JAMESfocus

Looking Back on a Decade of Youth Media Research

Section Media Psychology, 2021

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Contents

1 Introduction / Acknowledgements

In 2010 we were able, for the first time, to interview more than a thousand adolescents in Switzerland on their media behavior: the **JAMES Study** was born. Since then, we were allowed to record close to 6,500 pupils' media consumption in six survey rounds. The data collected have served, for example, to document the ascent of the smartphone as well as the decline of various non-media activities. The arrival of streaming services like *Netflix* is mapped, as is the decrease in linear TV and radio consumption. Switzerland's media world and user behaviors have changed drastically over the past decade. For the **present JAMESfocus report,** we have performed an in-depth analysis of all data collected over the last ten years. Firstly, this allows us to document general trends over the course of time. Secondly, we have also analyzed timelines separately across subgroups like **socio-economic status (SES), gender** and **immigration background** for the first time. These analyses provide a condensed view of the matter, enabling us to gain new insights. On the following pages, we present some **selected results**. We describe, discuss and interpret them and attempt to put them into a larger context. Thus, we contextualize our findings with societal trends like progressing **individualization**, increased **connectivity**, the **gender shift** and **relationship minimalism**. Moreover, we take a close look at the **digital divide**. Another important aspect for us is contextualizing empirically gained knowledge with findings from other studies. The **present report** is **not an all-encompassing retrospect**; for more detailed information it is still worthwhile to look at the biennial JAMES study reports.

In addition to this report, two other JAMES-focus dossiers have been published in 2021.

The first report takes a look at the **information behavior and psychological well-being of adolescents during Switzerland's first COVID-19 shutdown** in the spring of 2020. The shutdown had massive effects on the entire society, including adolescents' leisure activities. A pandemic comes with a variety of stressors and confronts people with great challenges. Adolescents' ways to deal with fears and use of coping strategies were examined in the respective report.

The second report we have published is about the subject of **hate speech/hate posts**. It examines how frequently adolescents face various kinds of hate speech. Attitudes and motives relating to hate posts are looked into as well, as are differences in gender, age, education and immigration background.

At this point, our warm thanks go to **Michael In Albon** and **Noëlle Schläfli** from **Swisscom**. Thank you for a decade of support and standing by JAMES. We value this cooperation very highly, and we hope for future years together.

Our thanks also go to Eleonora Benecchi, Merita Elezi and Patrick Amey for revising the Italian and the French version of this report.

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2　Methodology

2.1　Statistical Analyses

All calculations were done with the statistics programs, SPSS and R, taking the complex sample design into account. More detailed methodological information is found in the report on the latest JAMES study (Bernath et al., 2020).

For year-on-year comparisons on the overall sample level, effect sizes were calculated and visualized with points in the charts as follows.

Designation	Symbol	*r* classification according to Gignac & Szodorai (2016)
small effect	●○○	$0,10 \leq r < 0,20$
medium effect	●●○	$0,20 \leq r < 0,30$
large effect	●●●	$r \geq 0,30$

In time comparisons on the subsample level (gender, SES and immigration background), statistically significant differences were marked on the **1 per cent level**. In this context, **year*** means that the main effect, "time" is significant, i. e. that changes show between survey rounds. **Socio-economic status (SES)*, gender*** and **origin*** describe significant differences within the relevant subgroups. Finally, **int*** means that the interaction between the two variables is significant. This would be the case, for instance, if over a period of time, an increase was found in boys, while girls' scores remained constant.

Since this approach is **not hypothesis-driven** and thus **explorative**, all findings need to be interpreted with care.

From 2014 onward, **socio-economic status** (SES) is expressed using a scale based on the family affluence scale (Currie et al., 2008). Over the last six years, this scale was slightly changed for each round and refined. For 2020, the calculation of SES is based on the following variables: number of computers in the family, number of cars, number of holiday trips during the last year, number of bathrooms, having one's own room (yes/no) and intake of sweet beverages. A cumulative score was calculated from the *z*-transformed scores of these six variables, and from the percentiles (20/60/20) three levels were derived: low, medium and high SES.

In order to determine their **origin/immigration background**, the adolescents were asked about their nationality. Adolescents who named Switzerland as their country of origin were counted as Swiss, irrespective of whether or not they named an additional nationality. Adolescents with no Swiss nationality are counted as adolescents with immigration backgrounds.

3 Ten Key Findings of the Last Decade

3.1 Who Keeps It Rolling?

In 2020, the order of priorities in nonmedia leisure behavior came out differently for the first time. Until 2018, it had been stable, though spaced more and more closely. "Seeing friends" had been at the top, followed by "playing sports" and "relaxing and doing nothing". These are still many adolescents' favorite activities and done daily or several times a week, while "making music" themselves, activities with "family" as well as "painting and handicrafts" are less popular with them. This is not surprising, considering the fact that detachment from parents and increased

2020). The trend towards this change, however, had started to become apparent earlier. Whether and how the pandemic will impact this is a matter of speculation.

Looking at each of the leisure activities, some significant changes can be seen in the respective charts. A significant change regarding the social background is visible in sports activities (excluding school sports). Teens from lower-income backgrounds are less and less active in sports. This effect is not observed in adolescents with socio-economically more favorable backgrounds. They are roughly as active in sports as they were ten years ago. Thus, social background seems to play an increasingly important role in the question of how active adolescents are in sports outside of school. Hankonen et al. (2017) show in their US study

Figure 1: Nonmedia leisure activities in relation to SES
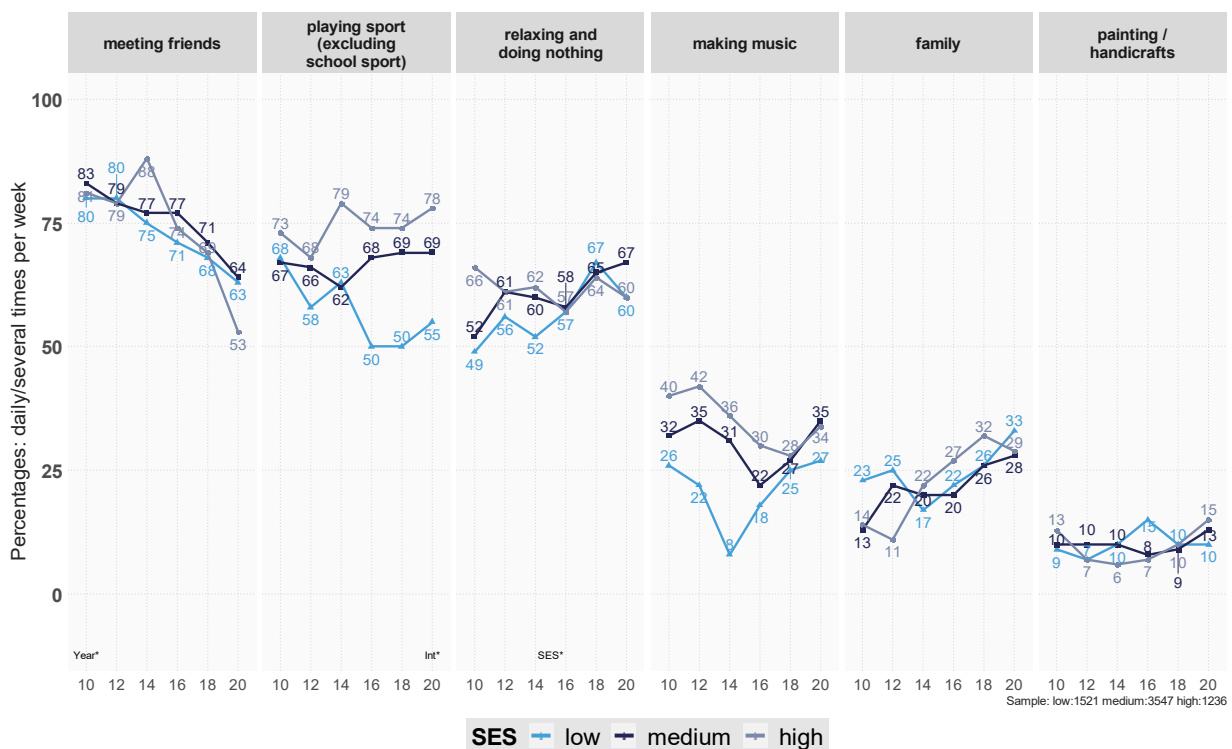
preoccupation with their own development is an important process at this age. Since the 2020 survey, however, the previous ranking has changed. The most popular nonmedia activities, in particular, were severely curtailed because of the pandemic and especially during the spring 2020 shutdown, which was strongly reflected in the adolescents' answers. "Seeing friends"—previously the most frequently named activity—falls behind "playing sports" and "relaxing and doing nothing" (Bernath et al.,

that there has always been an "activity gap" in relation to socio-economic status (SES) in the USA, but that it has been widening markedly since the 1990s. This development is now visible in Switzerland, too, and documented by the report "Sport Schweiz 2020" (Lamprecht et al., 2021) as well. Parents' education is described there as a slightly smaller influence than the family's financial situation. Parents' passion for sports is passed on to adolescents as well. Moreover, the report shows that

children and adolescents without immigration background are more active in sports than those with immigration backgrounds; and the country of origin as well as the time spent in Switzerland are important factors in this (Lamprecht et al., 2021). These findings are corroborated by the report on the results of the tests by the municipality of Zurich's sports authority (SMBA), too (Gränicher, 2021). Exercise and health are closely correlated. For future health-promoting prevention and intervention concepts, socio-economic inequalities in sports will need to be factored in more strongly.

