

# Strategies to Manage Material Convergence to Disaster Sites

**José Holguín-Veras**

**W.H. Hart Professor, Rensselaer Polytechnic Institute**

**Luk N. Van Wassenhove**

**Professor, Humanitarian Research Group, INSEAD**

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# Outline of the Workshop

- ❖ The Problem: Briefing on Material Convergence
- ❖ Suggested Solutions:
  - ❖ Behavior changes
  - ❖ Physical control
    - ❖ At entry points
    - ❖ On site
  - ❖ Role of Information
    - ❖ Matching needs with donors
    - ❖ Educating donors
- ❖ Discussion
- ❖ Conclusions

# The Problem

- ❖ In the aftermath of an extreme event, the convergence of non/low priority donations to the disaster site is a serious issue
  - ❖ Large influx of low priority goods clog the supply chains and hamper the flow of critical supplies
- ❖ Not much is known about the volume of material convergence that could be expected after a disaster
  - ❖ Making it difficult for relief agencies to prepare for their arrival

# Humanitarian Logistics / Material Convergence <sup>5</sup>

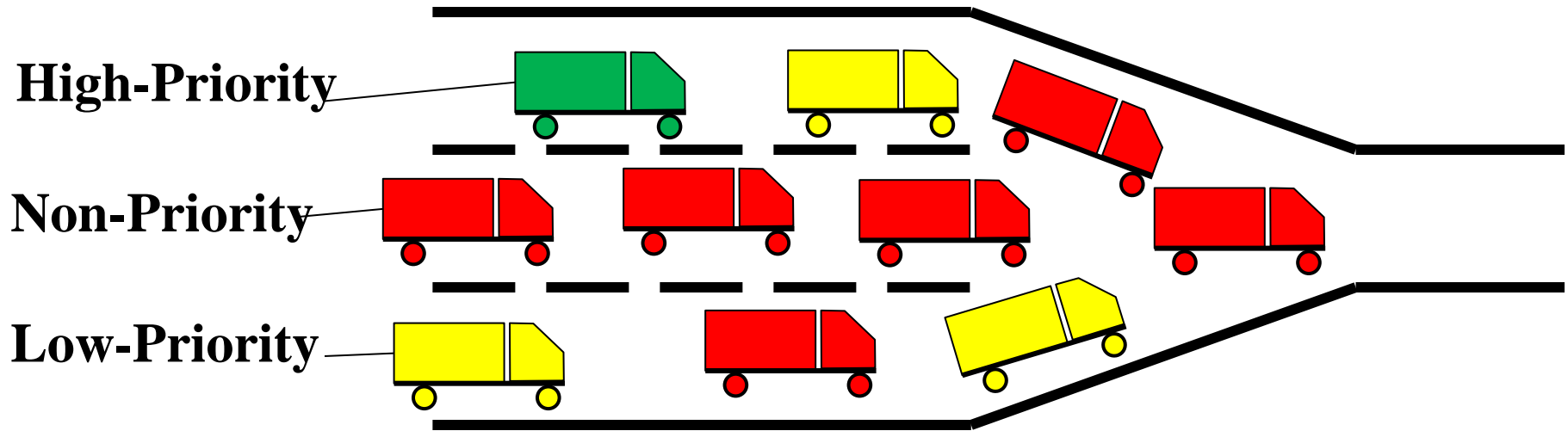
- ❖ Fritz and Mathewson (1956) defined convergence as “the movement or inclination towards a point”
- ❖ They created a comprehensive:
  - ❖ personnel convergence, i.e., movements of individuals;
  - ❖ informational convergence, i.e., “movement or transmission of symbols, imageries, and messages...”;
  - ❖ material convergence, i.e., “...the actual movement of supplies and equipment...”
- ❖ Humanitarian Logistics intertwined with Material Convergence

## Components of the flows (PAHO, 2001):

- ❖ Urgent or high priority (HP): items required for immediate distribution and consumption
- ❖ Non-urgent or low priority (LP): not immediately required but might prove useful at a later stage
  - ❖ must be classified, labeled and stored until needed
- ❖ Non-priority (NP): goods that:
  - ❖ are inappropriate for the event, time, context
  - ❖ arrive unsorted or in a condition impossible to efficiently inventory and difficult to identify in a timely manner
  - ❖ have surpassed expiration dates, are perishable, or are in poor/damaged condition
  - ❖ arrive without an appropriate site for distribution
  - ❖ need to be discarded, incinerated, buried or disposed

