



## Review Article

### **The Overview of Gifted Education in Israel in Terms of Rate of Receiving International Prizes Israelis and Jews Living Elsewhere?**

**ABSTRACT:** One of the indicators about countries' quality of education is receiving the international prizes e.g. The Nobel Prize, The Fields Medal, The Turing Award, The IJCAI – Computers and Thought Award, and the Award for Research Excellence according to international criterions. In this study the comparison of prizes that Israelis and Jewish living elsewhere Israel has been examined in terms of population of the country where they live, the number of prizes. It is clear that the numbers of prizes that Jewish living elsewhere has won are high in comparison to living in Israel. In this situation, enrichment programs for gifted children practiced for 40 years in Israel should be check out in terms of international criteria.

**Key words:** Israelis, Jews, international prizes, gifted education

Dr, **Hanna DAVID**,  
48/18 Hakookiya St.,  
75548 Rishon Leziyon,  
Israel. E-mail:  
hannadav@post.tau.ac.  
il

Received: 21 May 2013  
Accepted: 10 June 2013

## INTRODUCTION

Since the 19<sup>th</sup> century Jews have contributed to the world in all scientific and creative areas far beyond the rate expected by their number. Whether this has mainly been due to their high IQ (e.g. David & Lynn, 2007; Lynn, 2004; Lynn & Longley, 2006) or because of educational, financial, traditional or any combination of these components (Cochran et al., 2006) is not in the scope of this work. Here we shall explore the fact that while the tendency of receiving high-prestige prizes among Jews from Europe and from America, Jews from Ashkenazi as well as from Sephardi origin, Jews living in democracies and in non-democratic – especially communist countries has been steady until 2010, Israeli Jews have been the exception. Their rate of measurable success of Israeli Jews – according to any international criteria – is the lowest among Jews living everywhere else.

Let us examine this presumption in detail.

### Olympiads

Israel had started participating in the International Mathematical Olympiad in 1979. During the 80ies its best score was no. 14; its worst – no. 26. During the 90ies the situation remained quite steady: from 13 to 26. In 2000 – it scored 11<sup>th</sup>, but since then the deterioration was observed annually, until in 2010 it scored 53<sup>th</sup>. Furthermore: the team of 2010 included only 5 youngsters; there were not even the minimal 6 talented youngsters who were good enough to be sent to the Olympiad (IMO, 2010). In addition, between the years 1992, just after the immigration

to Israel from the ex-USSR was at its pick, until 2007, when even the youngest children of the immigrating Russian Jews were at the edge of adulthood, more than 53% of the participants in the IMO were either immigrant children or Israeli-born children of ex-USSR immigrants (Imo, 2010. The identification as "Russian" was done by the participants' names). This is an extremely high rate, as the percentage of "Russian" Jews reached just about 20% of the population after 20 years of immigration, while the number of children of immigration was only about 15%, because of the comparatively low birthrate among them. Thus, in spite of the intensive contribution of high quality IMO participants Israel had been able to keep its previous high math level, lost its former advantage and placed itself among other third-world countries.

The situation regarding other international prizes, such as the Nobel Prize, the Fields Medal, the Turing Award, the Computers and Thought Award, Award for Research Excellence is similar.

### The Nobel Prize

There are about 6 million Jews in Israel and about 5 million in the US. Between 1950-2010 66 American Jews received the Nobel Prize in comparison to only 7 Israeli. The Laureates of the Peace Nobel Prize have not been taken into consideration as this prize: "has been the prize most frequently reserved or withheld" (Nobel Prize, n.d.).

