the machine's operator, who gave the couple their chart, along with their marriage certificate ('Couple's "I Do" Is Verified By "Lie Detector", 1932). Amorous affections invariably pulsed through lie detector credibility claims. In 1921 for example, the Society of Electrical Development announced the invention of the "telegraphone", a device that recorded breathing and heart rate, and prevented the possibility of unhappy marriage: "It magnifies irregularities caused by emotions and is regarded by criminologists as a sure method of catching lying witnesses. The lover suggestion is put forward by the inventor merely as an example of what science could do if permitted." ('Shows One's Love Capacity', 1921)⁶

Whether a person unconsciously concealed their emotions or did so deliberately was of little consequence to the instrument that guaranteed to always uncover the truth.

In 1922, the *Evening Star* called its readers' attention to 'The Husbands' Protective Society' which was anticipating the advent of the truth-meter 'with real alarm': 'How will the old time-tested and faithful yarns get by when wife in no friendly mood at 2 a.m., applies the screws of the "sphyg" to the main artery and demands "Where have you been?" ('Lie-Detector Alarms Hubbies', 1922) A cartoon sketch of a woman taking her husband's pulse illustrated the article. "What a whopper", she shouts at her bewildered spouse. The instrument's ability to catch wayward husbands was a common motif. *Mechanix Illustrated* magazine showed its readers how to 'Have Fun With a Lie Detector' in 1957: "If you really worked late in the office last night you have nothing to worry about if the wife wants to give you a little going over with the help of this lie detector. But if you were out with the boys, played poker or told her that the smear on your collar was is red ink – watch out! This little gadget will give you away." (Karp, 1957, 120)

Inevitably, litigants also called on the machine to assist in the gathering of evidence for divorce proceedings. Dr Orlando Scott pioneered the introduction of such evidence in the American civil courts using his "Thought-Wave Detector" which he (falsely) claimed measured electric currents in the brain. (Alder, 2007: 131) Although the contraption was unnecessarily larger than a person and would not have looked out of place in Fritz Laing's *Metropolis*, Scott's machine simply measured the electrical conductivity of the skin – the 'galvanic skin response' – an straightforward biological phenomena known at least since the 1880s. One publicity photograph from 1943 shows Scott dressed in a white lab coat about to initiate the testing of 'Mrs Margaret Lyon...in the presence of her husband and their attorneys, after she had offered to take test during her divorce suit. The jealous husband has accused her of being unfaithful, and offered to pay the \$50 a week support money for herself and two children, if she would take the test, which she passed successfully.' In April 1944 Mrs Margaret Villa of

Chicago, submitted to one of Scott's tests and proved her marital integrity 'with flying colors' as her husband looked on.⁷

'It Really Understands Women'

Photographs of lie detector tests from the early 1920s tended to feature male subjects, male police examiners and any number of observers crowding around the test. One magazine photograph, for example, shows Leonarde Keeler and Calvin Goddard, the Director of the Scientific Crime Detection Laboratory, observing a seated male subject while a police officer looks on. (O'Leary, 1934: 22) Keeler sits on the desk behind a male subject in one picture, stands behind him in another. (Inbau, 1935: 82; Hopkins, 1932: 96) Female suspects featured more prominently in images of lie detector examinations as they were standardized during the 1930s. A 1935 newspaper photograph shows Keeler standing behind a female subject while she gazes passively ahead. (Horne, 1935) *Popular Science Monthly's* photograph was also of a female subject and a male examiner. (Murray, 1936: 63) By the late 1930s, the typical image invariably featured a male examiner and a female subject. Paul Trovillo's scholarly survey of 'A History of Lie Detection' featured a photograph of an ideal lie detector test situation. (Trovillo, 1939: 876) Taken from an elevated position so the viewer could observe the arrangement of the test, the photograph showed a man and a woman sitting on opposite sides of a desk, separated by a Keeler Polygraph. (Figure 6) The woman sits parallel to the length of the desk, gazing ahead into the middle distance. Her right arm rests on the desk, her left on the arm of her own chair. Trovillo has attached a blood pressure cuff to her right arm, a galvanometer electrode to her left hand, and he has wrapped a pneumographic tube

around her chest. Dressed in a smart suit, Trovillo sits on the other side of the desk, his right hand holding a pen poised to write. He is staring intensely at the woman.

Insert Figure 6 about here

Figure 6: Polygraph operators were regularly depicted gazing intensely at women attached to the “sweat box”; a galvanograph electrode on their wrists, a sphygmomanometer cuff on their arms and a rubber pneumograph tube strapped tightly around their chests. (Trovillo, 1939, p.876)

