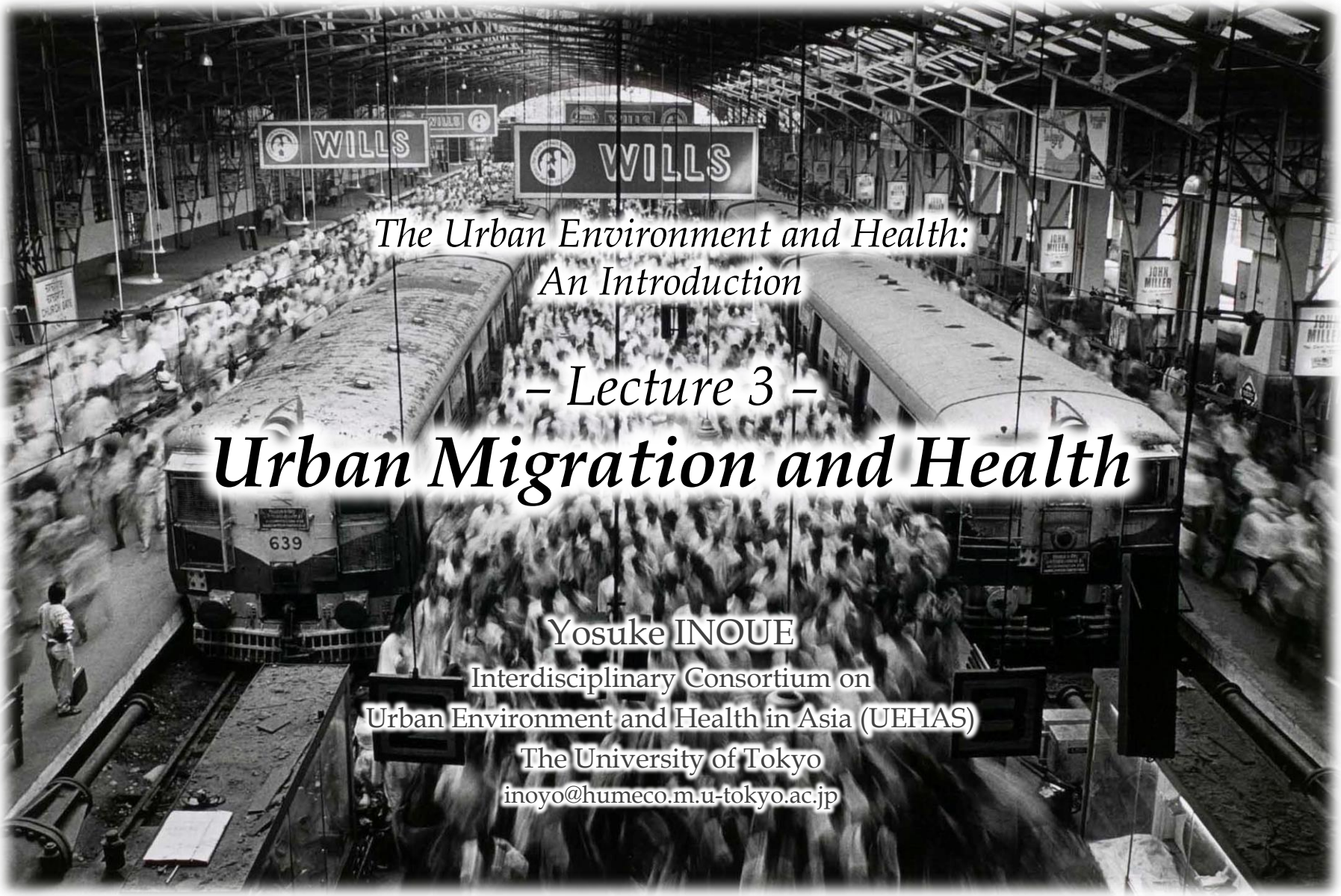

The Urban Environment and Health:
An Introduction

– Lecture 3 –

Urban Migration and Health

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Salgado / Church Gate Station. Bombay, India. 1995

Outline of Today's Lecture

Section 1

- General overview of migration (esp. Rural-to-Urban)
- Living in an urban area and its meaning
- Evaluating migrants' health
  - Selectivity
  - Acculturation

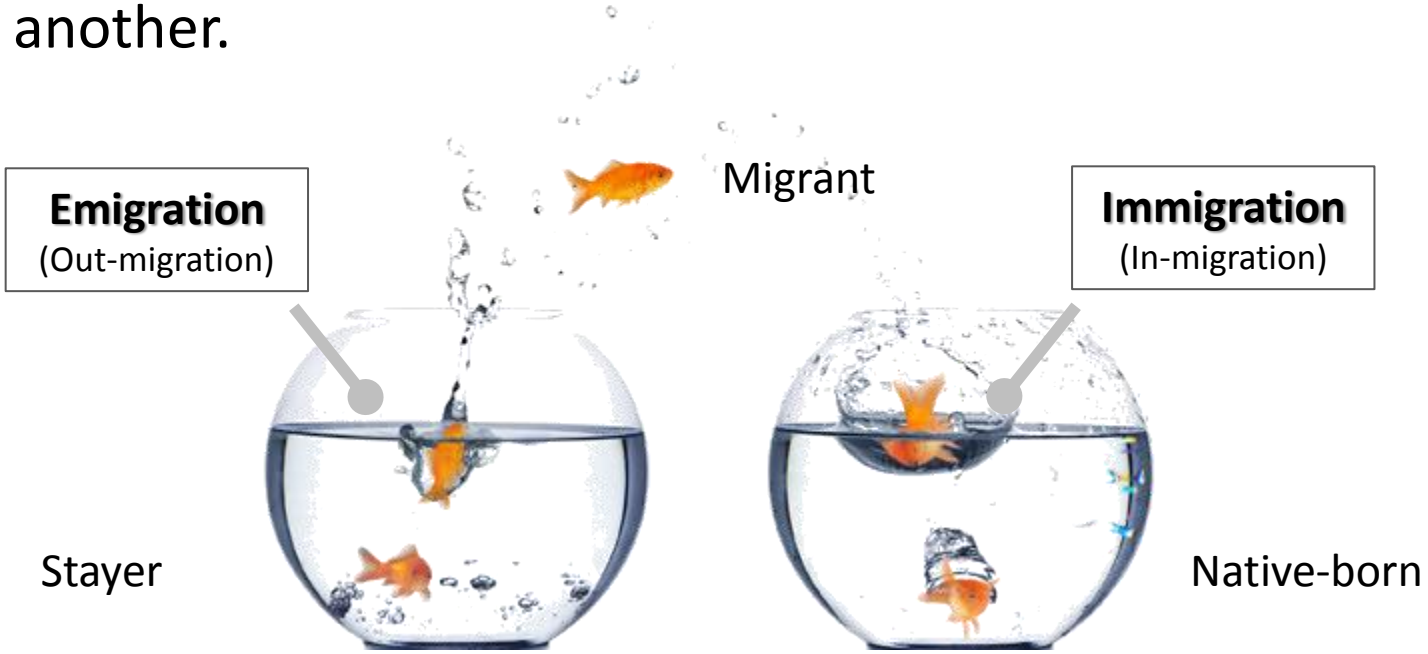
Section 2

- World Migration Survey 2013
- Case study: China
  - Lancet 2012 pp.843-852; British Medical Bulletin 2013 pp.19-43

Section 1-1: General overview of migration

Salgado / Women going to the market of Chimbote. Region of Chimborazo. Ecuador. 1998

- Migration
  - Physical movement by humans from one area to another.
  - Emigration from one population and immigration into another.



https://www.icinga.org/nagios/upgrade-from-nagios/

Types of migration [1]

- Types of migration by motive
  - Involuntary: By-product of
    - Wars (e.g. emigration from Iraq to the US)
    - Political conflicts (e.g. emigration from Zimbabwe to the UK)
    - Natural disasters (e.g. emigration from the Tohoku region following the earthquake and tsunami in 2011)
  - Voluntary: Economic reasons
    - Wide disparities in the income that can be earned for similar work in different countries of the world.
    - Some jobs in some high-wage countries for which there is a shortage of skilled or qualified citizens.

Types of migration [2]

- Types of migration by destination:
  - International migration
  - Internal migration
    1. Local (e.g. seasonal human migration)
    2. Rural to urban
       - More common in developing countries as industrialization takes effect (urbanization).
    3. Urban to rural
       - More common in developed countries due to a higher cost of urban living (suburbanization).