Let us look at Table 1 summarizing the number of Jews receiving the Nobel Prize for science and literature since 1950

**Table 1.** Jews receiving nobel prize in science and literature, from 1950<sup>1</sup>

	Jewish population, No.	Medicine & Biomedical science: NO.	Chemistry No.	Physics No.	Literature No.	<u>Economics</u> No.
Total No: 133	13,155,000 <sup>2,3,4</sup>	39	23	37	10	<b>24</b>
USA: 66 (~50%)	5,275,000	24	11	18	0	<b>16</b>
Israel: 5 (~3.7%)	5,703,700	0	3	0	1	<b>1</b>
France: 2	490,000 <sup>5</sup>	2			0	
UK: 2	295,000			1	1	
USSR [RUSSIA after 1990]: 17	Belarus 18,200 Ukraine 77,000 Russia 225,000 Moldova 4,600 Azerbaijan 6,800 Total FSU Republics: 345,700	1	3	6+ 1 Azerbaijan	2	<b>3</b>
Germany: 10	120,000	4		4	1	<b>1</b>
Other: Ashkenazi (22)	Austria 9,000 Argentina 184,000 Canada 373,500 Hungary 49,700 Poland 3,200 S. Africa 72,000 Switzerland 17,900	1 Austria 1 Argentina	2 Austria	2 Canada 2 Hungary 1 Poland 1 Poland	1 Canada 1 Hungary 1 Poland 1 S. Africa	<b>1 Canada</b> <b>1 Hungary</b>
Belgium: 1	Poland 3,200	2 Poland	1 Poland	2	1 S. Africa	
Canada: 4	S. Africa 72,000			Switzerland	Africa	<b>1 Hungary</b>
Hungary: 5	Switzerland	1 S. Africa				
Poland: 5	17,900					
S. Africa: 2						
Switzerland: 2						
Sephardi Jews	Italy 28,600	1 Venezuela 2 Italians		1 Italian 1 Algerian	1 Bulgaria	<b>1 Italy</b>

<sup>1</sup> Processed from: Jewish Laureates of Nobel Prize in Biomedical Sciences (2010).<sup>2</sup> Jewish People Policy Planning Institute (Jewish Agency for Israel), 2007, p. 15, <http://www.jpppi.org.il/JPPPI/SendFile.asp?DBID=1&LANGID=1&GID=482>,<sup>3</sup> CBS, 2010. 5,703,700 Jews lived in Israel at the end of 2009 (CBs, 2010, table 2,2). According to the Hebrew university web, there have been about 2,800,000 Ashkenazi Jews in Israel in the 21<sup>st</sup> century (Ashkenazi Jews, 2010). In Israel there are 1.1-1.5 million Sephardic Jews, more than in any other country, but not even one Israeli from a Sephardic origin has been awarded the Nobel Prize.<sup>4</sup> The Jewish Population of the World (2006). Retrieved on 20 November 2010 from <http://www.jewishvirtuallibrary.org/jsourc/Judaism/jewpop.html><sup>5</sup> 500,000 according to the Appel Unifié Juif de France (2010). <http://www.aujf.org>

Israeli Jews has won only ~3.7% of Nobel Prizes in science and literature, though more than 43% of the Jewish world population lives in Israel; that is about 12 times less than should have been expected.

One of the main arguments explaining the high rate of Jews winning major prizes is the high IQ of Ashkenazi Jews, estimated as 107-115 (Cochran et al., 2006; David & Lynn, 2007; Lynn, 2004; Lynn & Longley, 2006). Had the origin played such a substantial part in high achievements among Jews elsewhere, it could have explained, at least partially, the relatively low rate of prize winning among Jewish Israelis, consisting both Europeans and Sephardim. A close examination of the picture reveals a different state of the art: while in Israel no major prize had been won by a Jew from a Sephardi origin, non-Ashkenazi Jews have won some of the major prizes even in countries where the Jewish community had been very small. Let us examine this argument closely.