As we mentioned above, the need to see friends is very great for adolescents, because being with peers, they can develop autonomy and self-determination (Lüdeke, 2018). Thus, it is no surprise that these leisure activities are practiced on a regular basis by a large part of the interviewees, irrespectively of their SES. However, the frequency of meetings has diminished over the years. In 2010, around three quarters of the participating adolescents met friends almost every day. By 2020, this share had dropped to 60 per cent. The steep drop in the frequency of meetings with friends during the COVID-19 pandemic with the temporary shutdown is striking, but does not explain the development in this same direction over the entire decade.

A contrary development can be seen in the time adolescents spend with their families. This shows over the years in the entire sample, and the development runs parallel across all SES groups (Bernath et al., 2020). There might be a correlation with the shrinking frequency of adolescents' meetings with friends. In addition to the possibility to communicate with friends via media, and to meet them in school or at work, adolescents also say it is easier and more convenient to spend time with family, and that the high demands of school and work allow less time for activities outside the family. Shared interests within the family are also given as a reason (Rüegsegger & Brauchli, 2019).

Relaxing and doing nothing is still very important for adolescents and seems to gain in importance in general, with social background seeming to play less and less of a role. Growing numbers of children and adolescents report being under stress (Albrecht et al., 2021). The need to chill and do nothing is, therefore, a key

strategy for refueling in a digitalized high-speed society (Grossegger, 2014). However, this does not mean that while relaxing and doing nothing, digital media are completely done without. In addition to sleeping or being home, watching films and series and listening to music are used as means for regeneration, as is using the cell phone or computer. Note that the term "chilling" is used for hanging out with friends as well (Berweger & Bischofberger, 2016).

For making music, the total sample shows no significant change over the years between the first survey and the 2020 round. The differences between social groups seem less marked at present than in earlier years. As before, though, fewer adolescents with lower SES report that they frequently make music themselves. Here, too, financial factors might be a reason why they have less opportunity to make music (Fischer, 2012), similar to the case of sports activities outside school. In spite of the federal decision on the promotion of young musicians (Jugendmusikförderung, 2012), supplemented by the program "Jugend und Musik" (J+M, youth and music), a large part of the music schools still sees no level playing field, as mentioned in a 2019 survey by the BAK (Swiss authority for culture) in "Bericht zur Umsetzung von Artikel 12a KFG" (report on the implementation of Art. 12a KFG) (BAK, no yr).

Painting and handicrafts are adolescents' least frequent leisure activities; this has not changed during the last ten years. In spite of small variations in the answers on creative activities, social differences were no significant factor. On the whole, though, creative processes are shifted from crayons to the digital toolbox. This is also used massively in social networks—visible, for instance, in the growing production of digital videos and photos (see next chapter).

3.2 Media Use: What Has Changed, What Hasn't?

Seen from a long-term perspective, quite a few things have changed in adolescents' media menu in the course of the last decade. Some activities have gained in intensity, some have lost, and still others have been remarkably constant. The smartphone and the internet as such are used more intensively now than ten years ago. The same is true for activities that are strongly connected with the spread of

host of podcasts and various streaming services like *Netflix* etc. Many of these services explicitly target young audiences and are available anytime, anywhere on demand. This is true now in part for radio and TV as well, but mostly their various media centers (still) lag behind podcast or streaming portals in user friendliness as well as range of content. Text-centered journalistic media are losing readers, too. They seem to compete, above all, against social networks, which are winning many adolescents over from newspapers and magazines. Social networks deliver the latest news

Figure 2: Media activity over time

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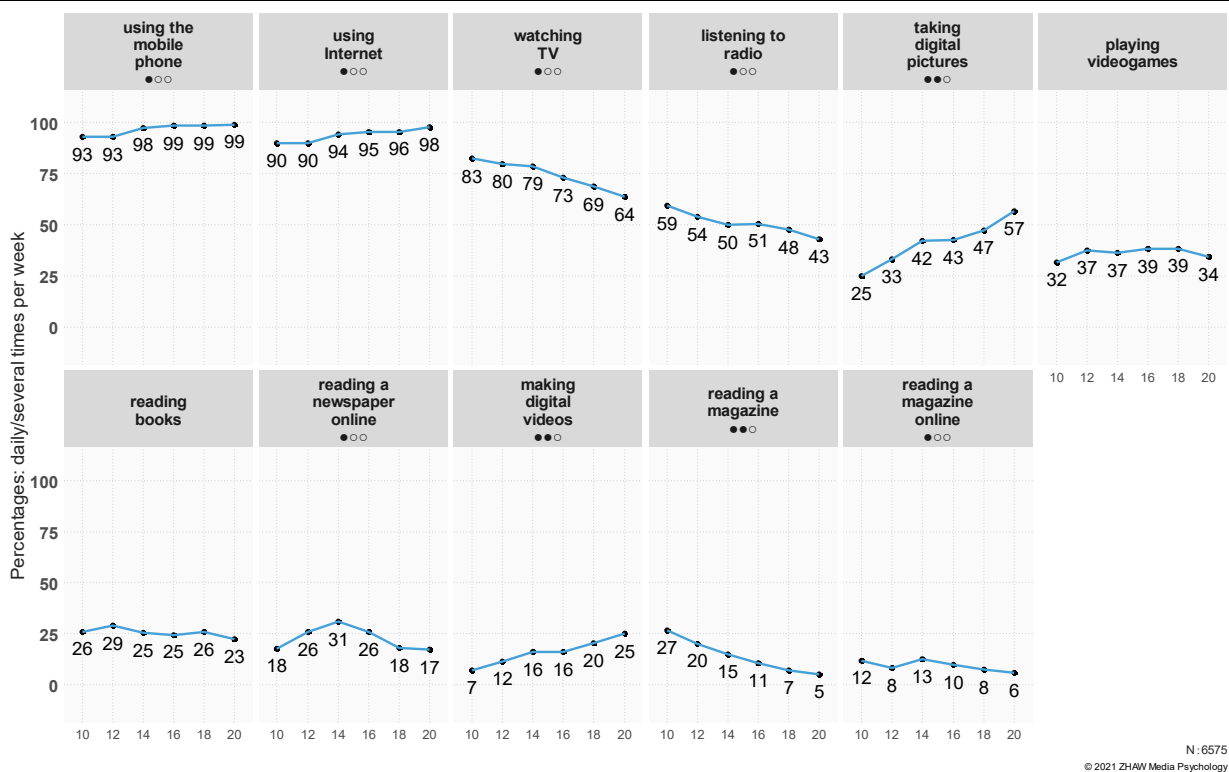
smartphones, e. g., producing photos or videos. One reason for this is the high smartphone penetration rate in Switzerland. On average, more than one device is in active use per capita by now (BAKOM, 2021). Moreover, the offers of providers for mobile telephone as well as data services are trending strongly towards flatrates. In contrast to volume rates, these protect users from unpleasant surprises a the month's end—certainly an important aspect for adolescents with limited budgets.

In contrast to smartphone and internet, consumption of traditional electronic media like radio or TV has receded. The reasons for this are manifold. One is that radio and TV now face audio and audiovisual competition by a

from all over the world and from the personal social environment, free of charge, via feed directly to the smartphone (Eisenegger & Vogler, 2021).

The popularity of books and games among adolescents has been found to be very constant. The constancy of these two genres over the entire decade is remarkable. One reason for this is probably the way they are used: both reading (fiction) books and playing games are mostly done consciously and purposefully foran optimum enjoyment experience. In order to reach a consistent level, it appears necessary to invest a certain amount of (exclusive) time (Bernecker & Becker, 2021).

The time budget for gaming has not changed much in recent years (see Chapter 3.4). All in all, adolescents have had a broader information and entertainment variety available directly on their smartphones in 2020 than a decade earlier. To be able to use this broad variety in personally profitable ways and to make the right choices, selection competencies are needed. These are indispensable, in particular, for the broad variety of information content. Otherwise, incorrect information or even disinformation can run wild (Waller et al., 2019). From a psychosocial point of view, the changes discussed above and the manifold expansion of media content to choose from lead to increasing individualization of media consumption. One consequence of this is that media content is rarely consumed in parallel. Thus, personal follow-up communication directly after consumption takes place more rarely.

### 3.3 Boys and Girls: Travelers in Different Media Worlds?

Some of the differences between genders are among the most stable findings over the six survey rounds. However, there are also media activities whose use frequencies have developed in different ways between genders.

Over the decade, great consistency in the differences between genders is seen in gaming, reading books and reading newspapers online. Video games were very much a male domain from the start. Cult titles from the

state while gaming as well as differences in learning about rewards (e. g., stronger competitiveness) (Hoeft et al., 2008).