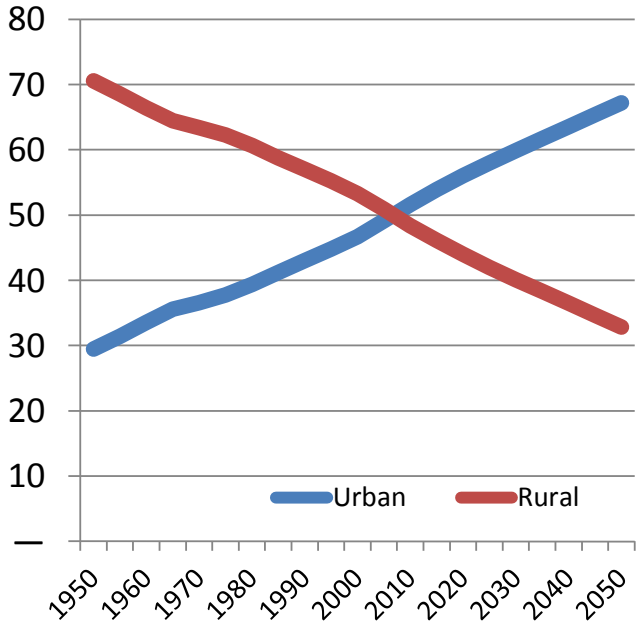
Migration statistics

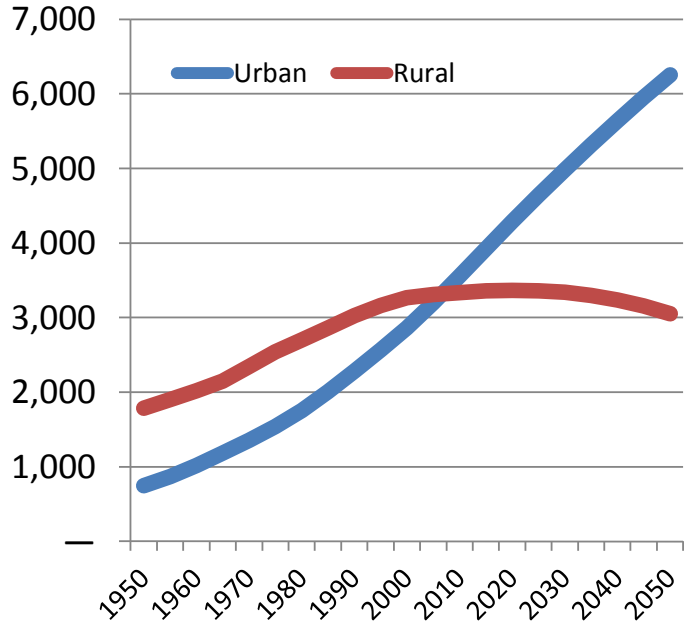
- International migrants
  - 214 million in 2010 (IOM)
    - 3% of the world's population
  - 405 million in 2050 (Projected)

- Internal migrants (esp. Rural-to-urban migrants)
  - Urbanization
    - Out-migration from rural areas result in the physical growth of urban areas, expanding the urban space of cities.
  - Urban population > Rural population

History of urbanization

- The global proportion of the urban population has risen dramatically.
  - 1900: 13% (220 million)
  - 2005: 49% (3.2 billion)
  - 1950: 29% (732 million)
  - 2030: 60% (4.9 billion)





The city – A home to migrants

- Sometime in the middle of 2007, the majority of people worldwide were living in towns or cities, for the first time in history.
  - 93% of urban growth has occurred in developing nations.
  - 80% of urban growth has occurred in Asia and Africa.

- The growth of urban population can be due to three factors:
  - The natural increase of the urban population
  - Boundary redefinition
  - Migration
    - Cities have become the focus of industry and production and have drawn and depended on workers from rural areas.

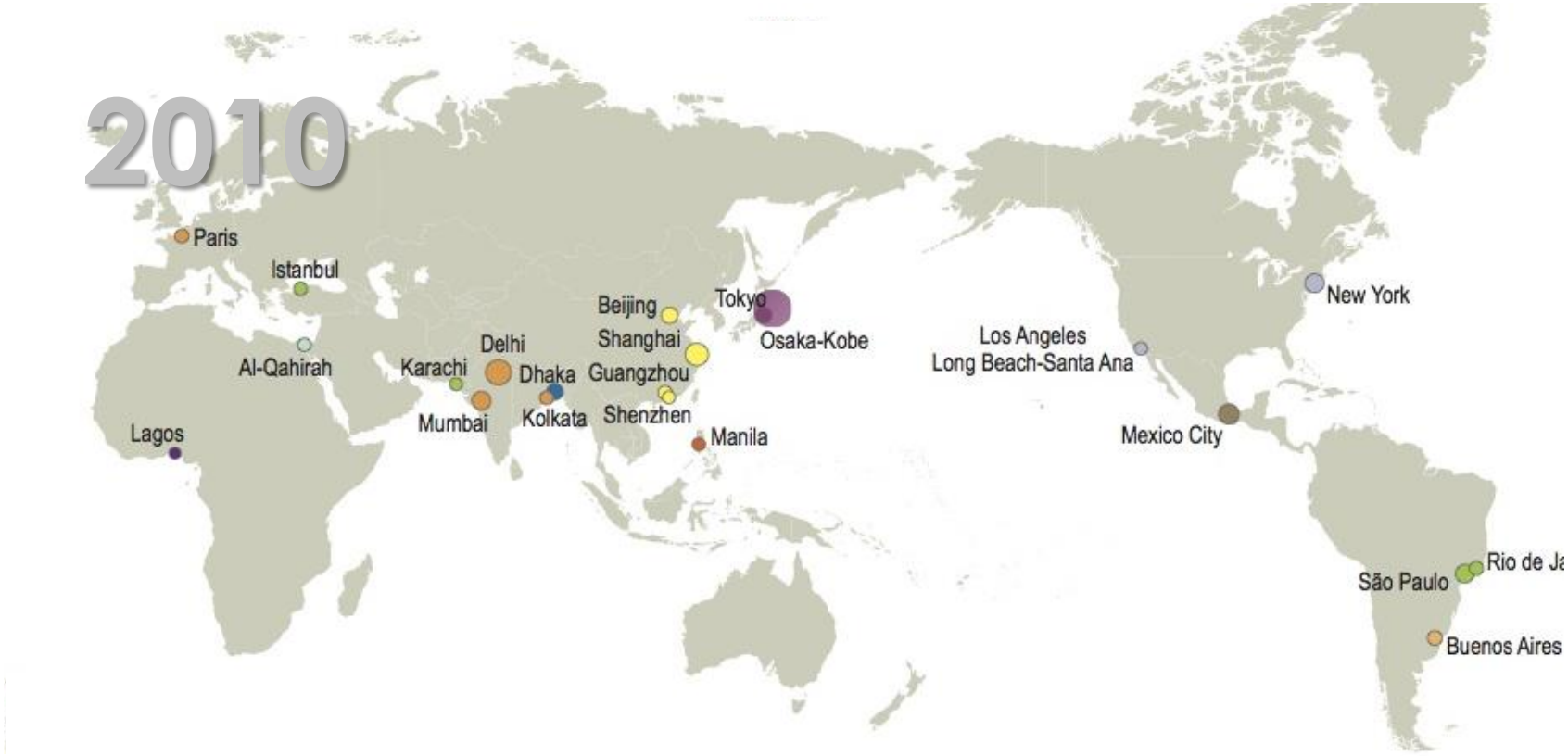
Urbanization and migration

- As more and more people leave villages to live in cities, urban growth results.
  - Chicago in the late 19th century
  - Tokyo in the mid 20th century
  - Mumbai in the 21st century

attributed largely to rural-urban migration.

- Influencing factors
  - The lure of economic opportunities
  - Loss or degradation of farmland
  - The attraction of leisure time opportunities in urban areas
  - Proximity and ease of mass transport
  - The opportunity to assert individualism