Only about 20% of the world Jewish population has been Sephardi at the beginning of the 21<sup>st</sup> century, most of it lives in Israel and in France (Elazar, 2010). Furthermore, while Ashkenazi Jews have traditionally been living in western countries, mainly in Europe and North America, where the rate of Nobel Laureates has been high, most Sephardi Jews had been living in the Middle East and North Africa, where the rate of the Nobel winners had been low. In spite of this fact, Sephardi Jews living either in Europe or in North Africa have won a few Nobel Prizes in the last 60 years, in some cases the only Nobel Prizes won by citizens of their countries during that period, and in one case – that of Italian Jews – setting a world record of the highest Nobel Prize rate for such a small population. During that period not even one Israeli Jew of Sephardi origin had won this honorable prize. Here are some examples.

#### *Algeria*

2 Algerian-born had won the Nobel Prize: Albert Camus (1957, Literature) and Claude Cohen-Tannoudji (Physics, 1997). However, while Camus was originally a "pied-noir", son of a French colonist before the Algerian independence, of European origin, Cohen-Tannoudji was the only "native" Algerian winning the Nobel Prize.

#### *Italy*

The Italian Jewish community has broken the world record: 4 Nobel prizes in a population lesser than 30,000. All in all, Of the 13 prizes in science and literature, given to Italians from 1957, 4 were awarded to Jews: 2 in Medicine & Biomedical science; one in physics and one in economics – the only economics Nobel Prize won by an Italian. That is 160 times the Israeli Jewish ratio.

Venezuela the majority of the Jewish population in Venezuela has been Sephardic, as the Nobel Prize winner Baruj Benacerraf, from Algerian origin. One Nobel Prize in a population of 15,400 Jews is 80 times the Jewish Israeli rate.

As it is beyond the scope of this article, the contribution to Sephardi Jews to social science in general, as well as to the world's philosophy and literature will not be discussed here.

#### *Jews from the USSR and ex-USSR Republics and the Nobel Prize*

##### *USSR*

Even in the USSR more Jews reached excellence than in Israel, in spite of the persecutions and the difficulties to get into higher education institutions (the numerous clauses). 17 Nobel Prize have been awarded to Jews from the ex-USSR since 1950. The maximal number of Jews in the USSR was counted at the eve of Second World War: about 3,000,000, about a third were killed either directly by the Nazis or as soldiers, due to the war hardships, e.g. hunger, bombing, lack of medical care. Currently there are only about 350,000 Jews in all ex-USSR.

##### *Azerbaijan*

Only one Nobel: the Jewish Lev Landau (Physics, 1962)

##### *Belarus*

Only one Nobel: the Jewish Zhores Ivanovich Alferov (Physics, 2000).

#### *Jews Receiving Nobel Prizes in Biomedical Sciences by Nationality*

Since 1952 34 Jewish Americans won the Nobel Prize in Biomedical Sciences, in the USA;

Germany had a population of about 200,000 Jews after 2000 (about 20,000 after World War II), approximately 4% of the Jewish Israeli population. Since 1953 4 Nobel Prize winners from Germany were Jews!

Germany, Austria and Hungary are interesting cases regarding Jewish Nobel Prizes. As David (2009) has summarized,

In the years 1901-1939, 92 scientists won the Nobel Prize in physics (29), chemistry (30) and medicine (33). Only twenty of them – less than 22% – to non-Jewish Germans: 7 in physics, 9 in chemistry and 4 in medicine. During these years an additional number of 15 German scientists won the Nobel Prize in these three disciplines: 4 in physics, 4 in chemistry<sup>6</sup> and 7 in medicine.

[...]

Jews were awarded 15 of the 35 Nobel Prizes, about 43%, while consisting of less than 1% of the population (p. 13).

As stated by Ziegler & Stoeger (2007), Germany indeed had a history of winning a high rate of Nobel Prizes, but the main reasons for it was the Jews contributing more than 50 times their share not only to science, but also to all cultural and arts areas.

The number of Israelis winning that prize has been zero.

*Jews receiving Nobel prizes in chemistry by nationality*

13 American Jews won the Nobel Prize in chemistry.

3 Israelis won the Nobel Prize in chemistry. Though more than 400% higher rate of American Jew, this is the highest score of Israelis in any category of the Nobel Prize, and the lowest American Jews/Israeli Jews rate.