Alva Johnston’s 1944 series of *Readers Digest* articles on the ‘magic lie detector’ shows Keeler operating his desk polygraph and gazing at a female subject who is looking ahead into space. (Johnston, 1944: 9) A 1951 photograph features a standing male wearing a white coat watching a seated female. (“Lie Detector Tests on Workers,” 1951) Didactic examination scenes such as those found in textbooks tended to feature female subjects. The first photograph in Reid and Inbau’s *Truth and Deception*—long regarded as the essential polygraph training manual—shows a male examiner gazing upon a female subject. (Reid and Inbau, 1977: 5) Other expository texts also use the male expert/female subject dyad. (Matté, 1980: fig. 67, 132; Wilhelm and Burns, 1954) Marston, Trovillo, Keeler, Reid and Inbau, and Matté all used women – usually their secretaries – in their posed photographs of the examination situation (see Keeler, 1983, p.69). Examiners invariably wore clothing associated with authority in pictures of lie detector tests, such as the police uniform, the scientific white coat or the business suit. Female subjects, in contrast, were usually casually attired. In some photographs the

tight-fitting pneumographic tube accentuates the subject's breasts.⁸ (Matté, 1980: fig. 67, 132; Reid and Inbau, 1977: fig. 1.5, 22)

Insert Figure 7 about here

Figure 7: "After the pneumograph tubes have been adjusted, the subject may enquire about the restrictive effect of the chest pneumograph. The examiner should then loosen the tube."

In its 1938 feature, "A Machine to Measure Lies," *Look* magazine reported Dr. Orlando F. Scott's explanation that "women respond with so much electrical energy that their lies are easier to detect than those of men." ("A Machine to Measure Lies," 1938) "It Really Understands Women" was the caption to a 1938 newspaper photograph of a woman being given a "photopolygraph" examination: "All Emotional Reactions Recorded." Women were ideal polygraph subjects because, as Marston suggested, they were either "more emotional" than men or because they were more capricious. Either way, they were inferior to their male examiners who were positioned as embodying scientific objectivity and integrity. "Women, agree masculine sages," Marston wrote, "are the worst liars. But are they?" "Treatises have been written—by men—to prove that women lie more frequently because they are the weaker sex and must deceive continually to protect themselves": "Women earn their livings mostly by deception, some cynics assert, pretending affection for men they don't love and tricking men they do love into unwilling generosity. But that sort of arm-chair indictment of the fair sex's truthfulness need no longer go unchallenged. The Lie Detector now supplies a method

for scientific comparison between male and female truthfulness." Marston concluded that "men are more dishonest in business and women in society." Women apparently told "innumerable lies . . . to enliven social conversations and to manipulate other people for various petty purposes or oftentimes just for the fun of it." (Marston, 1938: 113-115) Whether the explanation was nature or culture, gender was an important component of the science of human deceptiveness.

'Crime Testing Device Utilized by Cupid'

Given the machine's intrinsic concupiscence, it is perhaps unsurprising that all three of the men credited with inventing the lie detector met their wives, and in Marston's case, his mistress too, through their involvement with the lie detector. John Larson met his wife-to-be when she was a suspect in an early lie detector case in San Francisco. (Alder, 2007: 11) 'Inventor of Lie Detector Traps Bride', announced the *San Francisco Examiner* in August 1922: 'Crime Testing Device Utilised by Cupid to Make Expert Prisoner for Life': 'Dr. John Augustus Larson, Berkeley criminologist, has lately emerged upon the stage of fame as the inventor of the sphyg-sphygmomanon- call it the "lie detector". Everybody has heard of the "lie detector". Put it on a criminal's arm and ask him a rude question and if he lies the little wings of the machine will flop up and down...He placed the instrument on the girl's wrist and the love god manacled him for life.' (Alder, 2007, Fig.9)

Keeler met Katherine Applegate while they were both studying Psychology at Stanford University in the mid-1920s. Not a particularly industrious student, Keeler spent much of his time tinkering with his lie detector and attempting to secure a patent for modifications he was making to it. He was intrigued when Katherine beat his card

trick 'stim test'. Late one night, with a girlfriend, she sneaked into the Psychology Lab where Keeler kept his apparatus: "We bought some men's underwear, dyed it purple and decorated it appropriately, and went down at midnight and put ... [the dressed mannequin] in the machine: It created a sensation and we are strongly suspected but so far have maintained our innocence quite beautifully." Keeler and Applegate were married in 1930. (Alder, 2007: 83)

Marston married Elizabeth Holloway in 1915, the year in which he would later claim to have invented the lie detector. He credited his wife with the discovery of the principle that underpinned the 'Marston Deception Test': "I shall always be grateful to 'the girl from Mount Holyoke' for suggesting the idea that deception makes the pulse beat harder, and for assisting throughout the original research which established the systolic blood pressure deception test." (Marston, 1938: 'Acknowledgements') By 1925 he was teaching at Tufts University. Olive Byrne, the niece of the birth control and free love advocate Margaret Sanger, was a student in one of Marston's classes there. She became his research assistant for his work on 'primary emotions' and then his mistress. Marston, Elizabeth and Olive subsequently established a polyamorous household that lasted until Marston's death in 1947. Marston created the comic book character *Wonder Woman* in 1941. He, Olive and Elizabeth wrote the stories together, many of which, like Marston's theory of emotion, incorporated themes of bondage, domination and sadomasochism. (Berlatsky, 2015; Bunn, 1997). Olive and Elizabeth, who both had children with Marston, continued to live together until their deaths in the 1990s. (Lepore, 2014)¹⁰

