

# Honors 177

## Invisible Faces

Maria I Aguilar Rocha  
Political Science

# ABSTRACT

Through the implementation and use of the most innovative technology in the Meta Materials realm of science, all human beings in the planet will be submitted to the affects of the revolutionizing optical-camouflage technology. They will be forced to permanently wear an invisibility device that will make their faces invisible. The purpose of this international implementation of the “Invisible cloak” is to, once and for all, put an end to stigmatization, discrimination, prejudgments, racism, hatred, violence, and all of those problems that result from human perceived inequality. It will educate the world on the importance of mutual acceptance, tolerance, and appreciation of one’s true inner virtues.

# CONCEPT/TOPIC

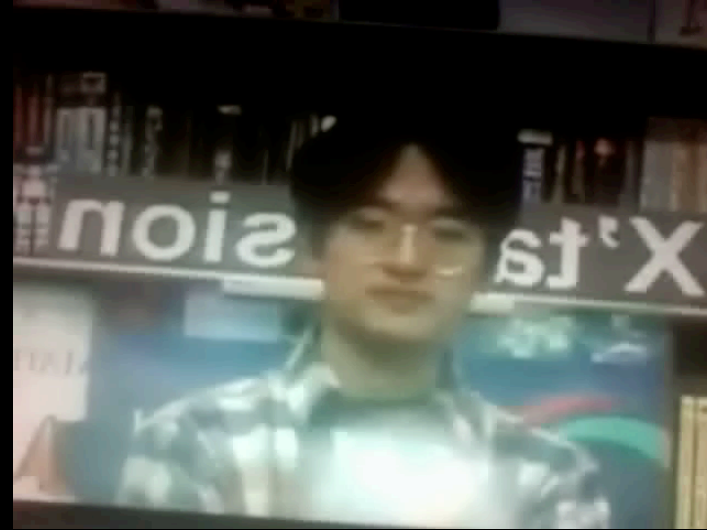
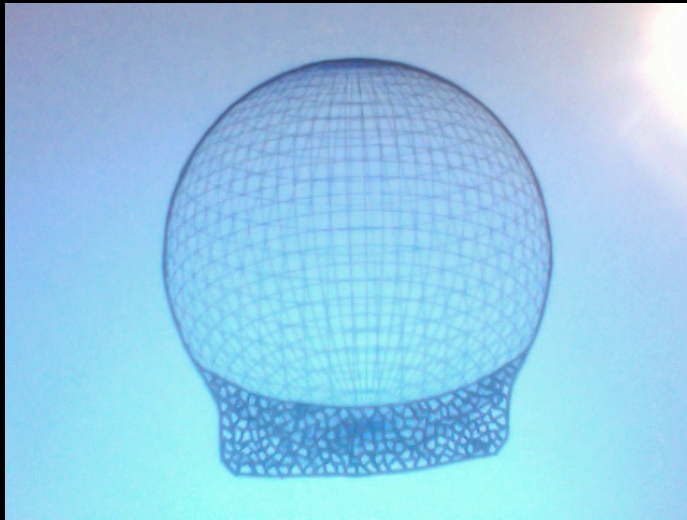
I am particularly interested in the integration of Meta Materials, specifically the “Invisibility cloak,” in today’s world, as a mechanisms that can help alleviate the social problems that currently prevail. Meta Materials are artificial structures that display properties beyond those available in naturally occurring materials.<sup>1</sup> The “Invisibility cloak” is made out of Meta Materials composed of a man-made matrix of tiny metal wires and loops that control electromagnetic waves and can create an area in space where no electromagnetic waves propagate.<sup>2</sup> The result of this is a lack of disturbance to the electromagnetic field which allows for invisibility by reducing reflection from the object and reducing the shadow that you would expect to see from electromagnetic waves.<sup>3</sup>

# CONTEXT & PRECEDENTS



- The recent and persisting Genocide in Darfur between African and Arab tribes reminds us that continued hatred, perceived inequality and inferiority due to issues of "race" and ethnicity continue to exist. The continuing femicide in Mexico's city of Juarez brings to light the distinctions that prevail between genders and the devastating consequence of such differentiations. Throughout the world, prejudices, discrimination, and stigmatization based on people's perception of one another are all created by that image that remains in our head; that facial image of the one different from us which makes him/her an unequal.
- In Thailand, an art project was developed to help Thai children overcome the stigma of HIV. They hid behind masks to represent the hurtful loss of their identity in the eyes of others and themselves. The project was entitled "Who am I? Why am I Here?"<sup>4</sup>