*Jews receiving Nobel prizes in Economics by nationality*

Since 1979 23 American Jews won the Nobel Prize in Economics;

Only one Israeli Jew, Prof. Robert J. Aumann, who had been educated in the US and immigrated to Israel after receiving his PhD, has won this prize. Though Israel is proud of another laureate, the Israeli born Prof. Daniel Kahneman, who holds a double citizenship, Kahneman had actually left Israel in 1958 and had been living and working in the US since.

The only Nobel Prize in Economics in Russia had been won by a Jew: Prof. Leonid Kantorovich.

*Jews receiving Nobel prizes in Physics by nationality*

American: 27,

Israeli: 0,

Russian: 7

*Jews receiving Nobel prizes in Literature by nationality*

American: 3

Israeli: 1

German: 1

Russian: 1

In summa: The total number of American Jews receiving the Nobel Prize has been 66 while Israelis won only 7 prizes (Jewish Laureates of Nobel Prize in biomedical sciences, chemistry, economics, physics and literature, 2010).

### The Fields Medal

The Field medal, the International Medal for Outstanding Discoveries in Mathematics, is given every 4 years to 2-4 outstanding mathematicians under 40. In 2010 Elon Lindenstrauss had been the first Israeli to win it. He had received it just after returning to Israel from the USA – has he stayed here after he finished his studies. Of the 52 winners of the Fields Medal, 14, 27%, have been Jewish (Field medalists, 2011). 5 were American Jews, 2 French Jews, 2 UK Jews, and 4 – Russian Jews, and only one – Israeli. In France, for example, there are less than 10% Jews than in Israel, so the rate of winners of the Fields medal is 20 times higher than in Israel. In the UK there are approximately 250,000 Jews in comparison to ~5,000,000 in Israel;<sup>7</sup> this means that the rate of the Fields Medal winners is 40 times higher in the UK than in Israel. By the way – the Nobel Prize rate is similar: 35 times more British Jews than Israeli.

### The [A.M.] Turing Award

What is the Turing award – the academic highest award in the field of computers science?

ACM's [=Association for Computing machinery] most prestigious technical award is accompanied by a prize of \$250,000. It is given to an individual selected for contributions of a technical nature made to the computing community. The contributions should be of lasting and major technical importance to the computer field (The Turing Award, 2010).

Israel has been known in the world for its highly developed high technology. "Israel's High Tech Industry is considered by many to be the second **Silicon Valley**, ranking immediately after North America in the number of companies ( $\pm 120$ ) listed on NASDAQ" (**Today's High Tech**

<sup>6</sup> The proportion of Germans versus German Jews would be even more striking had we not taken into account the 3 Nobel Prizes given to Germans in 1939, while the majority of German Jews had already left Germany and those remaining were facing concentration camps and death rather than Nobel Prizes.

<sup>7</sup> Actually, at the end of 2010 the number of Jews in Israel was 5,802,000. To this number 320,000 should be added – the number of citizens classified as "others": "non-Arab Christians and those with an unspecified religion" –almost all immigrants from the USSR Republics of Jewish origin, namely a Jewish father and/or grandparent[s], but a non-Jewish mother. Thus the number of expected Israeli Nobel Prizes should have been even higher (Statistics, Israel, 29.12.2010).

**Scene in Israel**, 2010); Bill Gates had referred to Israel explicitly as: "part of the Silicon Valley" (Plocker, 2005).

Indeed, Israel has an extra-ordinarily high rate of successful start-up companies, according to Devi (2007):

[...] almost one Israeli in 10 works in the high-tech sector, and that group's impact on growth and investment has been huge. Last year, some 3,500 start-ups were created in Israel – population 7 million - second in number only to the US.