Marston's unusual domestic arrangements are notable, considering the socially conservative and romantically normative ends to which the lie detector was typically directed.¹¹ But his love detector was part of a broader agenda to encourage women to

strive for excellence and seek positions of power and influence. As Michelle Finn has noted, Marston argued that women's natural capacity for love, nurture and self-sacrifice made them better leaders than men. "Frankly," he wrote in 1945, "Wonder Woman is psychological propaganda for the new type of woman who should, I believe, rule the world." (Finn, 2014, p.7) Like many Progressive Americans, Marston believed that women would be instrumental in bringing about a kinder, gentler civilization. Experiments with the lie detector provided him with empirical evidence to argue that unlike men who were motivated by appetite, women were inspired by love. "Our obvious goal, then," he wrote in 1942, "must be to devise social mechanisms whereby man is brought under the love domination of woman." (Finn, 2014, p.9) *Wonder Woman* was his enduring contribution to this project. Her 'Golden Lasso' can be understood both as an embodiment of his liberal social philosophy as well as the material device for enacting that vision. "With this great gift I can change human character!" she declared in *Sensation Comics* #6 (June 1942; Marston and Peter, 1998): "I can make bad men good, and weak women strong!"

Attempting to deceive raised a person's blood pressure, according to Marston. Although he attributed this discovery to his wife, in fact the osteopath Louisa Burns had made that very claim in 1914. The *Evening World* illustrated its article 'Scientific Lie-Detector for Every Home! Pulse Beats Will Betray Any Attempt to Fib' with a cartoon drawing of a sweating husband attached to the machine whilst being berated by his nagging wife: 'Now tell me where you have been!' (Moore Marshall, 1914) (Figure 8)

Insert Figure 8 about here

Figure 8: "And what husband will dare certain discovery and punishment, when his wife's boudoir is equipped with a few of the foregoing machines for the detection of deceit? Gather your fictions while you may!" (*Evening World*, 1914).

This article represents one of the earliest uses of the term 'lie-detector' in the American press. It is revealing that it explained how it worked in terms of its ability to detect amorous passion:

Whenever you tell a lie your pulse betrays it. You may cultivate a poker face and granite nerves, but you can't get away from your blood pressure. That is the truly revolutionary disclosure made by Dr. Louisa Burns of Chicago at the final meeting of the New York Osteopathic convention. "The man isn't born who can lie without raising his blood pressure," declared the doctor. "It remains constant when he is telling the truth. When he begins to lie his inventive powers are called into action...Just think for an instant of the many uses to which this simple discovery may be put! When a young man possesses the hand of his sweetheart and assures her that she is the only girl he ever loved, she has only to look at her wrist-watch and count his pulse beats. A minute will tell her whether she ought to fling herself into his arms or to rise and cry indignantly, "Reginald, you have deceived me!" (Moore's Marshall, 1914)

Burns' claims briefly attracted a flurry of press attention. The newspapers invariably highlighted the connection between detecting lies and detecting love: "When a husband comes home late with a story of night work at the office, his wife may squeeze his hand between her own and find out at once if he is telling the truth...The most charming and

efficient liar cannot cheat it.” “In the courtship of the future the affected pair will sit shyly side by side upon the sofa, chattering with apparent aimlessness, but really carefully studying the sphygmograph records upon each other's wrists. The swain will fall upon his knees to propose only when he has assured himself by pulse-- study that the maiden loves him and will answer "yes." Thus the instruments will save lovers very many embarrassing situations.”

As always, lies and love coincided. From the earliest years of its inception, the lie detector maintained a double life as a love detector. It is unlikely that many of the kiss-o-meters or love machines depicted in magazines were ever built. ('New Love Machine May Save Time', 1910; Figure 9) Nevertheless, their importance resides in the role they played in communicating the symbolic underpinnings of the project to mechanically detect private emotion. Newspaper and magazine articles helped to create the idea in the popular imagination that the instrument could render public the most intimate sentiments of love and erotic desire.¹²

Insert Figure 9 about here

Figure 9: 'New Love Machine May Save Time for Young Men'. (*The Commonwealth*, 1910)

“Supposing that Truth is a woman: then what?”

Despite its reputation as a totem of modernity, the lie detector was made possible by the popularisation of European criminology in the American press in the late nineteenth century. From about 1875, European criminology had assembled around the study of

