

## The "Reproductive Transition": A Community-based Reproductive Health Surveillance Paradigm in Developing Countries

ABE N'Doumy Noël\*

Doctorate degree of Anthropology, Teacher-researcher, Université Alassane Ouattara, Côte d'Ivoire.

### \*Correspondence:

Doctorate degree of Anthropology, Teacher-researcher, Université Alassane Ouattara, Côte d'Ivoire, Tel: (225) 05 64 28 98; E-mail: ndoumyabe@yahoo.fr.

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### ABSTRACT

*The major question at the center of this study is the model for reading maternal and neonatal health problems in developing countries. On the subject, the demographic, epidemiological and statistical literature has accustomed us to a reading model based on observation and analysis at the micro-individual scale. The unit of analysis is the individual. This classic model of analysis, based on sociodemographic variables, has some effectiveness / relevance, but is still limited. It appears partial and static. In contrast to this individualistic and fixed approach, we propose a dynamic and community-based observation scale that induces the concept of "reproductive transition". The reproductive transition is defined as the transition from a high-risk situation in a community to a lower-risk situation over a sustainable period in reproductive health. Indeed, the operational approach leads us to four types of expected results that are four possible trends of sociological evolution of this reproductive health. These expected results are:*

- The transition started; the problems are decreasing.
- The stationary situation; there is neither growth nor decay.
- The transition is mixed; some problems are growing, others are decreasing.
- The alarming situation; all problems have an ascending pace.

*"Reproductive transition" thus appears as an innovative model for reading reproductive health problems. Its scale of observation is the community and not the individual. It thus constitutes a relevant health surveillance support for communities where maternal, neonatal and infant morbidity and mortality appear to be endemic.*

### Keywords

Anthropology of health, Maternal health, Neonatal health, Observation scale, Reproductive health, Transition.

Ethiopia,

- Etc.

### Introduction

Maternal morbidity and mortality are endemic in sub-Saharan Africa. At the national level, both in Africa and abroad, several initiatives have been developed to control this situation. The following can be mentioned among other international initiatives:

- Beijing Conference in China in 1984,
- The 1994 International Conference on Population and Development in Cairo, Egypt,
- MDG 4 in 2000,
- Accelerated Reduction of Maternal Mortality in 2009, in

As a result of these multiple actions, there have been mixed fortunes from one country to another. The 2015 results published by WHO demonstrates this with such comments as "no progress" or "little progress" [1]. African countries registered under "securing progress" are few and far between. As a result, one wonders: 'What relevant control mechanism is to be put in place to achieve more sustainable maternal, neonatal and child health?'

This is a significant question that has led me to the hypothesis of the "reproductive transition" concept. What are epistemological foundations of this concept? What does this "reproductive

transition" concept mean?  
 What results has it given in its experimental implementation?  
 What scientific consequences can be drawn from it?

**Methodology**

Methodology concerns design of the reproductive transition.

**Initial question**

Let me recall my initial question: "What relevant control mechanism is to be put in place to achieve more sustainable maternal, neonatal and child health?"

**Working hypothesis**

From this central question, I have formulated a main hypothesis. Here it is:

"A control mechanism to be put in place for more sustainable reproductive health is a model that requires a community-scale observation, a rigorous operational definition and a dynamic analysis of the reproductive fact." [2]

- Community-scale observation – geographically, it is a health area that covers one or more villages within a District. A health area is the smallest spatial unit according to a health administrative division. It constitutes the community-scale observation.
- Operational definition – a reproductive fact is a reality consisting at least of three dimensions: demographic dimension attested by fertility (teenage pregnancy, close interval pregnancy, multiple pregnancy, and pregnancy over age 35); ethnological dimension (unassisted childbirth, inadequate prenatal consultations, out-of-date neonatal vaccines) and epidemiological dimension (abortion, indirect causes and direct causes of mortality);
- Dynamic analysis – the reproductive fact of a community is never fixed. It changes; how does it change over time? Why does it change? who are actors behind the change? The collective reproductive reality in a given geographical area undergoes a law of evolution. It is important to master this law of evolution.

