

“Through The Looking Glass: Comparing Crime And Gender Involvement In Both The Media Reality And The Real Life Crime Situation Using 1396 Synopsis Texts Over A Period Of 37 Years.”

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Author Biography

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Abstract

Purpose:

While media effect on aggression and violent behavior is under dispute, media still factors into the shaping of world view and stereotype reinforcement of the viewers as described in for example Cultivation Theory. The purpose of this study is to illustrate and explore this fact by using an unexplored field of movie content analysis of crowdsourced synopsis texts in order to examine the similarities and differences between crime and gender in American contemporary movies.

Methods:

A total of 1396 synopsis texts were analyzed from the Internet Movie Database ranging from 1973 to 2011 and coded categorizing the type and severity of violence as well as the gender of both perpetrator(s) and victim(s) of the crimes that occurred. The results of this analysis are then compared to real life crime statistics from the Bureau of Justice and Federal Bureau of Investigation released during the same time period.

Results:

Violence in movies over time is remarkably similar to the real life crime statistics, in both cases showing a constant discrepancy between the amount of violence men are involved in compared to women. Men are in both datasets almost 4 times more likely to be the perpetrator in violence, and almost 5 times as likely to be the victim. Men and women are in both datasets most likely to commit murder with a firearm. In both situations firearm violence is the most common type of violence in general.

Conclusions:

This study shows that the ratio of violence in movies between genders over time is remarkably similar to the crime statistics. This implicates a reinforcing principle where the movies influence the perception of violence and gender stereotypes, keeping the status quo in violent behavior for the genders intact over a long period of time. Crowdsourced content analysis is recommended as a new field of research.

Keywords

Content analysis, violence, crime, gender stereotyping, crowdsourcing, media culture

Introduction

As a result of the ever increasing globalization of our media culture, the world appears to be an ever increasingly violent place. These days, news and images of terrible events such as shootings and murders reach us within a matter of minutes. The media attempt to get as much coverage out of these events as possible, further cementing the idea that things are worse than ever. Despite the prevalence of violence and murder in the news, entertainment media such as movies containing violent images are still increasing in popularity as illustrated for example by the globally growing box office sales (Motion Picture Association of America, 2011). It is difficult to discern the relationship between violence in real life and media – media could be violent because the world is violent, or the world could remain violent because media helps establish a violent culture. In order to explore this relationship between media and the real world, this study seeks to explore a possible relationship or discrepancy between the media reality and the real world crime situation throughout time.

Media reality versus everyday life

Despite the continuous growth in national population, statistics from the American Central Bureau of Justice in fact show a slight decrease in the number of violent crimes recorded each year in the United States over the last 40 years. This decrease is partially attributed to the larger segment of elderly citizens, who are less likely to engage in or be victim of violent crime. Also, an American citizen is currently more likely to be a victim of a traffic accident than victim of a violent crime (US Department of Justice, 1973-2010).

Yet despite this apparent decrease in real world crime, trends in mainstream media show that feature length films are becoming increasingly explicit and violent over time (Bleakly, Jamieson, and Romer, 2010). Certain studies indicate that fictional media greatly overrepresent the amount of violence actually taking place in society. The amount of violence in movies is being steadily increased by the industry in order to keep producing exciting and thrilling material, with dramatization and entertainment value to boost movie sales in mind (Eschholz and Bufkin, 2001).

The statistics that crime in real life is steadily dropping, yet strangely enough the amount of violence in mainstream media such as movies is increasing over time. The possibility of effects of media on the behavior of viewers are difficult to prove. The scientific debate about the effects of media on aggressive behavior has still not lead to a satisfying consensus. Years of research have lead to theories such as the General Aggression Model (GAM) which is based upon the notion that exposure to violent media increases aggression by teaching aggressive behavior in the short term, and affecting learning processes such as the response to violence in the long term (Anderson and Bushman, 2001). Often associated with this theory is the Social Cognitive Theory, which is applicable to media since its main concept is observation based information gathering and learning (Bandura, 1988). Despite years of research seemingly supporting these theories, the results are now being entirely disputed in skeptic articles such as the ones from Ferguson (2009); Ferguson and Dyck (2012) pleading to retire the GAM and Social Cognitive Theory entirely and to re-evaluate media effect theory.

While because of this controversy it is no longer viable to make assumptions about the effects of aggressive media content on viewer behavior, there are regardless many other ways that media shape our perceptions of reality, morality and gender roles. In the study by Eschholz and Bufkin (2001) for example various male and female archetypes are given that emphasize femininity and masculinity, reinforcing the idea that men are for example more violent and women are dependant, caring and providing.

Although the actual effect of violent media on *violent behavior* is under dispute, the effect of media on the world view and morality of the viewer on the long term is still an interesting subject. Not how people act due to media exposure, but how it affects their thoughts and perceptions. It is possible that the use of violence as a means to an end, for a cause, or for a reason in a specific context, is more easily justified or deemed acceptable by the observers due to learned experiences with specific media situations.

One could wonder for example, if murder become more acceptable if it is in retaliation of another murder or under certain tragic circumstances. Context and attitude towards violence is an important factor in the determination of right and wrong,

especially in countries where justice is dealt out by a jury of peers (Dowler, 2003).

This notion is further illustrated by Cultivation Theory research focusing on fictional media such as movies and series. These studies indicate a relation between the memorized occurring of media violence and estimations of real-world violence (Gerbner, 1998; Riddle, Potter, Metzger, Nabi, and Linz, 2011). This could be seen as a sign that long term exposure to media may be a factor in shaping our world view, implying that exposure to media violence has an effect on our perceptions of violence: how often violence occurs in society as a whole but possibly also our attitudes and beliefs towards this violence. In this manner the overrepresentation of violence in (fictional) media may contribute to the construction of the world perception of the viewer.

In order to examine this notion a comparison of the real world crime statistics and the movie crime situation has to be made. Perhaps a trend analysis of these two can bring us closer to understanding in what ways the media help shape our perceptions. This reasoning leads to the following research questions which can then be answered:

RQ1: In what ways does the media reality violence relate to the real world violence?

RQ2: Does media give a skewed impression of the types and quantity of violence that occurs compared to the real world?

Media violence and gender perceptions

In a similar manner as media shaping the perception of violence, media may shape the gender perceptions of the viewer with regards to violence. If movies consistently shape the viewer's perception by portraying a biased world where men are depicted by traits such as activity, aggression, dominance and autonomy and women are depicted as dependant and nurturing (Eschholz, Bufkin, Long, 2002; Gilpatric, 2010) this may have profound effects on the viewers' real world perception of the relation between gender and violence.