the peculiar biological abnormalities of criminal man, *homo criminalis*. (Rafter, 1997; Gibson, 2002; Horn, 2003) A utopian vision for a crime-free state, Cesare Lombroso's *L'uomo delinquente* (1876) assimilated several threads of thinking about crime into the diabolical persona of the 'born or instinctual criminal'. A "relic of a vanished race", the born criminal was a 'prehistoric savage' "living amidst the very flower of European civilization." (Lombroso [1876] in Gibson and Rafter, 2006: 24; Rafter, 1997: 106) Conceptualised as a throwback to an earlier phase of evolution, *homo criminalis* was "an atavistic being who reproduces in his person the ferocious instincts of primitive humanity and the inferior animals." (Horn, 2003) This abject sub-human species was conceptualised as a bricolage of ideas that linked the common-sense truisms of folklore to the wider moral economy. (Weiner, 1990: 15) Lombroso and his followers initially theorised that such criminals bore extensive signs of degeneration on the surface of their bodies. The expert eye should be able to assess and interpret such anomalous stigmata, as in obscene tattoos or idiosyncratic facial physiognomies, or through the assessment of the shapes and sizes of anomalous skulls. Thieves had "mobile hands", according to Lombroso; rapists had "brilliant eyes" and "delicate faces", and murderers had dark, abundant, curly hair (Wolfgang, 1927: 251). Not only did the asymmetry of the face, eye defects and excessive jaw size contribute towards the diagnosis, but imperfections of the thorax, an imbalance of the hemispheres of the brain and even the presence of supernumerary nipples were all taken to be signifiers of criminal man's degenerate physiology (Wolfgang, 1972: 251).

As the list of candidate stigmata of criminality increased, so did the number of mechanical devices devoted to rendering them visible. A well-appointed criminology laboratory might stock over a dozen different anthropometric gadgets (Horn, 2003: 96; Hurley, 1996: 100).¹³ The sphygmomanometer for example was useful "in the diagnosis

of simulated disease” such as sham epilepsy. A series of experiments in the early 1880s had multiple recidivists attached to a sphygmograph and an induction coil with a view to determining if electric shocks produced changes in blood pressure. The criminologists were interested in whether pleasurable experiences, such as listening to music or looking at images of nude women, produced physiological changes (Leps, 1992: 47).

Gabriel Tarde’s eloquent defence of criminal anthropology’s encyclopedic intensity betrayed a distinctly unpositivist poetic sensibility. It also inadvertently revealed a profound epistemological insecurity at the project’s heart:

Every instrument for measuring or which was known to contemporary medical science and to psychophysics, the sphygmograph, dynamometer, aestheseometer, etc., had already been employed by Lombroso for the purpose of characterizing in the language of figures or of graphic curves, singular arabesques, the manner in which thieves or assassins breathe, in which their blood flows, their heart beats, their senses operate, their muscles contract, and their feeling is given expression, and by this means to discover through all the corporal manifestations of their being, considered as so many living hieroglyphics to be translated, even through their handwriting and their signatures submitted to a graphical analysis, the secret of their being and of their life. In this manner he had discovered, especially by means of three sphygmographic tracings, that malefactors are very responsive to the sight of a gold coin or of a good glass of wine, and much less to the sight of a “*donna nuda*,” in a photograph to be sure. (Tarde, 1890/1968: 63-64)

We have here, almost, but not quite, the invention of the lie detector. I say 'not quite' because the lie detector would only come in to being once criminology had rejected the essentialist concept of the born criminal (Bunn, 2012). What the project to mechanically detect deception required was not a fundamentally degenerate being, a diseased throwback, but rather an ostensibly normal human being. Potentially innocent until proven guilty, that normality would be symbolised by the figure of the woman.

Criminal anthropology's obsession with the measurement and testing of normal women emerged in conjunction with its fascination with abnormal men. The scientists claimed female nature was inherently duplicitous and secretive, and the locus of invisible pathologies. (Lombroso and Ferrero, 1895; Ottolenghi, 1986; Sighele, 1910; Gibson, 2002: 69; Schnieder, 2000: 407-427). According to Guglielmo Ferrero, the female criminal was characterised by deceit, dishonesty, a tendency for vendetta – and a passion for clothes. Constructed as being habitual liars in the wider culture, criminologists considered women to be physiologically incapable of telling the truth. Some claimed this was because of the need to hide menstruation from men and sex from children (Horn, 2003: 332). Others argued that because of “weakness, timidity, and shame of their sex...women take greater pains than men to commit their crimes in such a way as to escape detection.” (Földes, 1906: 558-559) Governed by an innate sexual force, even “normal” women were thought to be easily led into crime or prostitution (Gibson, 2002: 88).

By the time Lombroso was writing, commentators on crime had come to regard prostitution as the quintessential social evil, surpassing drunkenness, blasphemy and adultery in the state's dossier of the undesirable (Laqueur, 1992: 230). Criminal anthropology's gaze intensified when directed at the prostitute. “The primitive woman was rarely a murderess”, Lombroso and Ferrero claimed, “but she was always a