I have been led by this conceptualization to develop the figure 1:

	Demographic Dimension	Ethnological Dimension	Epidemiological Dimension	
Components	Reproductive Risk Behaviours (RRB)	Reproductive Risk Practices (RRP)	Maternal Morbidity and mortality	Neonatal Morbidity and mortality
Measurable Indicators	- Teenage pregnancy - Pregnancy over age 35 - Multiple pregnancy	- Unassisted childbirth - Prenatal visits fewer than 4 - Out-of-date neonatal vaccines / unimmunized	- Abortions - Direct medical causes  - indirect medical causes	- Child deaths greater than 1 - Weight at birth less than 2,500g - Premature birth

**Figure 1:** "Reproductive Transition" basic structure [3].

**Concept definition**

"Reproductive transition is identified with a theory of change

applied to human reproductive life. It assumes a simultaneous downward trend, over a sustainable period, risk factors in the three demographic, ethnological and epidemiological dimensions of reproductive health in a given community "(ABE 2013, 48) [3].

Observation relies on measurable indicators. Indicators to be taken into account in the approach are those considered risk factors, stemming from the three dimensions of the reproductive fact.

**Data collection techniques**

**Data source:** In the context of "Reproductive Transition", a midwife's "birth registry" in a maternity ward is the source of data to be collected (ABE, op cit.89-97) [2].

**Observation period:** "Reproductive transition" is defined as a theory of change. This aims to explain and understand the evolution of the reproductive lives of communities between T1 time and Tn time.

T1 is the year considered starting point, and Tn being the last year. The time interval separating T1 and Tn lay extend over a longer or shorter period: three, five, eight, ten or fifteen years, depending on the availability of data and / or a particular objective to be achieved. In this specific context, a survey to be conducted remains retrospective in nature. Data processing follows data collection.

**Data processing**

Implementing "Reproductive Transition" is a process. Outcomes highlight two types of elements:

- Level of a specific problem – Being translated as an annual average;
- Trend of a specific problem – In the latter case, there are four possible results:

**Initiated transition:** The three risk factors of the reproductive fact (RRB, RRP, MSR Reproductive Health Morbidity) simultaneously show a decreasing systematic rate from T1 to Tn;

**Static situation:** The three risk factors of the reproductive fact (CPR, PGR, MSR (Reproductive Health Morbidity) simultaneously show a fixed rate from T1 to Tn;

**Alarming transition:** The risk factors have a predominantly increasing trend over the period T1 to Tn;

**Mixed transition:** Mixed transition occurs over the period T1 to Tn when:

- either 2/3 of the risk factors have a decreasing trend;
- or 2/3 of the risk factors have a static trend.

The "reproductive transition" theory stems from this variety of results of the reproductive fact over time, within different communities. The ideal form is that of the initiated transition in all three cases: RRB; RRP; and MSR (Reproductive Health Morbidity). What results did the experimental studies show?

## Results

Application cases to be presented involve three geographical areas of Côte d'Ivoire, which are ADIAKE, AZAGUIE and SIKENSI, lagoon localities. I will present for these areas, reproductive behaviours, reproductive practices and maternal morbidities.

### Reproductive risk behaviours (RRB)

Levels and trends over a five-year period will be examined (2008-2012).

### Levels of reproductive risk behaviours

**ADIAKE area:** Teenage pregnancy identified as the major recurring issue in Adiaké area (Table 1).

**Table 1:** Variation in the level of reproductive risk behaviours in ADIAKE area in 2008-2012.

Reproductive risk behaviours Health areas	Annual average (%)			Prevailing issues
	Teenage pregnancy	Pregnancy over age	Multiple pregnancy	
Assinie France	06.91	04.72	03.93	Teenage pregnancy
Assinie Mafia	04.20	03.35	03.44	Teenage pregnancy
Adiaké	10.80	09.98	08.49	Teenage pregnancy
Assomlan	08.58	07.52	06.48	Teenage pregnancy
Kakoukro	12.03	07.25	05.79	Teenage pregnancy
Mélékoukro	11.98	10.62	09.27	Teenage pregnancy

**Finding 1:** Teenage pregnancy identified as the major recurring issue in Adiaké area.

**AZAGUIE area:** Teenage pregnancy remains the prevailing reproductive risk behaviour in Azaguié (Table 2).

**Table 2:** Variation in the level of reproductive risk behaviours in AZAGUIE area in 2008-2012.

Reprod. Risk behaviours Health areas	Annual average (%)			Prevailing issues
	Teenage pregnancy	Pregnancy Over age	Multiple pregnancy	
Achiékoi	36.25	08.75	07.50	Teenage pregnancy
M'Bromé	46.08	13.47	08.25	Teenage pregnancy
Grand Yapo	14.65	08.89	06.57	Teenage pregnancy
Azaguié	08.16	10.43	06.83	Pregnancy over age