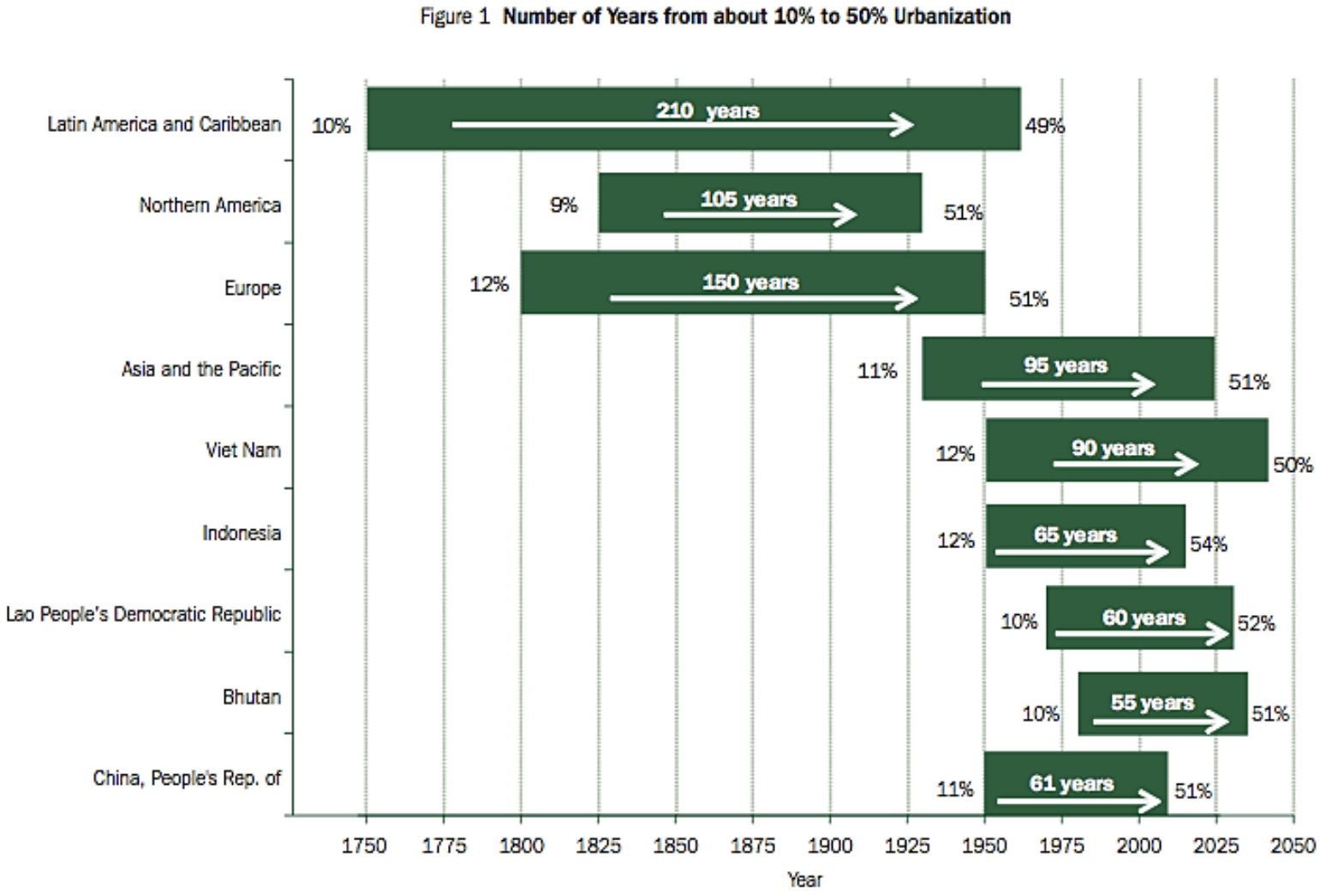
Limits to cities' ability to expand



- Questions are increasingly being raised as to the limits of cities' ability to take in new citizens.

http://www.forbes.com/sites/davidferris/2012/08/31/the-stark-environmental-challenge-of-asias-megacities/

Rapid urbanization



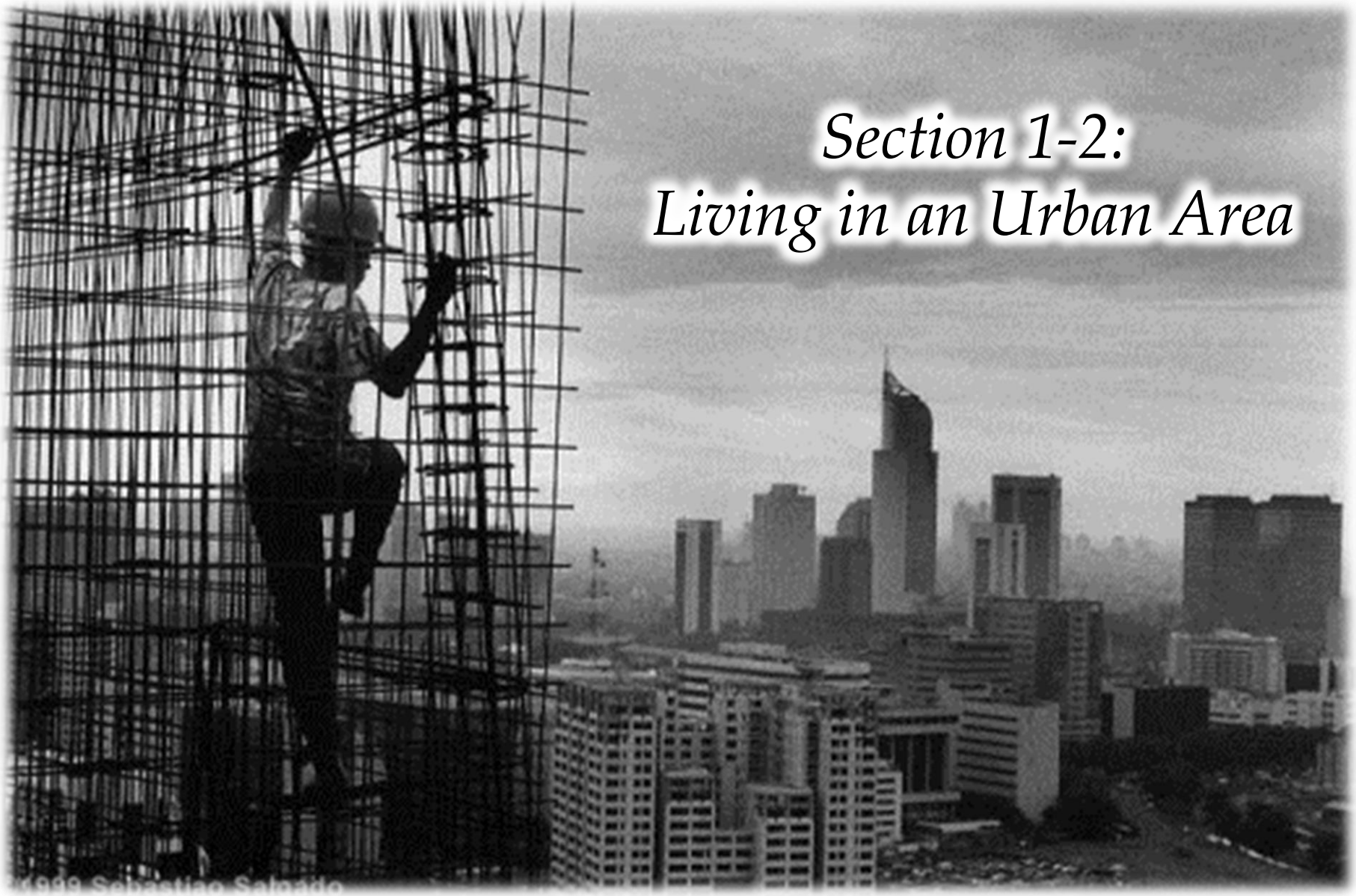
http://blogs-images.forbes.com/davidferris/files/2012/08/Pace-of-Urbanization.png

Urbanization and value

- Urbanization is not merely a modern phenomenon, but a rapid transformation of human social roots on a global scale.
  - Rural culture is being rapidly replaced by urban culture.
    - Village culture: common bloodlines, intimate relationships, and communal behavior
    - Urban culture: distant bloodlines, unfamiliar relations, and competitive behavior.

Urbanization changes information people perceive and thus, the way people think.

Section 1-2: Living in an Urban Area



Salgado / Construction of the Rasuna complex. Jakarta, Indonesia. 1996

The end of the 16th century

- Cities came into existence.
- London
  - Massive urban in-migration from rural areas resulted in an elevated degree of population concentration.
  - Because of epidemic deaths within the city, London required on average, an annual rate of in-migration totaling about 5000 people in order to sustain its population (McNeill, 1979).

By 1750

- Urban mortality due to epidemic disease was reduced:
  - Biological adaptation of the human host and pathogen
  - Improved sanitation, water treatment, and other public health measures (Dubo, 1965)
- Urban populations no longer required in-migration from the countryside, but rural-to-urban migration continued unabated.
  - The political, economic, and social practices of mill owners and landowners were still 'pushing' people from the country and 'pulling' them into the city.

1750 to 1950

- The bulk of rural-to-urban migration took place in developed nations.
- Also a great deal of international migration, especially from the Old World to the Americas.

- By 1950, 53% of the population of the more developed nations were urbanites, compared with only 16.7% of the population of the less developed countries.

City as an ecological setting

- Characteristics of cities
  - Large populations
  - Dense populations
  - High rates of in-migration

- Problems for humans
  - Technological problems of water supply, pollution, waste management
  - Socio-economic problems of poverty; unemployment
  - Social conflict
  - Biological problems of disease and ill health

Vulnerable population

- Migrants often remain peripheral.
  - Newcomers tend to accept work in occupations or industries where nationals refuse to work.
    - Activities that are high risk because of the nature of the work, the technologies, and the chemicals
  - Poor economic conditions force them into poor quality housing (crowded; unhygienic; unsafe).

- Linguistic, cultural, and legal backgrounds of migrants often place them on the margins of their host societies, and they are unable to access or use health services effectively.

- Human Ecological Perspective
  - There are several different lines of reasoning that lead us to suspect, a priori, that urban living should be deleterious to human biology/health.

1. Evolution

- Humans evolved as nomadic hunters and gatherers, living in small band populations. Cities are composed of sedentary, industrially employed peoples living in large groups.
- Humans are capable of a great range of adaptive responses to new environmental stress, but the genetic limits of this range are determined by the nature of adaptation to past environments (Harrison & Jeffries, 1977).