The opposite is true for reading books. Here, girls have been much more active than boys over the entire decade. The reasons for this are manifold. For once, even in preschool years, girls' language development is more advanced than that of boys: they speak earlier, form more complex sentences earlier and have a broader vocabulary. This advantage remains during all school years; only as adults do both genders have equal linguistic competencies

Figure 3: Media use in relation to gender

Sample: girls:3489 boys:3112

Gender — girls — boys

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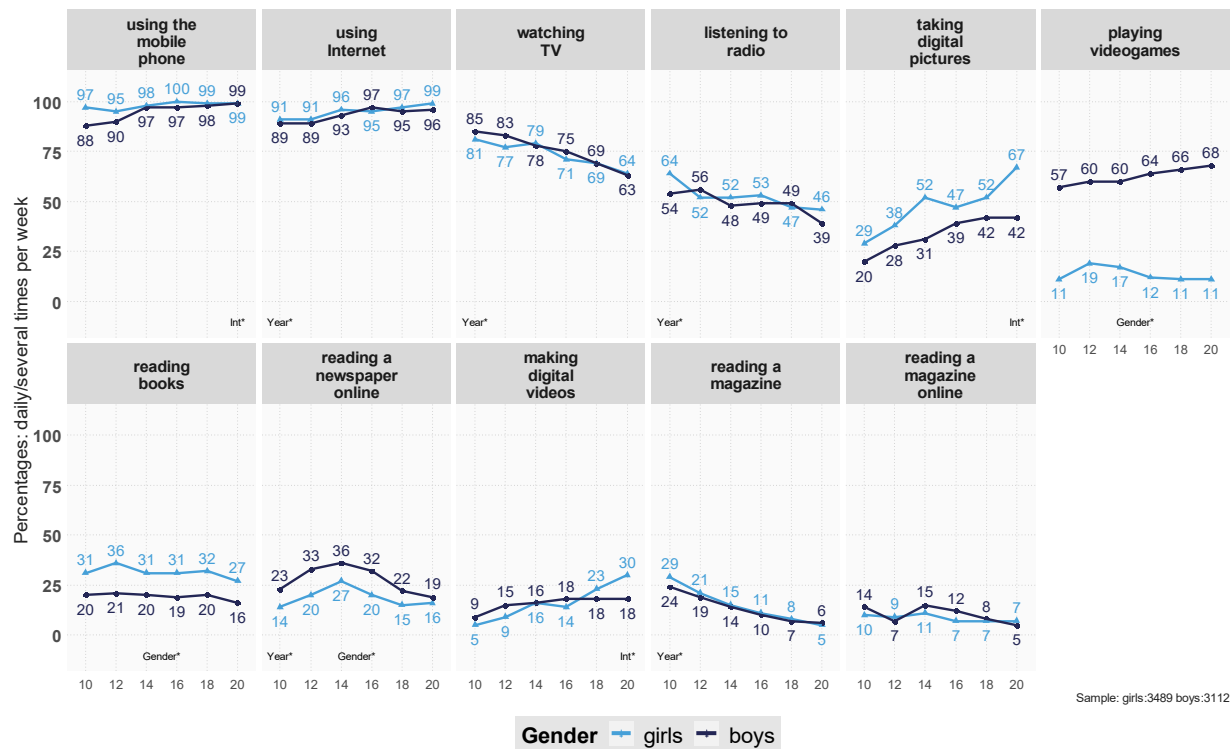
early days of the genre, e. g., "Pong", "Space Invaders", "Pac-Man", "Tetris" and "Super Mario Bros" were all created and programmed by men (Kent, 2001). From the gamers' perspective, too, boys showed a far higher usage intensity than girls even before the turn of the millennium (Feierabend & Klingler, 1998). This has not changed until today: boys are more fascinated by games than girls are. A possible explanation is found in a 2008 FMRI study. The authors were able to show that during a video game, male test persons have stronger activity and functional connections in the mesocorticolimbic system than female test persons. These results might be due to gender-specific differences in the cognitive

(Hirnstein & Hausmann, 2010). Also, boys read less by their own choice, less fiction books, and they prefer shorter texts (Uusen & Müürsepp, 2012). A British study with more than 100,000 test persons has shown, moreover, that boys read less carefully. They skip whole text passages more frequently, which has a negative effect on text comprehension and, therefore, reading pleasure (Topping, 2015). As opposed to that, boys use online newspapers more frequently than girls, indicating greater need for information relating to day-to-day events. This result is corroborated by a recent Reuters study done in nine countries. It shows that interest in the latest daily news, but also in political news is lower in women than in

men (Selva & Andi, 2020). This reduced interest could, in turn, be linked to the gender bias in journalistic media: an overproportionally large part of media content is still male-dominated (Rao & Taboada, 2021).

Additional interesting insights are gained by findings of differences between genders disappearing or being accentuated. In 2010, for instance, boys' intensity of cell phone use was ten percentage points lower than girls'. In the course of the decade, boys have caught up, and now both levels are equal. This confirms that today, the cell phone is indispensable for all adolescents and completely integrated into everyday life. This is probably related to the fact that more and more functions and services converge on these devices.

In the production of photos, the gap between girls and boys tends to grow, and in the production of videos, girls have caught up with boys and overtaken them in the course of the decade. Producing pictures of their own, be they still or moving, is getting more and more of a girls' domain. What are the reasons? One could be related to the use of social networks. Image and video oriented channels like *Instagram*, *Snapchat*, *TikTok* and *Pinterest* have seen a boom over the past few years. Moreover, three of these platforms are used more frequently by girls than by boys (Bernath et al., 2020). Self-produced photos and videos are an effective tool to get the main currency of those networks, the "likes" (Rainie et al., 2012), even to enhance or maintain the feeling of self-worth that may be linked to them (Stefanone et al., 2011). Also, the importance of selfies is not to be underestimated. They offer various possibilities to support impression-management strategies. Using the right camera angle or the right filter, selfies can present attributes of physical attractiveness in the preferred light (Makhanova et al., 2017)—attributes of physical attractiveness that entail, among other things, advantages in the choice of partners for adolescents (Yarosh, 2019). In addition to these identity and reputation functions of photos and videos, creative aspects should not be neglected. There is great creative potential in producing and editing photos and videos. This shows, not least, in the many artistic images and imaginative videos that adolescents produce and share daily.

3.4 Does Immigration Background Make a Difference?

"Tell me where you come from, and I'll tell you how intensively you use media." Is this statement correct for adolescents in Switzerland? There are several areas of media use where differences between the habits of adolescents with immigration backgrounds and those with a Swiss background can be found. Over the years, some differences have remained constant, while others have grown. In general, adolescents from families with immigration backgrounds show longer times of media use than their peers with a Swiss background. In the samples for the JAMES study series, adolescents with immigration backgrounds originate mostly from Spain, Portugal, South-

importance. It must be said, however, that no statistically significant differences in times of media use in the JAMES study data can be explained by socio-economic status. Therefore it may be assumed that a better explanation for the difference consists in the media's various functions for relatedness to the cultural background of the family's country of origin and to Switzerland as a home country (see Zöllner, 2009). For the adolescents, this is not only about communication with family members, but also about signaling affiliation as part of socialization. That this can follow various patterns has already been shown by Bonfadelli et al. (2008). Some adolescents with immigration backgrounds deliberately use media content from their family's country of origin in order to affirm their cultural identity, while others deliberately identify themselves with the mainstream

Figure 4: Media times in relation to origin

Sample: Switzerland:5357 Abroad:1189

Origin — Switzerland — Abroad

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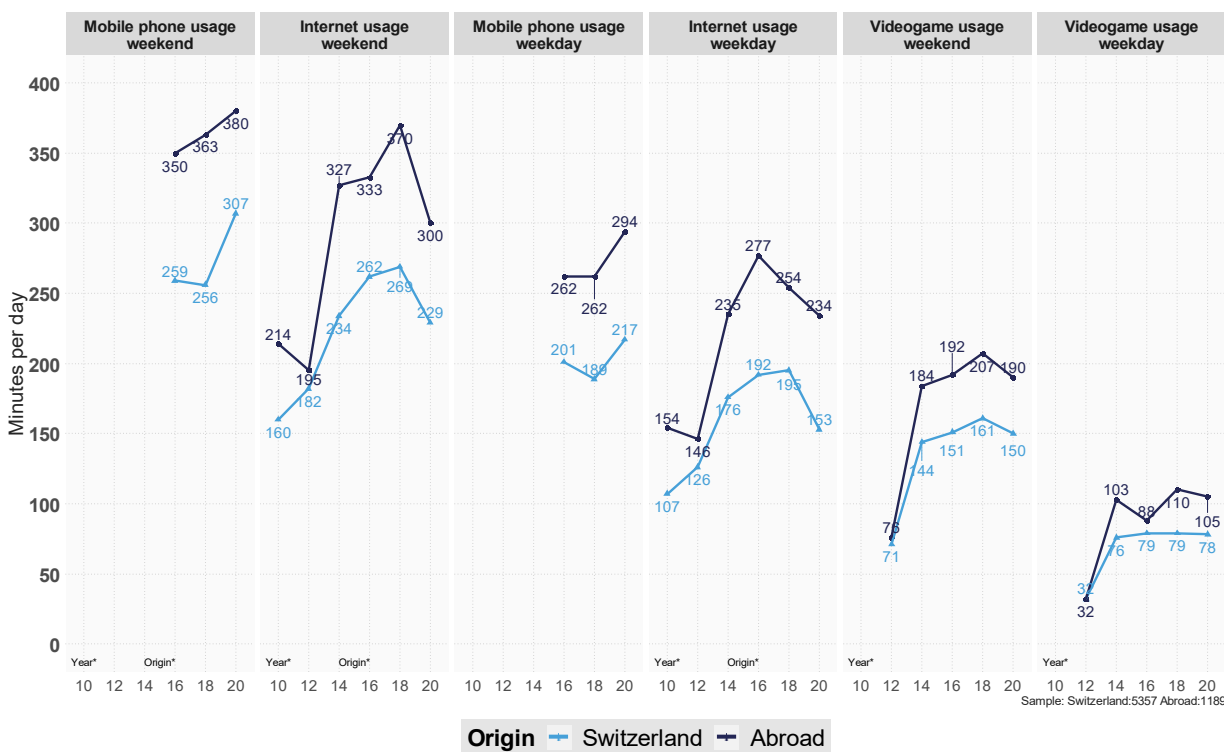
eastern Europe and Switzerland's neighboring countries. Thus they largely mirror the proportions in the total population (Bundesamt für Statistik, 2022). At events for parent education and vocational training, it is often speculated that in families with immigration backgrounds, media are used more intensively because more liberal ideas on media education prevail, or because on average, these families have less income and education resources, so that media use as leisure activity has greater

habits in Switzerland in order to affirm their affiliation with their Swiss peers. Others again use both media and communication ranges equally because they feel at home in both cultural contexts and want this to be seen, too. In sum, therefore, the symbolic meaning of the media and communication offers is more multi-faceted for adolescents with immigration backgrounds than for the other adolescents. Not only media preferences but also the way they present their own content in social networks,

e. g., selfies with symbols of the family's country of origin, are aimed at expressing multicultural identity (see Kramer, 2020).