**Finding 2:** Teenage pregnancy remains the prevailing reproductive risk behaviour in Azaguié.

**SIKENSI area:** Multiple pregnancy appears as the reproductive risk behaviour in Sikensi district (Table 3).

**Table 3:** Variation in the level of reproductive risk behaviours in SIKENSI area in 2008-2012.

Reprod. Risk behaviours Health areas	Annual average (%)			Prevailing issues
	Teenage pregnancy	Pregnancy Over age	Multiple pregnancy	
Bakanou B	09.80	06.89	07.48	Teenage pregnancy
Bécedi	04.71	03.22	06.81	Multiple Pregnancy
Elibou	07.99	07.87	08.49	Multiple Pregnancy
Gomon	01.06	0.81	25.74	Multiple Pregnancy
Sahuyé	09.64	08.65	13.12	Multiple Pregnancy
Sikensi	10.22	07.88	07.22	Teenage pregnancy
Yaobou	08.87	06.84	10.91	Multiple Pregnancy

**Finding 3:** Multiple pregnancy appears as the reproductive risk behaviour in Sikensi district.

### Reproductive risk behaviour trends

**ADIAKE area:** Of the six health areas in ADIAKE area, five present an alarming trend in terms of reproductive risk behaviours (Table 4).

**Table 4:** Reproductive risk behaviour trends (2008-2012).

Reprod. Risk behaviours Health areas	Teenage pregnancy	Pregnancy over age	Multiple pregnancy	Evolution trends
Assinie France	Upward pace	Upward pace	Upward pace	<i>alarming trend</i>
Assinie Mafia	Downward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Adiaké	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Assomlan	Upward pace	Downward pace	Upward pace	<i>Alarming trend</i>
Kakoukro	Downward pace	Downward pace	Upward pace	<i>Mixed trend</i>
Mélékoukro	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>

**Finding 4:** Of the six health areas in ADIAKE area, five present an alarming trend in terms of reproductive risk behaviours.

**AZAGUIE area:** Of the four health areas in AZAGUIE area, two show a mixed trend and two others show an alarming trend in reproductive risk behaviours (Table 5).

**Table 5:** Reproductive risk behaviour trends.

Reprod. Risk behaviours Health areas	Teenage pregnancy	Pregnancy over age	Multiple pregnancy	Evolution trends
Achiékoi	Static pace	Downward pace	Downward pace	<i>Mixed trend</i>
M'Bromé	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Grand Yapo	Upward pace	Downward pace	Downward pace	<i>Mixed trend</i>
Azaguié	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>

**Finding 5:** Of the four health areas in AZAGUIE area, two show a mixed trend and two others show an alarming trend in reproductive risk behaviours.

**SIKENSI area:** The configuration of SIKENSI gives one case of transition trend; three cases of mixed trend and three cases of alarming trend (Table 6).

**Table 6:** Reproductive risk behaviour trends.

Reprod. Risk behaviours Health areas	Teenage pregnancy	Pregnancy over age	Multiple pregnancy	Evolution trends
Bakanou B	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Bécedi	Downward pace	Upward pace	Downward pace	<i>Mixed trend</i>
Elibou	Downward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Gomon	Upward pace	Downward pace	Downward pace	<i>Mixed trend</i>
Sahuyé	Downward pace	Downward pace	Upward pace	<i>mixed trend</i>
Sikensi	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Yaobou	Upward pace	Upward pace	Downward pace	<i>Alarming trend</i>

**Finding 6:** The configuration of SIKENSI gives one case of transition trend; three cases of mixed trend and three cases of alarming trend

### Partial Conclusion 1

This analysis shows that reproductive risk behaviours (RRB) do not appear uniform between zones. Moreover, even if apparently,

there are common prevailing issues, the situations do not have the same extent (ex: Assinie Mafia and Mbromé).

### Reproductive Risk Practices (RRP)

Levels and trends will be analysed over a five-year period.