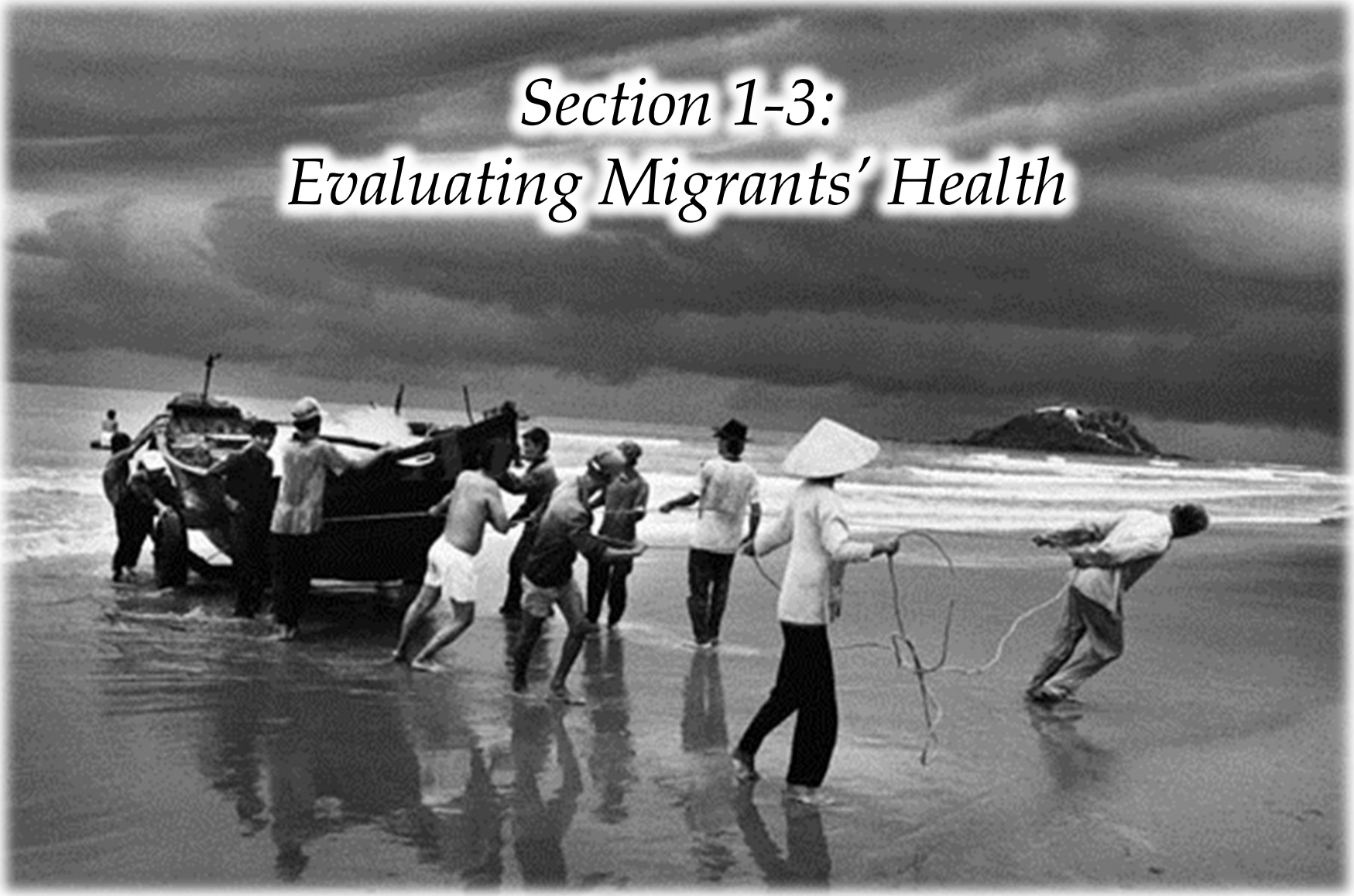
2. Development

- People develop phenotypic adaptations to their local environments.
  - The irreversible changes in growth that occur during childhood and adolescence.
  - The development of disease immunities that occur even in adulthood (Weissman, Hood & Wood, 1978).
  - Adaptation to local diets and activity patterns also shape human physiological adaptation.
- Migration to an urban environment following long-term residence in a rural area may cause a significant stress to human physiology.

3. Adaptation

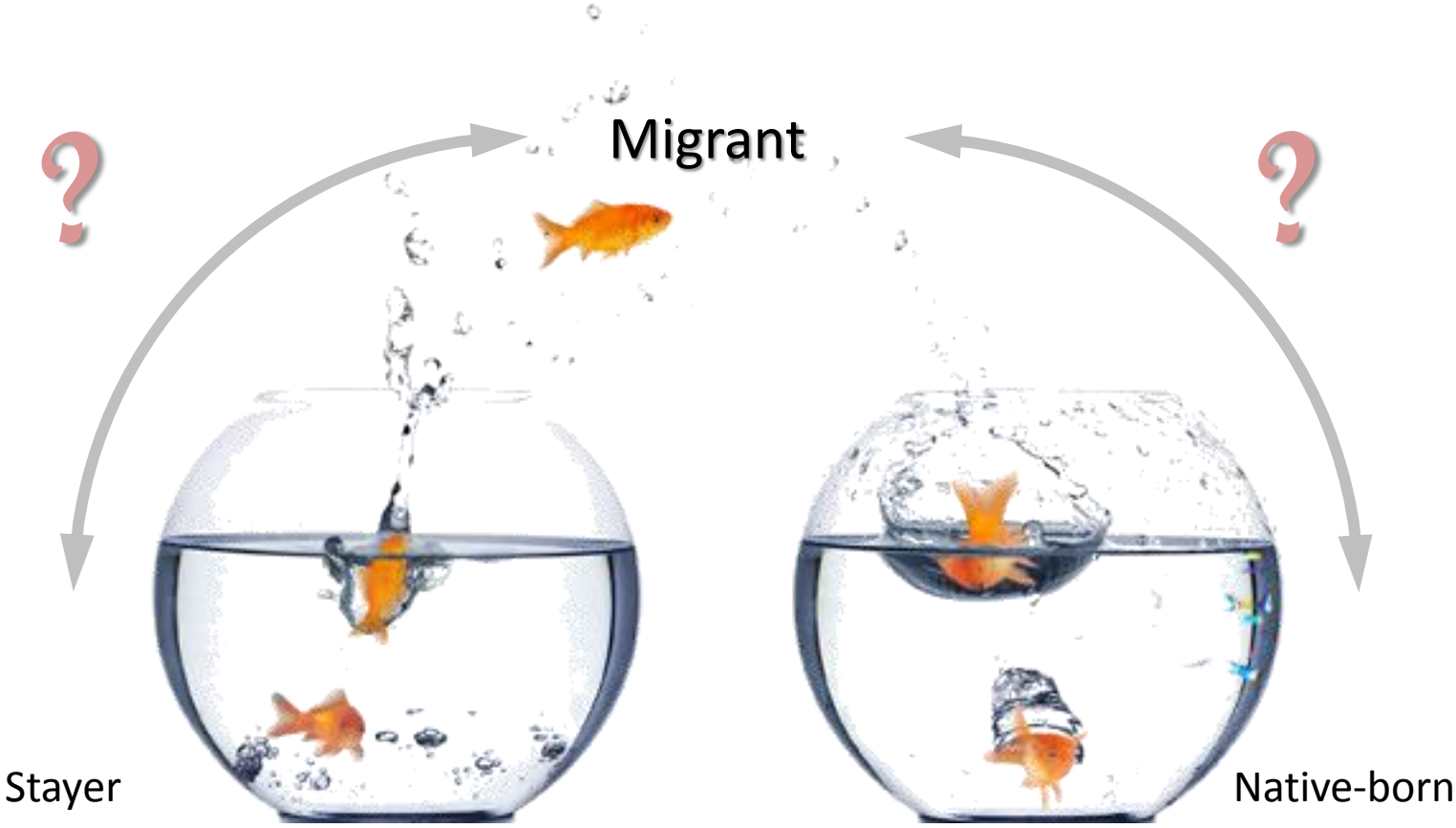
- Band, tribal societies were the basis of human social organization for the 99% of our evolutionary history.
  - These social groups are characterized by kinship. However, kinship is less of a determinant of urban population structure.
  - The large, densely populated conglomerates of cities require different patterns of social organization.
- When rural peoples migrate to the city they may be forced into rapid social change (Acculturation). This may lead to considerable psychological stress, and precipitate physical and mental illness.

Section 1-3: Evaluating Migrants' Health



Salgado / Beach of Vung Tau, from where the majority of boat people left. Vietnam. 1995

Unit of comparison



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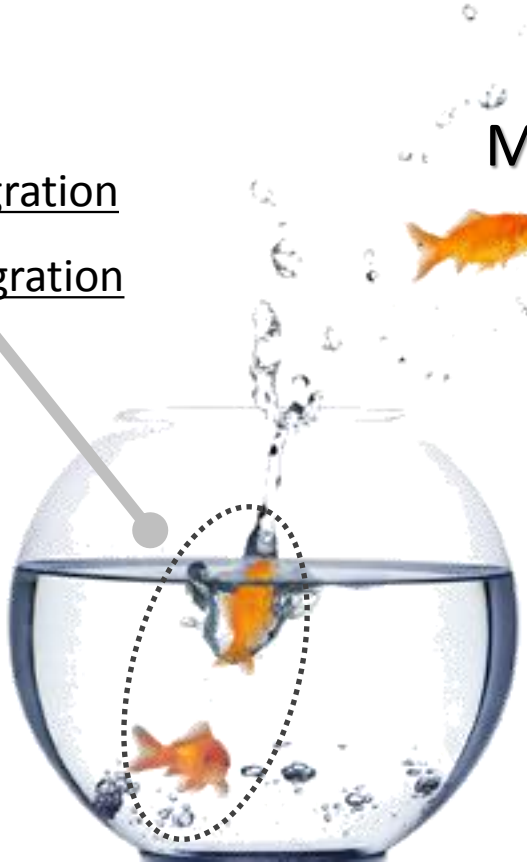
Unit of comparison



Migrant

Random Migration

Selective Migration

Acculturation

Stayer

Native-born

https://www.icinga.org/nagios/upgrade-from-nagios/

Trajectories [1/2]

Selectivity (Healthy migrant phenomena)

- Immigrants have better health outcomes than native-born residents when they first arrive in their new countries of residence

1. Immigration is a selective process in terms of health.

   (Frisbie et al., 2001, Jasso et al., 2004 and McDonald and Kennedy, 2004)

2. Migrants may under-report their health conditions.

   (Fennelly, 2007 and McDonald and Kennedy, 2004)

3. An unknown number of immigrants may return to their places in case of illness. [cf. Salmon bias]

   (Fong, 2008 and Jasso et al., 2004)

Trajectories [2/2]

Acculturation

- With increasing time in the host society, the immigrant health advantage diminishes significantly.