An indicator in this context is the average time adolescents spend with different media. In the trend analyses, we compare their own estimates of time spent on the cell phone, the internet and video games on weekdays and weekends. It stands out at first sight that across all questions, adolescents with immigration backgrounds tend to estimate longer hours than their Swiss peers. In 2012, both groups had stated equally long hours for videogames, and after that there were different growth rates, so that the patterns now resemble those of cell phone and internet use. The trends among adolescents with and without immigration backgrounds run parallel, but on different levels. The longer cell phone and internet hours can be explained by the more varied functions of media use for adolescents with immigration backgrounds. During the 2020 shutdown, in particular, mobile communication became central to keeping informed on developments in different regions of the world and to being in touch with family and friends. Above all, the differences in the time spent on the internet on weekdays are statistically significant. That this time estimate has receded since 2016 in spite of longer time on the smartphone is probably related to the fact that by "internet use", some adolescents mean being online via computer or tablet, while when using the smartphone they are less and less aware of when they an app connects them to the internet. The smartphone has increasingly become the central device for going online, even more so among adolescents with immigration backgrounds than among Swiss adolescents. Simultaneously, awareness is receding that the smartphone connects to the internet most of the time. Time spent on media is higher on weekends across all devices. The differences between the two groups follow the same patterns as on weekdays. A striking fact is that particularly among Swiss adolescents, cell phone time on weekends rocketed the most during the 2020 shutdown, but was still markedly shorter than among adolescents with immigration backgrounds. The pandemic curtailed adolescents' leisure time activities and personal communication with peers so massively that they used the cell phone more intensively to compensate for that. It may be

assumed that adolescents would have suffered even more from the pandemic-related restrictions if their smartphones had not been there for networking and diversion. For adolescents with immigration backgrounds, concerns about friends and family in the country of origin, and the need for information on worldwide developments via social networks carried special weight.

3.5   How Male Is Media Violence?

For adolescents, coming to terms with their gender identity is an important development task. One area where maleness and femaleness are negotiated is handling media violence. Earlier it used to be consumed, above all, by watching movies on TV, video or in

affiliation and mutual trust, and also sets them apart from outsiders, be they peers or adults. What becomes visible as well, though, is that this concerns a small fraction of all adolescents, and that on the whole, media violence consumption remains constant in boys as well as girls.

Figure 5: Contact with media violence in relation to gender. Has it ever happened that…
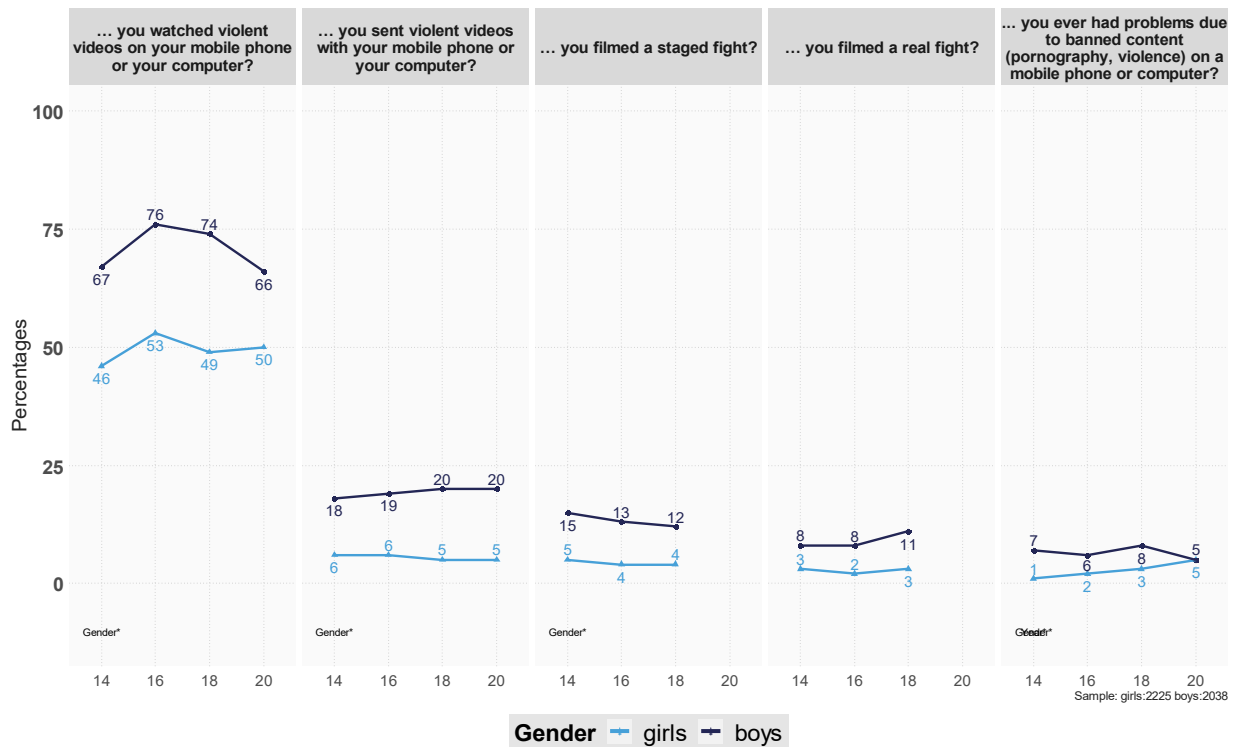
cinemas, but over the last few years, consumption of audiovisual violence has increasingly moved to cell phones, computers and gaming consoles (Kunczik, 2017; Slater, 2003). Moreover, adolescents are no longer just consumers of violent content now, but providers and even producers as well. Five problematic forms of usage can show how male and female adolescents' behavior has developed in this respect. In some aspects, boys' and girls' experiences are found to be constant, and in certain aspects the genders converge. What strikes at first sight is that boys consume or share brutal videos or videos with real-life fights much more frequently. They like violent movie genres more than girls do, and in peer groups that are geared to role stereotypes, fights are experienced as expressions of virility, risk appetite and assertiveness. What's more, sharing massively violent or even illegal content among male adolescents is a proof of

Concerning the question of whether they have already had problems because of illicit content on their cell phones or computers, boys and girls have reached an identical, low level. 95 per cent have never had problems, but 5 per cent have. This convergence between genders probably relates less to violent content but to pornography and sexy posing by minors/sexting, as the next chapter will show.

3.6 How Much Sex Should It Be?

Sexuality is an important subject for adolescents; their bodies change, and hormones go wild. In the course of decades, the way to deal with this subject has changed greatly, and particularly in the last years there have been many societal developments that contributed to a gradual removal of taboos (Büttner, 2019). Questions about consumption of pornographic content were asked in the JAMES study since its beginning. For the third round, the questions were adapted; therefore the present retrospect is limited to the years 2014 to 2020.

The convergence of the genders in porn consumption can have various reasons. Today, adolescents are educated about sexuality less shamefacedly than before, and thanks to the emancipation of women, girls learn more and more that their needs are as important as boys' needs. Films like #FEMALE PLEASURE (Miller, 2018) are emblematic for this societal development. The porn industry has identified women as a target group as well and increasingly produces "female-friendly" material, say Bauder & Hajok (2019). This development might have an effect on young women. Another possible reason for the changes is the

Figure 6: Sexual content and gender. Has it ever happened that…

Sample: girls:2225 boys:2038

Gender — girls — boys

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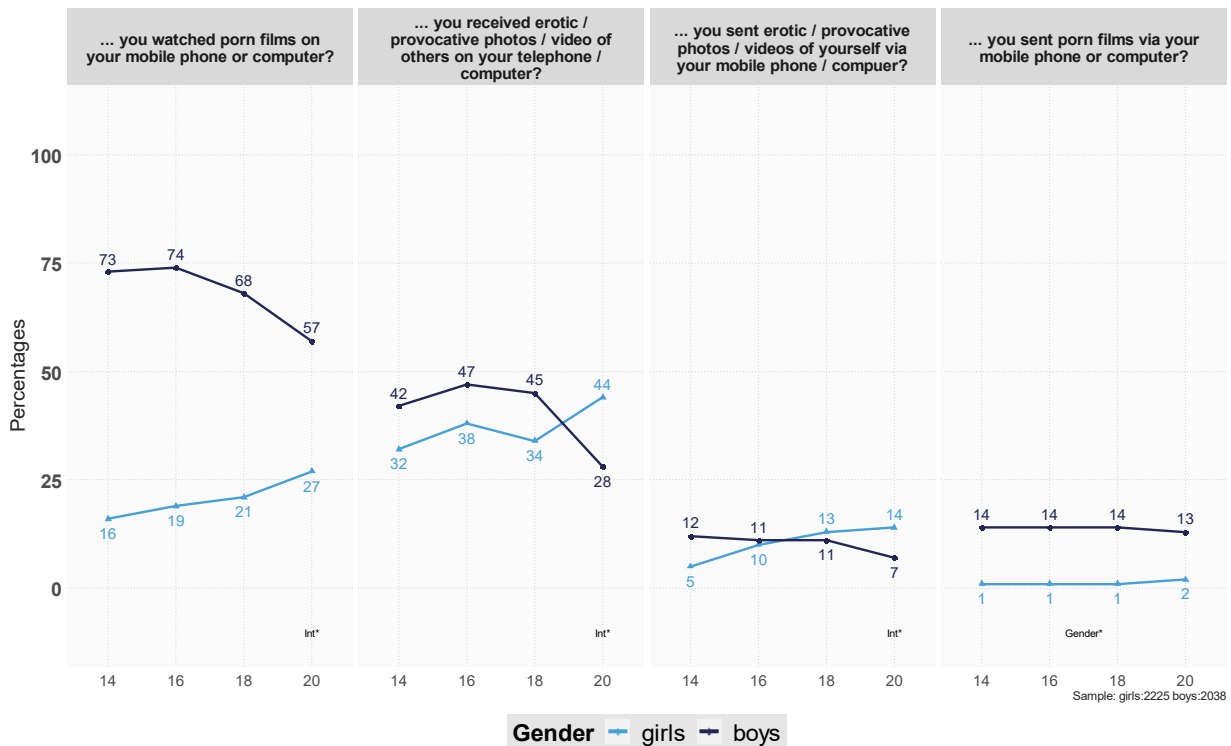
The gender differences in porn film consumption—but not in sharing porn films—have changed greatly since 2014. Boys' consumption is receding, whereas girls state more and more frequently that they watch porn films on the cell phone or computer; however, boys still have significantly higher scores on the whole. Research into pornography is slow in developing. Because of this, recent findings that could be compared to the available data are still scarce. Therefore, the following interpretations of the developments have to be presented, for the most part, as hypotheses and assumptions.

method of the survey: the 2020 round was conducted online because of the pandemic. Given a personal subject like pornography, this probably reduced effects of social desirability in both directions: boys had less need to brag before their peers (as frequently observed in field interviews before), and girls were less reluctant to mark that they, too, had already watched porn films. Büttner (2019) describes that in analyzing forum contributions on porn, she could find less marked gender differences than in direct interviews with adolescents and young adults. Döring (2013) was able to show this already, too.