#### Levels of reproductive risk practices

**ADIAKE area:** Inadequate PNs are revealed as the prevailing collective issue in Adiake area (Table 7).

**Table 7:** Variation in the level of reproductive risk practices Unassisted childbirth; Out-of-date vaccines; Inadequate Prenatal Consultations (CPN);

Reprod. Risk practices Health areas	Annual average (%)			Prevailing issues
	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	
Assinie France	26,65	37,04	44,69	Inadequate Prenatal Consultations
Assinie Mafia	25,53	14,32	42,39	Inadequate Prenatal Consultations
Adiaké	15,25	12,99	61,69	Inadequate Prenatal Consultations
Assomlan	21,19	28,91	49	Inadequate Prenatal Consultations
Kakoukro	15,63	18,35	76,65	Inadequate Prenatal Consultations
Mélékoukro	25,49	21,04	49,17	Inadequate Prenatal Consultations

**Finding 7:** Inadequate PNs are revealed as the prevailing collective issue in Adiake area.

**AZAGUIE area:** CPN inadequacy accounts for the prevailing major issue in Azaguié (Table 8).

**Table 8:** Variation in the level of reproductive risk practices.

Reprod. Risk practices Health areas	Annual average (%)			Prevailing issues
	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	
Achiékoï	35,83	16,66	11,25	Unassisted childbirth
M'Bromé	45,55	01,48	67,60	Inadequate Prenatal Consultations
Grand Yapo	08,52	09,96	29,37	Inadequate Prenatal Consultations
Azaguié	22,15	10,16	54,41	Inadequate Prenatal Consultations

**Finding 8:** CPN inadequacy accounts for the prevailing major issue in Azaguié.

**Table 9:** Variation in the level of reproductive risk practices.

Reprod. Risk practices Health areas	Annual average (%)			Prevailing issues
	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	
Bakanou B	80,13	26,90	49,17	Unassisted childbirth
Bécédi	08,67	12,03	31,71	Inadequate Prenatal Consultations
Elibou	32,98	05,33	56,77	Inadequate Prenatal Consultations
Gomon	10,45	09,03	53,25	Inadequate Prenatal Consultations
Sahuyé	38	23,81	58,75	Inadequate Prenatal Consultations
Sikensi	18,07	21,71	50,41	Inadequate Prenatal Consultations
Yaobou	18,60	04,46	36,81	Inadequate Prenatal Consultations

**Finding 9:** "Insufficient CPNs" are the major recurring problem in

SIKENSI area.

**SIKENSI area:** "Insufficient CPNs" are the major recurring problem in SIKENSI area (Table 9).

#### Reproductive risk practices trends

**ADIAKE area:** Six health areas are divided fairly among three trends: two cases of initiated trend; two cases of mixed trend and two cases of alarming trend (Table 10).

**Table 10:** Trends in reproductive risk practices.

Reprod. Risk practices Health areas	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	Evolution trends
Assinie France	Downward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Assinie Mafia	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Adiaké	Upward pace	Downward pace	Downward pace	<i>Mixed trend</i>
Assomlan	Downward pace	Downward pace	Upward pace	<i>Mixed trend</i>
Kakoukro	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Mélékoukro	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>

**Finding 10:** Six health areas are divided fairly among three trends: two cases of initiated trend; two cases of mixed trend and two cases of alarming trend.

**AZAGUIE area:** Four health areas are distributed as follows: two cases of initiated trend; one case of mixed trend; and one case of alarming trend (Table 11).

**Table 11:** Reproductive risk practice trends.

Reprod. Risk practices Health areas	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	Evolution trends
Assinie France	Downward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Assinie Mafia	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Adiaké	Upward pace	Downward pace	Downward pace	<i>Mixed trend</i>
Assomlan	Downward pace	Downward pace	Upward pace	<i>Mixed trend</i>
Kakoukro	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Mélékoukro	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>

**Finding 11:** Four health areas are distributed as follows: two cases of initiated trend; one case of mixed trend; and one case of alarming trend.

**SIKENSI area:** Health areas are divided into the following trends: one case of initiated trend; three cases of mixed trend; and three cases of alarming trend (Table 12).