# What is the problem?

- ❖ The efficiency of the flow of high-priority goods depend on the flow of low/non priority cargoes



- ❖ The cargo that arrive to a disaster site (estimates):
  - ❖ 60% are non-priority,
  - ❖ 30-35% are low priority,
  - ❖ 5-10% are high priority

# It happens in all disasters



**Katrina, 2005**



**Haiti, 2010**



**Japan, 2010**

**Japan, 2010**



**Sandy, 2012**



# 1953 Arkansas tornado

- ❖ "... (the day following the tornado) all this clothing and food and all this vast store of supplies started moving into Searcy for distribution to the tornado areas....There was no place to put it ... No buildings to put it in ... That created a big problem ... So much was worthless rags. They had some pretty good ones. Somebody sent an old doggone big carton of falsies. We got a tuxedo, a nice one ..."
- ❖ "...It was coming by Railway Express, by truck, by plane, by freight car... Enormous amount of floor space, but that was filled in two hours—filled ceiling high. One other big building...probably a hundred feet long and sixty feet wide, with 14 feet ceiling... filled in 12 hours." ... sixty percent of it was not good; it shouldn't have come to the area at all..." (NORC report No. 52, pp. 281)

- ❖ “Excessive donated clothing created major problems... some of the clothing was not appropriate for the tropical climate of Dade county (e.g., winter coats)....Often, truck drivers with loads of clothes drove straight to severely damaged areas...Upon arrival, they often did not know where to deliver the donated clothes, so they unloaded them on the side of the road. The heat and usual afternoon summer rains quickly turned the piles into heaps of stinking, rotting cloth.” ... “ Excessive food donations created further emergency management problems.” (Neal, 1994, pp. 24)

❖ “Chris Ward is snaking through a tunnel of cardboard crates, past boxes ... past thousands of shampoo containers organized by size....The problem is, very little of it was needed.... little of the cargo reached the intended recipients, as they simply had no use for it...The propensity of Americans to ship stuff to national disasters has become such an overpowering reflex that rescue workers now have to divert considerable resources to ensure the largess does not get in the way. Some even describe the torrent of sundries as a ‘second tier disaster’ ”  
(Newsweek, 2002)

- ❖ “[There] were examples of much needed materials, but we also saw donations of unnecessary goods ... the five tractor-trailer loads of pumpkins donated to Ground Zero around Halloween that needed to be redirected to public schools .... We heard of people driving machinery and equipment to the site, leaving it for use, and then becoming upset when it was not returned even though the items were never documented, processed, or requested.”  
(Wachtendorf and Kendra, 2004, pp. 5).

# 2005 Gulf Coast

- ❖ ““Donation management is the most difficult part of every disaster,” he said of the unsorted mountains of clothes. “We have a little bit of everything.”” .... (Caller-Times, 2005).
- ❖ “Sometimes generosity can go awry.” ... In Katrina's immediate aftermath... collection sites along the Mississippi Gulf Coast became “nothing more than dump sites” ...” (Times-Piscayune, 2005).



# 2010 Floods in Colombia

- ❖ The Colombian Red Cross reported receiving:
  - ❖ “A tiger costume” (for use in the carnival), , “...wigs...”
  - ❖ “...three Spanish flags...”
  - ❖ “...an used king mattress, that nobody could move...”

Donan ropa interior usada y demás objetos inútiles para damnificados

Por: Redacción eltiempo.com | 10:06 p.m. | 18 de Enero del 2011



Los damnificados necesitan ropa en buenas condiciones.

Foto: Juan Pablo Rueda / EL TIEMPO

ENERO Y FEBRERO 2011 TERREMOTOS EN EL SALVADOR

LUEGO DE LOS TERREMOTOS EN EL SALVADOR,  
EL 37% DE LOS MEDICAMENTOS  
RECIBIDOS NO FUERON ADECUADOS\*

NO AUMENTES LOS RIESGOS DE  
LAS COMUNIDADES AFECTADAS

INFÓRMATE  
**SABER DONAR:  
SE APRENDE**

[www.saberdonar.info](http://www.saberdonar.info)

- ❖ “At the top are planes bringing in water and water production equipment. Next is equipment for distributing supplies, followed by food and then medical personnel and medicine” (NYT, 2010)
- ❖ Dominican officials reported having to deal with dozens of planes that landed in Santo Domingo with donations and no consignee, that have to be unloaded and their cargo sorted out and transported to Haiti at their expense
- ❖ Ten containers with refrigerators, of no use due to lack of power.