# PROJECT PROPOSAL



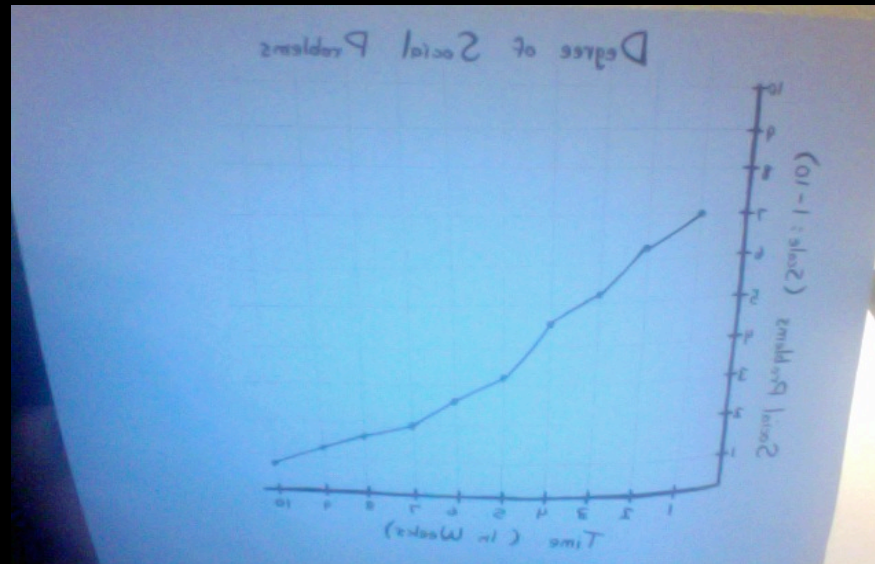
- An adjustable facial cover in spherical shape with an opening on the bottom for which to insert one's head will be constructed using the most innovative technology of today. Using the "Invisibility cloak," a technological innovation in the engineering realm of science known as Meta Materials, the creation of the invisible face device will be possible. The invisibility face device will be constructed from an arrangement of copper lines on fiberglass sheets which will give it the electromagnetic properties that are necessary for invisibility.<sup>3</sup> Through an arrangement of microscopic elements, the electromagnetic field will not be significantly disrupted, and the electromagnetic waves will bend and appear on the other side of the device as if there was nothing there. The result will be the creation of a space which lacks reflection or shadowing and that produces sustained invisibility.<sup>3</sup>

# PROJECT PROPOSAL (cont.)



- An international law will be passed whereby every human being will be required to wear an invisibility face device. Having no other alternative, and seeking to establish an optimal good for society, the proposed “Invisible faces” project is thought to put an end to centuries of ethnic discrimination, racism, inequalities between genders, stigmatization, and all of those pertinent social problems. Therefore, it will be mandatory for the old, the young, and newborns to put on this irremovable device which will remain with them for life. The local government will provide every individual with this new technology and ensure that everyone is complying with the passed legislation. Those who refuse to comply, will be arrested and an invisibility face device will be fitted on them before they are set free.

# PROJECT PROPOSAL (cont.)



- After the use of the invisible face device is satisfactorily enforced, the local governments will be responsible for inspecting the population in their boundaries. They will put out monthly reports delineating the behavior they observe. The results will show a steady decrease in all social problems including acts of discrimination, stigmatization, racism, and gender inequality. These reports will inform the public of the progress being made, and facilitate the acceptance of such instituted measures. Human beings will learn that the implementation of this device is for the greatest good, and they will benefit from the feeling of acceptance, tolerance, and respect for one another which will prevail.

# CONCLUSION

Discrimination, stigmatization, racism, and gender inequality are all social problems that continue to exist in our societies today. The consequences of such maladies have ranged from violent wars to bloody genocides. This project is meant to promote awareness to the human population of the devastating consequences that their unjust actions and decisions have led to. It is meant to make the world populations, in its totality, realize that the only way to overcome the inequality that exists in society is through acceptance, toleration, and respect of one another. Seeing that such goals have been impossible to reach, the only alternative is to create a world of faceless beings, where all these social issues have no place. Without faces, we cannot develop prejudices, discriminate, or stigmatize, because we will never know the identity of the one before us.



