

## The Cybercrime Morphing Hazard for a Life of Women and Children-The Case Study

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### Abstract

The objective of this case study is to develop a better understanding of the reasons for the rising cyber-crime morphing against women, analyze them from technical, legal and social perspective and suggest possible ways to prevent it. This study based on the case of Udaipur city of Rajasthan state, taken from the newspaper and website. Through this case, we know how morphing be done and the process of investigation of this crime, and provision for punishment by the law. Further we described the technical, legal and social issues supportive to increase this crime. We conclude that it is necessary to make preventive strategies to develop the awareness towards cyber technology security facilities and cyber-crime among women and children to avoid such crimes. In this article author compare the rates of increasing cybercrimes against women, Rajasthan in the last three years. At last, described the need of research in various field in the area of cyber-crimes.

**Keywords:** Cybercrimes against women, morphing, awareness, cyber technology security, I.T. Act 2000 and IPC 1860

### Introduction

The fusion of the Internet, digital devices and Information Communication technologies together are supportive for all over growth of individual, society, country and the nations by the sharing knowledge and information within neon-seconds in simple, easy, effortless, and economically, but it has full of tremendous confronts. Fundamental rights of freedom of speech and expression and no geographical boundary on Internet endorse and promote offences on the cyber space, globally. It develops itself as a source of information to offers opportunities to the cyber-crimes and criminals in the community and also increases the rates of cyber-crimes, therefore it is said that the continuous sources offers by the Internet are faulty.

Clearly mentioned in Indian constitution that every crimes must be reported and any women who has faced voidance of any form should get justice, but so many cases crimes against women has been un-

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reported because of fear of disgrace of victim and her family. Cybercrimes are termites in the society which is hollow us and our society out from inside. Sometimes as a society, we support the view of blaming the victim for her actions in order to trivialize sexual assault, making images of the victim flawed.

Gender discrimination by society is play important role to increase this type of crimes. Female child is raised with the thought of being polite and dutiful, whereas men and boys are raised with independence and preference thinking as compared to the opposite sex, and children accept, imitate their parents behavior, which obviously affects their mindset. When a family will not respect its own girl or woman, how will the next generation respect her?<sup>3</sup>

Morphing is one of the cyber-crime, where women and children are becoming victims by an individual or group of persons for their entertainment, or economic gain. It is nasty manner. In this metamorphosis technique, one graphical object is progressively transformed into another object, such as: A cat face can be transform into a girl face. This paper analyze the morphing cyber-crime on the technical, social and legal perspective in the respect of women and children by the case study with discuss the morphing technique how to manipulate a human face image.

The use of photos or images as fun or fulfillment of someone desire becomes serious issue when it tarnish image or spoil character of someone. Using fraudulent IDs is becoming an important social problem. 63% of people don't know where to lodge complaints on cyber-crimes<sup>4</sup>.

Origin of Morphing: The Greek word Morphing is the combination of Latin language two words, Meta<sup>5</sup>word comes from Greek prefix and preposition which means "beyond" or "change" whereas Morph+Osis ((biology) means many forms changes from during development<sup>6</sup>. Metamorphosis means transformation, (pathology) A change in the structure of a specific body tissue<sup>7</sup>. so it describes as many forms or shape or one form or shape can be change or transforming into more than two form or shape. Image or photo will become the sensitive or important information which have some sensitive contain, like identification of image or photo owner sharer, morph of two photos. Morphing is the image processing technique, used for metamorphosis is specify the transforms one image into another image.

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<sup>3</sup> Ann Mary Thomas, et. al, (2020), A Mathematical Modelling of Crimes Against Women in Rajasthan, International Journal of Recent Technology and Engineering (IJRTE), ISSN: 2277-3878, Volume-8 Issue-6S, March 2020, Retrieval Number: F10350386S20/2020©BEIESP, DOI:10.35940/ijrte.F1035.0386S20, Published By Blue Eyes Intelligence Engineering & Sciences Publication

<sup>4</sup>Staff report, The Hindu, cyber-crimes against women on the rise, <https://www.thehindu.com/news/national/andhra-pradesh/cyber-crimes-against-women-on-the-rise/article32399536.ece>

<sup>5</sup>Dictionary.com, <https://www.dictionary.com/browse/meta>

<sup>6</sup>Wikidiff.com, <https://wikidiff.com/morphosis/metamorphosis>

<sup>7</sup>Metamorphosis, Dictionary.com, <https://www.dictionary.com/browse/metamorphosis>

In today's high-tech era, image morphing has become a big entertainment in the society all over the world. One can easily transform the image as per their wish by giving and transitioning the effect of image or photo motion by morph techniques like 3D, computer animation, etc. By the process of morphing anyone can copy of an original image or picture then it can be change alter into another image smoothly by slight moves. Such as, in face morphing, combining facial images of different individuals creates images digitally by changes in position, rotation, size and color. Interesting fact is that in self-morphing individual cannot recognize image of themselves, this magical look stunning.