An example of this is illustrated in the article by Bloom (2011) which describes a growing trend in which terrorist cells employ women as suicide bombers, and the way they are less likely to be caught or even suspected of such an act based on the fact that they are women alone. To make matters worse, law enforcement officials forced to take lethal action against such a female terrorist are often much more traumatized by this act than if it were a male victim (Bloom, 2011). It is not unlikely that this is caused in part by a lifetime of media stereotype reinforcement (Eschholz et al., 2002). Not to say that factors such as social pressure, personality, upbringing and education no longer apply, but media is so prevalent in our daily lives that it is likely an important factor, especially since it is for the most part our main source of moral compass for the justification and application of violence.

An indication of this possibility is found in Agenda Setting theory research; normally conducted on news media, a few recent studies started to focus on entertainment media such as movies. The study by Mulligan and Habel (2011) indicates that entirely fictional media messages and context about important issues such as abortion and incest made the issues more relevant and influenced the attitudes of the viewers about those topics significantly. While the influence of other attitude moderators such as prior knowledge and ideology is unexplored and marked as a caveat, the results of these studies show promise for exploration about the effect of fictional media violence on the attitudes and morality concerning violence. The study by Holbrook and Hill (2005) supports these findings, further arguing that the exposure to fictional media is at least partially responsible for the construction of their (in this case political) reality. While the focus here lies on political attitude changes based on specific messages in the media, the next logical step would be examining the possible effects on general attitudes and morality towards specific behaviors such as violence and the relation to gender.

In order to examine this relation in conjunction with the earlier posed research questions about the difference between media reality and the real world, the research question for examining the combination of gender and violence in real life and media is:

RQ3: What can be concluded about the effect of media on the gender perceptions and morality towards violence of the viewers based on the comparison between real life and the movies?

Answering this question will be achieved by specifically analyzing the accuracy of the gender representations in movies with regards to violent behavior and victimization compared to the factual crime statistics gathered by various agencies in the United States such as the Bureau of Justice and the Federal Bureau of Investigation. By comparing these real world crime statistics to the media reality the similarities and differences between the two can be illustrated and this research question answered.

Crowdsourcing the data

Besides answering the main research questions, this study aims to innovate content analysis research by not performing the analysis on the actual movies themselves, but by using crowdsourced text information as the main source of content for the analysis. As a side goal, this will explore the value of crowdsourced information as an untapped resource and tool for scientific research.

Traditionally, research into the effect of movies on the viewer is done by content analysis of the physical medium film. (See for example: Bleakley et al., 2012; Monk-Turner, Ciba, Cunningham, McIntire, Pollard, and Turner, 2004; Worth, Dal Cin and Sargent, 2006). By using a coding scheme and a number of coders, the entirety of the film is analyzed and the number of events are compiled into a frequency table allowing further analysis. The main downside of this method is the amount of manpower and hours it takes especially when a large sample size, such as for a trend analysis, is required.

Crowdsourced information is text written, corrected, verified and compiled by a large group of anonymous internet users, popularized by the free encyclopedia Wikipedia. The application of such information for scientific purposes is a still largely unexplored territory, but the value of this data has been confirmed by quite a few articles. The number of people that work on for example a Wikipedia article positively influences the quality of the text, and the number of people that work on it is influenced by the popularity of the subject (Lih, 2004; Wilkinson and Hubermann, 2007). With this in mind and the intention of analyzing movie content, the site iMDB (Internet Movie Database) turned out to be a suitable platform for experimentation with crowdsourced content analysis. Being the largest and most successful website for movie information, iMDB attracts a lot of movie enthusiasts willing to contribute their perceptions and knowledge to the database. The site provides a synopsis page for every movie, containing a detailed description of the movie: a description of the characters, storyline and important events that are relevant for this study, such as detailed descriptions of the most memorable violent scenes and character deaths. As with Wikipedia, the collaborative editing model allows for rapid growth of the content as well as a high level of accuracy due to the peer reviewing and correcting.

Methods

Using these synopsis texts, a content analysis was performed into the main variables of interest: the violent behavior and victimization of male and female characters throughout time. The results of this analysis will provide further insight into the role of digital media on the shaping of the perceptions of violence, gender roles and morality of the viewer because the texts contain the collective perceptions of the viewers (which events they perceived as most important) instead of from the actively searching, perhaps overanalyzing eye of the researcher.

Corpus

Before beginning the data collection, a specific genre selection was made. Choosing the most accurate genres for the analysis was important because the analysis focuses on realistic, comparable to real life, violence. Therefore the final selection of genres was narrowed down to the genres: action, thriller, crime and adventure based on the higher correlation in duplicate entries between these genres (also found in Choi, Ko, Han, 2012). Excluded were the genres science-fiction, fantasy, horror, sport, western and animation in order to eliminate any non-realistic and less relevant violent content (such as involving aliens, animals and fantasy creatures which are irrelevant to the research questions). The war genre was also excluded, because war violence is arguably perceived different morally due to the involvement of political endorsement or condoning in those situations. Only motion pictures with release dates ranging from January 1st 1973 till December 31st 2011 were included. This time period was chosen because of the availability of real world crime statistics collected in the United States by various agencies in this time period. These statistics were first recorded and released in 1973. Due to the statistics being focused on the American population, only American made movies were selected. The cutoff point of December 2011 was chosen in order to give released movies a fair period of time to be viewed by users, increasing the chance that a synopsis has been added for that specific film.

The iMDB movie search engine assigns a number of genres to one specific film ranging from one to five different genres (e.g. both action and thriller). This makes it easier for viewers to find movies they might like. For all intents, this makes the collection of synopsis pages slightly more difficult due to the existence of many duplicates when searching. In order to remedy this, every single genre was searched for separately using the iMDB search engine. For example, the search for the "action" genre yielded 4,982 results. Using specialized link retrieval software, these 4,982 links were copied from the HTML source code. For all the genres, the total number of movie links collected was 29,119. After filtering out all the duplicates the total amount of links consisted of 8,932 unique action, thriller, crime and adventure movie titles. The texts were then copied from the website. Due to the fact that the synopsis content is being generated by movie enthusiasts, unfortunately not nearly all the synopsis pages of these 8,932 movies actually contained any relevant content. Whether or not a movie has a filled synopsis page depends for example on the popularity and age of the film. Pages of which the text was simply too short to be of value for analysis (less than three lines of text) or non-existent (blank) were also filtered out, leaving a final result of 1,396 texts of valuable length.

While this is a sizable decrease, the spread of these texts as shown in Table 1 shows that the majority of the years in the sample have an at least ten percent availability rate for texts which is deemed acceptable for a sample size. Furthermore, the compact summarizing nature of the synopsis text should ensure a high result per word ratio.

To allow for a more accurate comparison of each year, the average word length per year and per five years was calculated. As is to be expected, the amount of titles with a synopsis present grows the newer the movie is, which lowers the average somewhat. The table shows older movies have relatively less synopses, but they are usually of classic films with a high word count making them still very valuable material for analysis.

The clear growth in number of titles for more recent years can be attributed to the growing popularity of the internet and the website iMDB. This is further illustrated in the columns of Table 1 for total number of titles and number of titles with text.