prostitute, and such she remained until semi-civilised epochs.” (Hurley, 1996: 98) It was an undoubted fact, wrote Lombroso, “that atavistically [the female] is nearer to her origin than the male, and ought consequently to abound more in anomalies.” And yet “an extensive study of criminal women has shown us that all the degenerative signs...are lessened in them; they “seem to escape...from the atavistic laws of degeneration.” (Wolfgang, 1961: 255) To explain this paradox, Lombroso and Ferrero reminded their readers that “the profession of these women necessitates a comparative absence of peculiarities which...require as much as possible to be artificially concealed”. But even if external anomalies were rare in prostitutes, they most certainly possessed internal ones, “such as overlapping teeth, a divided palate”. (Lombroso and Ferrero, 1895: 101) Influenced by evolutionary theory, the authors concluded that the crimes that women did specialize in, such as adultery, swindling and prostitution required an attractive appearance that prohibited “the development of repulsive facial characteristics.” (Lombroso and Ferrero, 1895: 110) “Contrarily to [male] criminals”, they wrote, “these women are relatively, if not generally, beautiful”. “Some of the photographs are quite pretty”, they conceded: “This absence of ill-favouredness and want of typical criminal characteristics will militate with many against our contention that prostitutes are after all equivalents of criminals, and possess the same qualities in an exaggerated form. But in addition to the fact that true female criminals are much less ugly than their male companions, we have in prostitutes women of great youth, in whom the *beauté du diable*, with its freshness, plumpness, and absence of wrinkles, disguises and conceals the betraying anomalies.” (Lombroso and Ferrero, 1895: 100-101)

The criminal anthropologists did not take this absence of visible stigmata to be evidence of a lack of criminality. On the contrary, this very deficiency was itself suspect:

“it is incontestable that female offenders seem almost normal when compared to the male criminal, with his wealth of anomalous features.” (Lombroso and Ferrero, 1895: 107) “As a double exception,” Lombroso and Ferrero explained, “the criminal woman is consequently a monster.” (Hutchings, 2001: 107) The criminal woman’s teratology was, paradoxically, a function of the *absence of any obvious signs* of degenerate stigmata of criminality. The female criminal was therefore “*she who does not show herself*”, she who hides in plain sight. Lombroso took the absence of evidence as proof of female criminality and invoked spectacular reasoning: “criminal women show few deviations from normal women, therefore normal women are latent criminals.” (Hutchings, 2001: 110) Whereas male criminals were pathological deviations from the normal, female criminals were invisible specters, “monstrous in their lack of deviation from the normal: they are a monstrosity in terms of criminal anthropology, the mythical creature at the heart of its labyrinth”. (Hutchings, 2001: 110) In this way, criminology transformed the normal woman into an entity potentially more dangerous than the born criminal. The result was the “barely legible *potential* dangerousness of the normal woman”, the effect of which was to construct woman as “both normal in her pathology, and pathological in her normality.” (Horn 2003: 141)

The decline of criminal anthropometry and the subsequent abandonment of the concept of the born criminal was one of the factors that made the lie detector possible. (Bunn, 2012) 'No one can study criminals at close range and believe in the existence of a criminal class, regardless what Lombroso and his disciples may claim', declared the famous detective William Pinkerton in 1912. (Stockbridge, 1912) “There is No Criminal Type”, the *New York Times* concurred: “In other words the criminal is a normal person, not markedly different from the rest of humanity who have managed to keep out of prison. In other words, there are in ministers and Cambridge undergraduates and

college professors the making of pickpockets and thieves, as well as murderers and forgers.” (“There is No Criminal Type,” 1913) The *Times* article was a detailed account of Charles Goring’s *The English Convict*, the book that, according to the historian of criminology Arthur Fink, “was more decisive perhaps than any other factor in undermining belief in a criminal anthropological type.” (Fink, 1938: 244) Fink dated the end of criminal anthropology in the United States to 1915. (Fink, 1938: 243-249; Gillin, 1924/1925: 248-255) By then, he concluded, the study of crime “had come a long way from the time when the madman was indistinguishable from the criminal, from the time when it was held that the shape of the skull or of the brain determined criminal or non-criminal behaviour, from the time when it was believed that there was a fixed criminal anthropological type...when it was asserted that every feeble-minded person was a criminal or a potential criminal.” (Fink, 1938: 251) The lie detector was born when the born criminal died.

As criminology substituted anthropometric measurement for a psychological approach to understanding crime, the male criminal was supplanted by the female criminal as the science’s fantasy object of desire. (Tarde, 1886; Wolfgang, 1972: 280) Having decided that the stigmata of criminality was not written exclusively on the *surface* of the criminal body, criminal anthropology had had to search deeper *inside* it for hypothesised “internal lesions” of criminality. This break brought two new signifiers into criminology: on the one hand, ‘the female body is pure but contains a corrupt core’; on the other, ‘emotion can be measured’. In the post-Darwinian context, emotion was now conceptualised as an internal and invisible quasi-biological and gendered category. (Dixon, 2003)

Along with other late nineteenth century human sciences such as sexology and psychoanalysis, criminology therefore came to share an “eagerness to open up the

woman and see deeply into the secrets of her body and of creation.” (Showalter, 1991: 129) The female body was an enthralling cipher, a potential source of profound truths about the origins and causes of criminality. (Cobbe, 1868: 777-794; Young, 1996: 31) In accordance with long-standing beliefs about sex differences validated in the wake of Darwin’s theory, the female body was constructed as inherently secretive, deceptive and duplicitous. Woman was an untrustworthy corporeal being, an unruly body imprisoning an untrustworthy mind.¹⁴ (Brown, 1986: 401)