More than just a convergence between the genders was observed in receiving and sharing sexy photos/videos showing the teens themselves. In this, girls have become more active than boys. These two aspects cover, on one hand, classical sexting, but also sexy posing for social network profiles; many dances on *TikTok* also show sexualized gestures, too often in x-rated contexts. Sexting is mostly done within existing relationships or sometimes as an attempt to initiate a relationship (Pro Juventute, 2022). The growth of sexting by girls might be due to heterosexual girls sending each other provocative photos as well. The motivation for this could be getting approval and social recognition. In this context, "body positivity" has been an important buzzword in recent years. *Snapchat*, in particular, is favored by adolescents for this kind of photos because they are not automatically sent to the recipient's picture gallery. Sharing provocative images among girls would also explain why more girls are senders as well as recipients of such pictures and videos. A possible reason for boys' diminished activity might be heightened awareness for undesirable photo and video material, developed, in particular, in context with the #metoo movement. Another aspect of this is heightened awareness that unsolicited sexting (e. g., "dickpics") is a form of sexual harassment. At this point, we wish to note that such image material, produced by minors, can be illegal and counts as child pornography. Therefore, it is important to make adolescents aware of this within media and sex education (SKPPSC Schweizerische Kriminalprävention, 2022). Another probable hypothesis for explaining the positive and/or negative reinforcement is that provocative or sexy posts of boys get fewer likes on social media than those of girls, which in turn might lead to boys posting less and less, and girls more and more material of this type.

3.7 Are Social Networks Closing the Digital Divide?

Over the past ten years, the share of adolescents who have social network profiles has grown steadily. Only *Facebook* profiles have become less popular among them. The younger they are, the smaller is the share of *Facebook* users (Bernath et al., 2020). Teens' primary activity in this respect is now on *Snapchat*, *Instagram* and *TikTok*. A striking fact is the boom of *TikTok* within the last two years.

The absence of such a difference might be explained by the fact that using these networks is free. Creating and using a profile does not cost the adolescents money. Much rather, the price to pay is personal data revealed for registering on those platforms and using them. Additional reasons are the high penetration of cell phones and nationwide availability of broadband internet. Almost all adolescents use the cell phone and internet on a regular basis—irrespective of their SES (Bernath et al., 2020). The "free" usage and nationwide accessibility of the required infrastructure have

Figure 7: Sociel network profiles in relation to SES

Sample: low:750 medium:2606 high:855

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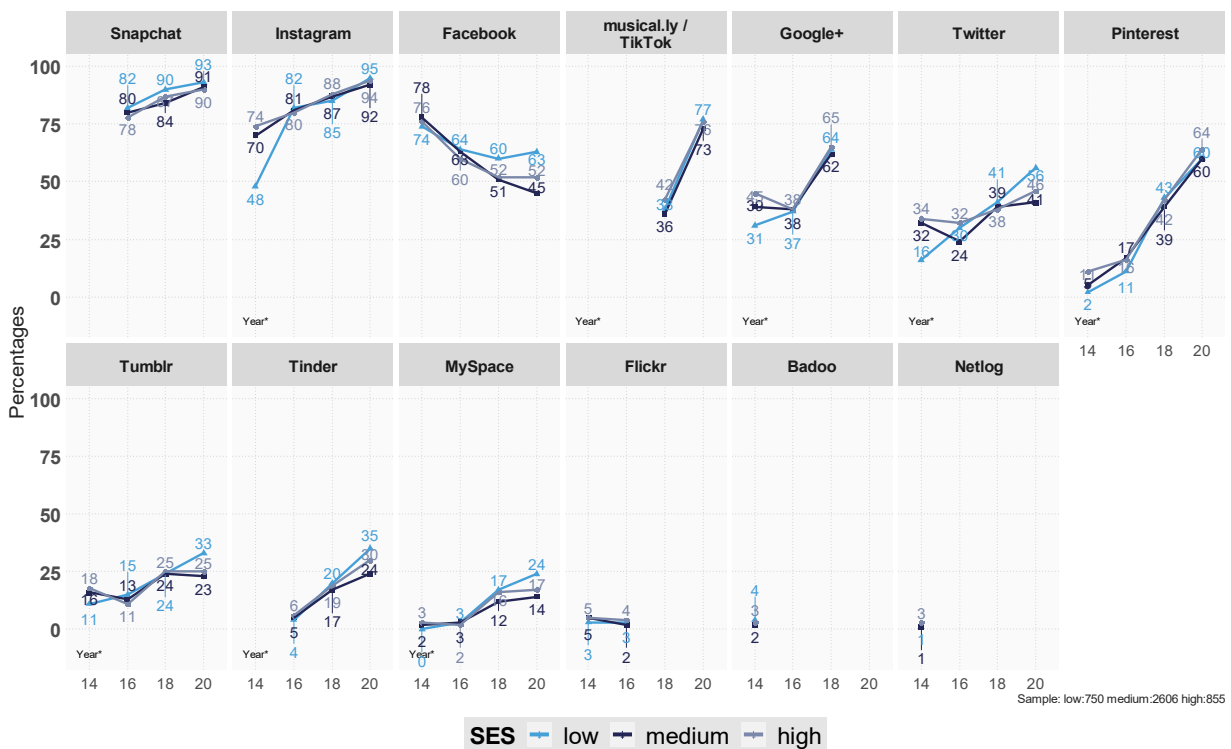
In context with internet usage, digital inequality is a much-discussed aspect. On the whole, internet usage in Switzerland is linked to socio-economic status (SES). Households with higher SES have internet access more often (Latzer et al., 2017). This social divide is known as the "digital divide". When it comes to social networks usage, however, this tendency cannot be seen. On the contrary, usage of *Facebook* in 2020 is significantly higher in people with low SES than in people with high SES (Bernath et al., 2020). The other networks show no significant difference between adolescents with low, medium and high SES. Neither can a conspicuous difference be found between the three levels over the last ten years.

an equalizing effect, so that a digital divide concerning social networks cannot be spoken of for this age cohort. Thus, social networks are relevant for adolescents across all social strata.

3.8 Where Do Signs of the Digital Divide Show?

While availability of social networks does not seem to be a function of adolescents' SES (see Chapter 3.7), fee-based offers show a different picture. The hope that by nationwide internet availability, social inequalities can be compensated and a level playing field created for everyone, cannot be fully substantiated. As in other studies (Büchi, 2018; Festic et al., 2021; Latzer et al., 2021) it shows here, too that there is a certain divide online—a digital

smartphone, a certain pressure might arise to have this kind of service at one's disposal in order to be able to participate in everyday social interaction and to exchange views on the latest series and films (Weber, 2015). This shows, at any rate, in the fact that in the last two JAMES-survey rounds (2018 and 2020), *Casa de Papel* was named as the most popular series—a production available at *Netflix*. More recent trends around the Korean series, *Squid Game* suggest that streaming services play an increasingly important role for social follow-up communication. The aspect