Table 1

<i>Number Of Titles Collected For Each Year, Number of Texts, And Word Length</i>						
<i>Year</i>	<i>Total words</i>	<i>Number of titles in genres</i>	<i>Number of titles with text</i>	<i>Percentage of titles with text</i>	<i>Average words</i>	<i>Average words per five years¹</i>
2011	72510	588	100	17%	725.1	
2010	104617	564	102	18.1%	1025.7	
2009	111594	471	114	24.2%	978.9	
2008	87674	337	108	32.1%	811.8	885,4
2007	76856	302	117	38.7%	656.9	
2006	73983	282	79	28%	936.5	
2005	64566	260	58	22.3%	1113.2	
2004	35367	222	48	21.6%	736.8	
2003	35300	229	50	21.8%	706	829,9
2002	41649	237	46	19.4%	905.4	
2001	34196	266	36	13.5%	949.9	
2000	33568	237	34	14.4%	978.3	
1999	36411	216	37	17.1%	984.1	
1998	27596	247	31	12.6%	890.2	941,6
1997	37320	256	29	11.3%	1286.9	
1996	34214	230	30	13%	1140.5	
1995	21313	235	21	8.9%	1014.9	
1994	26308	231	22	9.5%	1195.8	
1993	22830	204	17	8.3%	1342.9	1196,2
1992	19423	178	19	10.7%	1022.3	
1991	17742	167	19	11.4%	933.8	
1990	25929	177	24	13.6%	1080.3	
1989	12550	191	20	10.5%	627.5	
1988	7414	160	17	10.6%	436.1	820
1987	16895	144	16	11.1%	1055.9	
1986	11288	110	16	14.6%	705.5	
1985	20004	103	22	21.4%	909.3	
1984	17189	76	16	21.1%	1074.3	
1983	21550	64	17	26.6%	1267.7	1002,5
1982	11498	62	13	21%	884.5	
1981	21342	71	15	21.1%	1422.8	
1980	10306	57	10	17.5%	1030.6	
1979	7482	64	9	14.1%	831.3	
1978	8743	76	9	11.8%	971.4	1028,1
1977	10158	83	15	18.1%	677.2	
1976	11970	92	12	13%	997.5	
1975	8140	92	16	17.4%	508.8	
1974	13675	113	18	15.9%	759.7	
1973	11043	95	14	14.7%	788.8	746,4

¹ due to uneven number of years 2008-2011 is a four year word average.

Coding scheme

Before starting the analysis, an initial draft coding scheme had to be designed. Due to the interest in both gender and violence it was opted to design a two-part coding scheme: one containing the perpetrator/victim designations and one containing the severity and types of violence. As such, every piece of codable text would be assigned two different codes.

The part of the coding scheme for the people involved in the crime was designed to be fairly straightforward. A crime has either a male, female or unknown perpetrator(s) and victim(s).

An example of a codable fragment can be found in Box 1 below. A quote from the synopsis page of the 1987 movie "Lethal Weapon" is given. As can be seen in this situation, the aggressive actor ("Mr. Joshua") takes a violent action against the victim ("Michael Hunsacker"). This would be coded as "Male attacks Male".

"As Riggs and Murtaugh confront Michael Hunsacker, Mr. Joshua makes a surprise appearance in a helicopter and shoots him in the back with a sniper rifle."

Box 1: Quote from the synopsis page of the movie Lethal Weapon (1987)

The codings for the types of violence and the severity was based on data from the Federal Bureau of Investigation Uniform Crime Reports and a exploratory blind coding of a sample of the texts.

Categories were created for the types of violence found in this sample. Examples of this are gun violence, physical violence, blade violence. A full list of these codings along with common examples can be found in Appendix A.

Besides the type of violence, a designation for the severity also had to be given. These categories were decided as "light" for minor violence such as single hits and slaps, "severe" for bloody injury, "lethal" for violence with clearly or most likely lethal consequences and "unknown" depending on the context (or lack thereof) given.

An example of this coding can be found in Box 2 below. To stick with the theme, in this quote from the synopsis page of the 1989 "Lethal Weapon 2" two separate events take place: both times involving one male attacking another male. In the first coding, one of the men is stabbed with a knife, and the severity of this stabbing is implied. However, he lives. As such, it is coded as "Blade assault – severe". The second event the victim is killed by the use of an improvised environmental weapon (the container). This is then coded as "Environmental assault – lethal".

"In the process, Vorstedt and Riggs get into a violent fight. Riggs stabs Vorstedt with his own knife and leaves him for dead, but Vorstedt grabs a gun and aims it at Riggs. In the nick-of-time, Riggs exacts his revenge by pressing a button on a control panel which drops a metal container and crushes Vorstedt."

Box 2: Quote from the synopsis page of the movie Lethal Weapon 2 (1989)

Once this baseline for the coding was established, a exploratory analysis based on a randomized sample of all the texts was conducted. Ten percent of the total texts was analyzed, first by simply marking all instances of violence, then afterwards assigning the already established codes. The items that clearly did not fit into any category had new additional categories created for them. This revised coding scheme was robust enough to proceed to an inter-rater reliability test.

In order to test the Cohen's kappa for the coding scheme, another randomized sample of the total number of texts was drawn. A second coder was invited and instructed in the use of the coding scheme and the structure of assigning two codes per item. The coding scheme contains the base categories, for example "blade violence", as well as a number of examples of violence that would fall into this category not directly obvious as such. As an example, an attack with an object with a sharp edge such as a piece of glass would still fall in this category.

Similar instructions were given for the designation of the attacker(s) and the victim(s). The context shows if these persons are male and female based on the prefixes “he” and “she” in the singular, but vaguer designations in the plural such as “they” requires more exploration of the available context. (For example by finding in the context that “they” are two persons mentioned by name earlier).

By making it clear that each found item needed to be assigned one code from each category there is no difference in the number of codes assigned total, but since there is a two part coding scheme the calculation of two separate Cohen’s kappa’s is necessary. The resulting rounded Cohen’s kappa’s for agreement on the revised coding scheme are as follows:

Perpetrator/victim coding scheme: .8

Types of violence coding scheme: .8

Data analysis

After establishing the relative robustness of the coding scheme the actual coding could begin. The 1,396 pages of text were imported into the content analysis package Atlas.ti and coded manually. In total 6,756 codes were assigned, with two per event, totaling 3,378 events coded. Unfortunately the data was not able to be imported into SPSS in a logically structured manner requiring manual data entry for further analysis.

Comparison Data

To allow for comparison to real life data, various crime statistics from the Federal Bureau of Investigation and Bureau of Justice were examined and cross-referenced. In order to produce the comparison results, the data for homicides per year and number of homicide victims for each of the years 1973-2011 was compiled and entered into SPSS split into the categories male and female. The Bureau of Justice first started releasing these statistics in 1976 in this form, so the number of homicides for 1973-1975 was estimated using a total U.S. population census and the murder rates per 100,000 citizens for each year as released by the FBI Uniform Crime Reports for that period. Both these sources are frequently used for scientific purposes as they are the largest and most reliable source for crime statistics over a time period.

