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Examining the Ebola Epidemic in West Africa from Social Perspectives

—In the Case of Sierra Leone—

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Hello...I am Hideyuki OKANO in Ritsumeikan University.

Today, I will argue the Ebola epidemics.

I am originally a political scientist researching on civil war in SL, which ended in 2002.

Because Ebola Virus Disease broke out in SL. I have no choice but refraining from going there.

This presentation is examining Ebola Virus Disease from social perspective.



Ebola spread in 2014 and 2015 mainly in West Africa, especially in Guinea, Liberia and Sierra Leone.

Disbelief toward Ebola is commonly seen in the initial stage of epidemic.



First, please watch a video-clip, which was shoot in mid-June in 2014.

<見せる>

This video clip was shoot in Liberia, which is located next to SL.

At the time of June, Ebola was not serious yet. People do not belive in Ebola. In Sierra Leone, people's attitude is same.

However, people are involved in Ebola in both countries within a few month.

People learned Ebola from immediate surroundings.

Structure

1. Basic Information.
2. What we should know to understand Ebola.
3. A Case of the spread: Forbo
4. A Case of the Response.
5. Analysis and Conclusion

It is often broadcasted that one of problems is people did not believe in Ebola.

This presentation argues that people learned Ebola, but this is from immediate surroundings.

Once they directly experience Ebola. They can understand the seriousness.

This presentation consist of 5 parts as seen in slide.

1. Basic Information

First part is on basic information. What is Ebola.

What is “Ebola”

- Officially called “EVD”(Ebola Virus Disease)
- High case fatality (40-90%)
- From wild animal to human. Then, among human to human.
- Transmission is via blood and body fluid. Aerial infection is unlikely.
- The incubation period: 2 to 21 days.
- Symptom:
From flu-like symptom to bleeding under skin and from openings.
- No vaccine to prevent. No antiviral to treat.

(Hewlett and Hewlett 2008)

- Ebola is officially called Ebola Virus Disease, which is abbreviated to EVD, which caused by virus. Depend on subtype, fatality rate is 40 to 90 %.
- Widely accepted theory tells that the virus is infected from wild animals to human being. Actually, the video which I showed is on consumption of wild animal in Liberia.
- Once the virus entered to human, it spread from human to human.
- Transmission is via blood and body fluid. It is considered that aerial infection is unlikely.
- The symptom develop from flu like symptom to bleeding under skin and from opening.
- There is no vaccine for prevention as well as no antiviral to treat. There is no choice but to wait to heal on one’s own.

The Outbreak of 2014

- EVD spread from Guinea to Liberia and Sierra Leone. The three are mainly involved in the epidemics
 - * Minor cases of infections are found also in Nigeria, Senegal and Mali.
- Index case (the first patient) is a 2 year-old boy in the village of Meliandou, Guinea in **December 2013**. (Baize, Sylvain et al. 2014).

Since Ebola was found in 1976, more than 20 epidemics can be observed. Most of them are in central-Africa.

The epidemic in 2014 mainly spread in Guinea, Liberia, and SL, where they have no experience of Ebola before.

Index case (I mean first patient) is a 2 year-old boy in the village, which is called Meliandou in Guinea.

It was traced back that he was infected and died in December 2013. Then, from him, Ebola spread to the three countries.



The spotted area is Meliandou.

Then, it spread in border towns, which are called Guékédou and Macenta.



If enlarging this area, you can see that the two towns are gateways of Sierra Leone and of Liberia respectively.

On 10 March, hospitals and public health services in Guéckédou and Macenta alerted the Ministry of Health of Guinea on mysterious disease. The disease was found to be Ebola. WHO announced the epidemic of Ebola on 23th of March.

The Outbreak of 2014-2015 (2)

Country	Total Cases (Suspected, Probable, and Confirmed)	Total Death
Guinea	3794	2530
Sierra Leone	13799	3955
Liberia	10672	4808
Total	28265	11293

