



A Negative Flynn Effect in Kuwait: The same effect as in Europe but with seemingly different causes



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ABSTRACT

The results of two previously published Arabic language administrations of the Standard Progressive Matrices (SPM) are compared. The first is an administration of the SPM in 2006 to a probability sample of 6529 Kuwaitis aged between 8 and 15 from all regions of Kuwait. The second is an administration to a comparable sample of 6431 Kuwaitis in 2015. We find a significant Negative Flynn Effect in each age cohort and an overall Negative Flynn Effect amounting to a loss of 6.2 points in a decade. Possible reasons for this are discussed. It is proposed that the most persuasive explanation is increasing religious emphasis in the Kuwaiti school curriculum.

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1. Introduction

The Negative Flynn Effect refers to the secular decline in IQ scores of roughly 2.5 points per decade in representative population samples that has been documented as having occurred in certain Western countries since the 1990s (see Dutton et al., 2016). It is the opposite of the Flynn Effect; the secular increase in average IQ scores of roughly 3 points per decade documented in Western countries across the twentieth century (see Flynn, 2012). A Negative Flynn Effect has now been reported in Denmark, Norway, Finland, the UK, Estonia, the Netherlands, and France (see Dutton et al., 2016). It has been shown that the Flynn Effect does not seem to betoken a rise in general intelligence, as it generally occurs on the least heritable and least g-loaded parts of the IQ test (te Nijenhuis & Van der Flier, 2013). By contrast, the Negative Flynn Effect has been shown to have generally occurred on the most g-loaded and on the most heritable parts of the IQ test. This is known as the Co-occurrence model (see Woodley & Meisenberg, 2013).

This raises the question of what precisely is causing the Negative Flynn Effect. A meta-analysis of the Flynn Effect itself (Pietschnig & Voracek, 2015) highlights life history speed (see Figueredo et al., 2006) becoming slower as the most persuasive explanation for the Flynn Effect. The authors observe that issues such as growing educational exposure, nutritional improvements, and decreased parasite stress

could all impact the phenotype via a single developmental pathway: life history speed. This is because each of these traits is indicators of decreased extrinsic morbidity and mortality. They also observe that LH speed is not correlated with g, but predicts extent of cognitive specialization. Accordingly, slowing LH renders people more attuned to opportunities to develop specialized abilities (such as increased schooling). This more educated and wealthier society appears to push to its phenotypic limit certain weakly g-loaded abilities at the base of the intelligence pyramid, doing so to such an extent that a secular IQ increase is recorded. This has been conceptualised as the environment forcing us to 'don scientific spectacles' (see Flynn, 2012). In their systematic literature review of the Negative Flynn Effect, Dutton et al. (2016) propose that the Negative Flynn Effect, which occurs on g to a greater extent than the Flynn Effect, may reflect a combination of so-called dysgenic fertility – the negative association between IQ and completed fertility in industrialised countries – and 'dysgenic immigration.' This refers to the large-scale immigration of Africans and South Asians into Europe, when they typically have lower average IQs than Europeans (see Lynn, 2015) and higher fertility, at least with some groups (see Lynn, 2011, Ch. 16).

Accordingly, it would be useful to examine a country where purely native samples are employed, as well as one that is not in Europe, but where a Negative Flynn Effect has taken place. This is what we propose to do by comparing two representative samples to which were administered the Standard Progressive Matrices (SPM) in Kuwait. One administration took place in 2006 and the other in 2015. This will provide evidence of a Negative Flynn Effect and we will then explore possible reasons for it.

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2. Method

In 2006, the complete SPM was administered to a probability sample of 6529 Kuwaiti school children ranging in age from 8 to 15 years. They were drawn from all six districts of Kuwait. The sample was 51% male (Abdel-Khalek, 2006). In 2015, the complete SPM was administered to another probability sample aged between 8 and 15, comprising 6431 pupils. This was, once more 51% male. This sample was also drawn from all districts of Kuwait (Abdel-Khalek & Mourad, 2015). In both cases, these samples were composed exclusively of native Kuwaitis. One can only be a 'Kuwaiti' if one can trace descent, in the male line, from somebody who was living in Kuwait in 1920. Kuwaitis make up about a third of the country's population, with the remaining two thirds composed of expatriate workers who can never become 'Kuwaitis' (Yaphe, 2011, p. 123). Both of these studies were published in Arabic. They allow us to compare two representative samples of Kuwaitis with precisely the same age and sex composition. In 2007, 98% of Kuwaiti eight year olds were enrolled in primary school and schooling is free and compulsory up until the age of 15. That said, the literacy rate in Kuwait among 15 to 24 year olds in 2007 was 94%, so it would seem that 6% of Kuwaitis illegally do not attend school (Momani, 2016). This illiterate group may be mainly composed of Bedouin nomadic herders, as this group fiercely resisted the introduction of compulsory schooling, which was enacted in 1965, and many are categorised as Kuwaitis (Casey, 2007, p.74).

3. Results

The results can be seen in Table 1. They are presented in separate age groups and also combined.

It can be seen that there is a significant Negative Flynn Effect overall between 2006 and 2015, amounting to a loss of 6.2 SPM points in a decade. It can be observed that there is also a significant Negative Flynn Effect when comparing each age cohort. This loss is the least pronounced among 8 year olds and the most pronounced among those aged 14.

4. Discussion

There are a number of possible reasons behind this Negative Flynn Effect in Kuwait. The first possibility is 'dysgenic fertility,' a factor which has been proposed to significantly explain the Negative Flynn Effect in European countries (Dutton et al., 2016). The general decline, at least, is consistent with evidence of dysgenic fertility among the Kuwaiti population. But it should be stressed that the extent of dysgenic fertility in Kuwait is extremely weak, so it cannot possibly explain more than a small percentage of the decline.