Western philosophy has long expressed ambivalence towards the female body, a construct simultaneously pure yet corrupt, reliably stubborn yet capricious. Woman was angelic and supra-human but also not quite human. Because women lacked “reason and true morality” according to Schopenhauer, they represented “a kind of middle step between the child and the man, who is the true human being.” (Figs, 1970: 123) He pointed to their “instinctive treachery, and their irredeemable tendency to lying.” Nature had apparently “armed woman with the power of deception for her protection.” (Figs, 1970: 124) Whereas the man’s beard helped him disguise changes of expression when confronted by an adversary, the woman on the other hand, “could dispense with this; for with her dissimulation and command of countenance are inborn.” (Figs, 1970: 125) The German criminologist Hans Gross was puzzled by the enigma of female criminals who, he claimed, inhabited a radically different world to men:

We have always estimated the deeds and statements of women by the same standards as those of men, and we have always been wrong. That woman is different from man is testified to by the anatomist, the physician, the historian, the theologian, the philosopher; every layman sees it for himself. Woman is different in appearance, in manner of observation, of judgment, of sensation, of

desire, of efficacy, —but we lawyers punish the crimes of woman as we do those of man, and we count her testimony as we do that of man. The present age is trying to set aside the differences in sex and to level them, but it forgets that the law of causation is valid here also. Woman and man have different bodies, hence they must have different minds. But even when we understand this, we proceed wrongly in the valuation of woman. We cannot attain proper knowledge of her because we men were never women, and women can never tell us the truth because they were never men. (Gross, 1918: 301)

Following this logic, a lie detector test, then, became an enactment in miniature, of the separate worlds that men and women inhabited.

Nietzsche noted female deceptiveness in his explanation of her disorderliness: “man wishes woman to be peaceable: but in fact woman is essentially unpeaceable, like the cat, however well she may have assumed the peaceable demeanour.” (Nietzsche, 1886/1972: 100) Nietzsche begins *Beyond Good and Evil* by asking: “Supposing that Truth is a woman: what then?” “But she does not want truth” he answered; “what is truth to a woman! From the very first nothing has been more alien, repugnant, more inimical to woman than truth – her great art is the lie, her supreme concern is appearance and beauty.” (Nietzsche, 1886/1972: 31, 136) The woman, in other words, embodies a beauty that conceals a malevolent core. Whereas the male criminal had been conceptualised as a crude biological exception, an anthropological specimen, the female criminal was essentially a universal problem. The female body was also the erotic core at the heart of the lie detector’s project. The machine was therefore one answer to Nietzsche’s question “If truth is a woman, what then?”

The Logic of Fantasy

According to the Lacanian philosopher Slavoj Žižek (1989, p.30) the fundamental level of ideology 'is not that of an illusion masking the real state of things' but rather 'that of an (unconscious) fantasy structuring our social reality itself.' The critique of ideology must make two moves, he proposes. First, the analysis must start by demonstrating "how a given ideological field is a result of a montage of heterogeneous 'floating signifiers', of their totalization through the intervention of certain 'nodal points'". (1989, p.140) The lie detector instrument itself was one such nodal point, the 'big Other' that stitched together, into a coherent whole, a patchwork of subsidiary signifiers ('emotion is measurable', 'the third degree is inefficient' and so on).¹⁵ This omniscient and menacing 'black box' was the master signifier that guaranteed the meaning of the others. But Žižek emphasises that discourse analysis must then also be supplemented by a second critical move that focuses on the 'logic of enjoyment': 'beyond the field of meaning but at the same time internal to it – ideology implies, manipulates, produces a pre-ideological enjoyment structured in fantasy.' (Žižek, 1989, p.140) With its promises to render the violent extraction of truth obsolete, to match potential lovers painlessly, and to transcend the sordid machinations of the legal system altogether, the lie detector was a technoscientific fantasy *par excellence*. When 'every crime is entrenched behind a lie' everyone becomes a potential suspect. The logic of fantasy is the interpellation of subjects.

Claims that technology could assist in every stage of the romantic process were common during the Progressive era in the United States, when debates about eugenics, procreation and birth control were inflected with a technocratic ethic. (Clarke, 1998) It was evidently quite acceptable to consider surrendering one's private desires to

scientific scrutiny for their subsequent validation, supervision and control. There is no doubt that the machine's concupiscence represented one of its chief nodal points, endorsing a variety of tropes about woman's essential naturalness, deceptiveness, inscrutability and so on as it staged its metonymic investigation into romance. There was an unmistakable pleasure – in Lacan's terms *jouissance* – in deploying a technology to trace the trajectory of erotic desire. "Every ideology attaches itself to some kernel of *jouissance*", according to Žižek, "which, however, retains the status of an ambiguous excess." (Žižek, 1997/2008, p.63) Like Wonder Woman's magical 'Golden Lasso', the love machine communicated accepted facts about the lie detector's everyday workings, such as its coercive production of the confession and its uncanny ability to 'read minds'. These two *apparent* fantasy excesses were in fact immanent *necessities*. Their role as apparent 'ambiguous excess' was to elide further questions concerning the contradictions of discourse. (Bunn, 2012, p.183) 'In a universe in which all are looking for the true face beneath the mask,' writes Žižek (1989, p.41), 'the best way to lead them astray is to wear the mask of truth itself.' The lie detector's 'mask of truth' – an evident excess that was nevertheless intrinsic to the project's success – was the love machine.