Results

Incidents per year

Looking at the number of incidents coded for each year in the corpus in Table 2 a clear growth throughout time can be seen in the number of incidents coded for each year. This growth corresponds with the growing number of titles over time. As can be seen in Table 2 the number of titles grows each year, the ratio of average number of incidents coded per text becomes more and more stable, averaging two incidents coded per text in the most recent years, but in total never falling below one incident per text.

Table 2

<i>Codings Assigned Per Year And Ratio of Average Codings Per Title</i>				
Year	Titles	Codings	Ratio	Ratio per five years ¹
2011	100	190	1.9	
2010	102	243	2.38	
2009	114	203	1.78	2.0125
2008	108	214	1.99	
2007	117	215	1.84	
2006	79	166	2.10	
2005	58	171	2.95	2.05
2004	48	91	1.90	
2003	50	73	1.46	
2002	46	106	2.30	
2001	36	69	1.92	
2000	34	57	1.68	2.172
1999	37	100	2.70	
1998	31	70	2.26	
1997	29	81	2.79	
1996	30	89	2.97	
1995	21	85	4.05	4.222
1994	22	101	4.59	
1993	17	114	6.71	
1992	19	94	4.95	
1991	19	27	1.42	
1990	24	112	4.67	3.058
1989	20	52	2.60	
1988	17	28	1.65	
1987	16	70	4.38	
1986	16	20	1.25	
1985	22	47	2.14	3.304
1984	16	60	3.75	
1983	17	85	5	
1982	13	63	4.85	
1981	15	42	2.8	
1980	10	10	1	2.618
1979	9	18	2	
1978	9	22	2.44	
1977	15	12	0.8	
1976	12	64	5.33	
1975	16	16	1	2.674
1974	18	48	2.67	
1973	14	50	3.57	

¹ due to uneven number of years 2008-2011 is a 4 year ratio average.

Types of Violence

When examining Table 3, the most prevalent types of violence are the prevalence of violence with firearms (N=1335, 40%) and physical violence (N=839, 25%). Far behind these two majority categories follows violence with bladed weapons (N=283, 8%). The category for unknown assault is reserved for those cases where a violent act is described but no context about the means is given (for example: "he kills him").

Of the 1335 cases of gun related violence, 67% (N=898) of the cases were fatal shootings. Contrary to this, 75,6% (N=634) of the occurrences of physical violence were non-lethal, with only 10% (N=84) cases of lethal violence. The Chi-Square test for type of violence compared to severity of violence is significant with (df=22, n=3387) = 1312,904, $p < .05$.

Violence and Gender

In a similar fashion, the relationship between violence and gender can be examined. Table 3 shows the immense differences between men and women and violence in the coded movie synopses. As much as 79% (N=2676) of the victims of violence were male. Similarly, 80% (N=2704) of all the perpetrators were male. For women the number of victims totaled merely 13% (N=443), and the number of perpetrators was also 13% (N=443). For the victims where context did not provide a gender the total was 8% (N=259), and the aggressive unknown persons totaled 7% (N=231).

The Chi-Square test for the severity of violence compared to the victim of aggression is significant with (df=4, n=3387) = 52,533, $p < .05$. For the severity of violence compared to the aggressor the Chi-Square is (df=4, n=3387) = 29,589, $p < .05$.

Men were most likely to also cause male victims, totaling almost two-thirds of the total amount of violent crime victims (N=2132, 63%). This is over six times as many as the males making female victims.

Females were also almost five times as likely to make male victims (N=348, 10%) compared to only (N=74, 2%) females causing female victims.

The category for unknown perpetrators and unknown victims consists almost entirely of persons not named by name or a gender-specific prefix. Examples of this include organizational descriptions such as "the police-officer" and "the store clerk". In neither of these cases a specific gender can be designated without falling into gender stereotyping so categorizing them as unknown was a preferred solution.

For both genders, firearms were the most common tool for committing murder. In 45% (N=91) of the cases where women committed murder a firearm was used.

Men were by far the most frequent firearm users, holding 81% (N=1085) of the total firearm related violent incidents. Of the total number of cases of violent crime committed by men, firearm violence made up 40% (N=1085) of the total. For women this was 33% (N=145). The second most common weapon was the bladed weapon, in 14% (N=28) of the cases. Males show a similar pattern, with 49% (N=744) of the murders being committed with a firearm, followed by 9% (N=128) with a bladed weapon.

Table 3: Comparison Of Content Analysis Results With Relation To Violence Type, Victimization, And Gender