1. Temporal lifestyle >> Decline in physical health
   - Immigrants' assimilation to a Western way of life

   (Salanta & Lauderdale, 2003)
2. Acculturative stress >> Loss of mental health
   - It may be associated with reduced mental distress if they become more familiar with the new society over time.
   - Some individuals are likely to demonstrate negative mental health effects because of longer periods of exposure to stressful conditions.

Previous research (1)

Frisbie et al. (2001). Immigration and the health of Asian and Pacific Islander adults in the United States. *American Journal of Epidemiology*, 153(4), 372-380.

- 1992–1995 National Health Interview Survey
- To examine the effect of immigrant status (both nativity and duration of residence in the United States) on the health of Asian and Pacific Islander adults
  - Self-reported health status
  - Annual bed days
  - Access to health care
  - Activity limitation
  - Annual physician visits

Summary of findings

- Immigrants were found to be in better health than their US-born counterparts, but their health advantage consistently decreased with duration of residence.
  - e.g. For immigrants whose duration of residence was less than 5 years, 5–9 years, and 10 years or more, the odds ratios for activity limitations were 0.45 0.65, and 0.73.
    - Similar findings emerged for self-reported health and bed days due to illness.
- These results support the validity and complementarity of the migration selectivity and acculturation hypotheses.

Previous research (1)

TABLE 3. Odds ratios for the effects of immigrant status on the health† of Asian and Pacific Islanders (*n* = 8,249), National Health interview Survey, 1992–1995 combined

	Self-reported health, fair or poor		Activity limitation, yes		Bed days			
					1–6 days		≥1 week	
	OR‡	95% CI‡	OR	95% CI	OR	95% CI	OR	95% CI
Unadjusted model								
Immigrant status (Ref. US born)								
0–4 years	1.06	0.83, 1.35	0.56**	0.42, 0.73	0.62**	0.51, 0.75	0.51**	0.39, 0.68
5–9 years	1.11	0.82, 1.50	0.60**	0.43, 0.83	0.68**	0.55, 0.85	0.50**	0.38, 0.66
≥10 years	1.20	0.97, 1.48	0.76**	0.62, 0.92	0.75**	0.63, 0.90	0.67**	0.55, 0.80
Intercept	–2.23**		–1.84**		–0.53**		–1.45**	
–2 log-likelihood	4.17		29.73**		62.17**			
Adjusted model§								
Immigrant status (US born)								
0–4 years	0.69*	0.49, 0.96	0.45**	0.33, 0.62	0.61**	0.51, 0.74	0.45**	0.32, 0.64
5–9 years	0.94	0.63, 1.42	0.65**	0.46, 0.93	0.70**	0.55, 0.87	0.51**	0.35, 0.74
≥10 years	0.95	0.66, 1.37	0.73**	0.60, 0.90	0.77**	0.64, 0.91	0.68**	0.53, 0.87
National origin (Japanese)								
Chinese	1.52*	1.06, 2.18	0.90	0.68, 1.21	0.84	0.67, 1.05	0.74	0.51, 1.07
Filipino	1.72**	1.15, 2.59	1.56**	1.17, 2.08	1.14	0.92, 1.42	1.20	0.89, 1.62
Korean	2.62**	1.75, 3.92	1.15	0.75, 1.74	0.82	0.59, 1.13	0.89	0.58, 1.36
Asian Indian	1.75*	1.07, 2.87	1.54*	1.08, 2.20	0.93	0.71, 1.22	1.24	0.83, 1.84
Pacific Islander	2.72**	1.91, 3.88	2.02*	1.17, 3.47	1.09	0.78, 1.53	2.08*	1.04, 4.15
Vietnamese	3.46**	2.19, 5.47	1.79**	1.23, 2.61	1.14	0.82, 1.59	1.38	0.93, 2.05
Other Asian	1.97**	1.28, 3.05	1.44	0.84, 2.44	0.98	0.76, 1.27	1.00	0.65, 1.54
Intercept	–5.29**		–4.59**		1.05**		–1.64**	
Chi-square test (–2 log-likelihood ratio)	671.77**		770.93**		568.53**			

* $p < 0.05$; ** $p < 0.01$.

Previous research (1)

TABLE 4. Odds ratios for the effects of immigrant status and national origin on physician visits and access to health care, National Health Interview Survey: for physician visits, 1992–1995 combined; for health care, 1993–1995 combined

	Annual visits to physician†				Access to health care,†,‡ no	
	1 or 2 times		≥3 times			
	OR§	95% CI§	OR	95% CI	OR	95% CI
	Unadjusted model					
Duration (US born)						
0 to <5 years	0.68**	0.56, 0.82	0.45**	0.37, 0.55	4.11**	2.64, 6.40
5 to <10 years	0.64**	0.51, 0.80	0.45**	0.36, 0.58	3.31**	2.06, 5.29
≥10 years	0.94	0.79, 1.13	0.64**	0.54, 0.75	1.40	0.90, 2.18
Intercept	0.35**		0.44**		–2.12**	
–2 log-likelihood	117.22**				206.53**	
	Adjusted model¶					
Duration (US born)						
0 to <5 years	0.77*	0.60, 0.98	0.52**	0.41, 0.68	3.48**	2.27, 5.32
5 to <10 years	0.72*	0.56, 0.93	0.54**	0.40, 0.74	2.72**	1.75, 4.22
≥10 years	0.94	0.74, 1.20	0.62**	0.48, 0.78	1.41	0.93, 2.14
National origin (Japanese)						
Chinese	1.01	0.81, 1.27	1.08	0.82, 1.42	1.35	0.91, 1.99
Filipino	1.47**	1.14, 1.89	1.28	0.97, 1.68	0.58*	0.37, 0.91
Korean	0.71*	0.54, 0.95	0.69*	0.50, 0.95	1.87**	1.21, 2.87
Asian Indian	1.10	0.84, 1.44	1.37	0.98, 1.93	1.21	0.74, 1.97
Pacific Islander	1.11	0.83, 1.49	0.99	0.63, 1.55	1.16	0.64, 2.09
Vietnamese	1.22	0.86, 1.72	1.48*	1.06, 2.05	0.83	0.48, 1.45
Other Asian	0.96	0.66, 1.39	1.15	0.80, 1.65	1.46	0.82, 2.58
Intercept	0.33		–0.78**		–1.78**	
Chi-square test (–2 log-likelihood ratio)	2,239.61**				566.69**	

* $p < 0.05$; ** $p < 0.01$.

Previous research (2)

Cho, Y. et al. (2004). Nativity, Duration of Residence, and the Health of Hispanic Adults in the United States. *International Migration Review*, *38*(1), 184-211.

- National Health Interview Survey for 1989-94
- Many studies report that Hispanics in the United States have better or similar health to that of non-Hispanic Whites, despite Hispanics having lower incomes and less education.

- Immigrants reported better health than the U.S. born. In addition, this advantage tended to be significantly smaller among immigrants with > 10 year‘s duration in the USA.