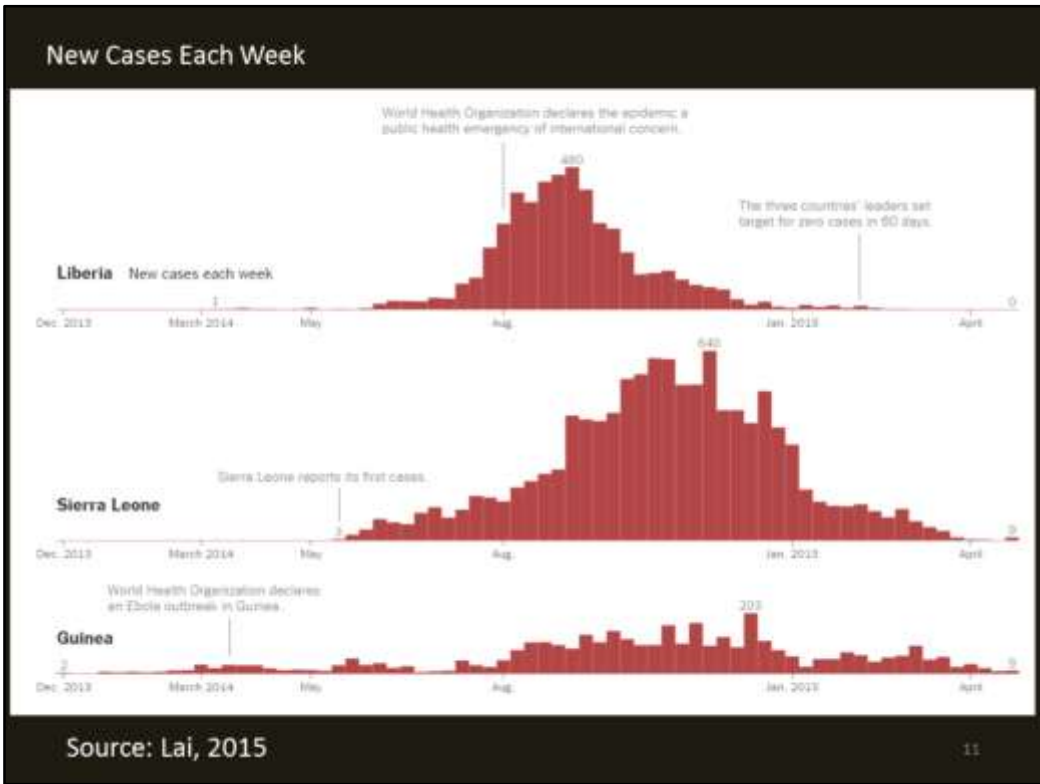
"2014 Ebola Outbreak in West Africa - Case Counts" CDC (access 20 Sep 2015)
<http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/case-counts.html>

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This is the total number of the cases and deaths in the three countries. The data is from CDC.

More than 28,000 people had been infected. Among them, more than 11,000 people were killed.

It is said that the epidemic is almost over.



The graph shows a number of new cases each week in the three countries

In SL, first patient is found in 3rd week of May. Then, it spread rapidly.

2. What we should know to understand Ebola.

In order to understand the social aspect of the epidemic, we need to know the lives of people there.
I summarized them into two.

(1) Population Distribution

- Subsistence economy.
- Cities, Towns, and Villages in Sierra Leone

-Cities --- More than 10,000 people lives, 7 Cities
-Towns---More than 1,000 people lives, 67 town.
-Village---Normally 70-250 residence. Villages
scatter with interval of 1.5-5km.

Gwynne-Jones D. R. G., et al. (1978)

- Many people live on not along motorable roads.

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First, population Distribution is different.

In rural area of Sierra Leone, subsistence economy is prevalent still.

Networks of car-passable road are not well established. So, many people live outside of car-access.

Many villages are only accessible by bush-path.

In this area, people's notion of towns and cities are different.

- City is a place where more than 10,000 people lives.