		Victim of Aggression															
		Male				Female				Unknown				Total			
		Severity of Violence				Severity of Violence				Severity of Violence				Severity of Violence			
		Lethal	Non-lethal	Unknown	Total	Lethal	Non-lethal	Unknown	Total	Lethal	Non-lethal	Unknown	Total	Lethal	Non-lethal	Unknown	Total
Male	Blade	112	59	7	178	13	9	1	23	3	3	0	6	128	71	8	207
	Assault	(3.3%)	(1.7%)	(0.2%)	(5.3%)	(0.4%)	(0.3%)	(0.0%)	(0.7%)	(0.1%)	(0.1%)	(0.0%)	(0.2%)	(3.8%)	(2.1%)	(0.2%)	(6.1%)
	Gun	611	291	0	902	60	30	0	90	73	20	0	93	744	341	0	1085
	Assault	(18.1%)	(8.6%)	(0.0%)	(26.7%)	(1.8%)	(0.9%)	(0.0%)	(2.7%)	(2.2%)	(0.6%)	(0.0%)	(2.8%)	(22.0%)	(10.1%)	(0.0%)	(32.1%)
	Physical	49	400	87	536	10	69	10	89	4	23	11	38	63	492	108	663
	Assault	(1.5%)	(11.8%)	(2.6%)	(15.9%)	(0.3%)	(2.0%)	(0.3%)	(2.6%)	(0.1%)	(0.7%)	(0.3%)	(1.1%)	(1.9%)	(14.6%)	(3.2%)	(19.6%)
	Unknown	241	22	2	265	33	5	0	38	66	5	1	72	340	32	3	375
	Assault	(7.1%)	(0.7%)	(0.1%)	(7.8%)	(1.0%)	(0.1%)	(0.0%)	(1.1%)	(2.0%)	(0.1%)	(0.0%)	(2.1%)	(10.1%)	(0.9%)	(0.1%)	(11.1%)
	Other	179	72	0	251	31	63	0	94	21	8	0	29	231	143	0	374
	Types ¹	(5.3%)	(2.1%)	(0.0%)	(7.4%)	(0.9%)	(1.9%)	(0.0%)	(2.8%)	(0.6%)	(0.2%)	(0.0%)	(0.9%)	(6.8%)	(4.2%)	(0.0%)	(11.1%)
	Total	1192	844	96	2132	147	176	11	334	167	59	12	238	1506	1079	119	2704
		(35.3%)	(25.0%)	(2.8%)	(63.1%)	(4.4%)	(5.2%)	(0.3%)	(9.9%)	(4.9%)	(1.7%)	(0.4%)	(7.0%)	(44.6%)	(31.9%)	(3.5%)	(80.0%)
Female	Blade	19	28	3	50	9	4	1	14	0	0	0	0	28	32	4	64
	Assault	(0.6%)	(0.8%)	(0.1%)	(1.5%)	(0.3%)	(0.1%)	(0.0%)	(0.4%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.8%)	(0.9%)	(0.1%)	(1.9%)
	Gun	82	44	0	126	5	6	0	11	4	4	0	8	91	54	0	145
	Assault	(2.4%)	(1.3%)	(0.0%)	(3.7%)	(0.1%)	(0.2%)	(0.0%)	(0.3%)	(0.1%)	(0.1%)	(0.0%)	(0.2%)	(2.7%)	(1.6%)	(0.0%)	(4.3%)
	Physical	14	84	7	105	4	34	0	38	0	1	1	2	18	119	8	145
	Assault	(0.4%)	(2.5%)	(0.2%)	(3.1%)	(0.1%)	(1.0%)	(0.0%)	(1.1%)	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(0.5%)	(3.5%)	(0.2%)	(4.3%)
	Unknown	22	2	0	24	5	0	0	5	8	0	0	8	35	2	0	37
	Assault	(0.7%)	(0.1%)	(0.0%)	(0.7%)	(0.1%)	(0.0%)	(0.0%)	(0.1%)	(0.2%)	(0.0%)	(0.0%)	(0.2%)	(1.0%)	(0.1%)	(0.0%)	(1.1%)
	Other	26	17	0	43	4	2	0	6	1	2	0	3	31	21	0	52
	Types ¹	(0.8%)	(0.5%)	(0.0%)	(1.3%)	(0.1%)	(0.1%)	(0.0%)	(0.2%)	(0.0%)	(0.1%)	(0.0%)	(0.1%)	(0.9%)	(0.6%)	(0.0%)	(1.5%)
	Total	163	175	10	348	27	46	1	74	13	7	1	21	203	228	12	443
		(4.8%)	(5.2%)	(0.3%)	(10.3%)	(0.8%)	(1.4%)	(0.0%)	(2.2%)	(0.4%)	(0.2%)	(0.0%)	(0.6%)	(6.0%)	(6.7%)	(0.4%)	(13.1%)
Aggressive Actor	Blade	6	3	0	9	3	0	0	3	0	0	0	0	9	3	0	12
	Assault	(0.2%)	(0.1%)	(0.0%)	(0.3%)	(0.1%)	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.3%)	(0.1%)	(0.0%)	(0.4%)
	Gun	55	36	0	91	8	6	0	14	0	0	0	0	63	42	0	105
	Assault	(1.6%)	(1.1%)	(0.0%)	(2.7%)	(0.2%)	(0.2%)	(0.0%)	(0.4%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(1.9%)	(1.2%)	(0.0%)	(3.1%)
	Physical	3	17	3	23	0	6	2	8	0	0	0	0	3	23	5	31
	Assault	(0.1%)	(0.5%)	(0.1%)	(0.7%)	(0.0%)	(0.2%)	(0.0%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.1%)	(0.7%)	(0.1%)	(0.9%)
	Unknown	37	1	0	38	7	0	0	7	0	0	0	0	44	1	0	45
	Assault	(1.1%)	(0.0%)	(0.0%)	(1.1%)	(0.2%)	(0.0%)	(0.0%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(1.3%)	(0.0%)	(0.0%)	(1.3%)
	Other	25	10	0	35	2	1	0	3	0	0	0	0	27	11	0	38
	Types ¹	(0.7%)	(0.3%)	(0.0%)	(1.0%)	(0.1%)	(0.0%)	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.8%)	(0.3%)	(0.0%)	(1.1%)
	Total	126	67	3	196	20	13	2	35	0	0	0	0	146	80	5	231
		(3.7%)	(2.0%)	(0.1%)	(5.8%)	(0.6%)	(0.4%)	(0.1%)	(1.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(4.3%)	(2.4%)	(0.1%)	(6.8%)
Total	Blade	137	90	10	237	25	13	2	40	3	3	0	6	165	106	12	283
	Assault	(4.1%)	(2.7%)	(0.3%)	(7.0%)	(0.7%)	(0.4%)	(0.1%)	(1.2%)	(0.1%)	(0.1%)	(0.0%)	(0.2%)	(4.9%)	(3.1%)	(0.4%)	(8.4%)
	Gun	748	371	0	1119	73	42	0	115	77	24	0	101	898	437	0	1335
	Assault	(22.1%)	(11.0%)	(0.0%)	(33.1%)	(2.2%)	(1.2%)	(0.0%)	(3.4%)	(2.3%)	(0.7%)	(0.0%)	(3.0%)	(26.6%)	(12.9%)	(0.0%)	(39.5%)
	Physical	66	501	97	664	14	109	12	135	4	24	12	40	84	634	121	839
	Assault	(2.0%)	(14.8%)	(2.9%)	(19.7%)	(0.4%)	(3.2%)	(0.4%)	(4.0%)	(0.1%)	(0.7%)	(0.4%)	(1.2%)	(2.5%)	(18.1%)	(3.6%)	(24.8%)
	Unknown	300	25	2	327	45	5	0	50	74	5	1	80	419	35	3	457
	Assault	(8.9%)	(0.7%)	(0.1%)	(9.7%)	(1.3%)	(0.1%)	(0.0%)	(1.5%)	(2.2%)	(0.1%)	(0.0%)	(2.4%)	(12.4%)	(1.0%)	(0.1%)	(13.5%)
	Other	230	99	0	329	37	66	0	103	22	10	0	32	289	175	0	464
	Types ¹	(6.8%)	(2.9%)	(0.0%)	(9.7%)	(1.1%)	(2.0%)	(0.0%)	(3.0%)	(0.7%)	(0.3%)	(0.0%)	(0.9%)	(8.6%)	(5.2%)	(0.0%)	(13.7%)
	Total	1481	1086	109	2676	194	235	14	443	180	66	13	259	1855	1387	136	3378
		(43.8%)	(32.1%)	(3.2%)	(79.2%)	(5.7%)	(7.0%)	(0.4%)	(13.1%)	(5.3%)	(2.0%)	(0.4%)	(7.7%)	(54.9%)	(41.1%)	(4.0%)	(100%)

¹: Other types contains various minor categories of violence coded including chemical, environmental, explosive, projectile, rope, sexual, vehicular and drug assaults.

