



Predicting longevity from the line of life: is it accurate?

Teghan Lucas^{1,2}, *Amrita Dhugga*³, *Maciej Henneberg*^{3,4}

¹School of Medical Sciences, Anatomy, University of New South Wales, Sydney, Australia

²Department of Archaeology, Flinders University, Adelaide, Australia

³Biological Anthropology and Comparative Anatomy Research Unit, School of Medicine, University of Adelaide, Australia

⁴Institute of Evolutionary Medicine, University of Zurich, Winterthurerstr. 190, 8057 Zurich, Switzerland

ABSTRACT: Palmistry or Chiromancy is the art of reading lines on the palm of the hands. Today, many researchers believe that the lines on the palms of the hands can predict the individual's future. Computer programs are being designed which can automatically read the lines on the palm of the hand. One popular theory is that the length of the line of life will indicate lifespan. This theory was investigated in 1974 by Wilson and Mather who found no significant correlation between life expectancy and the length of the line of life. In 1990 Newrick and colleagues found a significant correlation as measured on 100 cadavers. These conflicting investigations are the only existing studies which have explored the relationship between palmistry and longevity. Since then no other study has validated nor disproven these claims.

A total of 60 cadavers donated to The University of Adelaide were used in this study. Total hand length and the line of life length were measured on all cadavers. The age at and cause of death were also recorded. Linear regressions were used to establish any correlations between longevity and the length of the line of life. No significant correlations were found. There was also no significant difference between males and females or the right or left hands.

As no significant correlations were found between longevity and the line of life all efforts at producing more reliable and automatic ways to read the lines are futile. This study puts to rest any debate surrounding the use of the line of life in palmistry as introduced by Newrick and colleagues.

KEY WORDS: dermatoglyphics, Cheiro, palmistry

Introduction

Palmistry is the art of reading naturally occurring lines on the palm of the hand, which are claimed to give insight into an individual's personality. Palmistry is also

commonly used to predict the future of the individual, especially regarding health and wellbeing (Jones 1942). The three lines most commonly used in palmistry are: the heart line, head line, and the line of life. The heart line is said to indicate

someone's emotions and how they will react to matters of love. The head line is thought to represent someone's intellect, knowledge, communicability and whether or not they are more creative or imaginative. The line of life is believed to indicate someone's vitality, health and wellbeing.

Dermatoglyphics as applied to medical research, has shown that various chromosomal disorders have a correlation with unusual flexion creases of the palm of the hand and the ridge patterns on the fingertips (fingerprints). Down syndrome is the most extensively studied condition for correlations with dermatoglyphics, it commonly produces simian and Sydney lines, frequently occurring ulnar loop patterns and larger than average atd angles (Penrose 1973, Sharma et al. 2012, Shiono 1986). The reason abnormal dermatoglyphics are present is not entirely clear, however, most patients with Down syndrome have brachydactyly which causes the bones of the hand to be abnormally short which corresponds with the larger atd angle. Palm creases have also been studied in cases of trisomy 18 and 13, Cri du chat syndrome, Turner's syndrome and Klinefelter's syndrome (Shiono 1986). Studies such as these have aided medical practitioners in diagnosing a specific condition.

It has only been in the past 100 years that studying the lines of the hand and fingers has been applied to medicine. However, the art of foretelling one's future from the lines on the palm of the hands has been around since ancient times. It is believed to have originated in India during the Veda period or even earlier in China (Penrose 1973). Since dermatoglyphics has recently been applied to medicine with great success, the line separating medical palmistry from fortune telling has been blurred. With the recent advancement of

technology, computer programs are being designed which can read the lines of the palms of the hand and automatically predict the individual's future (Desai et al. 2015, Navpat et al. 2012, Pandit and Shah 2011). This research has stated that, 'palmistry is in itself a complete science which can forecast the future of an individual authentically' (Desai et al. 2015). This paper then goes on to mix medical dermatoglyphics and fortune telling palmistry to justify the research without any evidence that the lines on the palms of the hands can reliably predict the future.

Of the three main lines used in palmistry (heart, head and life), the line of life is said to be the most 'controversial' (Navpat et al. 2012). Many of the published works on palmistry were based on Cheiro, who was made famous for modernising palmistry in the 19th and 20th centuries. In his many works Cheiro (Cheiro 1988, Cheiro and Owen 1977, Hamon 1900; 1975) theorised that 'the line of life relates to the natural length of life'. The reasoning behind the statement that the line of life is 'controversial' was not given, however, it could be suggested that out of the three lines, the line of life can be scientifically tested whereas the heart line and head line are directly related to emotion and are more subjective.