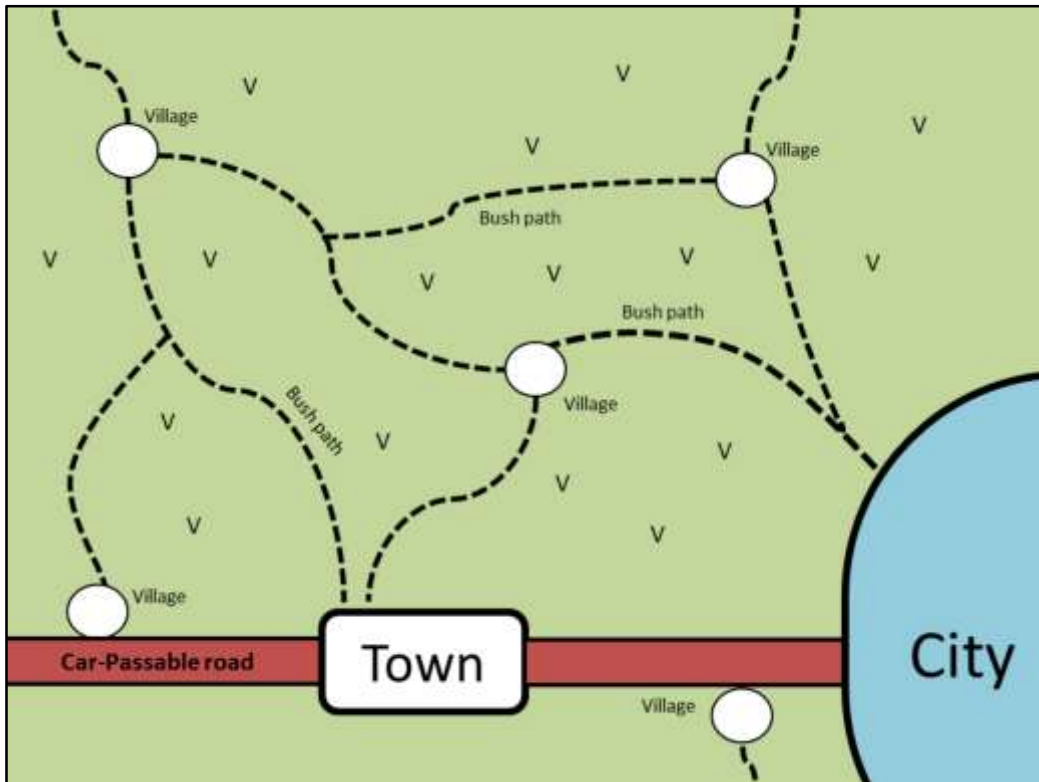
Town is a place more than 1,000 people lives.

Village normally have 70 to 250 residence. Villages scatter with interval of 1.5-5km.

Between a village and a village, bush scatters.

7 Cities are there in Sierra Leone, and 67 towns are in SL as well.

I can just draw image of relations among city, town and villages in Sierra Leone.



As seen in the slide, City is a center of the region. Which connect to towns by car-passable road.

But, many villages are not accessible by car. They have to walk along with bush path. Motorbikes are sometimes used to access these remote villages.



This is bush path.



This is how village scatter.

You can know that how long 500 meter is.

The villages are there (クリック)。

If I enlarge the red village, it is like this (クリック)



Thus, such villages are scattered in Sierra Leone.

If a person get sick seriously, chiefs mobilize young people and make them carry the patient to car-passable road.

They pick up a commercial vehicle on the road. Then brought the patient to a hospital in towns or in cities.

Some get died without to be taken to hospital, because hospital is physically difficult to access. And financially difficult to access too.

(2) Chieftom in Sierra Leone

District > Chieftom



Second is chieftom in Sierra Leone

Sierra Leone is divided into four part. Namely Northern province, Eastern Province, Southern Province and Western Area.

But this is only names. It is not an administrative unit.

Actual Administrative Unit is District. Sierra Leone is divided by 12 district and Western area, which is the capital and the suburb.

Districts are divided into Chieftoms.

- Leader of Chiefdom--**Paramount Chief**
- Kinship of Paramount Chief--- **"Ruling Family"**
- Three level of administration in Chiefdom

1. **Paramount Chief**
----in charge of Chiefdom
2. **Town Chief and Section Chief**
---sub-unit of chiefdom
3. **Headman**
---leader of village/settlement

- Normally, a capital of a chiefdom is "town" or less.

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-The leader of a chiefdom is called paramount chief.
They are traditional leaders as well as administrative leader.

-In precolonial era, SL is divided into small kingdoms.
Kings were absorbed in colonial administration, and appointed as paramount chief.
The families of Kings were called "ruling family". Colonial government decided that only from ruling family, next chiefs were selected.
This system were left when SL became independent.

Therefore, SL still have chieftancy system as formal administrative system.

- The chieftancy system consist of three-levels of leaders.
 1. Paramount Chief----in charge of Chiefdom
 2. Town Chief and Section Chief---sub-unit of chiefdom. Town chiefs are placed on major towns in a chiefdom.
 3. Headman---leader of village/settlement
- Normally the size of a capital of chiefdom is town.

3. Case Study: Forbo

Next, I want to examine how Ebola spread.

The Case of Forbo (Richards et al. 2015)

- Forbo located at Kori Chiefdom in Moyamba District.
- Forbo have 500 population.
- Only accessible on foot.