Discussion

The goal of this study was to examine the combined views towards violence and gender perceptions of film culture through a large-scale analysis of a great number of titles throughout time. In order to achieve this an innovative approach was chosen: unlike most content analysis about film which is done through analysis of the actual film, the idea was to use the power of observation and documentation of the movie enthusiast. By performing the analysis on written synopses of movies, a content analysis of a much larger sample could be achieved with relatively minimal manpower and time. The value of such a crowdsourced corpus of analysis and its ability to accurately portray reality as seen by movie culture is best illustrated by examining the most interest findings and comparing them to real-life crime statistics.

For this comparison the various statistics collected by the Bureau of Justice Statistics and the Uniform Crime Reports assembled by the Federal Bureau of Investigation were used. The same time period as the movies will be examined, ranging from 1973 up to and including 2011.

When examining weapon use in Table 3 by far the most common type of violence (especially lethal violence) involves the use of a firearm totaling almost 40% of all violent acts. Gun violence was almost four times as likely as any other kind of violence. When comparing this to the Homicide Trends statistics, a similar pattern is displayed with homicides being most often committed with firearms and other types of weapons trailing far behind this percentage. However, in real life the percentage of firearm related homicides is far greater than in the movies. In 2009 for example, the FBI Uniform Crime Reports show that nearly 70% of all homicides involved a firearm with similar percentages throughout time. In the movies, while still a majority group, this is merely 27%. The second most common type of weapon used is in both cases bladed weapons. In 2009, the FBI reports 13% of all homicides involving a sharp weapon. For the movies this was closer to 5%. In the sample this physical violence (such as with fists or blunt weapons) occurs most in non-lethal yet severely violent crimes, and is the second largest group of violence found in the analysis totaling over 20%. With regards to the most frequently used types of weapon, the media reality is similar to the real world crime.

With regards to the differences in gender the movies display a similar accuracy. The Bureau of Justice Statistics Homicide Trends document shows a constant pattern throughout time of males being the majority in both homicide victimization and perpetration. The relative ratio of male and female offenders and victims stays notably constant throughout time, averaging a roughly 80% offending/victimization rate for males compared to 20% for females. The statistics give as an example that for 2008, a male was 7 times more likely to commit murder than a female, and a male was 4 times as likely to be murdered than a female.

To take a closer look at this trend and to compare the movie results to the real life situation, figure 2 and figure 3 were created detailing the murder and victimization rates of both males and females in the period of 1973 till 2011 compared to the results of the content analysis. This comparison is chosen because these are the most commonly available statistic for this entire time period, as crime statistics in general also include minor offenses such as petty theft and property damage which has very little bearing on this research. The Bureau of Justice also considers homicide to be a fairly reliable barometer of all violent crime. These murder offender and victim percentages were calculated by using the Bureau of Justice Homicide Trends Statistics for 1973 to 2011. The relative percentages for each year are very similar, with the offender rates for males and females in movies spiking slightly between 2010 and 2011, but staying very constant for victimization rates.

Figure 2.

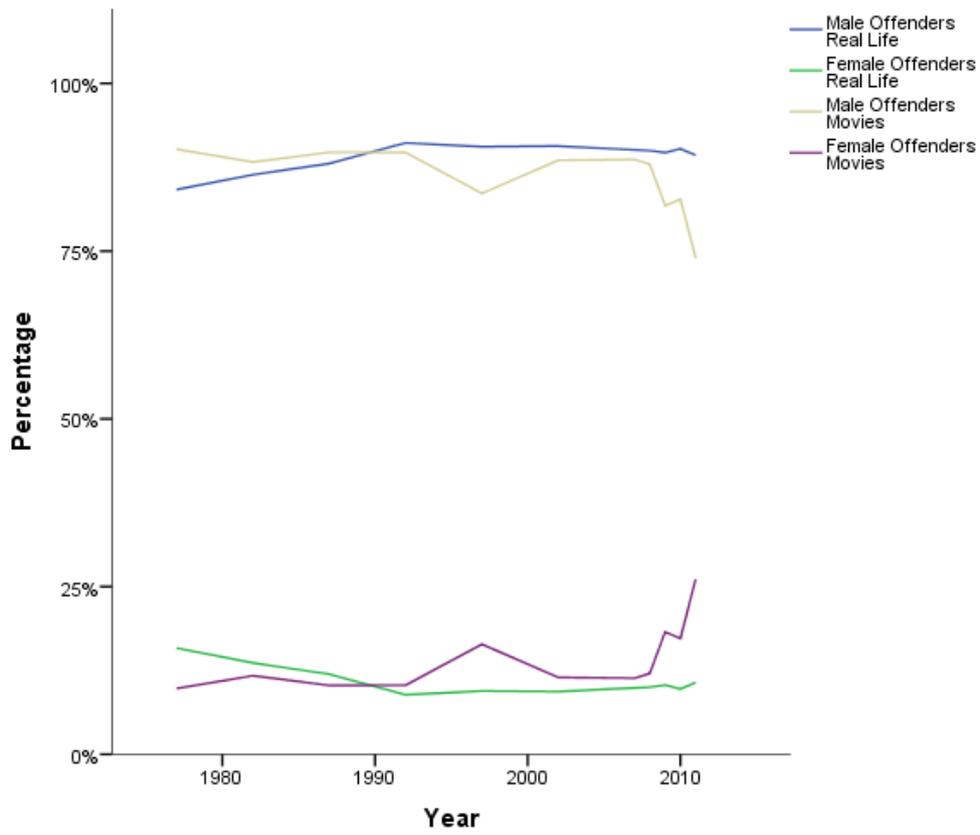
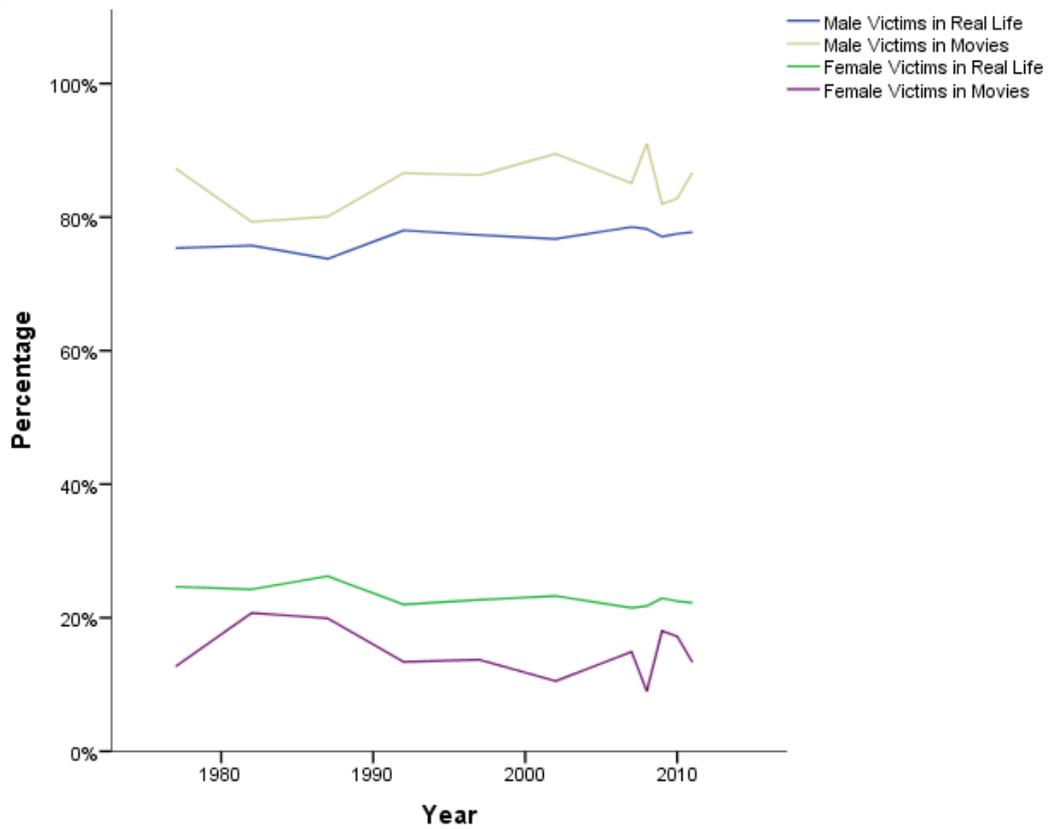