Reprod. Risk practices Health areas	Unassisted childbirth	Out-of-date vaccines	Inadequate Prenatal Consultations	Evolution trends
Bakanou B	Upward pace	Downward pace	Downward pace	<i>Mixed trend</i>
Bécédi	Downward pace	Downward pace	Downward pace	<i>Transition trend</i>
Elibou	Downward pace	Upward pace	Upward pace	<i>Alarming trend</i>
Gomon	Upward pace	Upward pace	Downward pace	<i>Alarming trend</i>
Sahuyé	Downward pace	Downward pace	Upward pace	<i>Mixed trend</i>
Sikensi	Downward pace	Upward pace	Static pace	<i>Mixed trend</i>
Yaobou	Upward pace	Upward pace	Upward pace	<i>Alarming trend</i>

**Table 12:** Reproductive risk practices trends in health areas.

**Finding 12:** health areas are divided into the following trends: one case of initiated trend; three cases of mixed trend; and three cases of alarming trend.

### Partial Conclusion 2

In the three lagoon observation areas in Côte d'Ivoire, the non-compliance with official Prenatal consultations norms constitutes the prevailing attitude of mothers. However, reproductive practices evolution trends are far from being uniform. This evolution has a very heterogeneous configuration from one area to another.

### Maternal morbidities

Levels and trends over a five-year period will be examined.

### Levels of maternal morbidities

**ADIAKE area:** Complications (direct causes) prevail even though diseases (indirect causes) during pregnancy are present in terms of maternal morbidities in Adiaké (Table 13).

**Table 13:** Variation in the level of maternal health problems in ADIAKE area in 2008-2012.

Maternal morbidities	Annual average (%)			Prevailing issues
	Abortions greater than 1;	Direct causes (complications)	Indirect causes (diseases)	
Aires sanitaires				
Assinie France	13,44	05,12	23,76	Indirect causes
Assinie Mafia	09,42	10,28	05,80	Direct causes
Adiaké	11,64	15,34	0,11	Direct causes
Assomlan	10,93	16,53	03,58	Direct causes
Kakoukro	07,26	21,36	Not determined	Direct causes
Mélékoukro	13,09	02,97	43,26	Indirect causes

**Finding 13:** Complications (direct causes) prevail even though diseases (indirect causes) during pregnancy are present in terms of maternal morbidities in Adiaké.

**AZAGUIE area:** Morbidity issues are characterised by abortions and diseases during pregnancy in Azaguié area (Table 14).

**Table 14:** Variation in the level of maternal health issues.

Maternal morbidities	Moyenne annuelle (%)			Prevailing issues
	Abortions greater than 1;	Causes directes	Causes indirectes	
Aires sanitaires				
Achiékoi	11,25	6,66	23,75	Indirect causes
M'Bromé	26,02	4,42	0,20	Abortions
Grand Yapo	12,83	09,83	0,75	Abortions
Azaguié	11,71	24,90	18,60	Direct causes

**Finding 14:** Morbidity issues are characterised by abortions during pregnancy in Azaguié area.

Maternal morbidities	Annual average (%)			Prevailing issues
	Abortions greater than 1	Direct causes	Indirect causes	
Aires sanitaires				
Bakanou B	13,44	03,46	04,35	Abortions
Bécédi	02,89	02,24	16,32	Indirect causes
Elibou	08,31	04,49	0,62	Abortions
Gomon	09,55	06,02	17,02	Indirect causes
Sahuyé	07,12	05,19	35,25	Indirect causes
Sikensi	11,84	25,57	11,30	Direct causes
Yaobou	09,91	16,10	01,75	Direct causes

**Table 15:** Variation in the level of maternal health issues.

**Finding 15:** Diseases associated with pregnancy appear be consistent in the area of Sikensi.

**SIKENSI area:** Diseases associated with pregnancy appear be consistent in the area of Sikensi (Table 15).

### Maternal morbidity trends

**ADIAKE area:** The result of changes in maternal health seems heterogeneous in Adiaké area. Yet, only one health area tends to be improving (Table 16).