Figure 8: Households' media subscriptions in relation to SES

Sample: low:637 medium:1864 high:688

SES — low — medium — high

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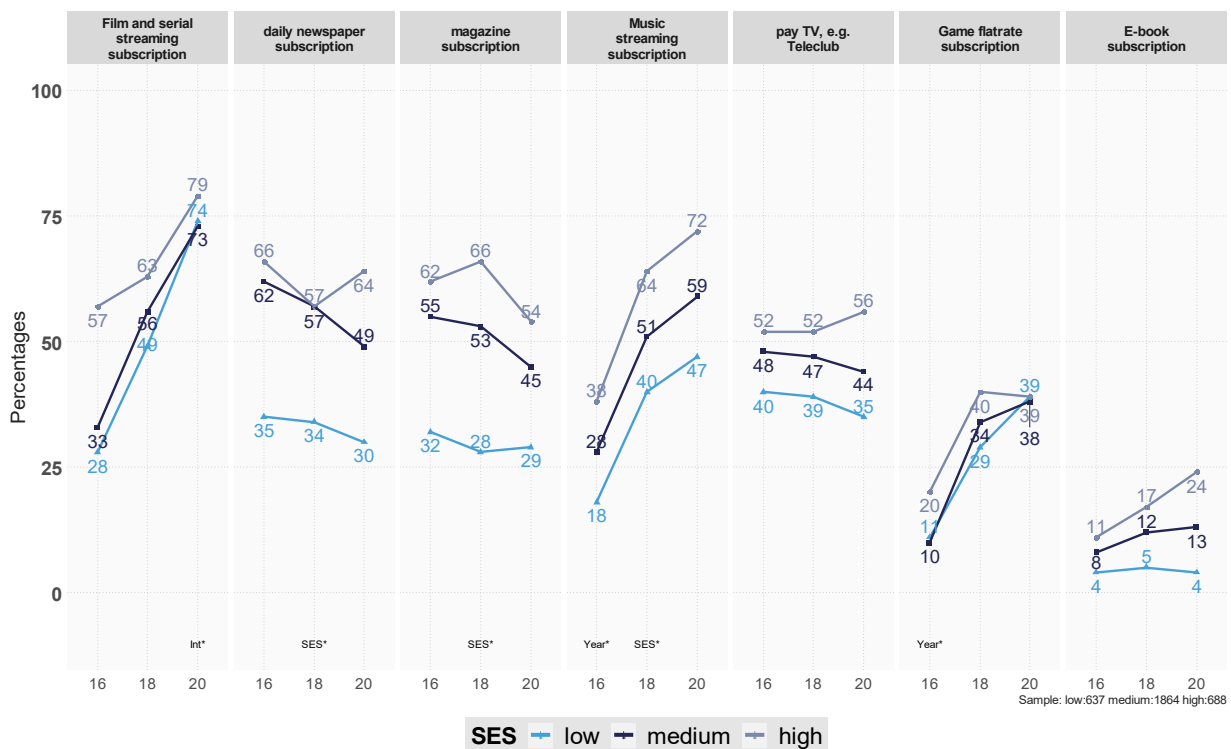
divide. Thus, depending on social background, various offers are less available (first-level digital divide) or are used less profitably because of lower competency (second-level digital divide) (Hargittai, 2002). In the usage of subscription offers, varying trends can be seen in this regard. For almost all offers, availability has been more widespread in households with higher SES than in those with lower SES since 2016. Only film and series streaming subscriptions show a significant convergence over the years. While their distribution was still very unequal in 2016, the 2020 survey round hardly showed any differences any more. This might point, on one hand, to the social relevance of these services. Similar to the case of the

that most of these streaming subscriptions can be shared so that several people can access them simultaneously might have favored their prevalence in lower-SES families as well. On the other hand, the COVID-19 pandemic might have been a factor in this, too. The data collection of the 2020 JAMES study was done during the first wave of COVID-19, with Switzerland in a shutdown and schools mostly closed (Bundesamt für Gesundheit, 2020a; Bundesamt für Gesundheit, 2020b). Because of the restrictions, adolescents as well as their families spent more time at home, which probably led to media entertainment gaining in relevance (Bernath et al., 2020). That no comparable effects show in subscriptions for music

streaming and e-books seems surprising at first glance. The spread of music streaming has risen significantly since 2016, but on levels varying according to SES. Thus there was no equalization here. This is presumably explained by the fact that for some services like *Spotify*, there is a free, ad-funded version (spotify.com, 2021). Moreover, a large amount of music content can be consumed for free via video portals like *YouTube*, so that fee-based music offers are easier to avoid. In e-book subscriptions, there are no significant differences over the years, and not in relation to SES either. Reading books in general has been one of the most constant media activities (see Chapter 3.2), and this without differences between adolescents' SES. A very striking difference, however, shows in the availability of magazine and newspaper subscriptions. Ever since the first survey round in 2016, these have been less widespread in households with lower SES than in those with higher SES. This shows, on one hand, effects of a classical first-level digital divide, i. e., cost-based barriers to accessing offers. On the other hand, inequalities relating to less profitable usage (second-level digital divide) can be assumed as well. As early as in 1970, Tichenor & colleagues coined the phrase, "knowledge gap" and argued that people with higher SES appropriated mass media information faster than people with lower SES, leading to a widening of existing inequalities (Tichenor et al., 1970). Even though Switzerland's population in general now consumes news more online via news portals or social networks (Forschungszentrum Öffentlichkeit und Gesellschaft, 2021), this information gap still does not seem to close, because the internet, too, is used less intensively for information purposes by people with lower SES (Festic et al., 2021). This raises a question about the consequences of such unequal participation in the information society. Especially in times of incorrect information, fake news and conspiracy theories, access to high-quality and trustworthy news content as well as promoting news competencies are of the essence and should be available to everyone, irrespective of social status.

3.9 What Do Adolescents Expect From Apps?

Possessing one's own smartphone enables downloading specific apps from among a steadily growing choice and combining them according to personal preference. In 2012, adolescents were asked for the first time to name their three favorite smartphone apps. Since then, apps named at least five times have been depicted in *Wordcloud*, where frequent mentions are shown larger and less frequent ones, smaller. A comparison of 2012 and 2020 shows substantial changes, but also remarkable constancies.

One striking development is that **games** are more rarely named among the favorite smart-

present analysis. A recent Swiss study (Hütter-mann, 2021) shows, at any rate, that when it comes to gaming, the smartphone is the favorite device for Swiss society as a whole. The popularity of *Brawl Stars* can be attributed, among other things, to the fact that this game is available exclusively for the smartphone and easy to play on it. Moreover, the app offers numerous possibilities to connect with one's own or new contacts just by pushing a button, and to game together. In addition, there is a large *Brawl Stars* community and a host of entertainment content on *YouTube* and other social media-platforms. The social and entertainment needs this satisfies also play a central role in gaming.

Figure 9: Favorite smartphone apps in 2012
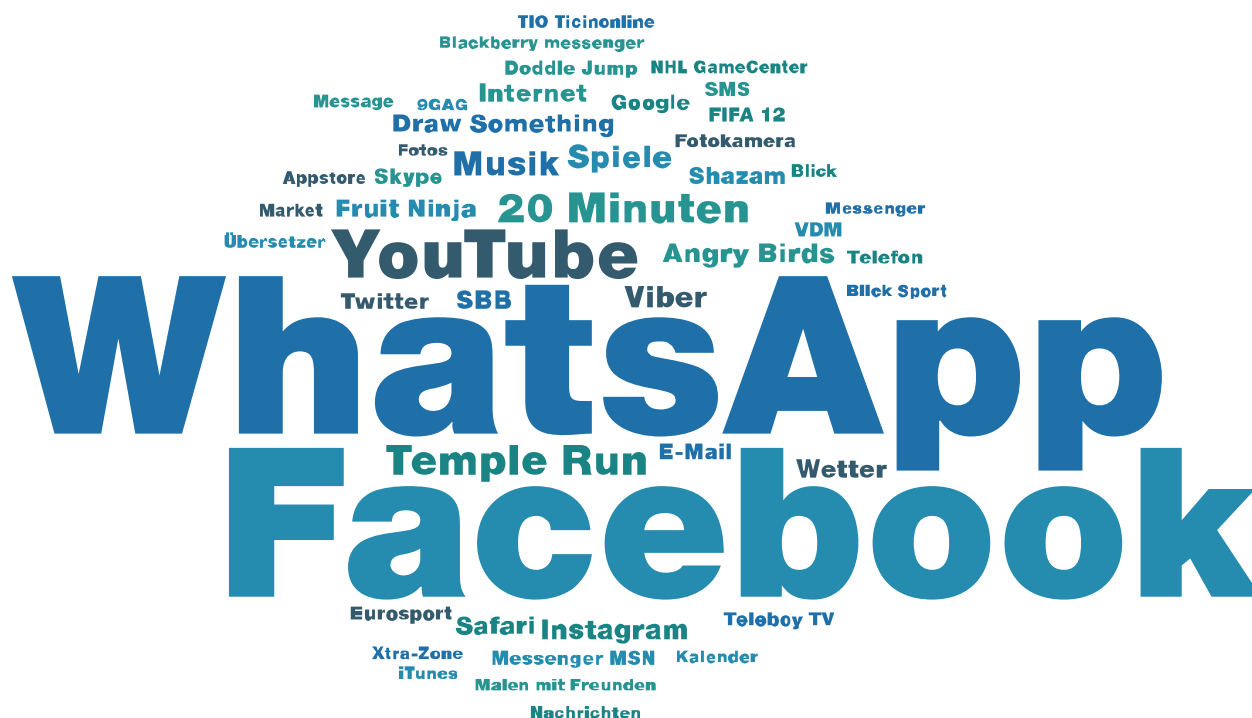
phone apps now than they used to be. While in 2012 a diverse range of games, e. g., *Angry Birds*, *Draw Something* and *FIFA12* were named at least five times, this has remained the case only for the multiplayer-based battle game, *Brawl Stars* in 2020. This does not mean that the relevance of this media-based leisure activity is receding—the share of teens who game on a regular basis has remained constant since 2010 (see Chapter 3.2). The question whether smartphone games are actually losing favor with adolescents cannot be answered conclusively on the basis of the

In contrast to this, **ad- and subscription-funded streaming services have clearly made headway among favorite apps**. They do no longer store media content on the users' devices but play directly via internet. As early as 2012, the video portal, *YouTube* was a must for Swiss adolescents. It offers a varied mix of professionally produced and user-generated audiovisual content, and using it is often an integral part of the teens' everyday routines (Heeg et al., 2018). The film and series platform, *Netflix* which entered the Swiss market in 2014, has rapidly conquered a stable position

among the top 3 apps as well. Moreover, a shift is becoming visible in the consumption of audio content: away from apps like *Musik* or *iTunes*, where music has to be paid for, to streaming services that can also be used without direct fixed costs—above all, *Spotify*, available in Switzerland since 2011, which offers not only music, but also podcasts and audio books. Streaming services of this kind allow users to choose and to consume media content at pleasure, freely and spontaneously, from among a nearly endless collection, without having to tie themselves down to single

(Vitale et al., 2018). Adolescents seem to evade that data dilemma by using this kind of streaming services, for example, via flatrate subscriptions that are increasingly becoming available (Bernath et al., 2020).

