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BOYS, GIRLS AND TECHNOLOGY

Paper submitted by Italy[1]

Summary

Out of school, children's life is a very rich context where different inputs shape a different landscape of opportunities for little boys and girls.
In this landscape, technology is very important. It is a new stimulus for children and it offers new tools for children's growth. But technology, in Italy, is more diffused among boys than girls, especially speaking about the new technologies (computers, videogames, ...).
Although young girls are generally very active in leisure time and in cultural fruition (and more than their coeval boys), the new technological context may represents a new disadvantage for young girls, and this is probably due to the traditional relationship between men and technology.

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The importance being taken on in society by the new technologies (audiovisuals, informatics, telematics, etc.) is obvious, and since the spread of technology is a process which restructures the cultural models, perceptive habits, manual and intellectual capacities, and professional skills of individuals, it is not possible to speak of cultural consumption and activities without considering technology. Attention will be focused on those practices which, more than others, may entail an active relationship with youngsters in the use of the various technological means that fill everyday life (for example, from this standpoint, the use of television is a process characterised by less active involvement by the individual, and thus does not fall within the activities that define the relationship between youngsters and technology in the sense just mentioned).

Children's lives outside of school are rich and full of stimuli. Down through the years we have seen a rapid multiplication of the activities characterising children's everyday space, up to the point that we have frequently wondered if this sort of over-stimulation might not prove somehow too tiring, or even harmful, for the child's mental-affective and cognitive balance. Children exchange trading cards (49,4%), exchange or lend comic books (25,5%), play with animals (40,6%), and play amongst themselves (88,5%). These are traditional activities, strongly connected with the childhood period, activities which are present today as much as they were in the past.

Also as far as self-expression is concerned, today's children are much busier starting from the age of 6 to 10 years: more than 29% of these children act; 26% sing, 24% keep diaries or write poetry, 19% play a musical instrument, and around 15% dance. But while these percentages are significant, just as significant are those concerning, for example, going to shows or events, since 56% of the children go to the movies, 30% visit museums or shows, and 26% see sports events.

About 45% of the children do sports on a continuous basis and, as for reading, 47% read books, 20% weeklies, and 15% periodicals.

If, alongside all of this we add the pervasive presence of television, it can be understood even more how much the stimuli have multiplied with the passing of time as far as the everyday lives of children are concerned (and that a percentage of 12% of children between the ages of 6 and 10 who do not play with other children is significant, bearing witness to the risk that an excess of individual-oriented stimuli, if combined also with the increase in the number of only children, may lead to the lack of a socialising dimension in the child's formation process).

Furthermore, alongside these numerous activities, children have gradually been developing other interests and other play habits.

Apropos of this, technology is certainly present on the new horizon of childhood experience, and the relationship with computer technology (the home computer, first of all) is undoubtedly decisive for grasping the dimension of the transformations taking place.

Almost 800,000 children between the ages 6 and 10 (i.e. around 28%) have a computer or other computer equipment at home, among these more than 500,000 use it, and among the users almost 100% use it for playing games, but in 20% of the cases (i.e. for around 115,000 children) the computer is already being used for study purposes (Table 1).

Table 1 - Persons aged 6-14 years, by the presence of a computer or other computer equipment in the home, use, and kind of use – Year 1995 *(data in thousands and percentage values)*

	AGE			
	6-10	11-14	6-10	11-14
	Data in thousands		% values	
HAS A COMPUTER AT HOME				
Males	459	496	40,6	44,8
females	334	345	24,3	29,3
total	793	841	28,1	35,1
USES THE COMPUTER			(*)	
males	362	468	79,0	94,3
females	222	283	66,5	82,1
total	584	751	73,7	89,3
PLAYS WITH THE COMPUTER			(**)	
males	358	465	98,7	99,6
females	219	278	98,7	98,3
total	577	743	98,7	99,1
STUDIES WITH THE COMPUTER			(**)	
males	74	207	20,3	44,2
females	40	109	18,0	38,8
total	114	316	19,4	42,1