This story I pick up from a previous research.

Forbo located at Kori Chiefdom in Moyamba District.

The population is 500. Only accessible on foot.

The border region is involved in Ebola first. But Ebola jumped from the border region to Forbo.



It is already known that Ebola entered to Sierra Leone from Guekedou. Then, jumped town to town from a city called Kenema.

In Kenema, one middle-aged man get sick. He did not want to be hospitalized. He evade a curfew and went back to Forbo.

How EVD spread within Fogbo

- He came back his home, Forbo. He was cared by his sister.
- Those who lives in Fogbo does not know what is Ebola yet. His sister is not exception.....

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He was cared by his sister. Those who lives in Fogbo does not know what is Ebola yet. His sister, is not exception....

Next slide is a quotation from original article....

A few days later [she] also became sick. The Community Health Officer was again informed and he took a blood sample, but [she] died before the result available. The villagers conclude, without waiting for the result, that it was Ebola.

The town chief called the health officials to come and take charge of the body, but they were unable to attend, and later instructed the people to bury the dead..., but not to wash the corpse.

(continue...)

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<読み上げる>

Prominent women in the community insisted [that the deceased have to receive a fitting burial because she was well-respected. T]hey washed and buried the body. Corpse washing is an important part of local rituals for the deceased.

Since then women and one man have died....By early September it was reported that somebody in the village was dying every day...there was nobody to bury the corpses. The Forbo people waited for the burial team to come.

(Richards et al. 2015)

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<読み上げる>

Thus, Ebola spread in Forbo.

This case tells that people did not lesson health official's advise, but learned from their direct experiences.

4. Cases of the Response.

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Then, I will show how people respond.

Disbelief in Sierra Leone

Rumours spread that Ebola was an excuse for medical teams to harvest organs or that it was caused by witchcraft. And in Kenema, Sierra Leone, a 'running battle' ensued between the police and protestors who were threatening to burn down the hospital and were demanding the release of all patients in the end of July (HEART 2014).

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As I showed already, people respond to Ebola by disbelief.

In the case of Sierra Leone it is reported that.. <読み上げる>



Responding against disbeliefs, there are signs in towns telling that Ebola is real.

However, people did not believe the sensitization. They believe actual experience.

How people began to believe Ebola

At first, people did not believe Ebola. People rumored that it was witchcraft, or it was biological weapon. However, when famous doctor was killed, people got serious. Also, people began to see actual patients. In Bo town, a treatment center was established. In some cases, whole villages were taken to a treatment center and quarantined. People can see inside of the treatment center. They saw patients died one by one. We had no choice but believe Ebola when seeing them.

(Male in 30s, Bo, Sierra Leone)

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I interview to a man living in Bo, Sierra Leone.

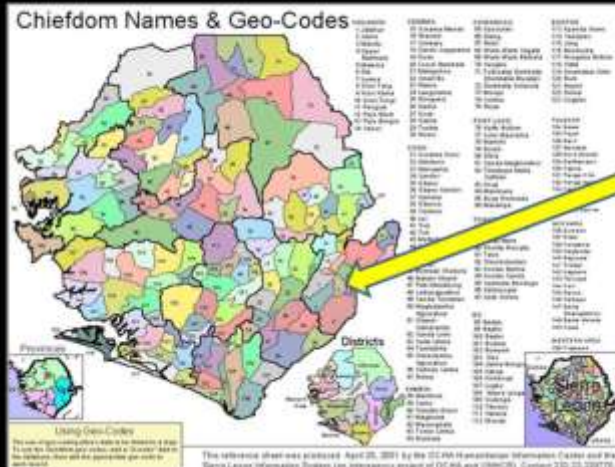
He said that...

<読み上げる>

Thus, people learn from immediate surroundings.

(4) Paramount Chiefs' attempt against Ebola

- **Malema Chiefdom**, Kailahun District.
- No one was infected.



Once people recognize Ebola they can act voluntarily.

I will give the example of Malema Chiefdom.

This chiefdom locates in Kailahun District, where Ebola hit first in Sierra Leone.

This is one Sierra Leonean spoke about his Chiefdom.

Jame Chiefdom, which is next to Malama Chiefdom seriously affected by Ebola. So, paramount chiefs and elderlies in Malema chiefdom decided no body to enter, nobody to leave.