In 1974, Wilson and Mather investigated the theory of the line of life in an attempt to find a reliable way of predicting life expectancy for use by insurance companies (Wilson and Mather 1974). Wilson and Mather (1974) measured the length of the line of life on 51 cadavers of unreported sex, no statistically significant correlation was found. In 1990 a study by Newrick and colleagues further investigated the relationship between the line of life and longevity in 100 cadavers (Newrick et al. 1990). The sample com-

prised 63 males and 37 females, the line of life was measured in all individuals at autopsy where age at death was recoded. Newrick et al. (1990) found a statistically significant correlation between the length of the line of life and longevity, with correlation coefficients ranging from 0.43 to 0.55. The statistical significance of these findings was later confirmed by Mardia (1990). Since the publication by Newrick and colleagues (1990) was released, it has been broadcasted by television, newspapers and other popular media outlets (Hodges 1995). The Weekly World News (Hodges 1995) headline read, 'Amazing new medical study reveals: lifeline on your palm really does tell how long you will live'. The studies by Wilson and Mather (1974) and Newrick et al. (1990) are the only published material which investigates the correlation between longevity and the line of life. The two studies present conflicting evidence for the significant relationship between longevity and the line of life. People who believe in the use of palmistry will argue that it is scientifically sound, while those who do not will argue the same, both quoting reputable and published studies.

The authors of the current study have used the methods proposed by Newrick and colleagues (1990) in an attempt to investigate the claim that the line of life correlates with longevity. The aim of the current paper is to provide accurate scientific validation for either of the studies which has previously investigated the use of the line of life in predicting longevity.

Material and Method

A total of 60 cadavers were donated to The University of Adelaide, School of Medicine for use in research. The sample consists of 35 males and 25 females.

Table 1. Cause of death as recoded on death certificate, for all participants (n=60)

Cause of death	Number of deaths
Natural causes	3
Carcinoma	23
Stroke	7
Dementia	3
Infection	13
Cardiovascular disease	10
Alcoholism	1

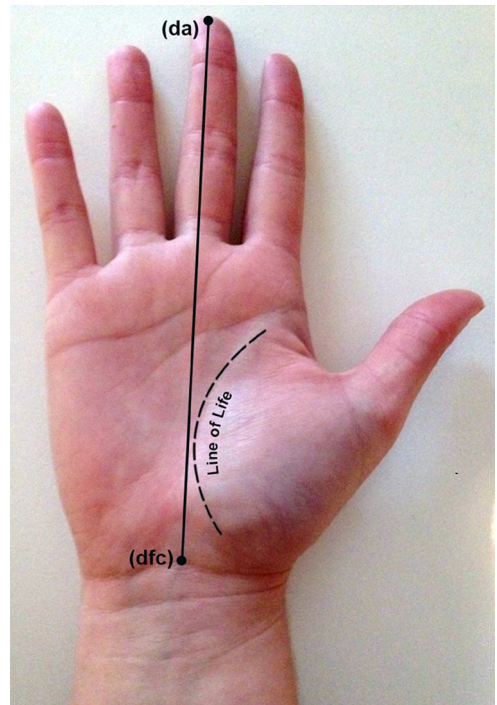


Fig. 1. An example of the total hand length and line of life measurements used in the study

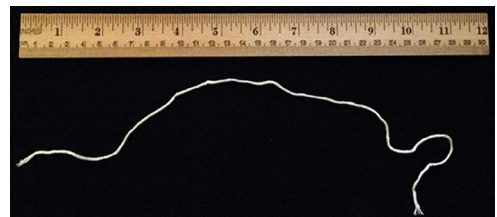


Fig. 2. An example of the measuring equipment

All cadavers were aged between 39 and 99 years at death, giving a wide range of longevity. A power analysis was used to determine the sample size needed to achieve significant correlations at a level of 0.40–0.60 observed by Newrick et al. (1990). With a total sample size of 60, any Pearson's correlation coefficient over 0.26 should be significant at the 0.05 level, thus giving ample room to observe correlation coefficients of about 0.50, had they existed. Causes of death for all cadavers are listed in Table 1.