Previous research (2)

TABLE 4

ODDS RATIOS FOR THE EFFECTS OF RACE/ETHNICITY, DEMOGRAPHIC, AND SES RISK FACTORS ON SELF-RATED HEALTH STATUS, U.S. ADULTS, 1989–1994

	Model 1	Model 2	Model 3	Model 4
Race/Ethnicity [Anglo]				
Mexican	2.09[a] (1.91, 2.28)	2.17[a] (1.99, 2.37)	1.18[a] (1.11, 1.26)	1.46[a] (1.36, 1.57)
Cuban	1.49[a] (1.23, 1.79)	1.60[a] (1.31, 1.95)	1.42[a] (1.15, 1.75)	1.54[a] (1.25, 1.89)
Puerto Rican	2.65[a] (2.34, 2.99)	2.82[a] (2.52, 3.15)	1.56[a] (1.37, 1.77)	1.55[a] (1.37, 1.77)
CS American	1.60[a] (1.41, 1.81)	1.73[a] (1.54, 1.93)	1.35[a] (1.21, 1.51)	1.59[a] (1.41, 1.79)
Other Hispanic	1.45[a] (1.33, 1.58)	1.49[a] (1.36, 1.62)	1.31[a] (1.19, 1.44)	1.40[a] (1.25, 1.56)
Black	2.42[a] (2.25, 2.59)	2.42[a] (2.26, 2.60)	1.61[a] (1.51, 1.72)	1.78[a] (1.67, 1.91)
Age (continuous)	1.05[a] (1.04, 1.05)	1.05[a] (1.04, 1.05)	1.02[a] (1.02, 1.02)	1.02[a] (1.02, 1.02)
Sex [Female]				
Male	0.93[a] (0.92, 0.95)	0.93[a] (0.92, 0.95)	1.18[a] (1.16, 1.21)	1.08[a] (1.06, 1.11)
Nativity/Duration [U.S. Born]				
0–4 years		0.91 (0.79, 1.04)	0.60[a] (0.53, 0.69)	0.87 (0.74, 1.01)
5–9 years		0.87[a] (0.78, 0.98)	0.66[a] (0.58, 0.74)	0.89 (0.78, 1.02)
10+ years		0.90[a] (0.85, 0.97)	0.86[a] (0.80, 0.91)	0.95 (0.89, 1.02)
Marital Status [Married]				
Widowed			0.79[a] (0.76, 0.82)	0.65[a] (0.62, 0.68)
Separated or Divorced			1.31[a] (1.26, 1.36)	1.00 (0.96, 1.05)
Never Married			0.97 (0.93, 1.01)	0.89[a] (0.85, 0.93)
Family size (continuous)			1.06[a] (1.05, 1.07)	1.06[a] (1.05, 1.08)

Source: National Health Interview Survey 1989-1994 (pooled).

Notes: Reference category for Self-rated Health Status is Excellent, Very good, Good.

[a] $p < .01$

[b] $p < .05$

Previous research (2)

TABLE 4

ODDS RATIOS FOR THE EFFECTS OF RACE/ETHNICITY, DEMOGRAPHIC, AND SES RISK FACTORS ON SELF-RATED HEALTH STATUS, U.S. ADULTS, 1989–1994

	Model 1	Model 2	Model 3	Model 4
Educational Attainment [College graduate]				
Less than 12 years			3.11[a] (2.95, 3.27)	3.07[a] (2.91, 3.25)
High School Graduate			1.81[a] (1.73, 1.90)	1.89[a] (1.80, 1.99)
Some College			1.47[a] (1.40, 1.53)	1.38[a] (1.31, 1.46)
Family Income [$35,000+]				
Less than $10,000			3.20[a] (3.04, 3.37)	2.56[a] (2.41, 2.72)
$10,000 to $19,999			2.11[a] (2.03, 2.20)	1.90[a] (1.82, 1.99)
$20,000 to $34,999			1.48[a] (1.43, 1.53)	1.41[a] (1.36, 1.47)
Missing			1.78[a] (1.70, 1.86)	1.75[a] (1.67, 1.84)
Employment Status [Employed]				
Unemployed			1.60[b] (1.50, 1.72)	1.30[a] (1.21, 1.41)
Not in Labor Force			3.01[a] (2.91, 3.11)	1.73[a] (1.68, 1.79)
Activity Limitation [None]				
Limited				6.43[a] (6.24, 6.62)
Bed Days [None]				
1–6 days				1.46[a] (1.42, 1.51)
7 days or more				4.01[a] (3.87, 4.15)
Intercept	-4.15[a]	-4.28[a]	-4.85[a]	-5.61[a]
Chi-square (df)	133,321.2[a] (8)	30,552.8[a] (11)	58,570.2[a] (24)	106,484.4[a] (27)

Source: National Health Interview Survey 1989-1994 (pooled).

Notes: Reference category for Self-rated Health Status is Excellent, Very good, Good.

[a] $p < .01$

[b] $p < .05$

Previous research (3)

Abraido-Lanza et al. (1999). The Latino mortality paradox: a test of the "salmon bias" and healthy migrant hypotheses. *American Journal of Public Health*, *89*(10), 1543-1548.

- To examine biological risk profiles by race, ethnicity, and nativity to evaluate evidence for a Hispanic paradox in measured health indicators.
- Adults > 40 years old (n=4206) from the National Health and Nutrition Examination Surveys (NHANES)(1999–2002) to compare blood pressure, metabolic, and inflammatory risk profiles.

Summary of findings

- Foreign-born Hispanics and Whites had similar biological risk profiles, but US-born Mexican Americans had higher risk, which was consistent with the hypothesized effects of migrant health selectivity.
  - Hispanics have more risk factors above clinical risk levels than do Whites but fewer than Blacks.
  - After controlling for SES, the differences between foreign-born Hispanics and Whites were eliminated, but US-born Mexican Americans still had higher biological risk scores than did Whites and foreign-born Mexican Americans.

Previous research (3)

TABLE 1—Clinical High-Risk Criteria for Risk Factors: National Health and Nutrition Examination Survey, 1999–2002

Biological Risk Indicators	High-Risk Cutpoint
Blood pressure risk factors	
Systolic blood pressure[a]	≥140 mm Hg[33]
Diastolic blood pressure[a]	≥90 mm Hg[33]
Pulse rate at 60 s	≥90
Metabolic risk factors	
Total cholesterol[b]	≥240 mg/dL[34]
HDL cholesterol[b]	<40 mg/dL[34]
Body mass index[c]	≥30 kg/m[35]
Glycated hemoglobin[d]	≥6.4 %[36]
Inflammation risk factors	
C-reactive protein[e]	>3.0 mg/L[37]
Fibrinogen	>400 mg/dL[38]
Albumin	<3.8 g/dL[39]

TABLE 3—Mean Biological Risk Score, by Race, Ethnicity, and Nativity: National Health and Nutrition Examination Survey, 1999–2002

			All Hispanic			Mexican American		
	White (n = 2338)	Black (n = 717)	All (n = 1151)	US born (n = 505)	Foreign born (n = 646)	All (n = 963)	US born (n = 455)	Mexican born (n = 508)
Model 1								
Total risk (0–10)	1.87	2.58[a]	2.19[a,b]	2.23[a,b]	2.16[a,b]	2.26[a,b]	2.41[a]	2.14[a,b,c]
Blood pressure risk (0–3)	0.36	0.61[a]	0.43[b]	0.41[b]	0.45[b]	0.45[a,b]	0.51[a]	0.40[b]
Metabolic risk (0–4)	0.82	0.96[a]	0.96[a]	0.99	0.94	1.00[a]	1.03[a]	0.98[a]
Inflammation risk (0–3)	0.69	1.01[a]	0.79[a,b]	0.83[a,b]	0.77[b]	0.81[a,b]	0.87[a,b]	0.76[b]
Model 2								
Total risk (0–10)	1.92	2.40[a]	1.98[b]	2.08	1.85[b]	2.00[b]	2.28[a]	1.72[b,c]
Blood pressure risk (0–3)	0.37	0.58[a]	0.39[b]	0.38[b]	0.40[b]	0.41[b]	0.49	0.33[b,c]
Metabolic risk (0–4)	0.85	0.89	0.85	0.92	0.80	0.87	0.97	0.78[c]
Inflammation risk (0–3)	0.70	0.95[a]	0.71[b]	0.78[b]	0.66[b]	0.72[b]	0.82[b]	0.62[b,c]
Model 3[d,e]								
Total Risk (0–10)	1.92	2.40[a]	1.98[b]	2.08	1.90[b]	2.03[b]	2.28[a]	1.79[b,c]
Blood pressure risk (0–3)	0.37	0.59[a]	0.39[b]	0.38[b]	0.40[b]	0.37[b]	0.49[b]	0.33[b,c]
Metabolic risk (0–4)	0.85	0.88	0.86	0.92	0.81	0.88	0.96	0.80[c]
Inflammation risk (0–3)	0.70	0.93[a]	0.73[b]	0.78[b]	0.69[b]	0.74[b]	0.83	0.65[b,c]

Note. Model 1 adjusted for age and gender. Model 2 adjusted for age, gender, low education, and poverty score. Model 3 adjusted for age, gender, low education, poverty score, health behaviors, and access to health care.
[a]Significantly different from White.
[b]Significantly different from Black.
[c]Significantly different from US born at the .05 level.

★Effects of migration on the remaining population

Yao Lu (2012). Household migration, social support, and psychological health: The perspective from migrant-sending areas. *Social Science & Medicine* 74 (2012) pp. 135-142

- Psychological cost of family disruption
  - Loss of social support
    - Social support (Resources provided by others in the social structure).
    - It often protects individuals from the adverse influences of stressful circumstances (Lin & Ensel, 1989).

Previous research (4)

- Indonesia Family Life Survey (IFLS)
  - 7,224 households, 22,347 individuals
  - Multistage-probability sampling in 1993
  - Low Attrition Rate
    - 2000: Over 90 % of the HHs interviewed in 1997
    - 2007: Over 90 % of the HHs interviewed in 2000
  - Hypertension: SBP > 140 or DBP > 90
  - Depressive symptoms (CES-D): Score (0-30) > 16 points
  - Depressive symptoms (sadness): response to “Have you experienced sadness in the last 4 weeks?”, where the response options were “sometimes” or “often”.