# REFERENCES

- 1 “What are Electromagnetic Metamaterials?” Duke University: The Research Group of David R. Smith. <[http://people.ee.duke.edu/~drsmith/about\\_metamaterials.html](http://people.ee.duke.edu/~drsmith/about_metamaterials.html)>
- 2 Zyga, Lisa. “Scientists interpret physics behind invisibility cloaks” Physorg. 2007-08-22. <<http://www.physorg.com/news107011336.html>>
- 3 “Duke University's Invisibility Cloak” How Stuff Works. 2007-06. <<http://science.howstuffworks.com/invisibility-cloak.htm>>
- 4 Rodraksa, Natthinee. “Art Project Helps Thai Children Heal Scars of HIV Stigma” UNICEF. 2006-06-02. <[http://www.unicef.org/infobycountry/Thailand\\_34338.html](http://www.unicef.org/infobycountry/Thailand_34338.html)>

# BIBLIOGRAPHY/LINKS

"Amigos de las Mujeres de Juarez" Amigos de Mujeres. 2008-05-07. <<http://www.amigosdemujeres.org/>>

"Battant. No Head" Killthedj. 2009. <[www.shopkillthedj.com/images/battantfaceweb.jpg](http://www.shopkillthedj.com/images/battantfaceweb.jpg)>

Bland, Eric. "Invisibility Cloak Closer Than Ever to Reality" Discovery Channel. 2009-01-15. <<http://dsc.discovery.com/news/2009/01/15/invisibility-cloak.html>>

Chen, Hongsheng, Wu, Bae-Ian, Zhang, Baile, and Kong, Jin Au. "Electromagnetic Wave Interactions with a Metamaterial Cloak." Physical Review Letters 99, 063903. 2007.

"Duke University's Invisibility Cloak" How Stuff Works. 2007-06. <<http://science.howstuffworks.com/invisibility-cloak.htm>>

F. Zolla, S. Guenneau, A. Nicolet, and J. B. Pendry, "Electromagnetic analysis of cylindrical invisibility cloaks and the mirage effect," Opt. Lett. 32, 1069-1071. 2007.

"Genocide in Sudan" United Human Rights Council. <[http://www.unitedhumanrights.org/sudan\\_genocide\\_genocide\\_in\\_sudan.php](http://www.unitedhumanrights.org/sudan_genocide_genocide_in_sudan.php)>

Handwerk, Brian. "Invisibility-Cloak Materials Bend Light 'Backward'" National Geographic. 2008-08-12. <<http://news.nationalgeographic.com/news/2008/08/080812-invisibility-cloak.html>>

Harris, William. "How Invisibility Cloaks Work" How Stuff Works. 2007. <<http://science.howstuffworks.com/invisibility-cloak.htm>>

Hernandez, Dr. Reyna; Dr. Juan. "Las Mujeres de Juarez" Geocities. 2002-04-03. <<http://www.geocities.com/pornuestrashijas/doc2.html>>

Lott, Bernice; Maluso, Diane. The Social Psychology of Interpersonal Discrimination. The Guilford Press: 1995.

Major, Brenda; O'Brien, Laurie T. "The Social Psychology of Stigma" Annual Reviews: A Nonprofit Scientific Publisher. 2004-09-14. <<http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.psych.56.091103.070137>>

Nelson, T.D. The Psychology of Prejudice. Boston: Allyn & Bacon. 2002. "Optical Camouflage (Invisible Cloak)" Youtube. 2006-09-09. <<http://www.youtube.com/watch?v=JKPVQal851U>>

Prunier, Gerard. Darfur: The Ambiguous Genocide. Cornell University Press: 2005.

Rodraksa, Natthinee. "Art Project Helps Thai Children Heal Scars of HIV Stigma" UNICEF. 2006-06-02. <[http://www.unicef.org/infobycountry/Thailand\\_34338.html](http://www.unicef.org/infobycountry/Thailand_34338.html)>

Schurig, D. et al. "Metamaterial Electromagnetic Cloak at Microwave Frequencies" Science. 2006-10-19.

"Scientists one more step closer to realizing invisible technology" Physorg. University of Liverpool, 2007-05-09. <<http://www.physorg.com/news97945163.html>>

"What are Electromagnetic Metamaterials?" Duke University: The Research Group of David R. Smith. <[http://people.ee.duke.edu/~drsmith/about\\_metamaterials.html](http://people.ee.duke.edu/~drsmith/about_metamaterials.html)>

Zyga, Lisa. "Scientists interpret physics behind invisibility cloaks" Physorg. 2007-08-22. <<http://www.physorg.com/news107011336.html>>