**Table 16:** Reproductive health issues in health areas.

Maternal morbidities	Abortions greater than 1;	Direct causes	Indirect causes	Evolution trends
Health areas				
Assinie France	Downward pace	Downward pace	Upward pace	Mixed trend
Assinie Mafia	Downward pace	Upward pace	Upward pace	Alarming trend
Adiaké	Downward pace	Downward pace	Upward pace	Mixed trend
Assomlan	Downward pace	Downward pace	Downward pace	Transition trend
Kakoukro	Upward pace	Downward pace	Static pace	Mixed trend
Mélékoukro	Downward pace	Downward pace	Downward pace	Transition trend

**Finding 16:** The result of changes in maternal health seems heterogeneous in Adiaké area. Yet, only one health area tends to be improving.

**AZAGUIE area:** Mixed trend prevails in the situation of maternal health in Azaguié area. Yet, a health area is an exception in the positive sense (Table 17).

**Table 17:** Reproductive health issues in health areas.

Maternal morbidities	Abortions greater than 1;	Causes directes	Causes indirectes	Evolution trends
Aires sanitaires				
Achiékoi	Static situation	Upward pace	Downward pace	Mixed trend
M'Bromé	Downward pace	Downward pace	Static pace	Mixed trend
Grand Yapo	Downward pace	Downward pace	Downward pace	Transition trend
Azaguié	Downward pace	Upward pace	Downward pace	Mixed trend

**Finding 17:** Mixed trend prevails in the situation of maternal health in Azaguié area. Yet, a health area is an exception in the positive sense.

**SIKENSI area:** Alarming trend appears more recurrent in terms of maternal morbidity in Sikensi area. Only one health area seems to be improving (Table 18).

**Table 18:** Reproductive health issues in health areas 2008 – 2012.

Maternal morbidities	Abortions greater than 1;	Direct causes	Indirect causes	Evolution trends
Aires sanitaires				
Bakanou B	Downward pace	Upward pace	Downward pace	Mixed trend
Bécédi	Downward pace	Upward pace	Upward pace	Alarming trend
Elibou	Upward pace	Static pace	Upward pace	Alarming trend
Gomon	Downward pace	Upward pace	Upward pace	Alarming trend
Sahuyé	Upward pace	Upward pace	Downward pace	Alarming trend
Sikensi	Upward pace	Upward pace	Downward pace	Alarming trend
Yaobou	Downward pace	Downward pace	Downward pace	Transition trend

**Finding 18:** Alarming trend appears more recurrent in terms of maternal morbidity in Sikensi area. Only one health area seems to be improving.

### Partial Conclusion 3

Reading these tables presents a variety of situations between the three areas visited with regard to the issue of maternal morbidities. Trends are also divergent as they move from one area to another.

### Results of Reproductive Transition Observed

Reproductive transition is an interaction between reproductive behaviours, reproductive practices and maternal morbidities. These transition results thus relate to the general situation of each area with regard to maternal health.

**ADIAKE health area:** The general situation of Adiaké area does not look good. There are three cases of mixed transition and three alarming transition cases (Table 19).

**Table 19:** Reproductive transitions observed in Adiaké area.

Reproductive health issues	Reproductive Risk behaviours (RRB)	Reproductive risk practices (RRP)	Maternal morbidities	Reproductive transitions
Health areas				
Assinie France	Alarming trend	Alarming trend	Mixed trend	<i>Alarming transition</i>
Assinie Mafia	Alarming trend	Transition trend	Alarming trend	<i>Alarming transition</i>
Adiaké	Alarming trend	Mixed trend	Mixed trend	<i>Mixed transition</i>
Assomlan	Alarming trend	Mixed trend	Transition trend	<i>Mixed transition</i>
Kakoukro	Mixed trend	Transition trend	Mixed trend	<i>Mixed transition</i>
Mélékoukro	Alarming trend	Alarming trend	Transition trend	<i>Alarming transition</i>

**Finding 19:** The general situation of Adiaké area does not look good. There are three cases of mixed transition and three alarming transition cases.

**AZAGUIE health area:** The general situation of Azaguié does not display a very viable configuration: the case of mixed transition prevails (Table 20).

**Table 20:** Reproductive transitions observed in Azaguié area.

Reproductive health issues	RRB	RRP	Maternal morbidities	Reproductive transitions
Health areas				
Achiékoi	Mixed trend	Transition trend	Mixed trend	<i>Mixed transition</i>
M'Bromé	Alarming trend	Alarming trend	Mixed trend	<i>Alarming transition</i>
Grand Yapo	Mixed trend	Mixed trend	Transition trend	<i>Mixed transition</i>
Azaguié	Alarming trend	Transition trend	Mixed trend	<i>Mixed transition</i>

**Finding 20:** The general situation of Azaguié does not display a very viable configuration: the case of mixed transition prevails.