Summary of findings

- Psychosocial costs of out-migration: adults left behind by migrants were more susceptible to
  - stress-related health impairments such as hypertension
  - psychological distress such as depressive symptoms.
- These findings largely hold when specific relations are investigated, including
  - spouses left behind
  - parents left behind by adult children.
- This study also finds some support for the stress-buffering role of social support from extended families.

Table 2
Fixed-effect and lagged dependent variable models of health status on household migration and other covariates, IFLS 1997–2007 (odds ratios shown; 95% confidence intervals in parentheses).

	Hypertension	Depressive symptoms (CES-D)	Depressive symptoms (sadness)
Household with labor migrants (ref. nonmigrant household)	1.373* (1.814, 1.039)	2.052* (3.588, 1.174)	1.241† (1.564, 0.985)
Age	1.019 (1.171, 0.887)	0.957 (1.049, 0.873)	0.957* (0.995, 0.920)
Age squared	0.999 (1.001, 0.997)	1.059 (2.552, 0.439)	1.288 (1.876, 0.884)
Male	–	0.910 (1.704, 0.486)	0.926 (1.181, 0.726)
Currently working	0.835 (1.071, 0.651)	−0.522† (1.096, 0.248)	0.981 (1.322, 0.728)
Education (ref. 0–5 years)			
6–9 years	1.095 (1.589, 0.755)	0.587† (1.057, 0.326)	0.843 (1.081, 0.657)
≥10 years	0.948 (2.406, 0.374)	0.534 (1.316, 0.217)	0.959 (1.370, 0.671)
Marital status (ref. never married)			
Married, living with spouse	0.783 (2.249, 0.273)	1.153 (3.257, 0.408)	1.153 (1.830, 0.726)
Married, not living with spouse	0.977 (3.262, 0.293)	6.104* (25.780, 1.445)	2.206† (5.004, 0.972)
Marriage dissolution	1.468 (4.746, 0.423)	1.948 (6.952, 0.546)	1.611 (2.833, 0.916)
Per capita household annual income (log)	0.990 (1.014, 0.967)	0.983 (1.076, 0.898)	0.968* (0.998, 0.938)
Family structure (ref. nuclear families)			
Extended families	1.059 (1.434, 0.781)	0.584 (1.208, 0.282)	0.976 (1.270, 0.751)
Other	0.895 (2.485, 0.322)	1.239 (6.883, 0.223)	0.931 (1.909, 0.455)
Household size	0.969 (1.113, 0.843)	1.104 (1.252, 0.974)	1.065* (1.125, 1.008)
Female-head household	0.809 (1.442, 0.454)	0.614 (2.075, 0.182)	0.849 (1.237, 0.583)
Overweight	1.229 (1.917, 0.787)	–	–
Currently smoking	1.108 (2.184, 0.563)	–	–
Previous depressive symptoms (sadness)	–	3.333*** (5.771, 1.926)	1.960*** (2.456, 1.565)
Log likelihood	−827.5	−272.7	−1214.9
N	3924	4107	4311

Note: Estimates for year, province dummy variables, and their interactions are not shown.
***p value < 0.001; **p value < 0.01; *p value < 0.05; †p value < 0.1; two-tailed tests.

Table 3
Coefficients of household migration status by relationship to migrants, level of social support, gender, and length of emigration, IFLS 1997–2007 (odds ratios shown; 95% confidence intervals in parentheses).

	Hypertension	Depressive symptoms (CES-D)
By relationship with migrants		
Parents left behind	1.520* (2.185, 1.058)	2.280* (4.791, 1.085)
N	1078	1352
Spouses left behind	1.423 (2.355, 0.860)	1.972* (3.810, 1.021)
N	1352	1630
Gender		
Males		
Household with labor migrants (ref. nonmigrant household)	1.721* (2.707, 1.094)	1.448 (3.996, 0.525)
N	1785	1869
Females		
Household with labor migrants (ref. nonmigrant household)	1.192 (1.714, 0.830)	2.026* (4.039, 1.016)
N	2139	2238
Difference by gender	–†	–†
Level of social support		
Nuclear households		
Household with labor migrants (ref. nonmigrant household)	1.527* (2.224, 1.048)	2.197* (4.510, 1.070)
N	2511	2628
Extended households		
Household with labor migrants (ref. nonmigrant household)	1.269 (1.941, 0.829)	1.365 (3.214, 0.580)
N	1354	1417
Difference by family structure	Insignificant	–*
By length of emigration (ref. nonmigrant household)		
Household with labor migrants ≤1 year	1.137 (1.725, 0.749)	1.328† (1.857, 0.950)
Household with labor migrants 1–3 years	1.578** (2.210, 1.126)	2.195** (3.829, 1.258)
Household with labor migrants >3 years	1.657* (2.575, 1.066)	1.906† (3.998, 0.909)
N	3874	4063

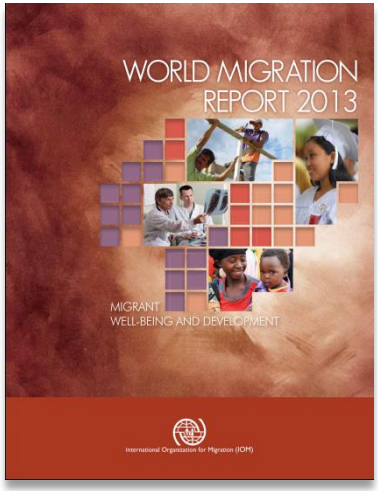
Note: Estimates of other covariates are not shown, which are the same as those presented in Table 2.
*p value < 0.05; †p value < 0.1; two-tailed tests.

Section 2: Migration Topics

Salgado / Former peasants living in crowded apartments. Ho Chi Minh City, Vietnam. 1995

World Migration Report

- World Migration Report 2013
  - Migrant Well-being and Development
  - 7th report by International Organization for Migration (IOM)



  - Gallup World Poll
    - >150 countries in 2009-2011
    - 25,000 Migrants + 400,000 Native-born
      - New comers < 5 years; Long-term > 5 years

- Migrants vs. Native-born in host countries
- Migrants vs. "Matched stayers" in origin countries

Focusing on well-being

- Holistic Approaches: **Well-being**

- What we measure affects what we do… The time is ripe for our measurement system to shift emphasis from measuring economic production to measuring people's well-being.

  – Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi, 2010

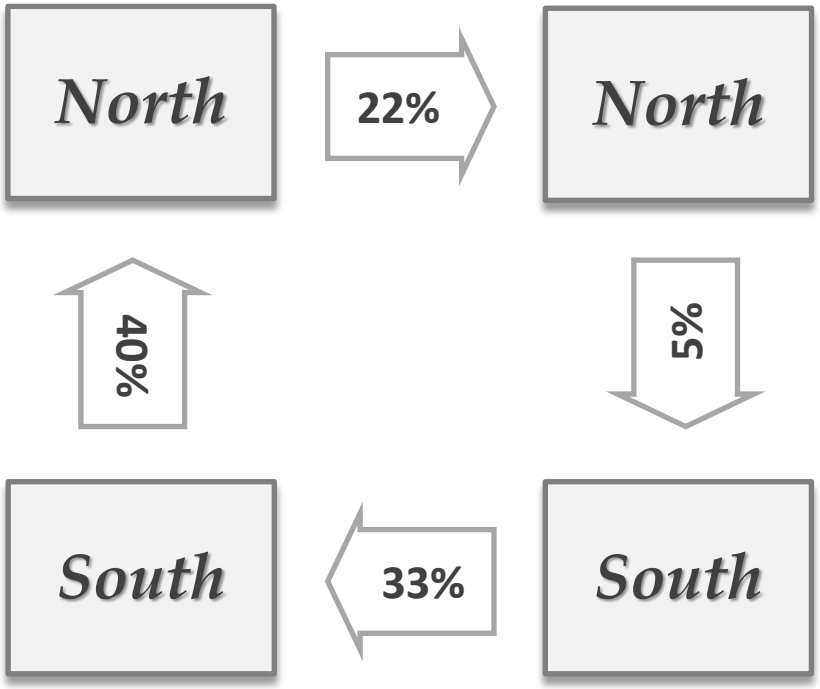
- We need to put the notion of well-being and sustainability at the core of the reflections about the future shape of the global development framework beyond 2015.

  – United Nations General Assembly, 2012

Well-being by subcategory

Subjective well-being	How people evaluate their lives overall, and affective states and experiences in real time.
Financial	Personal finances, ability to live on current income, and satisfaction with standard of living.
Career	Employment situation, job views, and opportunities for entrepreneurship.
Physical	Quality of an individual's personal health, access to health care and medical insurance.
Social	Personal relationships and social networks (e.g. friends and support structures).
Community	Relationships with the community (e.g. personal safety, confidence in national institutions).

Four modes of migration



- Most international migrants move from the South to the North or between countries in the South.
- The number of South-North migrants increased the most during the last two decades.
- But they represent less than half of all international migrants.

Overview of international migration

- Most international migrants live in the North (at least 56%): migrants represent between 10% to 12% of the total population in the North; while in the South they are only 2% of the resident population.

- The majority of international migrants are male, except in the case of North-North migration, where the majority are female.