According to Levy & Dolgin (2008):

During the 15-year period [1993-2008], Israel distinguished itself as a highly concentrated center of technological entrepreneurship, creative entrepreneurs with specialized skills from Israel's top-notch universities, army programs and Russian immigrants

All these excellent achievements cannot deny the fact that of the 56 recipients of the reward, there have been 13 Jews (The Turing Award, 2010), but only 2 Israelis. An interesting case of a the 1976 winner of the Turing Award is that of Prof. Michael Oser Rabin, who was born in 1931 in Breslau, then Germany, and immigrated to Mandate Palestine 4 years later, shortly after the Nazis took over. Though he was educated in Israel until the age of 22, when he received his Masters degree from the Hebrew University, and returned from the US to Israel after receiving his PhD from Princeton at age 25, and headed the Institute of Mathematics at the Hebrew University at 29 years old, and a full professor by 33, Rabin recalls, "There was absolutely no appreciation of the work on the issues of computing. Mathematicians did not recognize the emerging new field" (An Interview with Michael Rabin, 2010).

### **The IJCAI – Computers and Thought Award**

The Computers and Thought Award is given by the IJCAI organization every two years to an "outstanding young scientist" (under 35). The first prize was given to Terry Winograd in 1971; since then it was given to additional 20 artificial intelligence scientists, at least one quarter – Jewish, but only one Israeli Prof. Sarit Kraus (see The IJCAI – Computers and Thought Award (2010)). It should be noticed, that in 1998 interview, when asked: "did you participate in enrichment programs for gifted children"? Prof. Kraus answered: "I first tied an afternoon activity for the gifted while already I grade 8. I participated in for a while in the 'graph theory' course held at the Technion [=Israel Institute of

Technology], but I dropped out before its end (Zorman & David, 2000, p. 146). The only Israeli who received this prestigious prize, though identified as gifted, chose not to participate in activities for the gifted offered by the system to elementary school children in her hometown, Haifa. When she finally did, it was just for a few months.

Prof. Daphne Koller, who was awarded the Prize in 2001, was also born in Israel but left for her PhD at Stanford University in 1989 and had stayed in the US since. Had she stayed in Israel we would have never known whether she would have won this prize, be named a MacArthur Fellow (MacArthur Fellows, 2004) and win the inaugural ACM-Infosys award (A.I. work by Daphne Koller wins inaugural ACM-Infosys award, 2008).

### **IJCAI Award for Research Excellence**

The Research Excellence award is given to a scientist who has carried out a program of research of consistently high quality yielding several substantial results (IJCAI Award for Research Excellence, 2010). One third of its recipients have been Jewish, non – Israeli.

It should be noted, though, that Prof. Judea Pearl, the 1999 winner of the Award for Research Excellence, was born in Tel Aviv in 1936. However, he left at age 24, and had been American since.

#### *Summary*

This partial list of some of the most important prizes in the world given for achievements in a variety of areas demonstrates clearly that Jews living in Israel have not fully materialized their scientific or creative abilities as have Jews been doing elsewhere. It should be studied why in spite of the 65 years of independence of Israel it is still lacking far behind both in comparison to Jews living before the establishment of the state of Israel after it, in democracies as well as in non-democratic-countries, among Jews of Eastern as well Western origins.

However, one fact is clear: the full identification of gifted children, practices in Israel for about 40 years, has not proved successful regarding the results in international criteria

#### **REFERENCES**

- Appel Unifié Juif de France (2010). Retrieved on 30 April 2013 from: <http://www.aujf.org/>  
 Cochran, G., Hardy, J., & Harpending, H. (2006). Natural History of Ashkenazi Intelligence. *Journal of Biosocial Science*, 38(5), 659-693.