Public buses come once a week, but shut down. People can come by motorbike. But all the transportation they cut.

Also, they post young men on chiefdom border.

There was one case that one entered to the chiefdom, but they made the person leave in a day.

Muslim sacrifice every Friday to protect the Chiefdom.

Thus, they can save their chiefdom from Ebola. They said no single victims they made.

This case tells that once people recognize Ebola, people can respond voluntarily.

5. Analysis and Conclusion

Then, analysis and conclusion.

- People learn from immediate surroundings.
- People can respond voluntarily, once they recognize Ebola.

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This presentation tells that

- People learn from immediate surroundings,
- and that, people can respond Ebola voluntarily, once they recognize Ebola.

This case can support from quantitative evidence.

District > Chiefdom

Northern
Province

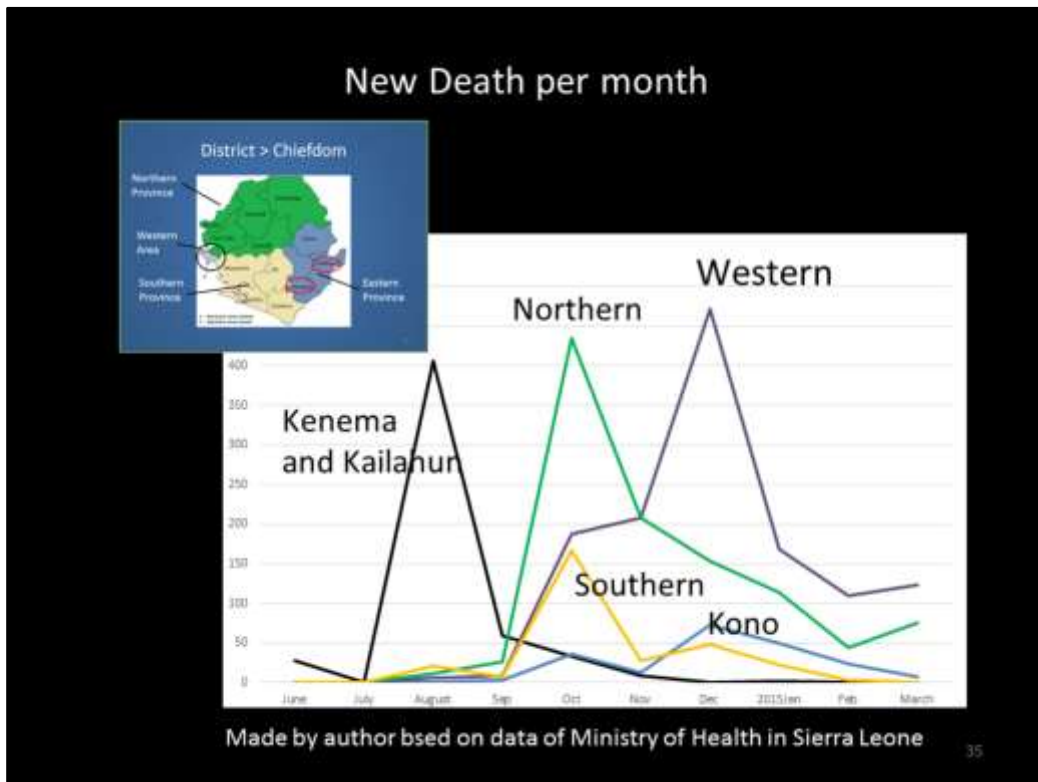
Western
Area

Southern
Province



Eastern
Province

We already know that SL is divided in several region.
And, the place first area which was involved in the epidemic is Kailahun and Kenema.



This graph shows new death per month in each province. But I divide Eastern province more detail.
 What I want you to check is peaks.

First, Kenema and Kailahun are in the epidemic in August, but it moved to other region.
 Northern province experience the peak on October.
 Western Area is in December.

Thus, you can see the peaks are different among region.

It means that the center of the epidemic move from region to region within one month.
 This will be the supporting evidence that people who is involved in region respond to Ebola soon.

Another researcher also present that people can learn. A researcher, Chigusa Nalagawa, who researched in Guinea tells that people do not believe in Ebola first, because they have no acquaintances who died by Ebola.
 But, gradually, people began to experience that their acquaintances suffered Ebola. Those people became serious and call to her via international call, because she researched on Ebola in Guinea and people remember that she talked on Ebola.

Thus, people can learn ebola from direct experience and respond afterwards.

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Thank you

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