Figure 3.



These graphs collaborate with the sentiment from the Bureau of Justice Statistics in that offending patterns are generally similar to victimization patterns.

Compared to previously conducted content analyses about violent content in films over time such as the study by Bleakley et al. (2012) similar conclusions can be drawn: male characters are consistently involved in more violence than female characters (in both offending and victim roles).

While it seems that males are highly over-represented in movies when it comes to violence (Eschholz et al., 2002), it is as far as the comparison to real life goes not the case that movies in some way skew the reality of the distribution of violence. In fact, the ratio of violence between the male and female groups is very similar to what the real life statistics display. Of course statistics gathered by agencies such as the Bureau of Justice come with the caveat that they are compiled from *reported* crimes, leaving at least some degree of unknown offenders and victims. The gathered data in turn also included a number of cases where the gender of the offender and victim were not known and therefore excluded from the comparison.

Returning to the main question: what can be concluded about the effect of media on the gender perceptions and morality towards violence of the viewers?

While these results show that there are clear similarities to the complete violent landscape of real life discernible, such as the amount of firearm related violence and the ratio of violence between the genders, the truth is that a person will only come into contact with a very minimal amount of this violence in their daily lives. Perhaps the fortunate ones among us will never come into contact with any violence whatsoever. Media such as movies however, practically everyone watches. And as such, we are constantly confronted with this notion that males are much more frequently involved in violent crime and shape our view of violence as such. While it is true that movies as a whole are more violent than society as shown by the average of two violent incidents per movie, when looking at this from a stereotyping perspective, are the gender stereotypes of violence true? As far as we can tell, they are fairly accurate in the time period examined. The expectation was that the movies have a skewed, inaccurate world view, but the fact of the matter is that movies have been reinforcing a valid stereotype for at least 35 years. This makes the perceptions of violence and gender unlikely to change anytime soon and continuing the established trend.

When looking at both the situations from the perspective of type of violence used, the clear preference that men and women both have for the use of firearms for both lethal and non-lethal violence suggests a reinforcement of the cultural norm that violence with a firearm is “the way to do it”.

Without going into the discussion of the validity or not of concepts such as Cultivation Theory and Social Cognitive Theory, there is undoubtedly some form of shaping of world view involved in the consumption of media such as in this movies. This explains in part the example given in the introduction: the increased traumatization of emergency personnel in the case of a female terrorist compared to a male terrorist (Bloom, 2011). No doubt there are other latent effects of this stereotype reinforcing as well, for example regarding criminal investigation, criminal jury rulings and sentencing. As a theoretical example, increased media consumption (and this further reinforcement of the gender stereotypes) amongst the jury members could lead to harsher sentencing for men, as they are perceived to be more violent. Even if it is true in real life, it is the media and our own personal experiences that shapes this image, not statistics.

If the status quo in the movies were to suddenly drastically change, for example to a 50% violence rate for women, this could also have profound effects in the opposite direction. Perhaps this would lead to true societal gender equality – not only professionally, but also morally with regards to violence. Where it is no longer more shocking when a woman commits a crime than if it were a man, but simply shocking that there was a victim. Regardless of gender.

Discussion of method and limitations

This research took an innovative approach towards content analysis of movies: using the power of the collective minds of movie enthusiasts and the crowdsourcing concept to in principle let other people watch the movies for the researchers. The question was if such information was of value for scientific research compared to a more traditional movie content analysis methods. There are clear advantages to using texts compared to the actual medium film: the time, number of coders, and financial investment required is significantly lower. There are also possibilities for use of automatic content analysis packages for even more efficient analysis.

This study discovered that the use of synopsis texts of movies is a very effective tool for content analysis of violence. Due to the book summary nature of the texts, all important plot-related violent acts are described and codable. On top of that, due to the peer review nature of crowdsourced text the overall quality of writing, grammar and spelling is surprisingly high and usable.

Crowdsourced movie information is a new and upcoming field of research, which will become more and more interesting as time goes on: the number of available synopsis texts for each year grows greatly with time. As such, larger and larger sample sizes will become available – while an analysis of all the movies in a certain time period will become more and more difficult as the number of titles grows, the analysis of text is a much more constant and manageable time investment.

The caveats of the method and the corpus are that not all information is available in text form; due to the summarizing nature of a synopsis, the length of the texts varies a lot. Other information which would be very interesting to research such as the appearance, age or race of the characters simply is not available in the context of such texts. If highly detailed information is required, an old fashioned film content analysis would be a more suitable choice.

Another limitation of the corpus is the sometimes generalized description of the offender and victims. The researcher has to remain completely free of gender stereotyping in such an analysis – it is an easy pitfall to assume “the police”, “the bank robbers” or “the store clerk” as being male or female. It is important to code these incidents as gender neutral/unknown in order to not skew the data. However, the inclusion of the group of unknowns may or may not alter the relation between the genders.

For a similar study, examining the entire available synopsis library would be interesting – in this case the focus was on the movie genres which were most likely to contain violent content, but as such many usable texts were excluded. This also opens up opportunities for further exploration of the similarities and differences between the media reality and the real world. The standardized nature of crowdsourced information also allows future research to be conducted through automated content analysis software frequently used for newspaper- and website analysis, which further enhances the efficiency of the method. By using a cohesive word and concept dictionary the human manual coding aspect could be eliminated entirely, allowing for large-scale samples to be analyzed through computer processing. The included coding scheme could serve as a baseline for this dictionary.

Findings

Despite the expectation that the media reality would display a highly skewed depiction of the relation between gender and violence, this study found that compared to the real life statistics the movies give an accurate portrayal of the ratio between male and female offenders and victims of violent crime. Males are four times as likely to be the person offending and victimized. The weapon use of offenders in violent crime is also very similar to in real life, heavily favoring firearms and to a lesser degree bladed weapons for both men and women. With regards to the method used, this study finds that content analysis using crowdsourced information is a worthwhile field to be explored for further research.