Abdel-Khalek and Lynn (2008) examined a representative sample of 4643 children in Kuwait aged between 8 and 15 years. They found a correlation of -0.05 between family size and average score on the SPM. Clearly, this is, essentially a negligible, albeit significant, effect size. Nevertheless, this modest dysgenic fertility is consistent with evidence

reported by Al-Kandari (2007) that there is a significant negative correlation in Kuwait – based on a sample of 7749 – between fertility and a number of robust proxies for intelligence. These proxies were education level, occupational status, age at first marriage, and socioeconomic status. However, there was a positive relationship between income and fertility. Fertility was also positively associated with those who were in non-consanguineous marriages, with those who were Bedouin, and with being a Sunni (rather than Shia) Muslim woman.

Al-Kandari's results contain a number of findings which may allow us to better understand the weak negative relationship between intelligence and fertility in Kuwait or which require explanation. Al-Kandari finds that Sunni Muslim women are more fertile, by implication than Shia Muslim women. Around 45% of Kuwaiti Muslims are Sunni, about 35% are Shia and roughly 10% are from other Muslim denominations (Shomali, 2003).¹ A possible explanation for higher fertility among Sunni women is that Sunni teaching permits males to take a maximum of only four wives. By contrast, Shia teaching allows men to take as many 'temporary wives' (whom Shias marry on a temporary basis with no expectation of staying married for life) as they can afford and, in some Shia sects, it is also permitted to take concubines (Minces, 1982, p. 62). On this basis, we would expect Sunni females to have more children each, because their husbands are limited in the number of wives they can take.

Moving on, we can see that Al-Kandari finds that fertility is negatively associated with education level but positively associated with income. In general, education level has been found to be a stronger correlate of intelligence than income. Based on Western samples, the correlation between education level (defined as the highest qualification obtained) and IQ score is about 0.5 whereas it is only 0.3 with regard to the relationship with income (e.g. Jensen, 1981). Assuming that this same difference exists elsewhere, Kuwaiti intelligence can be understood to be pulled in two directions, which may help to explain the very modest negative correlation. In addition, other factors may be at play, which help to explain the weakness of the negative correlation. These would include the society being religious and having strict rules condemning illegitimacy and relationships outside marriage. Premarital sex, for example, is illegal in Kuwait (US State Department, 2015, p.27). This would mean that a woman must marry to have a child and in the context of a polygamous society she is likely to sexually select for a wealthy and high status male, as these factors play an important role in female sexual selection (see Buss, 1989). This would leave low status males with relatively fewer children than in Western societies. By contrast, in the West, with relatively low levels of religiosity and little taboo on illegitimacy, there is far less pressure against those of low socioeconomic status simply impulsively having unprotected sex outside marriage (see Perkins, 2016) and, anyway, men are limited to one wife.

It can also be seen, from Al-Kandari's results, that consanguineous marriage is associated with reduced fertility. In Kuwait, cousin marriage is actually preferred among males of higher socioeconomic status (Bittles & Hamamy, 2010, p. 90), meaning that the association should be dysgenic. But, on the other hand, the practice has a weak negative effect on IQ, due to the elevated probability of double doses of mutant genes, known as 'inbreeding depression.' It also renders mental retardation more likely (see Woodley, 2009). Greater fertility, in Kuwait, is found among those practicing non-consanguineous marriage, where

Table 1
SPM Scores of Kuwaiti School Pupils comparing 2006 to 2015.

| Age | 2015 | | | 2006 | | | Change |
|-------|------|---------|--------|------|--------|--------|--------------|
| | N | Mean | SD | N | Mean | SD | |
| 8 | 674 | 18.75 | 7.6775 | 811 | 22.635 | 9.925 | -3.88 <0.001 |
| 9 | 833 | 22.66 | 9.33 | 788 | 26.825 | 10.805 | -4.2 <0.001 |
| 10 | 746 | 25.585 | 9.015 | 807 | 30.765 | 10.35 | -5.2 <0.001 |
| 11 | 857 | 29.565 | 8.5925 | 833 | 35.745 | 9.475 | -6.2 <0.001 |
| 12 | 796 | 32.0875 | 7.9575 | 827 | 37.505 | 9.165 | -5.5 <0.001 |
| 13 | 887 | 34.38 | 7.2 | 890 | 40.58 | 8.505 | -6.3 <0.001 |
| 14 | 833 | 36.3775 | 6.7775 | 815 | 43.575 | 7.515 | -9.9 <0.001 |
| 15 | 805 | 37.52 | 6.43 | 758 | 44.275 | 7.875 | -6.75 <0.001 |
| Total | 6431 | 29.616 | 7.873 | 6529 | 35.238 | 9.202 | -5.6 <0.001 |

¹ As with Christianity, Islam has divided into assorted denominations. The fundamental schism in Islam is between Sunni and Shia. The key point of contention is over who was the rightful successor to the Prophet Mohammed as leader of the religious group. Sunnis followed the Prophet Mohammed's friend Abu Bakr and his successors, whereas the Shia believed the successor to the Prophet Mohammed should be a blood relative of the Prophet's, called Ali. This disagreement led to two separate groups, with the Sunni at first dominating the Shia. The Sunni believe the community should be led by an appointed individual and they stress following the lifestyle of the Prophet Mohammed. The Shia, however, regard their leaders, known as 'Ayatollahs,' as reflections of God on earth who can speak for God; rather like the Pope supposedly can in Catholicism. This has led to different religious traditions and beliefs in the two groups (see Hazleton, 2009).

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