Conclusion: Truth Emerges from the Well

A slight shift of perspective is all it took for the lie detector to become a love detector. The U.S. intelligence agencies have long used lie detector tests to attempt to unmask unsuitable agents – and to investigate the private lives of its employees.¹⁶ In January 1939, a 'pretty blonde "told all" to the United States Secret Service' during a demonstration of the Keeler Polygraph at the Willard Hotel in Washington. 'Much

against her will, 23-year-old Erva Kalvig...admitted she was in love', according to the *Washington Post*, 'and even admitted her age':

Miss Kalvig, comely cigar counter attendant at the Willard Hotel, agreed to play "stooge" for a demonstration of the Keeler polygraph (lie-detector) at the Secret Service conference at the hotel. And it wasn't five minutes before she regretted accepting the job.

Calmly the young woman let herself be attached to the polygraph - described as eight times as sensitive as the ordinary, so-called "lie-detector" - while Agent E.A. Wildy prepared to question her.

Miss Kalvig was told to answer "No" to every question. And then the fun began.

"Were you born in June?" Wildy asked.

"No," - and the needle didn't jiggle.

"Have you ever been kissed?"

"No," said Miss Kalvig, blushing a nice crimson. And you should have seen that needle!

"Are you in love?" was the next question.

"No" - and boy! - that needle gyrated wildly. ('Truth Will Out', 1939)¹⁷

Almost 60 years later, the C.I.A.'s obsession with the sex lives of its female employees, 'led to a welter of lawsuits and a crisis down at "The Farm" according to the U.K.

Independent newspaper (Jeffreys, 1996: 8-9). The CIA had recruited 'Sarah' in 1987. Like all her fellow recruits, she was obliged to take a pre-entry lie detector test. "I was a bit surprised by the intimate nature of the questions," she said. "They asked me about my sex life. Luckily, I didn't really have one at the time, so there was not much to say."

According to Sarah, the interrogators asked repeated questions about sex and very little else. She described the examination as an exercise in abuse and intimidation: "They kept coming back to my sex life," she said. "They asked how many times we have sex in a month, what kind of sex we have, what kind of positions, what I was wearing. How can I have a normal sexual relationship now, knowing that whatever I do in bed I may be asked to describe in detail to one of my superior officers?"

Science occasionally mimics sexual relations between men and women. Ernest Barrias' famous sculpture 'Nature Unveiling Herself Before Science' (1899) depicts a

young woman, her head bowed, opening her garments to display her breasts. Nature is female, to be enjoyed and examined by the male scientific gaze. A similar binary also featured in 'Truth Emerging from the Well' genre paintings that briefly flourished in European art between the 1880s and the end of the century. Holding a mirror whilst emerging from a well, truth is personified as a young naked woman. (Figure 10) Although the assumed male viewer is invited to gaze upon her, his gaze is defiantly returned by Truth who holds up a mirror, demanding that he first confront the truth of his own desire.¹⁸

Insert Figure 10 about here

Figure 10: Edouard Debat-Ponsan (1898) 'Truth Emerging from a Well'. Hôtel de ville d'Amboise.

This same refusal to be subjected to male scrutiny can also be seen in Nancy's 1931 Valentine's Day card, a description of which opened this essay. In that case too, the card's recipient was forced to confront an uncomfortable truth concerning the integrity of desire. The card invites the recipient to *pull the girl's leg*, to enact a gesture that itself signals deception: "You're not telling me the truth", she seems to be thinking in response, "You're pulling my leg." Not only does the lie detector therefore fail to unmask her intentions (even though she's the one strapped to it), but it has discovered something about the intended object of her affections: if you're pulling *her* leg, then *you're* the one who can't be trusted. The girl has turned the tables, rejected the male gaze. In a clever reversal, the suspect has enlisted the machine to help her question the motives of her interrogator; to effectively *detect his lies*. We shall never know if Nancy's

love interest experienced a thrill on receiving her card or realised that by pulling the girl's leg he was communicating doubts about the integrity of his desire. But Nancy's Valentine's Day card cleverly forced him to release a 'tell', in polygraph interview parlance, a behavioural signifier of his own guilt. This is the secret the girl knows. There's an enjoyable little story encapsulated in this simple love token. But the artefact also embodies a more unsettling allegory concerning the relationship between science, gender and the pursuit of truth.

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¹ The lie detector was sufficiently famous by the 1930s for it to be familiar to the English, as the Donald McGill postcard shows: "Have you read about that machine that can tell at once when a man's lying?", says one drunk to another. "Read about it?", his mate replies, "Holy Smoke - I married it!"

² On the polygraph's 'tangled history with abnormal sexuality' such as its role in the management of sex offenders, see Balmer and Sandland (2012).