### **LITERATURE REVIEW**

Time for a change of attitude towards women is the article by Dr G Krishna (2017). This is the article is the published in the Health colume of Sci-Tech news of The Hindu Newspaper.

Quoting the Global Gender Gap Index 2012, author Krishna Clinical Psychologist highlights the status of women in the current society where it is worrying to hear about rape, murder and suicide in our country. The World Economic Forum also found in 135 countries the India's ranks 105th.

Author said, In India, gender equality has its roots in discrimination against women in social norms, which manifests in women's perceptions and attitudes towards male dominance and controlling behavior. As proof, the author presents the social theory of learning that women adopt and accept male dominance in their lives through learned social behavior, which they learned from childhood through their mothers and other older women in the household by watching. Girls are supposed to play with dolls.

Author said Bad attitude towards women requires to deep rooted changes in the social attitude and education system. The author said that transformation in the way women are perceived can possible by the unbiased, non-stereotypical perception of parenthood.

Women's protection in India requires a mindset revolution, article by Poornima Advani (2020). It is the part of views, opinion of mint newspaper, There is an article written regarding the demonstration of women after the death of the rape victim in New Delhi.

Author highlights the attitude of medical staff, police and family members towards the victim (female) and emphasizing the need to bring about fundamental changes in the system to make investigation more scientific, increase accountability of government officials and increase general sensitivity on gender issue.

### **Methodology**

Case study is a systematic, intensive, qualitative method of research methodology. In this case study mentioned more than one cases for a more in-depth understanding of the cases that makes this article stronger and more reliable. In this study cases are taken from secondary data: newspaper, magazines, Journal Articles, books and conference papers, etc. Original cases data are taken from Rajasthan state news papers.

This Study Provide techno-socio-legal knowledge and insight about morphing cybercrime and after analysis of cases author suggested some recommendations.

#### **3.1 Participants Case Study**

Case 1 Rajasthan: WhatsApp group member shares morphed photo of woman, court convicts admin . The accused in this case was a member of a WhatsApp group that was spreading an obscenely edited

photo of a woman in a 125-member WhatsApp group. The accused take out obscene photo from the Internet and then pasted the face of woman on it, then he shared this edited photo in the group, the photo becomes viral.

Case 2: 17-year-old was blackmailed with morphed naked photo, Rajasthan Police blames girl's upbringing. In this case 7- years old sister of victim received an anonymous direct message message had a photo on Instagram. Girl's face has been morphed faced on bare body with the terrific message that he would post this photo on face-book with tag. When she approached the cops to register her complaint, then cops blamed her upbringing for the sexual harassment of her sister. Then she Twitter to share her agony and tagged Maneka Gandhi for help and then immediate action was taken.

Case 3: The Morphs of photo of the teenager girl case was happened in Udaipur city of Rajasthan handled by the cyber cell, Rajasthan. In this case, an unknown person had sent to a teenage girl her morphed photo with face on her naked body with objectionable comments and asked to meet him, and also said otherwise he would make to be viral this photo.

This person had copied photo of teenager girl from her social media account. This written complaint was registered in the Dhanmandi police station by the parents of the terrified teenager girl. And then this case file was sent to the cyber police cell for the detailed investigation. This type of cases we read in the newspaper. This is happening, everywhere in the society, women are being abused through social media.

### **3.2 The Case Investigation Analysis on the Technical Perspective**

*Method to extract the photo from social media:* To extract or stole secure photo from social media by the Photo extractor like software applications are available in the market. Image tools like Placiet'slibrary, sketch, cloud-app, smush.it, social image reziser-tool, photovisi is collage maker software, over-app for androids, Aviary for mobile, etc.

*Method to edit the photo into pornography:* Photo editing software like Photoshop software used for merger different images called rendering the image, then give the shadow effects along with background texture to the photo for given the depth of the image that produced dark, after that they set the accurate proportion of the image and original look same as original photo.

Clipping path, image-making, photo-retouching, makeup artistic, etc. like a numerous features are available in the photo editing software use these features accused manipulate image or photo.