- David, H. & Lynn, R. (2007). Intelligence Differences between European and Oriental Jews in Israel. *Journal of Biosocial Science*, 29(3), 465-473.
- Devi, S. (13/4/2007). Business as usual. Retrieved on 15 March 2012 from <http://www.ft.com/intl/cms/s/0/090e5dd2-e88e-11db-b2c000b5df10621.html#axzz1pBU7ZBsp>
- Field medalists (2011). Retrieved on 30 April 2013 from <http://www.mathunion.org/general/prizes/fields/>
- Freeman, J, Raffan, J. & Warwick, I. (2010). World-wide Provision to Develop Gifts and Talents. An International Survey. Retrieved on 30 April 2013 from <http://www.joanfreeman.com/pdf/towereport.pdf>
- IJCAI – Computers and Thought Award (2010). Retrieved on 30 April 2013 from <http://www.ijcai.org/awards>
- IJCAI – Award for Research Excellence (2010). Retrieved on 30 April 2013 from <http://www.ijcai.org/awards>
- IMO (2010). International Mathematical Olympiad. Retrieved on 30 April 2013 from <http://www.imo-official.org/RESULTS.ASPX>
- Jewish Laureates of Nobel Prize in biomedical sciences (2010). Retrieved on 4 January 2011 from <http://www.science.co.il/Nobel.asp?s=bi&sort=c&ord=a&cit=y>
- Jewish People Policy Planning Institute (Jewish Agency for Israel), 2007, p. 15. Retrieved on 30 April 2013 from: <http://www.jafi.org.il/JewishAgency/English/Home/>
- The Jewish Population of the World (2006). Retrieved from the Jewish Virtual Library on 30 April 2013 from <http://www.jewishvirtuallibrary.org/jsource/Judaism/jewpop.html>
- Lynn, R. (2004) The intelligence of American Jews. *Personality and Individual Differences*, 36, 201-206.
- Lynn, R. & Longley, D. (2006). On the high intelligence and cognitive achievements of Jews in Britain. *Intelligence*, 34, 541-547
- Mullis, I.V.S., Martin, M.O., Gonzales, E.J., Gregory, K.D., Garden, R.A., O'Connor, K.M., Chrostowski, S.J., & Smith, T.A. (December 2000). *TIMSS 1999 International Mathematics Report: Findings from IEA's repeat of the Third International Mathematics and Science Study at the Eighth Grade*. Chesnut Hill: The International Study Center, Boston College, and International Association for the Evaluation of Educational Achievement.
- Nobel Prize (n.d). in Encyclopædia Britannica. Retrieved on 30 April 2013 from <http://www.britannica.com/EBchecked/topic/416856/Nobel-Prize/93434/The-prizes>
- OECD (2007b). PISA 2006. *Science Competencies for Tomorrow's World. Volume 1: Analysis*. Retrieved on 30 April 2013 from [http://www.oecd-ilibrary.org/education/pisa-2009-results-what-students-know-and-can-do\\_9789264091450-en](http://www.oecd-ilibrary.org/education/pisa-2009-results-what-students-know-and-can-do_9789264091450-en)
- OECD (2010b). Volume I: What Students Know and Can Do: Student Performance in Reading, Mathematics and Science. Retrieved on 30 April 2013 from [http://www.oecd-ilibrary.org/education/pisa-2009-results-what-students-know-and-can-do\\_9789264091450-en](http://www.oecd-ilibrary.org/education/pisa-2009-results-what-students-know-and-can-do_9789264091450-en)
- Plocker, S. (2005). Gates: Israel part of Silicon Valley. Microsoft chairman praises successful local high-tech industry during Israel visit. Retrieved on 15 March 2012 from <http://www.ynetnews.com/articles/0,7340,L-3159576,00.html>
- The Turing Award (2010). Retrieved on 15 March 2012 from <http://amturing.acm.org/byyear.cfm>
- Today's High Tech Scene in Israel (2010). Retrieved on 15 March 2012 from [http://www.entrepreneurship-israel.com/index.php?option=com\\_content&view=article&id=190&catid=72&Itemid=54](http://www.entrepreneurship-israel.com/index.php?option=com_content&view=article&id=190&catid=72&Itemid=54)