The life line runs directly along the thenar eminence of the palm of the hand (Figure 1). It was measured in the current study in the same way that Newrick et al. (1990) measured their subjects. The methods proposed by Newrick et al. (1990) were chosen as that study found the significant correlation. A piece of string was placed along the line, the beginning and the end was marked on the string and then the string was straightened and the distance between the two marks was measured with a ruler to the nearest millimetre (Figure 2). The total hand length was also measured as the distance between the dactylion (da), the tip of the middle finger and the distal flexion crease of the wrist (dfc) (Figure 1). Due to the effect of the embalming process on the position of the hand, lab technicians assisted in holding the hand open so that measurements could be taken accurately. In order to account for the size of the hand influencing the length of the line of life, a ratio of the two measurements was calculated, whereby length of the line of life was divided by the total hand length. This ratio will be referred to as the life line ratio. Both hands were measured in all participants. Participants were only included in the study if the line of life was present in both hands.

Linear regression analysis was used to test the relationship between the ratio of length of the hand with the line of life and the age at death for all subjects. Data were analysed separately for each sex.

Results

Table 2 shows the descriptive statistics for all measurements, analysed separately for sex. There is no significant difference between the average lengths of the right and left line of life in both males and females. Likewise, there is little difference in their derived ratios. On average, there is only a difference of approximately 2 mm between the total hand length of males and females for both hands.

The standard deviations of the length of the line of life and the total length of the hand for both sexes were compared using an F test (Table 3).

Standard deviations of line of life lengths are significantly greater than standard deviations of hand lengths. Despite wide ranges of variation, there is no statistically significant correlation between the life line ratio and longevity (Figure 3). As mentioned previously, any correlation coefficient over 0.26 would be considered significant with the current sample size. Figure 3 shows regression analysis with the associated correlation coefficients for each hand separated by sex. There are no statistically significant correlations between any of the variables.

As there were no significant differences between the life line ratio for males and females (Table 2), both sexes were combined and a further regression analysis was conducted between the left and right hands. By combining the sexes,

Table 2. Mean, standard deviation, minimum and maximum for all measurements for both males and females separately (mm). Sample size is 35 males and 25 females

Variable	Sex	Mean	±SD	Minimum	Maximum
Age at death (years)	Male	82.80	±11.61	41.00	99.00
	Female	76.76	±13.43	39.00	91.00
Line of life (L)	Male	83.86	±12.95	55.00	110.00
	Female	83.04	±12.96	64.00	111.00
Line of life (R)	Male	83.60	±15.03	54.00	120.00
	Female	85.60	±11.82	60.00	108.00
Hand Length (L)	Male	109.46	±8.24	95.00	125.00
	Female	111.60	±8.28	95.00	134.00
Hand Length (R)	Male	111.57	±7.98	95.00	130.00
	Female	110.76	±10.10	85.00	131.00
Life Line Ratio (L)	Male	0.76	±0.09	0.58	0.96
	Female	0.74	±0.09	0.60	0.91
Life Line Ratio (R)	Male	0.75	±0.11	0.53	0.96
	Female	0.77	±0.07	0.61	0.91
Life Line Ratio (R+L)	Male	0.76	±0.09	0.60	0.95
	Female	0.76	±0.06	0.63	0.84

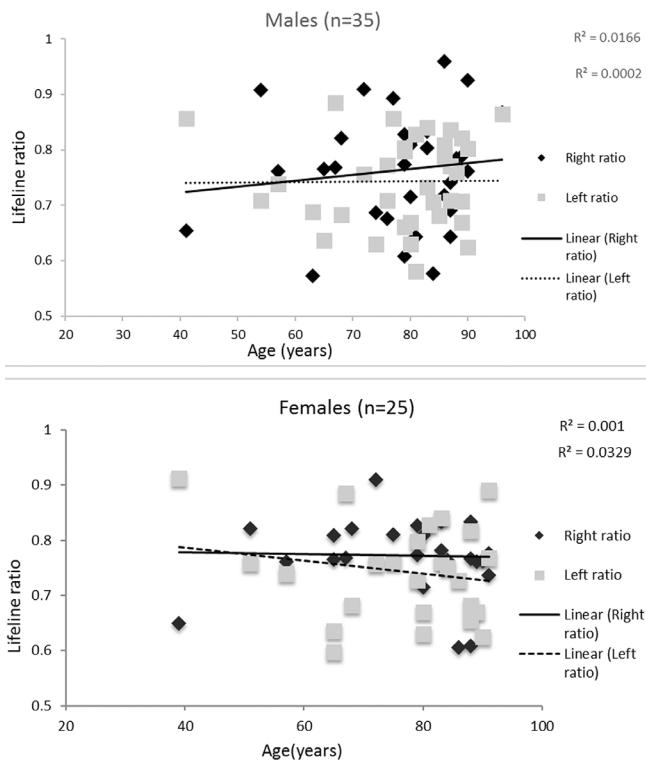


Fig. 3. Regression analysis and R² values for LLR and age at death for both hands of males and females
 Note: R² values are in the same order as the legend.

