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# Identity Dynamics, Needs, and Social Influences on Human Effects of Flashbang Grenades

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Monterey, California: Naval Postgraduate School

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## NPS NRP Executive Summary

Identity Dynamics, Needs, and Social Influences on Human Effects of Flashbang Grenades

Period of Performance: 01/15/2021 – 09/11/2021

Report Date: 09/10/2021 | Project Number: NPS-21-M226-A

Naval Postgraduate School, School of International Graduate Studies (SIGS)



NAVAL RESEARCH PROGRAM

NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

# IDENTITY DYNAMICS, NEEDS, AND SOCIAL INFLUENCES ON HUMAN EFFECTS OF FLASHBANG GRENADES

## EXECUTIVE SUMMARY

**Principal Investigator (PI):** Dr. Anne Marie Baylouny, Graduate School of International and Defense Studies (GSIDS), National Security Affairs and Dr. Susan K. Aros, Graduate School of Defense Management (GSDM), Operations Management

**Additional Researcher(s):** Dr. Mollie McGuire, Graduate School of Operational and Information Sciences (GSOIS), Information Sciences; Mr. Chris Keptonglard, Faculty Associate-Research, GSIDS, National Security Affairs

**Student Participation:** No students participated in this research project.

### Prepared for:

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Topic Sponsor Organization(s): Joint Intermediate Force Capabilities Office (JIFCO)

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### Project Summary

This project investigated the psychological, physiological, and social effects of the use of flashbang grenades (FBG) for less-lethal crowd control and other intermediate force purposes. Our objective was to determine the specific elements that make FBGs effective, when they are less effective, and to develop a conceptual FBG effects model that includes such effects. The conceptual model would then feed our computer simulation model under development, called Workbench for refining Rules of Engagement against Crowd Hostiles (WRENCH). We examined the psychological dynamics of FBGs, reviewed documented physiological literature, extrapolated social psychology effects, and examined case studies of use in crowds including videos. We concluded that more research on case studies of FBG use in crowds is needed. The physiological and experimental data on effects is inconclusive and limited to individuals, without considering group dynamics, context, experience, expectations and perspectives of security forces. All these factors are necessary to adequately predict or model a crowd's behavior.

**Keywords:** *crowds, non-lethal weapons, flashbang grenades, social identity, less-lethal weapons, intermediate capabilities, stress, stun weapons, non-lethal weapons, WRENCH, Workbench for refining Rules of Engagement against Crowd Hostiles, simulation, social identity*

### Background

Under Joint Intermediate Force Capabilities Office (JIFCO) funding, the Naval Postgraduate School has developed the WRENCH Simulator: a complex agent-based simulation modeling environment that enables commanders to explore the effects of different non-lethal-weapon rules-of-engagement for encounters with non-combatant crowds in different scenarios. WRENCH incorporates social modeling, identity dynamics, and needs modeling into an operational scenario where security forces interact with populations to manage the operational scenario. The primary objective of this project is to investigate the psychological, physiological, and social effects of the use of flashbang grenades (FBG) for less-lethal crowd control and other less-lethal purposes and to develop a conceptual FBG effects model that includes such effects.

FBG has not been studied with identity and social variables. Such variables can alter the reactions of individuals and crowds, including past and present experiences of deprivation, amount and type of social organization, evaluations of risk and existing levels of tolerance for violence and shock, for example. These differences need to be researched and understood to advise on the circumstances in which FBG should be used to achieve the intended result, either crowd dispersal or a decline in adversarial actions against security forces.

The cognitive and psychological effects on behavior of FBG are crucial in recommending their use, which is central to the sponsor's mission, since less-lethal weapons are intended to alter behavior. Crowds are diverse in their composition, quite possibly resulting in different responses to a variety of less-lethal weapons, particularly FBG.



