

# THE GRAY ZONE

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# Agenda

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- What is the Gray Zone?
- Why is the Gray Zone important?
- What are the human aspects of operations in the gray zone?

# What is the Gray Zone?

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- Zone between traditional notions of war and peace through destabilizing social media influence, disruptive cyber attacks, and anonymous “little green men”
  - Source: Barno and Bensahel, AU School of International Service
- Operating gradually and somewhat covertly to remain below key thresholds of response
  - Source: Mazarr, RAND
- Interactions among and within state and non-state actors falling between traditional war and peace
  - Source: Kapusta, SOCOM



# Gray Zone Weapons

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- Proxy forces, guerrillas to undermine stability
- Military movements, exercises, nuclear threats to intimidate
- Special forces, intel services, cyber, information operations to encroach on territory, challenge sovereignty, conduct harassing attacks
- Sanctions, manipulation of capital and energy markets, trade policy designed to undermine economic prospects
- Drones

# Drones (Unmanned Vehicles)

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“In the next five years or so, we are going to try to move from human operated systems to ones that are less dependent on people. Technology is going to enable increased autonomy.” ....but the strategy is by no means intended to replace humans....

-- Rear Adm. Robert Girrier, N99

- Unmanned Aerial Vehicles (UAVs)
  - ONR Program – drones stay in formation controlled through computer programs by a single human operator
- *Sea Hunter* – unmanned surface vessel to track submarines
- *Puma* – hand-launched drone for over-the-horizon surveillance

# Defense Unmanned Systems Summit – March 7-8

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Bindu Nair, Deputy Director, Human Systems, Training & Biosystems Directorate, OASD

“... efforts to develop greater **unmanned capabilities that intermix with manned capabilities** & future systems”

Michael Novak, Acting Director, N99

“...optimizing **human-machine teaming** to multiply capabilities and reinforce trust”

Kris Kearns, AF Research Lab

“...current efforts to mature and update autonomous technologies and **manned-unmanned** teaming”

# Drones May Not Need Humans To Operate

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Swarms of unmanned vehicles are able to stay in formation with little human control because they are able to each act locally on local information, with systemic intelligence “emerging” from their collective intelligence. It is called “swarm intelligence”.

- Introduced by Norbert Wiener in his book *Cybernetics*
- Builds on behavioral models of animal cultures – e.g. synchronous flocking of birds – that learn by adapting to their environment
- Emergent properties are properties of the *whole* that are not possessed by any of the parts making up that whole. Global order emerges without any need for external control



# The PLA's Current Unmanned Weapons System\*

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- The PLA has intensified its efforts to capitalize upon the military applications of artificial intelligence
- Breakthroughs in swarm intelligence could enable “swarm warfare” for asymmetric assaults against major U.S. weapons platforms, such as aircraft carriers
- PLA Air Force and PLA Navy have started to introduce more advanced, multi-mission UAVs.
- Space plays a prominent role in China's efforts to establish an effective military

\*Testimony before the U.S.-China Economic and Security Review Commission Hearing, 23 February, 2017

# DARPA OFFSET BAA was issued February 15th

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Title: OFFensive Swarm-Enabled Tactics

“...tactics that look at collaboration between human systems and the swarm, especially for urban environments”

# How Do We Keep Humans In The Loop?

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Let's Discuss