- ❖ “Nobody seemed to know exactly what was on the boat, or who actually sent it. One rumor was that it was from Costa Rica.” ...” The boat, it turned out, had mostly packs of water bottles, which is nice and everything, but water isn't really what Haiti needed right after the quake. There was plenty of water. Sanitation equipment or rice would have definitely been more useful. This is one example of aid that just might have been hurting more than it was helping.” (National Public Radio, 2010).



# Caritas DR: One sixth of staff handling clothing<sup>17</sup>





- ❖ Quotes from individuals interviewed :
  - ❖ "...50% no good..."
  - ❖ "...70% was no priority..."
  - ❖ "...too many blankets..."
  - ❖ "...too much clothing..."
  - ❖ "...a lot of broken bikes..."
  - ❖ "...people got offended when we told them we did not need these goods...we told them to postpone the donation..."
- ❖ Visual inspection of one of the distribution centers indicated that 40-50% of the materials there were clothing of little used to the victims
- ❖ Lots of low/non-priority made by local governments that sent part of their stocks

# DC in Tohoku: 1/3 of staff handling clothing



# DC in Tohoku: 1/3 of staff handling clothing



# 2012 Hurricane Sandy



# Impacts



# Problems caused by non-priority MC

- ❖ The huge volumes of NP-MC impact
  - ❖ Entry points
  - ❖ The disaster site
- ❖ Impacts at entry points
  - ❖ Increased congestion due the vehicular traffic
  - ❖ Increased delays due to lack of proper documentation (bill of lading, manifest, consignees)
  - ❖ Example: Santo Domingo airport after Haiti earthquake
    - ❖ Air traffic controllers re-routed hundreds of planes there
    - ❖ Dominican authorities had to let them land (to refuel), unload/process the cargo (mostly non-priority), and transport all the cargo to Haiti
  - ❖ If not controlled → they impact the disaster site



## ❖ Impacts at disaster site

- ❖ Only a fraction of the massive volumes of cargo are actually needed at the disaster site
- ❖ More often than not, the incoming trucks end up dumping the cargo anywhere they can
- ❖ Examples: Hurricane Andrew and Katrina's experience
  - ❖ The donations of well meaning individuals end up as rotting piles
  - ❖ Requests for clothing donations are made frequently by media and local politicians



Who produces the problem?

# Nature of Material Convergence

## ❖ Philanthropy

❖ Who gives? What? How much? Why? To Whom? When?

## ❖ Nature of the Donor

❖ Taxonomy of social collectives

		Post-disaster tasks	
		Regular	Non-regular
Post-disaster structure	Old (familiar)	Type I	Type III
		(Established)	(Extending)
	New (unfamiliar)	Type II	Type IV
		(Expanding)	(Emergent)

Note: After Quarantelli et al., 1966

## ❖ Media portrayal of the disaster

# Who Creates the Material Convergence?

- ❖ Individuals that decide to act to help the impacted populations
- ❖ Community groups that organize donation drives without properly identifying: actual needs, and who would use the donations
- ❖ Non-Governmental Organizations that try to help
- ❖ Companies that send supplies to: help, market their products, dump unwanted inventories, etc.
- ❖ Governments and government agencies

# Suggested Solutions

# Solutions suggested in the literature

- ❖ Behavior changes
- ❖ Physical control
  - ❖ At entry points
  - ❖ On site
- ❖ Role of Information
  - ❖ Media engagement
  - ❖ Matching needs with donors
  - ❖ Educating donors

# Discussion

# Questions for the audience

## ❖ Behavior changes

- ❖ How do we change the behavior of individuals, community groups, NGOs, governments, etc.?

## ❖ Physical control: At entry points, On site

- ❖ Is this a good idea? How do we make it happen?

## ❖ Role of Information:

- ❖ Media engagement
- ❖ Matching needs with donors
- ❖ Educating donors
- ❖ How should we engage the media so that they help?





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Thanks!

**José Holguín-Veras,**  
William H. Hart Professor  
Director of the Center for Infrastructure,  
Transportation, and the Environment  
[jhv@rpi.edu](mailto:jhv@rpi.edu)