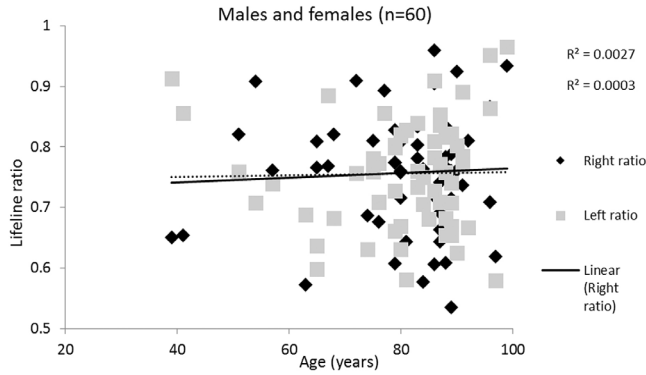


Fig. 4. Regression analysis and R² values for LLR and age at death for both hands of males and females combined

Note: R² values are in the same order as the legend.

Table 3. F tests with significance values comparing the standard deviations of the line of life and total length of the hand in both males and females for both hands

Sex	Right hand	Left hand
Male	F = 3.21 (NS)	F = 2.80 (NS)
Female	F = 2.37 (NS)	F = 4.00 (NS)

Note: NS = not statistically significant.

the sample size was increased. Figure 4 shows the regression between age and the life line ratio of each hand separately for both sexes combined. There were no significant differences between ratios of the left and right hands when sex was combined.

Discussion

This study used the same method that was described in Newrick et al. (1990). Although the study by Newrick and colleagues (1990) found a correlation between longevity and the line of life’s length, this study did not. This study validates original claims by Wilson and Mather (1974).

This current study found neither a correlation nor trend between longevi-

ty and the length of the line of life. The study used the same data collection methods that were used by Newrick and colleagues (1990) and the same statistical methods that were used by Newrick et al. (1990) and Wilson and Mather (1974). Although the line of life was measured differently by Wilson and Mather (1974) there would be no difference in the statistical findings. In the current study, the ranges of variation of ages at death and of line’s lengths were large, still no significant correlation was found.

In the original work by Cheiro (Hamon 1900) it was theorised that the length of the line of life indicated natural life expectancy, apart from accidents. In the study by Newrick et al. (1990) the sample consisted of cadavers which were undergoing autopsy. The cause of death in these cases was not reported and thus could have varied greatly. It is very likely that the sample used by Newrick and colleagues (1990) included individuals who died as a result of an accident, as the purpose of an autopsy is to determine cause of death. In the current study, the sample consisted of cadavers donated to The University of Adelaide. The cause of death was known

in all cases and in a majority of cases the causes were diseases associated with older age. No cases of death as a result of an accident were included. By not including cases of accidental death, the current study is considered more representative of Cheiro's original theory (Hamon 1900). Still, no significant correlation was found to support his theory.

It is difficult to ascertain the reasoning behind Cheiro's theory of the line of life and longevity. Biologically, the line of life is merely another flexion crease on the palm of the hand. Like all aspects of the human body, it is subject to biological variation, hence the differences in its length between individuals. Longevity is a result of an interplay between genetic and environmental influences. It can be theorised that Cheiro's original theory only applied to natural life expectancy (no accidental deaths) because he believed that longevity (as represented by the length of the line of life) is only subject to genetic influences. All cases of accidental death are the result of environmental influences.

In an interview published in the *Weekly World News* (Hodges 1995), Newrick claimed that he was not a believer in palmistry and after his study, he remained a disbeliever. He later explains that more research should be conducted to discover the significance of the line of life. The authors believe that the present study is a significant contribution to the scientific literature concerning longevity and the line of life.

Acknowledgements

The authors would like to thank Tavik Morgenstern for his assistance in producing photographic material for this study. The authors would also like to ac-

knowledge the Ray Last Laboratory technical team, specifically Wesley Fisk, Michael Hodges and Corey Lloyd for their assistance with cadavers.

Authors' contributions

MH conceived the concept of the paper; AD and MH collected the data and conducted initial statistical analyses; TL conducted statistical analyses, wrote the MS with the agreement and review of MH and AD.

Conflict of interest

All authors declare no conflict of interest regarding the publication of this paper.

Corresponding author

Teghan Lucas, School of Medical Sciences, Anatomy, University of New South Wales, Sydney, NSW, 2052, Australia
e-mail: t.lucas@unsw.edu.au

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