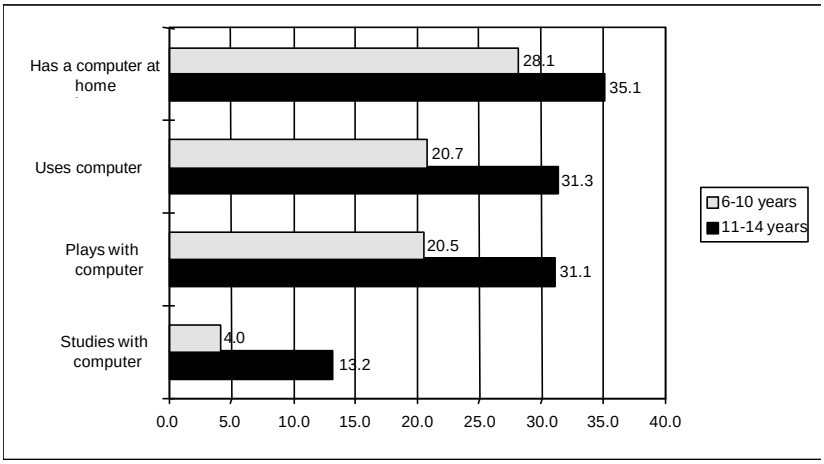
(*) per 100 persons who have a computer at home

(**) per 100 persons who use a computer at home

In the age bracket immediately after (between 11 and 14 years) these values grow further (841,000 who have computers or other computer equipment at home, 751,000 users, and 743,000 “players”, more than 300,000 youngsters who study with them), indicating the fundamental importance that the new

computer technologies are acquiring in the play and formative experience of today's youngsters. All this means that, of the total childhood population, more than 20% of all children between the ages of 6 and 10 use the computer and play with it (study concerns a more limited 4%), while between 11 and 14 years of age, around 31% of the youngsters use the computer and play with it, and a significant 13.2% of all youngsters of the same age already use it for studying (Chart 1).

Chart 1 - Persons aged 6-14 years, by the presence of a computer or other computer equipment in the home, use, and kind of use – Year 1995 (*per 100 persons of the same age)*



However, already in these first age brackets, the differences between boys and girls are pronounced, and a disadvantage among girls is observed starting in the first years of childhood and adolescence: 40% of the boys have a computer at home, while this figure drops to 24,3% for girls; 79,0% of the boys and 66,5% of the girls use the computer they have at home; play obviously reunifies the experiences; and studying, already at this age, brings girls closer to boys, even in a field which is so strongly characterised in the male sense.

In this case the influence that cultural tradition can have on educational processes, a tradition which for centuries has brought men in contact with technology to practically the same extent as it has kept technology away from women, seems evident. Indeed, it is at the level of first opportunity (i.e. starting from the presence or absence of a computer at home) that girls are more disadvantaged than boys, and this lesser frequency is also reflected on the use level, registering a lower tendency of girls (whether induced or spontaneous) to use the computer equipment available at home.

Obviously, in this case also, the influence of the parents' educational level has its weight in determining the opportunity levels (around 630,000 of the children between 6 and 10 years have parents with university degrees; 1,800,000 with high school diplomas; 2,220,000 with junior high/middle school diplomas; 530,000 whose parents have finished or not finished elementary school).

The presence of the computer in the home involves around 14% of the 6-to-14-year-olds with parents who have low educational level, compared to around 55% of the children of persons with university degrees, but at the use level the percentages calculated on those who have a computer at home are reversed, for both boys and girls. This trend is probably due to the fact that in the homes of parents with degrees, the computer is present also as a work instrument for the parents themselves while, on the contrary, in the homes of those with low educational level the presence of the computer is probably the result of a purchase made for the children.

The gender differences continue even with the change in the parents' educational level. 46% of the boys and 39% of the girls with parents with degrees play with the computer, while these percentages drop to 17% and 9%, respectively, among those with parents with limited schooling.

The more serious approach that brings the young users to study with the computer is obviously influenced by the family cultural climate, to the extent that the only significant "coming close" to males of the same age in the technological field (15,8% compared to 17,5% of the males) is registered for girls whose parents have degrees (Table 2). The female disadvantage is in any case evident at the level of opportunity if we consider the fact that the computer is present among 52,1% of the daughters of degree-holders, compared to 11,1% of those whose parents have low schooling levels (a value almost 5 times lower than the first), while among males the gap is between 17,3% and 58% (a value about 3 times higher than the first).