³ In frustrated recapitulation of criminal anthropology's own fruitless search for the visible stigmata of criminality, almost every body part has attracted its own advocate at some point in the machine's history: the pupil, hand, arm, skin, lungs, heart, muscles, voice, stomach and, of course, brain have all been posited as betrayer's of the mind's secrets. (Littlefield, 2011)

⁴ This point was conceded as much by Keeler when in *Call Northside 777* instead of having the lie detector dramatically reveal the truth, Keeler insists that the complex graphs must first be studied with appropriate care elsewhere before a decision about the suspect's guilt or innocence can be reached. In this way, the lie detector's operation, as Lacanian theory predicts, is a matter for the 'symbolic' and not the (unattainable) 'real'.

⁵ The Embassy Theatre was an appropriate setting for the vaudevillian experiments. The technique involved strapping women to the apparatus and showing them clips from movies such as the Greta Garbo/John Gilbert pictures *Flesh and the Devil* (1926) and *Love* (1927). "The experiments more or less proved," said the *New York Times*, "that brunettes enjoyed the thrill of pursuit, while blondes preferred the more passive enjoyment of being kissed."

⁶ "If the girl puts up a struggle at a suggestion that she wear this harness during an evening of courtship John may be sure that he is going to get several hours of lies. In that case there is nothing to do but doubt everything she says. Thus will unhappy marriages be prevented." ('Shows One's Love Capacity', 1921).

⁷ 'Wife given alimony after taking lie detector test', Acme press photograph, 11/19/43. Private collection; 'Mrs. Margaret Villa, 22, Chicago, takes lie detector test to prove her marital integrity.' Acme press photograph, 4/17/44. Private collection.

⁸ See, for example Matté, *The Art and Science of the Polygraph Test* (1980: 132) fig. 67; Reid and Inbau (1977: 22) also discuss some of the potential hazards of attaching the pneumographic tube to women.

⁹ "It Really Understands Women," Newspaper clipping [May 1938], in Boder Museum Papers, Archives of the History of American Psychology, University of Akron, OH 44325.

¹⁰ There is now a voluminous scholarship on Marston and *Wonder Woman*. See Berlatsky (2015); Hanley (2014), Lepore (2014), Sandifer (2013), and Darowski (2014).

¹¹ 'Love machines' were evidently incapable of detecting love between two people of the same sex for example. See 'Lie detector measures kiss reactions' (1939).

¹² Love machines were all the rage in 1910: Joe Roberts of Greenwood, Miss. wrote a comedy play "The Love Machine": "It seems that this invention was quite a complicated piece of machinery, as all who came in contact with it immediately fell in love." ('Romantic wedding Friday Morning', 1910)

¹³ Such as, for example: baresthesiometer, campimeter, clinometer, craniometer, dynamometer, ergograph, esthesiometer, goniometer, Hipp's chronoscope, olfactometer, the Schlitteninductorium, spirometer, tachyanthropometer, thermesthesiometer. (Horn, 2003)

¹⁴ Such ideas reached an apogee in Otto Weininger's (1903/1906) *Sex and Character*. See also Slavoj Žižek (1994) *The Metastases of Enjoyment: Six Essays on Women and Causality*.

¹⁵ Other signifiers include: 'Guilt produces physiological effects', 'Emotion is a biological force', 'Women are more emotional than men', 'Women are duplicitous and inscrutable', 'The third degree is unprofessional and pre-modern', 'Interrogation techniques should be standardised', 'Every crime is entrenched behind a lie'.

¹⁶ After the Aldrich Ames spy scandal in 1994, when the CIA discovered that one of its agents had sold sensitive secrets undetected for nearly a decade, it was decided that all staff members must take a polygraph test at least once every five years. On the C.I.A. and F.B.I.s use of polygraph testing see Alder (2007) and Baesler (2018).

¹⁷ Miss Kalvig might have had the last laugh by beating the lie detector in 1939. In her 2006 obituary, the *Washington Post* reported that the "cigar counter cutie" had died at age 87 which would make her 20 when she took the Secret Service lie detector test, not 23 as the test's administrator claimed to have discovered.

<http://www.washingtonpost.com/wp-dyn/content/article/2006/02/15/AR2006021502654.html> accessed 02.10.17.

¹⁸ Works include Debat-Ponsan, E. (1898) *Nec mergitur/La Vérité sortant du puits*. [Oil on canvas] Ville d'Amboise: Musée de l'Hôtel de Ville; Garnier, J. (1883) *Truth Emerging from the Well*. [Oil on canvas]; Gérôme, J. (1896) *La Vérité sortant du puits*. [Oil on canvas] Moulins: Musée Anne-de-Beaujeu; Lefebvre, J. J. (1870) *La vérité*. [Oil on canvas]. Paris: Musée d'Orsay; Marc, F. (date unknown) *La vérité sortant du puits*. [Sculpture]. Amélie-les-Bains-Palalda: L'Ancien Théâtre de Verdure; Pallez, L. (date unknown) *La vérité sortant du puits*. [Sculpture]. Lyon: Parc de la Tête d'Or.

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