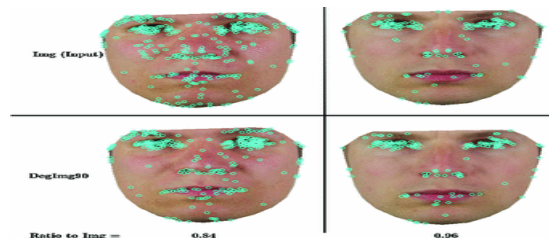
*Technologies using in image manipulation:* artificial intelligence, cloud adobe, machine learning, machine language. Accuse used advanced version of adobe photo editor for this purpose.

**Morphed face image can be identified by the consideration of two approaches:** An analysis of features vectors differences to get as of a pair of images along with a combination of resulting score including that obtained in the no-reference plot.



**Img.1 manually created face morphing forgery of two different persons, Source: Kramer, R.S.S., Mireku, M.O., Flack, T.R. et al. (2019) .**

An example of the images of the three faces depicts two individuals (left, right) and a morph created using these images (center). The individuals pictured have given permission for their images to be reproduced her, Detected FAST Corner Features Authentic Morphing



**Img.2: Example of detected FAST corner features for an authentic sample and a morphed sample for Img and DegImg90, Source: T. Neubert (2017)**

### **Computer Vision of Photo Technology used describes on the Levels**

Recognition, analyzing, of photo in morphing cases can be done using Artificial Intelligence's image recognition tools, combining open source databases, programming tools and deep learning technology to make it easy for anyone to read, recognize and understand photos easily, and for detects fine details, analysing the original image vectors, texture and color to recognize the object. Precise face land-marking and facial feature detection are important operations that have an impact on subsequent tasks foc-used on the face, such as coding, face recognition, expression and/or gesture comprehension, gaze detection, animation, and face tracking, etc.[Çeliktutan, O, et.al. 2013] The software Pixie detects is used to specify the face in the image and detect the basic facial formation on the face and index points related to parts of the face, chin, and to separate objects into different layers. Places and gives opacity to each object in images automatically and directly used to edit an image in a realistic way like photoshop, dlib for make his clear vision towards the image. The attacker stole a protected photo from the victim's social media account using an online photo extractor tool, machine-learning algorithms inspired the neural networks and brain waves, more artificial intelligence tools are using to recreate photo. They used web based version of software, psychomorph that uses open source Java library 'FaceMorphLib manipulates face and transforming that face into morph, It has several batch functions for processing large number of images automatically and create moving gifs of transforms.[DeBruine, Lisa, 2016] has shown young adult

composite faces as an example of morphing software developed for web applications, used to identify uploaded photos and to make effective 3-D morphing animation, displayed online. Give stunning effects of home video or film by Software Facemorpher LITE. .NET, C++, Delphi and Java apps for Win, Mac, Linux, iOS to detect facial features, user database uses face match to identify and authenticate hundreds of applications along with the webcam. The graphical editor automatically detects faces on images and videos in real time and finally the group administrator has the right to add or remove members from the WhatsApp group as well as upload pictures or photos and send or receive messages to the group. Combining tools and technologies such as software, artificial intelligence, Adobe Cloud, machine learning tools and speech recognition tools, the attacker uploads a victim image or photo.

### 3.3 Case analysis on Legal Perspective

*Digital Evidence on which accused found guilty and punished under the Law:* Audible and visible digital devices: CD's in which record of the day and time when the event happened, voice sample of accused, chip or memory card and other hard disk or additional disk or any other interface along with digital devices by which all these connect. IP address of Mobile on which message along image or photo was circulated on whatsapp group.

*Process to prove the crime and criminals:* CDR, CD, Police contact with internet identifiers: Domain Name, IP Address, Autonomous System Numbers, Trappe and Trace the IP address from ISP Internet Service Provider by the "tracert utility", figure-print, webcam photos, etc. crack and track the case police need IP Address and the details of log. Investigation of crime is based on above grounds and to find out the evidence and to prove the crime and criminal (s) investigators go through the digital legal process, during this process they use *block-chain technology and chain of custody*, etc. To Prove the cyber-crime by the digital evidence: Artificial intelligence based software and technology, cloud computing along with cloud forensic technology, machine learning technology, and machine language technology.