- Migration is not just a South-North phenomenon.

Migrants vs. Native-born

- Many migrants report poorer levels of well-being.

- But results differ between migrants in the North and the South.
  - North: higher unemployment, lower incomes.
  - South: More health problems, lower trust in national institutions, poorer personal safety.

- Duration of stay matters.

Migrants vs. Stayers

- Migrants in the North make the largest gains compared with if they had not migrated:
  - Overall subjective well-being increases.
  - Better off financially.
  - More satisfied with personal health and healthcare.

- Migrants in the South fare similarly or worse compared with if they had not migrated:
  - Lower subjective well-being.
  - Struggle more to get adequate housing.
  - Worse health and health care.

Rural-to-urban migration in China

- Facts on China's Urbanization (McKinsey Global Institute)
  - **350 million** will be added to China's urban population by 2025 – more than the population of the USA today.
  - **1 billion** people will live in China's cities by 2030.
  - **221** Chinese cities will have more than one million people. Europe has 35 today.

- China has seen the largest human migration in history, leading to a rise in the urban population from 191 million in 1980 to 622 million in 2009 – an increase driven largely by rural-to-urban migration.
  - Migrants: 40% of the urban population ≈ 260 million

Rural-to-urban migration in China

- Household Registration (Hukou: 戸口) '50s-
  - restricted the geographical mobility of the population.

Post-1978 Economic Reforms

Increasing population mobility

Changing settlement pattern

- Hukou is, for migrants, regarded as an important institutional barrier to the achievement of equal rights to employment, education, housing, health care, and social services.

Push and pull – the drivers of migration

Push factors

Economic

- Agricultural failure
- Income variability
- Surplus laborers / Loss of employment

Social

- Ethnic or other discrimination
- Dissatisfaction with traditional lifestyle

Environmental

- Administrative displacement
- Drought or flood
- Disaster
- Resource depletion
- Loss of land, conversion of farmland

Pull factors

Economic

- Prospects for high income and remittance
- Job opportunities
- Improved housing
- Health care

Social

- Marriage prospects
- Educational opportunities
- Children, siblings, spouse, or other relatives

Environmental

- Resource discovery

(Peng et al., 2012 Lancet)

The pathways through which urbanization affects health.

1. The urban environment itself contains chemical, biological, and physical hazards.
2. Urbanization triggers changes in occupational activities, SES, and social structures that can promote illnesses.
3. The massive rural-to-urban migration has created particular challenges for health-care delivery in highly mobile and often undocumented populations.
4. Urbanization has connected previously isolated locations through rural-to-urban migration, with implications for the spread of communicable infections across the country.

Healthcare coverage

- Low immunization coverage in migrant children
  - Little awareness of immunization among migrant parents
  - The costs associated with inoculation
  - Frequent job-related changes of residence
  - Births that violate the one-child policy
  - Alarmingly low age-appropriate immunization coverage of migrant children for vaccines in Beijing.
- The immunological status of female migrant workers in Shenzhen
  - The sero-prevalence of antibodies to rubella was too low to provide herd immunity in the population.
  - Rubella infection during pregnancy leads to congenital rubella syndrome and subsequent lifelong disability.

Communicable diseases

- The absence of health-care coverage of migrants puts many at risk of a dual infectious disease burden.
  - Pathogens associated with rural poverty (e.g. helminth)
  - Diseases associated with crowded environments (e.g. TB).
  - Migrant workers infected with helminth infections often go undiagnosed and untreated in urban areas, leading to morbidity and raising the risk of reintroduction of diseases into previously controlled rural areas.
  - The crowded working and living conditions of migrant workers might put them at higher risk of tuberculosis infection than permanent residents.

Communicable diseases

- China's economic growth has also led to a growing commercial sex industry and a rise in unprotected sexual activity.
  - Higher prevalence among migrants has not yet been supported through cross-sectional studies, but since migrants tend to be younger and unmarried, they have higher rates of risky behaviors such as unprotected sex and use of commercial sex services.

- STIs are also a concern because of mother-to-child transmission.
  - A fast climbing incidence of congenital syphilis
    - from 0.01 cases per 100 000 live births in 1991
    - to 19.68 cases per 100 000 live births in 2005,

    representing an average annual increase of 71.9%.

Non-communicable diseases

- Urbanization has led to changes in patterns of human activity, diet, and social structures in China, with profound implications for non-communicable diseases.

- An ethnic minority group in southwest China
  - Early evidence of the effect of urbanization on chronic disease; age-related increases in blood pressure were greater in individuals who had moved to urban areas than in those who remained in rural villages.

Psychological stress

- Psychological stressors
  - Noise and social isolation
  - Discrimination, stigmatization
  - Finding work, housing, schools for their children, and health care.

- Rural-to-urban and urban-to-urban migrants
  - Higher psychological distress than in non-migrating populations.
  - This trend lessens as the length of residence in the urban destination increases.

Occupational accidents and injuries

- Migrants are more likely to have dangerous work environments, such as those in construction or heavy industry.
  - In 2004, nearly all the 39 million construction workers in China were migrants.
  - Migrant workers work nearly 50% longer hours, are less educated, and have less experience than non-migrant urban workers, all of which lead to an increased risk of injury.
  - Reports of work-related injuries (e.g. pneumoconiosis, poisoning, and noise deafness) in migrant workers are common.

Ageing in China

- Because of the migration of young people to urban centers, people in rural areas are ageing rapidly.

- One study examining the effect of migration on ageing
  - In the absence of rural-to-urban migration
    - the proportion of the population > 65 years would reach 25% in urban and 16% in rural areas by 2050.
  - With migration included
    - the population > 65 years would reach 21% in urban and 23% in rural areas in 2050.

Assignment!

Choose one of the tasks below. (Due 27th Nov, 2013; One page in A4).

1. Choose an example of a migrant community in your home country. You are requested to refer to some of the following points:
   - Their origin
   - Are there sufficient healthcare services/information for them?
   - What kind of health problems do they face?
2. Choose an example of emigrants from your home country.
   - Their destination
   - What kind of health problems do they face?
3. Use the example of a migrant community to Japan from your home country.
   - Are there any places in Japan where migrants from your country live together?
   - Do these migrants use their fellow community members (network connections) in order to obtain healthcare services/information?

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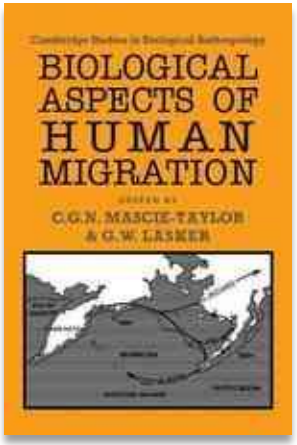
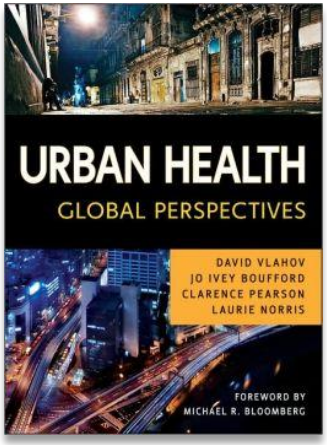
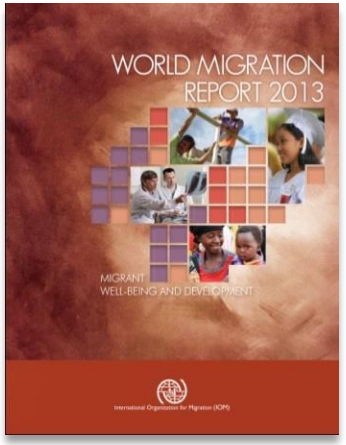


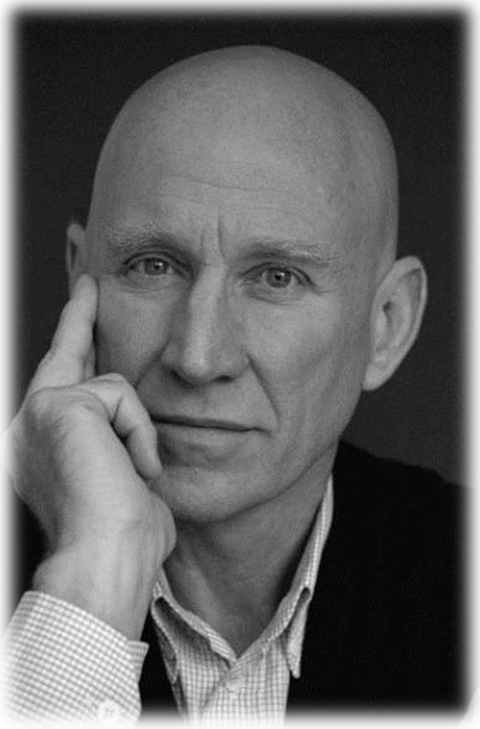




Brazilian Photojournalist

Publication

- *An Uncertain Grace* (1992)
- *Trabalhadores: Uma Arqueologia da Era Industrial* (1993)
- *Migrations* (2000)
- *The Children: Refugees and Migrants* (2000)
- *Sahel: The End of the Road* (2004)
- *Africa* (2007)
- *Genesis* (2013)



February 8, 1944 –