Table 2 - Persons aged 6-14 years, by age, higher parents' education, presence of a computer or other computer equipment in the home, use, and kind of use – Year 1995 *(per 100 persons with the same characteristics)*

	Elementary, no qualifications	Junior high / Middle school	High school	University degree	Total
HAS A COMPUTER AT HOME					
Males	17,3	25,6	46,1	58,0	35,9
Females	11,1	17,7	33,8	52,1	26,7
Total	14,1	21,7	40,2	55,1	31,4
USES THE COMPUTER (*)					
Males	98,0	89,4	86,9	80,7	86,9
Females	80,8	70,4	75,4	76,4	74,4
Total	91,1	81,8	82,2	78,7	81,7
USES THE COMPUTER (**)					
Males	17,1	22,9	40,1	46,6	31,3
Females	9,0	12,5	25,4	39,7	19,8
Total	12,9	17,7	33,0	43,5	25,7
PLAYS WITH COMPUTER (**)					
Males	17,1	22,6	40,0	46,0	31,0
Females	9,0	12,3	25,1	39,0	19,6
Total	12,9	17,6	32,7	42,7	25,4
STUDIES WITH COMPUTER (**)					
Males	5,4	7,5	13,2	17,5	10,5
Females	2,2	3,1	6,9	15,8	5,9
Total	3,8	5,4	10,2	16,9	8,3

(*) per 100 persons who have a computer in the home

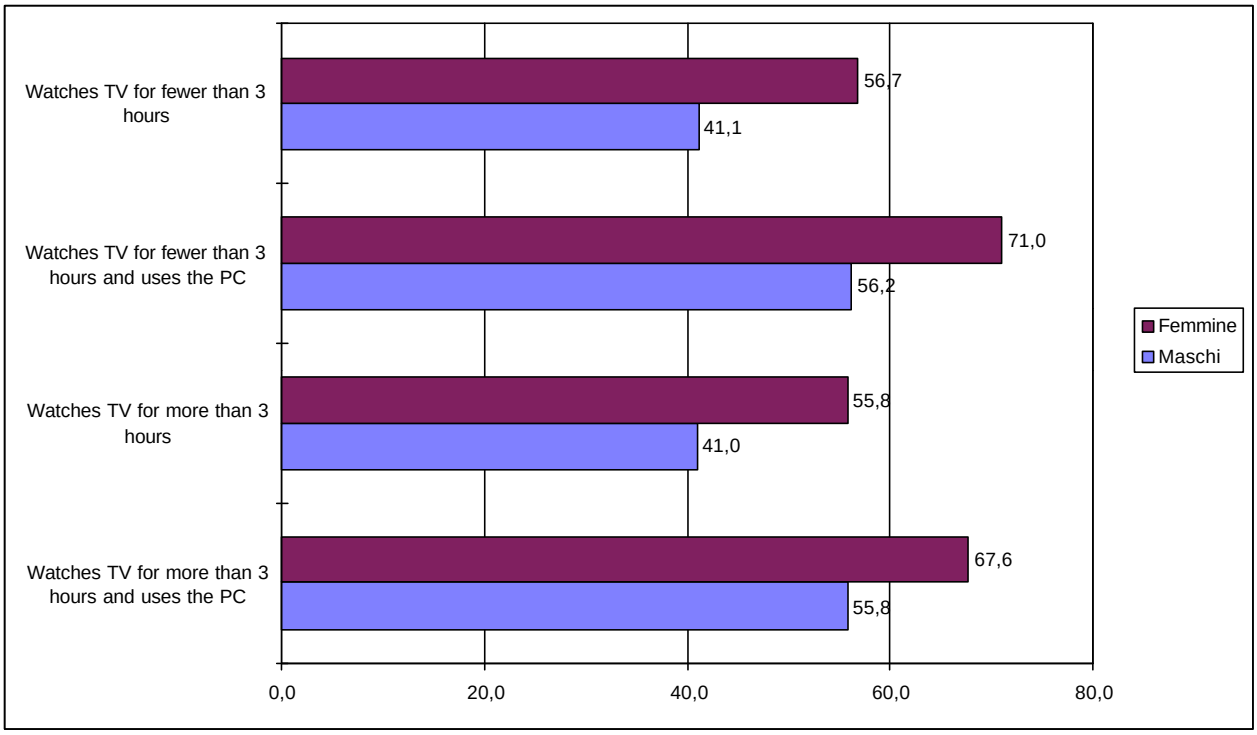
(**) per 100 persons of the same age

In order to analyse the interactions among computer, television, and book reading, children and youngsters between 6 and 17 years of age were considered, showing, on the one hand, those who use a personal computer or other computer equipment at home and indicating, on the other, those who generally watch TV for more or less time than the daily viewing average registered for these age groups (3 hours).