*Accused Found Guilty:* Stealing the image or photo, hacking whatsapp account, defamation of a woman, send objectionable comments, sexual harassment of woman, creates pornographic video, circulate porn video on whatsapp group,

**Punishment** through the I.T. Act 2000 & Its Amendments and IPC 1860[Chapter XI, Offences] : Under I.T. Act Section: 66(C), 66(D), 66(E), 67, and, Under The IPC 1860, Section 509, 292, and 420.

### 3.4 Case analysis on Social Perspective

Unemployment, lack of proper knowledge of sex, male dominated society, increasing use of new advent technologies and social networks but lack of knowledge of safe and proper use of technology and tools, cyber-crime and criminals and women's legal right against these crimes ignorance of women, women fear humiliation of themselves and their families in the society, are all social issues, which are helpful in increasing the rates of cyber-crimes in the society.

**Data Collection Instruments:** NCRB Report of Rajasthan State, TABLE 9A.10 Cyber Crimes against Women (State/UT-wise) - 2017, 2018, 2019

### Findings

The study brings out a clear vision of the increasing rates of cybercrime against women in Rajasthan every year.

Cyber Pornography crime rates have increased in 2019 as compared to 2017 and 2018

### Discussion and Conclusion

TABLE 1 A.2 (i)Sec. 509 IPC-2019, 2020 <sup>8</sup> IVR

Total	No. of I	No. of V	No. of R
2019	40887	40989	108.6
2020	34207	34426	89.6

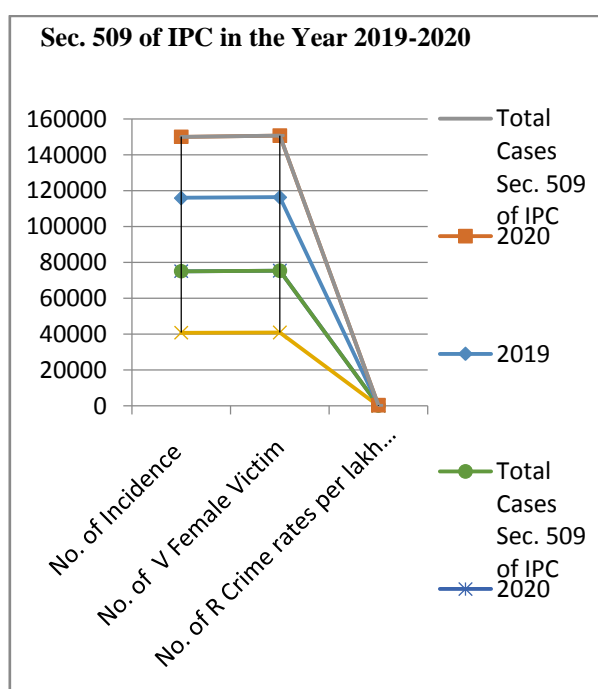


Figure 1: Based on Data of Table 1

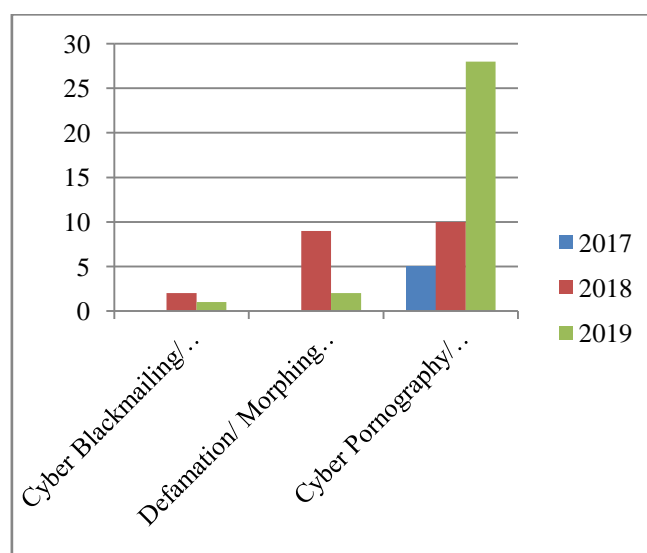
<sup>8</sup>NCRB Record 2019, Crime Head-wise & State/UT-wise-2019,

[https://ncrb.gov.in/sites/default/files/crime\\_in\\_india\\_table\\_additional\\_table\\_chapter\\_reports/Table%203A.2\\_2.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/Table%203A.2_2.pdf)