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Studying the social variables in the use of less-lethal weapons is necessarily complex. To date, the numerous experiments examining stun weapons and the stress effects that follow have focused on the individual and his/her reaction to an FBG. Experiments have not considered the effects, from short- to long-term, of the use of these weapons on the smaller groups that make up crowds. The effects on social identities over the long term have not been analyzed, for example the effect on memory and future use. Do groups become accustomed to the use of FBGs and therefore these weapons lose their effectiveness? Do the weapons agitate more than disperse a crowd through their effects on people nearby the individual targeted?

For this study we examined extant literature on the human response to FBGs, the social identity literature for reactions to such weapons, and analyzed a broad sample of footage from crowds subjected to FBGs. This provided us with the mechanism and theorized physiological effects and human reactions from psychology, sociology, and case studies around the world.

### Findings and Conclusions

We sought to determine if FBG use translated into dispersal of the crowd or, at a minimum, a decrease in adversarial behavior. Our results confirm stress findings of physiological effects but question the translation of those effects into human actions that are effective for crowd control under all circumstances. Possible reactions include flight, fight, or freeze. Stress can cause all of these in an individual. Experiments have shown that FBGs stun individuals for less than a minute, and this distraction is the objective of FBG use in criminal or military usage, allowing security force personnel to enter without adversarial action. The perception of FBGs as an effective less-lethal weapon has translated into their heavy use in crowd control scenarios.

The physiological and social psychology literatures both yield uncertain conclusions regarding context and memory for the use of FBGs. Stress responses vary among individuals due to experience, expectations, and evaluation of threat, among other variables. Intensity of belief in the reason for confronting security forces and perceptions of illegitimacy also affect responses to the use of FBGs. These questions are exacerbated in crowd situations where people look to others to determine their own actions and participants in the protest have a variety of experience with such weapons. The result will also vary by the laws of a country and the expectations of protesters. In countries where lethal force is often used, FBGs can be interpreted as live ammunition, causing the crowd to flee. Where security forces operate along rules of minimum harm to civilians, video evidence has shown protesters were far less affected by FBGs.

Our conclusions question the use of FBGs in democratic contexts with civil rights while demonstrating tentative evidence supporting the use of other less-lethal weapons. Data from social identity literature on disasters indicates the dominance of helping behavior among victims, not panic or self-serving behavior. We see these effects in video case evidence of FBG use. A wide variety of behavior was evident in these cases, from individuals remaining unaffected despite numerous FBGs in the vicinity, to immediate flight



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in non-democratic contexts, to throwing weapons back at security forces. Youth and young males appear most unaffected and adversarial after the use of FBGs in these protests.

These conclusions mean we need to break down the diverse elements of context and social identity to model the effects of FBGs in crowds. The model would need to break down crowd types by context and participants, for example historical perceptions of legitimacy of security forces, expectations and memory of behavior, degree and strength of social identity unity among the crowd, and the salience of the issue for the crowd.

With these findings the sponsor can request further research specifically into crowds and the use of FBGs and compare that to other less-lethal weapons used with crowds. Videos and case studies of crowd events compared across contexts and issues would be particularly useful in delineating when FBGs would be effective, ineffective, or backfire into escalation.

### Recommendations for Further Research

We recommend continuing to explore the video evidence of flashbang grenade (FBG) use in crowds and documenting how each crowd response varies by history/experience, expectations and law, and social identities. We see the effect of FBGs in crowd scenarios varied by social psychological elements including country and dominant laws (expectations), experience of the protesters, and context of the protest. Perception and purpose were key, as were the actions of smaller groups making up the crowd.

Our initial look into this data source verified many of our hypotheses regarding the use of FBG which run counter to their purpose in crowd use. Real-life demonstrations of how FBGs effect actions, the second dynamic after the initial physiological effect that is non-voluntary, can yield more answers that experiments cannot. Experiments are generally focused on the individual effects while what we found was that social relationship, beliefs, purpose, and memory, all components of social identity, crucially alter the response to such stun weapons.

### Acronyms

FBG	Flashbang grenade
JIFCO	Joint Intermediate Force Capabilities Office
WRENCH	Workbench for refining Rules of Engagement against Crowd Hostiles