Compared to the average 58,9% of female readers, it is among those who use the computer and watch TV for fewer than 3 hours a day that the highest percentage of girls who read books is found (71%). This is followed immediately by those who watch TV for more than 3 hours and use the computer (Chart 2). On the other hand, the fact of not using the computer pushes the percentage of female readers under the average (56.7%) for those watching TV for fewer than 3 hours, and 55,8% for those watching it more.

For males the situation is similar, even though it is marked, as is well known, by lower levels of readers in all groups considered.

Chart 2 – Children aged 6-17 years who have read books during the past year, by TV watching time, use of computer, and sex. Year 1995 (per 100 children aged 6-17 years)



At first glance it would seem that the use of the computer is a strong indicator of intellectual brightness, since its presence corresponds to higher reading levels, especially when its use is combined with a moderate watching of television programs. On the contrary, in the absence of the use of the computer, the television seems to return to playing a negative role as far as reading is concerned, a role which becomes even more distinct if the television viewing goes beyond three hours.

Generally speaking, the use of the computer may be considered an indicator of a higher family income, of higher educational qualifications in the family or, even and simply, of a greater attention and stimulation by the parents. The most interesting results are obtained, apropos of this, by analysing this triple relationship between television, computer and book reading in four different family contexts characterised by the highest educational level reached by one of the two parents or by both. The basic configuration (for which the readers are more common among those using the computer and watching television) does not change with the change in the parent's educational qualifications, leading to the recording of low reading levels (obviously in relation to the average value of the group), especially among those who do not use the computer.

The use of the computer and the television are therefore behaviours which are characterised, in their positivity and negativity with respect to book reading, by the fact that they are experienced, autonomously or starting from how they are proposed by the parents, as further cultural stimuli which contribute to enriching the background of knowledge and information, regardless of the their technical characteristics or contents.

Most of all, it should be added that, while the stimulation arrives through the behaviour of the parents, this does not seem, however, to be immediately connected with the parents' educational level.

This impression is even more striking if, for example, we observe the fact that the percentage of readers among those who use the computer, watch TV for fewer than 3 hours, and have a parent with a junior high/middle school diploma or elementary/no school diploma is exactly equivalent to that among children who watch little TV, do not use the computer and have at least one parent with a degree (an image which should correspond, in the traditional view, to the optimum situation for reading: little TV, absence of computer, high family cultural level).

The significant approach to technology of children and youngsters is also confirmed by the analysis of other relationship contexts with technology.

Taking pictures or making amateur films, recording or exchanging/lending audio and videocassettes, exchanging or playing with video games and exchanging/lending compact discs are all activities which today involve surprising percentages of children and youngsters (Table 3). Worthy of note, for example, is the approximate 73% of male 11-to-14-year-olds who play with video games and 59% of the children who carry on a similar activity, or the 28% of children who exchange or lend videocassettes (and it is easy to see how, in this case also, the values of the males constantly surpass those of the females, with the sole, rather striking exception of the exchanging of audiocassettes).

Table 3 - Persons aged 6-14 years, by type of leisure time activity – Year 1995 *(data in thousands and per 100 persons with the same characteristics)*

	6-10	11-14	6-10	11-14
	Data in thousands		% values	
TAKES PICTURES, MAKES FILMS				
Males	150	311	10,4	25,4
Females	105	265	7,7	22,7
Total	255	576	9,0	24,0
PLAYS WITH VIDEO GAMES				
Males	853	887	59,0	72,7
Females	485	542	35,3	46,1
Total	1,338	1,429	47,5	59,5
RECORDS VIDEOCASSETTES				
Males	380	637	26,3	52,2
Females	258	534	18,7	45,4
Total	638	1,171	22,7	48,9
RECORDS AUDIOCASSETTES				
Males	170	563	11,8	46,2
Females	150	540	10,9	45,9
Total	320	1,103	11,3	46,0
EXCHANGES VIDEOCASSETTES				
Males	409	431	28,3	35,3
Females	347	429	25,3	36,5
Total	756	860	26,8	35,9
EXCHANGES VIDEO GAMES				
Males	280	435	19,3	35,6
Females	81	112	5,9	9,5
Total	361	547	12,8	22,8
EXCHANGES AUDIOCASSETTES				
Males	88	378	6,1	31,0
Females	108	470	7,8	40,0
Total	196	848	7,0	35,4
EXCHANGES COMPACT DISCS				
Males	27	163	1,9	13,4
Females	12	125	0,9	10,6
Total	39	288	1,4	12,0

With reference to the children's games and the relationship with the parents, it should be noted that the kinds of games in which the mother is more involved, for both males and females, are numerically higher than those which more often involve the father. Therefore, not only do children play more frequently with their mothers, but they do so in more varied activities.