**TABLE 2 A.10 Cyber Crimes against Women, Rajasthan (State/UT-wise) – 2017, 2018, 2019<sup>9</sup>**

Year	Cyber Blackmailing/Threatening (Sec.506, 503, 384 IPC r/w IT Act)	Defamation/ Morphing (Sec.469 IPC r/w IPC and Indecent Representation of Women (P)Act)	CyberPornography/Hosting/ Publishing Obscene Sexual Materials (Sec.67A/67B (Girl Child) of IT Act r/w other IPC/SLL)
2017	0	0	5
2018	2	9	10
2019	2	2	28

Sec.506, 503, 384 IPC, Sec. 469 IPC and Sec.67A/67B (Girl Child) of IT Act



**Figure 2: Based on Data of Table 2**

The NCRB Cyber Crime against Women Table 9A.10 records shown by the author in Table 1 and Chart 1 of this article clearly shows that cyber pornography rates have increased in 2019 as

<sup>9</sup>TABLE 9A.10 Cyber Crimes against Women (State/UT-wise)-2017,2018,2019 TABLE 9A.10

Cyber Crimes against Women (State/UT-wise) - 2017 TABLE, [https://ncrb.gov.in/files/Table\\_9A.10\\_1.pdf](https://ncrb.gov.in/files/Table_9A.10_1.pdf), Cyber Crimes against Women (State/UT-wise) - 2018 TABLE ...[https://ncrb.gov.in/files/Table\\_9A.10\\_1.pdf](https://ncrb.gov.in/files/Table_9A.10_1.pdf), Cyber Crimes against Women (State/UT-wise) - 2019 TABLE ...[https://ncrb.gov.in/files/Table\\_9A.10\\_1.pdf](https://ncrb.gov.in/files/Table_9A.10_1.pdf), [https://ncrb.gov.in/sites/default/files/crime\\_in\\_india\\_table\\_additional\\_table\\_chapter\\_reports/Table%209A.10.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/Table%209A.10.pdf),



compared to 2017 and 2018 and also shown that the rates of cybercrimes against women are increases in every year. To prove the crime and criminals is a very tricky because the advanced technology which are using in investigation process is also used by criminals and criminals are smarter as they knows the weakness of evidence law of India. Women of state of Rajasthan are not much more aware about the safe and secure technologies which they are using, their legal rights because of male dominating societal structure. Women are afraid of talking and complaining against the crime and criminal because of being convicted by the society. Unemployment more and more, aspire to get rich easily and quickly, jealousy, fun and enjoyment is also one of the reason behind the increasing rates of crimes.

Digital technologies are very sharp to catch the crime scene and criminals, but complicated structure of social network, mastermind criminals and male dominating societal structure, social insecurity of women and there is no specific cyber laws for women, complicated rules to prove the crime and criminals, lack of proper skilled, trained officials, are some of the causes plays a major role to increases these crimes.

### Suggestions

1. There is need to do more and more research in the area of Information technologies, law, psychology, economics, and societal, etc., in the context of cyber-crimes against the women and children, so cyber space make more safe and secure for the women and children.
2. Advanced more secure features should be essentially insert in the digital devices and social app and it should be highlighted.
3. Prevention is better than cure. Internet users especially women and children should not share their personal photos and personal images, which are more likely to be victim.
4. Always maintain the privacy limit in your social networking sites or app setting on your photos and images.
5. If they become victim of cyber-crime, then they should immediately report it to the cyber cell or cyber police-station nearby and ask them for immediate action.
6. There is a need for more clear and specific cyber laws to provide protection of women and children in the cyberspace.
7. Take effective action immediately.

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[able%203A.2\\_2.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/T)
14. I = Incident, V = Female Victim, R = Crime rates per lakh population TABLE 9A.10 Cyber Crimes against Women (State/UT-wise)-2017,2018,2019 TABLE 9A.10 Cyber Crimes against Women (State/UT-wise) - 2017 TABLE, [https://ncrb.gov.in › files › Table 9A.10\\_1.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/Table%209A.10_1.pdf), Cyber Crimes against Women (State/UT-wise) - 2018 TABLE ...[https://ncrb.gov.in › files › Table 9A.10\\_1.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/Table%209A.10_1.pdf), Cyber Crimes against Women (State/UT-wise) - 2019 TABLE ...[https://ncrb.gov.in › files › Table 9A.10\\_1.pdf](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/T) , [https://ncrb.gov.in/sites/default/files/crime\\_in\\_india\\_table\\_additional\\_table\\_chapter\\_reports/T](https://ncrb.gov.in/sites/default/files/crime_in_india_table_additional_table_chapter_reports/T)  
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