Social networks were already among many adolescents' favorite apps in 2012. They provide entertainment, news, and venues for creative activity. In addition, they enable them to follow idols virtually and to engage and communicate with peers, and they play a central role in media-related follow-up communication. Thus they are important for adolescents'

Figure 10: Favorite smartphone apps in 2020
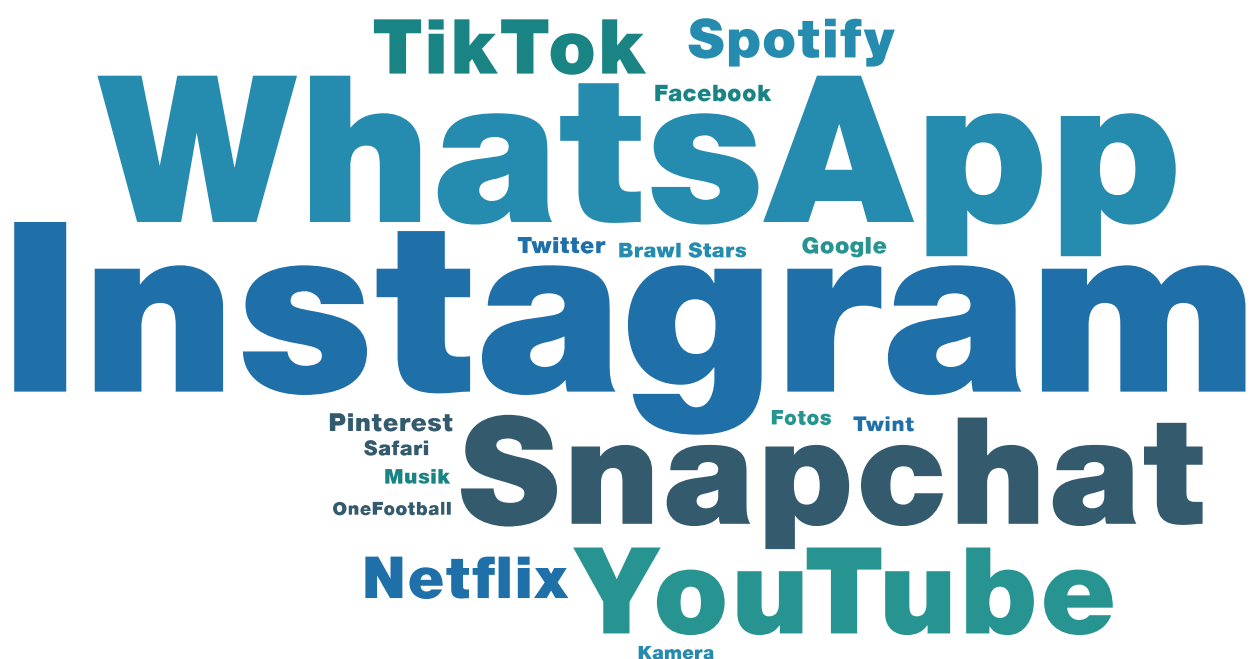
titles and having to purchase each of them for a fee. Adolescents have obviously gotten used to not having to consider limits of time and content that come, for instance, with linear TV and radio. As opposed to other devices that also support streaming, the portability of smartphones allows adolescents to entertain themselves, for instance, when they are out and about with peers or on the way to school or work. At home, on the other hand, streaming services can offer them an alternative to joint usage in the family and thus, a kind of way to do their own thing. In principle, there seems to be a developing trend away from storing data and having them in one's personal possession, in favor of streamed content. Storing media data on the smartphone comes with several disadvantages in the form of management and storing tasks that may be felt to be onerous

identity development and integration in their circle of friends. Small wonder, then, that their popularity has remained unchallenged in 2020, too. Over the years, there has been a gradual broadening and approximation in their functions: before long, many platforms enabled sharing photos with filters as well as videos with effects and playback audio tracks, among personal contacts or publicly, permanently or for a specific period of time, and exchanging private multimedia messages. However, there has been a shift between favorite apps in favor of (moving) image-centered platforms. *Instagram* has made it to the absolute top, replacing its sister network, *Facebook,* which only a few adolescents now name as a favorite. That *Facebook* has obviously not succeeded in jumping the generation gap is seen in other recent statistics as well: in Switzerland, its

users' average age is 43 years now (IGEM, 2021). Also, there has been a diversification among the top 3 social networks. A newcomer that became a favorite in almost no time is *TikTok*. Published as *musical.ly* in 2014, this platform was focused on quickly generated, shared and consumed playback videos, though now less artistically oriented contributions, e. g., vlogs are becoming more and more frequent. Another remarkable ascent is that of *Snapchat*. This service was founded in 2011 and was the first to introduce functions for exchanging time-limited picture messages, which soon became available in other social networks, too. Storing memories as in a traditional photo album or social media feeds is not so much the purpose here (Bayer et al., 2016; Kofoed & Larsen, 2016). Rather, this is about casual chatting, supported by "quick photographs" (Lobinger & Schreiber, 2017, S. 8), which is highly popular with adolescents today. Not only is this easy on the smartphone memory, it can also be psychologically relieving and liberating to have virtual conversations without having them physically copied and stored (Bayer et al., 2016; Shein, 2013). The fascination of this kind of exchange is probably due to the fact that it comes closer to everyday personal interaction, another potential source of enhanced well-being (Bayer et al., 2016; Sandstrom & Dunn, 2014).

Among the apps Switzerland's teens name as favorites for **Instant Messaging**, there has been a concentration and, at the same time, fusion of messaging and telephone services. While 2012, a broad variety of apps were named as favorites—among them, *Viber*, *MSN*, *SMS*, telephone function and *Blackberry Messenger*—, only *WhatsApp* has held its ground. Aside from the fact that using it causes no direct costs, there are additional clues for this app's popularity. On one hand, *WhatsApp* has broadened its original function of instant text messaging with aspects that were dispersed between separate, fee-based apps before. Thus, in 2020 the service allows a broad range of communication formats with internet-based phone and video calls, exchange of voice messages and files. Also, *WhatsApp* is used by 84 per cent of all Swiss, i. e., very broadly (IGEM, 2021), which mostly enables universal communication with various people from the social environment, be it family, friends, school, work or club. Cumbersome switching between apps for different

communication formats and partners is, therefore, no longer necessary, and this makes it simpler and, above all, more comfortable. That data protection and privacy are not valued very highly in *WhatsApp* is a fact that teens are aware of (Heeg et al., 2018). But the above-mentioned advantages in everyday usage seem to outweigh the risks this comes with. This raises the question of whether now, with new data protection regulations in place, safer messengers like *Threema* or *Signal* will gain in importance among teens going forward.

3.10 How Has the Smartphone Changed Cell Phone Behavior?

Adolescents' cell phone behavior has undergone marked changes during the past decade. In particular, a clear increase shows in many internet-based functions between 2010 and 2014 (see Figure 11). This is due to the growing prevalence of smartphones. Thus, barely half of the adolescent cell phone users said they owned a smartphone in 2010 (Waller &

adolescents with subscriptions rose, and that of prepaid users receded (see JAMES studies 2010 to 2018). Moreover, cell phone subscriptions increasingly included unlimited or very high data use, so that the internet could be accessed from any location.

Thus the smartphone allowed surfing the internet, sending e-mails and listening to music from an almost unlimited library. In cell phone games, it also made new things possible. In addition to internet access, an important factor

Figure 11: Usage of cellphone functions over time
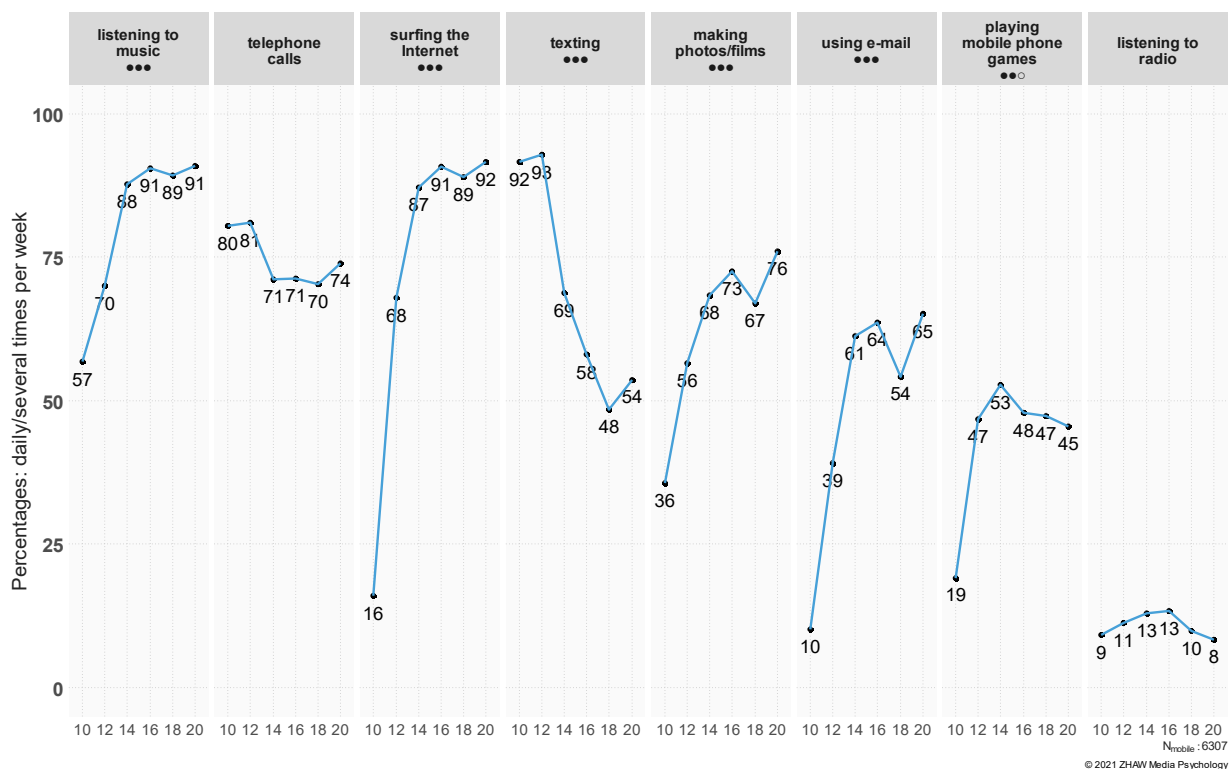
Süss, 2012). In 2012 and 2014, this share rose to 79 and 97 per cent (Willemse et al., 2012, 2014). In 2020, only 0.2 per cent of the cell phones they have are feature phones, i. e, telephones with a physical keyboard (Bernath et al., 2020).