Video games and computers remain, however, a totally male prerogative. Already in the 3-to-5-year age bracket, sons who play more often together with their fathers using computer-related equipment total 16%, and this percentage reaches 40,3% in the next higher age group. This same activity is, instead, carried on by sons together with their mothers only, respectively, in 8,3% and 19,6% of the cases. Girls also play more often with their fathers using video games and computers, but with a distinctly lower percentage than that of the boys their age (7,4% between 3 and 5 years of age, and 22,2% between 6 and 10 years).

The results do not change even when we consider the parents' educational qualifications. When the mother or father has a degree or diploma, the frequency with which their children play with video games and the computer together with them is obviously higher. For example, when the father has a degree or diploma, the sons and daughters aged 3 to 10 play this way in 28,1% of the cases, while if the parent's educational level does not go past elementary school, the percentage falls to 14,5%.

But what is most interesting is that sons of fathers with high-level educations play with video games and computers together with them in a percentage almost double that of the daughters of the same age (36,3% compared to 19,5%). And this difference, even if with percentages which are in any case lower, remains even when the mothers with the same level of schooling are considered. The mothers participate in these activities with their sons in 17,5% of the cases, while they play with their daughters only in 8,3% of the cases.

In other words, it is not only the fathers who prefer sons when they play together with their children using the new technologies, but the mothers also seem less oriented to transmitting their interest in this sector to their daughters. On the other hand, since video games still generally tend to be conceived and created from a totally male viewpoint, it may be hypothesised that this translates into a lesser interest of girls in a domain that reflects their feelings and tastes very little.

At the end of this trip through the world of childhood, it may be stated that the variable connected with the family context (here considered starting from the parents' highest educational qualifications) remains a key element for understanding the various systems of opportunity (job, cultural and social) of the future young people. With regard to the importance of the parents' level of schooling, it should be kept in mind that an actual transformation is taking place at the generational level: among young people aged 15 to 24 the percentage whose parents have a medium-high schooling level (degree or high school diploma) totals around 36%, while among children and youngsters between 6 and 14 this percentage rises significantly to 47%.

But the gender differences also influence the youthful universe very significantly. The girls' manners of relating to the cultural stimuli indicate an attitude which is certainly more active than that of the boys, particularly for everything concerning cultural consumption of traditional kinds and self-expressive activities in general. However, a new element, the relationship with technology, seems to be pressingly entering the scene of the children's formation processes, in the broad sense (i.e. at both the scholastic and the extra-scholastic levels); it is a relationship that will, in all probability, profoundly alter the manners of learning and perception of future generations.

From this standpoint, it seems that male children are advantaged, compared to girls their age, a fact that is probably due to a traditional greater male bent for technology, a bent which is spontaneously passed on by parents in the educational processes. In this sense it may be said that, in the present situation, the investment in technological culture is still partly an unconscious investment by the families, even though, however, these almost automatic mechanisms are in fact already currently penalising young women who will enter the job market

The overpowering entrance of the relationship with technology proposes, therefore, on the scene of the new forms of cultural consumption a sort of overturning of the female "supremacy" in the field of cultural consumption and activities, since for all that concerns the relationship with technology (old and new), young males are constantly more involved than girls their age, almost as if to make up for the disadvantage present in the other dimensions of cultural activities.

Long-standing polarisations (between elite culture and common culture, between north and south, between men and women, between different family statuses) continue to show up in a cultural context which, on the contrary, is exponentially spreading its stimuli and offerings in a great multiplicity of means and places, through which the new generations are more or less consciously learning.

Leaving such a process in the hands of families alone thus means allowing these polarisations to reproduce spontaneously, with the added risk of creating new ones (as, for example, may happen between men and women with regard to the new technologies). Therefore, only school would be able to work toward a progressive reduction of the polarisations that already exist at the cultural and social level, urgently taking on the responsibility of governing the new languages and new technologies, to accompany the families in an educational process which, while it is also being concentrated in the home, obviously escapes a conscious, knowing control by most family units.