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Appendix A

Coding Scheme (with % used in corpus)

Blade assault¹: for example *knives, shards of glass, sharp sticks and spears, scalpels, swords*
(8,4% of total)

Severe	Blade assaults are always severe if not specifically mentioned as lethal in the text or the location of injury – for example: “he gets stabbed in the arm” is coded as a severe injury.
Severe 1+	For sentences in the plural – e.g. “He stabs them both”
Lethal	Used when the lethality of the attack is mentioned in the sentence, for example “He stabs him, killing him instantly” or “he slits his throat”
Lethal 1+	For sentences in the plural – e.g. “He stabs them both to death”
Unknown severity	Injuries of unknown severity is used when the sentence is vague in the details and only provides the act itself and not the nature of the injury – e.g. “he stabs him.”

¹: *this type of violence is never considered light (always severe or worse) due to the nature of the injuries*

Chemical assault: *for attacks with chemicals such as acid, flammable substances such as gasoline, pepperspray, toxins, medications such as tranquilizers.*
(2,0% of total)

Light	Light attacks, such as with sleep pills, pepperspray
Severe	Severe attacks, such as attacks causing chemical burns, toxins which cause hospitalization
Lethal	Deadly attacks, for example gasoline and a match, making someone drink deadly poison or chemicals

Environmental assault: *for attacks using environmental hazards such as gravity (high places), water (drowning), moving neutral vehicles such as trains and buses, plane propellers, high stairs, open fire*
(3,7% of total)

Light	Light attacks such as pushing someone over, burning them slightly on a hot frying pan, throwing in a pool
Severe	Serious attacks, such as attempted drowning, throwing out of a fast-moving car, burning with a pot of hot coffee.
Lethal	Attacks where lethality is mentioned in the sentence or when lethality can be assumed, such as thrown off a skyscraper, thrown in front of a train, drowned in a pool, locked in an inferno

Explosive assault: *attacks with explosives, rockets, bombs, exploding fuel pumps etcetera*
(2,0% of total)

Severe	Explosive assaults are always severe unless mentioned to be lethal
Lethal	Explosive assaults which are described as lethal (e.g. “the bomb kills them”)

Forced drug use: *Injecting someone with harddrugs against their will.*
(0,1% of total)

Gun assault: for attacks with firearms regardless of time period e.g.:
muskets, handguns, machine guns, shotguns.
(39,5% of total)

Miss	For attempted attacks, gunfire which is attempted murder but the shot misses
Severe	All gunshot wounds which are not specifically mentioned as lethal are considered severe. E.g. "he gets shot in the arm", "he gets shot in the gut" (but character continues to act later)
Severe 1+	For sentences in the plural – e.g. "He shoots them both"
Lethal	Used when the lethality of the attack is mentioned in the sentence, for example "He shoots him, killing him instantly" or "he shoots him in the head" or "he executes him"
Lethal 1+	For sentences in the plural – e.g. "He shoots them both in the head"

Physical assault: all bodily harm inflicted with *bodyparts and hand-to-hand weapons such as clubs, sticks, hammers, maces. Also improvised weapons such as (car) doors, vases and chairs*
(24,8% of total)

Unknown severity	Injuries of unknown severity is used when the sentence is vague in the details and only provides the act itself and not the nature of the injury – e.g. "he beats him."
Light	Light injuries are described as such, e.g. a open handed slap, a single punch, a kick in the shin
Severe	Serious attacks, such as repeated beating, assault leading to hospitalization, attacks with weapons, attacks which cause bloody injuries
Severe 1+	Used for serious attacks where a person or persons attack multiple victims. E.g. "they repeatedly beat them both"
Lethal	Attacks where lethality is mentioned in the sentence or when lethality can be assumed, such as "beats him to death with a hammer"
Lethal 1+	For sentences in the plural – e.g. "He beats them both to death"

Projectile assault: for assault with projectiles that are not fired from a gun specifically: *such as darts, boomerangs, arrows, crossbow bolts, improvised projectiles such as rocks, glasses, statues.*
(1,5% of total)

Light	A non-serious projectile, such as a ball, small rock, glass
Severe	Severe injuries caused by projectiles, such as arrows to the leg, rocks to the head
Lethal	Attacks where lethality is mentioned in the sentence or when lethality can be assumed, such as arrows to the neck, lethal rock throws

Rope assault (deadly): for assaults with ropes, garrotte wires, barbed wire and other strangulation attacks with lethal consequences.
(1,2% of total)

Sexual assault (severe): for assault such as rape and attempted rape
(1,5% of total)

Unknown assault: for all assaults where the sentence *is too vague to deduce specifics*.
(13,5% of total)

Severe	When the (non-lethal) nature of the injury is known but the cause is not, use severe unknown assault. E.g. "he attacks him and wounds him"
Lethal	When the (lethal) nature of the injury is known but the cause is not, use lethal unknown assault. E.g. "he kills him"
Lethal 1+	For sentences with more than one victim of unknown cause.

Vehicular assault: for assaults with vehicles, most commonly cars, buses, boats etcetera where one of the attackers is driving the vehicle. If neutral vehicle, use environmental assault instead.
(1,7% of total)

Severe	Severe vehicle impacts, which are mentioned as non-lethal.
Lethal	Lethal impacts, where lethality is mentioned in the sentence.
Lethal 1+	Impacts which cause more than one victim.

Gender designation

Perpetrator attacks Victim

<i>Single Female</i>	<i>Single Male</i>	<i>Single Unknown</i>
Female attacks Female 1+	Male attacks Female 1+	Unknown attacks Female 1+
Female attacks Females 1+	Male attacks Females 1+	Unknown attacks Females 1+
Female attacks Male	Male attacks Male	Unknown attacks Male
Female attacks Males 1+	Male attacks Males 1+	Unknown attacks Males 1+
Female attacks Unknown	Male attacks Unknown	Unknown attacks Unknown
Female attacks Unknowns 1+	Male attacks Unknowns 1+	Unknown attacks Unknowns 1+
<i>Multiple Females</i>	<i>Multiple Males</i>	<i>Multiple Unknowns</i>
Females 1+ attack Male	Males 1+ attack Male	Unknowns 1+ attack Male
Females 1+ attack Female	Males 1+ attack Female	Unknowns 1+ attack Female
Females 1+ attack Males 1+	Males 1+ attack Males 1+	Unknowns 1+ attack Males 1+
Females 1+ attack Females 1+	Males 1+ attack Females 1+	Unknowns 1+ attack Females 1+
Females 1+ attack Unknown	Males 1+ attack Unknown	Unknowns 1+ attack Unknown
Females 1+ attack Unknowns 1+	Males 1+ attack Unknowns 1+	Unknowns 1+ attack Unknowns 1+