With the smartphone, mobile internet became a part of everyday life. In 2011, only 20 per cent of the Swiss population also used the internet when they were out and about. Until 2021, this share rose to 86 per cent—a majority of the population—and in the age cohort of 14 to 19 years, to even 93 per cent (Latzer et al., 2021). While at the beginning of the smartphone era, many adolescents took care to use their limited mobile data sparingly, connecting via (free) WiFi whenever possible, this changed over the years. The share of

has been the advance of the touchscreen, much larger than screens of older cell phones, making the entire screen available as "playing field" and control panel. Thanks to sophisticated software support, the cameras integrated in smartphones even provided better quality than the digital cameras that had been widespread before, so that the cell phone increasingly enabled producing high-quality photos or videos. Based on this development, new and strongly image-oriented apps like *Instagram* and *Snapchat* were able to become prevalent (see Chapter 3.9). With mobile internet, internet-based instant messaging apps—above all, *WhatsApp*—became part of everyday life. These reduced SMS usage, but did not supersede it completely. Making voice calls also

remained a frequent cell phone activity for many adolescents over the years.

Other functions did not survive the last decade and were eventually deleted from the JAMES questionnaire. Among others, this includes sending MMS or sending photos/videos or MP3 files via Bluetooth.

In sum, it can be concluded that the cell phone is used in many more ways now than ten years ago. The technology has continued to develop, and a broad range of the most varied apps allows using the cell phone in greatly personalized ways today. Be it communication, information or entertainment—it's all just a touch away. So much has the smartphone become a natural part of our lives today that research is being done into how far the smartphone is a vital part of a person's identity (Harkin & Kuss, 2021; Park & Kaye, 2019; Ross & Bayer, 2021).

The smartphone's strong presence in adolescents' everyday lives does not only bring new opportunities but challenges, too. It regularly confronts many adolescents with a dilemma (Heeg et al., 2018): on one hand, it enables spontaneous and location-independent communication, but on the other hand, it puts them under pressure to be accessible at all times and to have to reply at once. Also, new phenomena have arisen, for instance, "phubbing"— neglecting or ignoring conversation partners in favor of smartphone activities (Aagaard, 2020). It shows that handling the smartphone well takes not only technical media competence, but consideration of social and emotional aspects as well.

4 Summary and Discussion

During the decade from 2010 to 2020, adolescents' media behavior was marked by, or interacted with, a series of major societal developments. This led to some changes, but on the other hand, some aspects showed remarkable constancy—usage behavior that remained the same over the decade. Below, we will list long-term societal trends as well as constants and discuss how they are mirrored in media behavior.

The **individualization** trend is a growing tendency towards personal and uniquely fashioned self-realization. The basis for this is the progression of freedom of choice and self-determination (Zukunftsinstitut, 2021a). This development can be shown very clearly in teens' media consumption. The media menu has been enlarged by a broader range of offers: on-demand streaming services like *Netflix* and *Spotify* became available in addition to linear TV and radio. In parallel to the massive broadening of available choices, access to the content was simplified enormously, e. g., in the form of a practical and easy-to-use app. Moreover, reception was made independent of time and—thanks to the smartphone—of location. Today, anyone can consume information and entertainment media ad lib, always and nearly everywhere. No matter if the content is text, audio or audiovisual: the freedom of choice and self-determination has increased massively during the last ten years. New (media) competencies are needed. Consumers have to face several questions: How do I make the media choice that is best for me? When do I consume what content in order to enable follow-up communication? Which apps fit my smartphone repertoire? Media menu and app repertoire are becoming an expression of individual personality and lifestyle.

The **connectivity** trend is society's development towards more and more interconnection. This was made possible, above all, by the advent of digital infrastructures like the internet and the cellular network. This enabled a broad variety of new possibilities, with direct effects on every individual's everyday life (Zukunftsinstitut, 2021b). And this effect is visible in the way adolescents use media, too. Internet and

smartphone spread and usage have grown during the last decade, and so have communication platforms based on them, e. g., messenger services and social networks. Adolescents use these intensively, in one-on-one communication as well as in groups. They organize themselves via these services and exchange messages in private, school and also business contexts via these channels. The connectivity trend was, to no small extent, a precondition for enabling distance teaching in times of crisis—as in the COVID-19 pandemic. Negative aspects of the stronger interconnection are constant accessibility, ceaseless flow of communication and pressure to continuously document one's life with photos and videos on all manner of social platforms. It is true here, too: keeping up with the development and integrating it fruitfully into one's life requires new competencies.

The **gender shift** means that the traditional role patterns for men and women are becoming obsolete. Gender is no longer carved in stone, fluid intermediate identities are becoming possible (Kelber, 2022). Certain aspects of adolescents' media behavior point to the gender shift: girls assert their femaleness and sex appeal in their everyday digital life. Skilful use of self-produced sexy images is no longer a taboo and ranges with revealing apparel for a night out. Gender-specific patterns converge also in the consumption of industrially produced pornography: girls consume it more often than before, and boys less often. In this respect, preferences seem to be determined less by pre-conceived gender roles than by personal tastes. The industry responds by producing more "female-friendly" films, with the roles of women and men less determined by bizarre stereotypical notions. In spite of all this convergence, however, some aspects of media use still show stable **differences between genders**: girls spend more time reading books, and boys, playing video games. Apparently, the genders derive a different value added from the respective media. Should these differences persist in the next decade, too, the reasons for them might turn out to be biological.

Another trend that seems to be spreading among adolescents in Switzerland is **relationship minimalism** (Nordmann, 2021). Relation-

ship minimalism is about maintaining few, but close and individually "valuable" contacts. Young people, in particular, "unclutter" friends from their social environment and limit themselves to few but more intimate friendships. This trend is an extraction from a minimalist lifestyle, also relating to material possessions. The motto of this movement is "Less Is More," and its reward is a less consumerist, simpler and, therefore, happier life (Nordmann, 2021). An indication of relationship minimalism is found in the reduction of face-to-face meetings with friends. Even before the pandemic, these became constantly less frequent among adolescents. By contrast, they do things with their families more often now. This could lead to the conclusion that they focus on less but closer friendships and the family. It raises the question of whether this trend concerns online contacts as well—whether tendencies to "unclutter" show there as well, or an opposite effect, making the online network a kind of compensation place for the personal network.

Less of a trend, but rather a description of the state of society is seen in the **digital divide**. It describes demographic and socio-economic inequalities in access to and usage of information and communication technologies since the 1990s (Ritzhaupt et al., 2020). Among adolescents in Switzerland, this divide is particularly visible concerning text-oriented information media. Newspaper and magazine subscriptions are much more often available to adolescents from higher-SES households. The same is true for music streaming subscriptions. Another, non-digital divide has emerged in sports outside of school. In comparison with their more affluent peers, adolescents from socio-economically disadvantaged households are less and less active in this regard. Since exercise is an important factor for physical and psychological health, society needs to counteract this development. It is not acceptable that in a country like Switzerland, adolescents' sporting activity depends on their parents' income. This **activity gap**, therefore, needs to be closed as soon as possible. No digital divide is seen in social networks. Since there is no fee on creating a profile, financial reasons do not come into play. The price to pay is

personal data, which can be provided across all strata. The case of film and series streaming subscriptions is similar. These are now available in around three quarters of all households, irrespective of status group. In gaming flatrate subscriptions, no difference is found, either. People seem willing to spend money on a media subscription as long as it is entertainment-oriented. A leveling in internet access has, moreover, occurred via the strong penetration of smartphones and the flatrate subscriptions for them.

In parallel to the above trends, however, the decade has seen remarkable **constants** in media behavior. Thus, the frequency of reading books has remained the same among adolescents, in spite of ever-increasing digitalization. The book obviously comes with a value that can hold its own even in the face of new digital competition. Gaming remained very constant, too. A factor both activities have in common is that for a perfect pleasure experience, they are mostly done purposefully and consciously. Apparently, a certain measure of exclusive time has to be invested in order to reach an adequate level of enjoyment. Another constant is the consumption of media violence. Even though an increase in juvenile violence and delinquency is recorded in some places, this does *not* come with an increase of media violence and can, therefore, probably not be seen as a possible source of the problem (Baier, 2021). A constant is also seen in the fact that compared to Swiss adolescents, those with immigration backgrounds spend more time on the cell phone, internet and gaming. The reasons for this are many-faceted and probably rooted in the multicultural embeddedness of adolescents with immigration backgrounds: while growing up here, media support them in bridging the gap between differing cultures, customs, languages, and religions. Constant or changing—one thing has become very clear during the last ten years of JAMES research: media are an integral part of the adolescents' everyday world and an important factor in their leisure activities. The next decade will show what form this will take in the future.

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Zurich University of Applied Sciences

**Applied
Psychology**

Pfingstweidstrasse 96
Postfach
CH-8037 Zürich

Telefon +41 58 934 83 10
Fax +41 58 934 83 39

info.psychologie@zhaw.ch
www.zhaw.ch/psychologie