**Table 21:** Reproductive transitions observed in Sikensi area.

Reproductive health issues	RRB	RRP	Maternal morbidities	Reproductive transitions
Health areas				
Bakanou B	Transition trend	Mixed trend	Mixed trend	<i>Mixed transition</i>
Bécédi	Mixed trend	Transition trend	Alarming trend	<i>Mixed transition</i>
Elibou	Alarming trend	Alarming trend	Alarming trend	<i>Alarming transition</i>
Gomon	Mixed trend	Alarming trend	Alarming trend	<i>Alarming transition</i>
Sahuyé	Mixed trend	Mixed trend	Alarming trend	<i>Mixed transition</i>
Sikensi	Alarming trend	Mixed trend	Alarming trend	<i>Alarming transition</i>
Yaobou	Alarming trend	Alarming trend	Transition trend	<i>Alarming transition</i>

**Finding 21:** Sikensi area has less satisfactory overall appearance: Three

cases are declared mixed and four alarming.

**SIKENSI health area:** Sikensi area has less satisfactory overall appearance: Three cases are declared mixed and four alarming (Table 21).

### Partial Conclusion 4

As a result of the experience presented, items stated below are kept in mind the following results:

- Geographical differentiation of the level of the issues;
- Variation in trends in critical situations;
- Unequal distribution of maternal health issues;

### Discussion

The "reproductive transition" concept derives from the context of observation scales theory. What does this mean?

### Observation scale theory

Observation scales are a variety of viewpoints offered by a social reality. To geographers, it is a basic tool that helps to develop maps. It is an approach to reality division. There are large scales and small scales. DESJEUX (2004) [4], states that what is visible on a scale disappears when such observation scale is changed; yet, other aspects or other invisible phenomena on the previous scale, appear by the very fact of this change. There are different observation scales.

In his theory, DESJEUX [4] lays an emphasis on three scales that are: macrosocial scale, micro-social scale and micro-individual scale.

- Macro-social scale – is the widest. It is that of regularities, major trends, social affiliations and values. Individual actors are not that visible in there.
- Micro-social scale – is that of social actors interacting with one another.
- Micro-individual scale – involves subjects, agents, individuals, be it in its psychosocial, cognitive or unconscious dimension.

### Privilege granted to the micro-individual observation scale

All official estimates that are habitually observed up to now, as a rule, fall within the micro-individual scale for assessing maternal health in the world. This means that all national and international organisations (WHO, UNICEF, UNFPA, etc.) have adopted the individual scale observation approach as a tradition. This is the case in most African countries where maternal morbidity and mortality are rife. Indeed, an official reference document is that entitled: "Demographic and Health Survey". In my country, Côte d'Ivoire, we have performed the third "Demographic and Health Survey". The first one was carried out in 1994 [5]; the second in 1998-1999 [6] and the third in 2011-2012 [7]. How are methodological characteristics of this classical approach defined?

### Objectives

The defined objectives are determined in an international organisational framework that is the Demographic and Health Surveys (DHS) global programme. In Côte d'Ivoire, the

Demographic and Health Survey is conducted by the Ministry of Health in collaboration with the National Institute of Statistics (INS) [7]. This operation covers the entire national territory. It aims to collect, analyse and disseminate demographic and health data, relating particularly to fertility, family planning, maternal and child health and nutrition and HIV / AIDS" (EDSCI, III, 5) [7]. DHS is to inscribe this approach in a quantitative survey related aim.

#### Collection techniques used

The survey results from a statistically representative sample and the use of individual questionnaires.

- The sample is based on a stratified area sampling, and is a two-tier one (EDSCI, II; 9) [6].
- The collection instruments are specified as follows:
  - a household questionnaire – was used to list all members and visitors of selected households;
  - an individual questionnaire for women – is filled in for all women registered in the household, i.e. all women aged 15-49;
  - an individual questionnaire for men – the individual questionnaire for men provides information on men's knowledge as well as their attitudes towards AIDS. (EDSCI-I,11) [5].

What is today's observation?

#### Limits of the micro-individual scale

Based on micro-individual observation and analysis, the Demographic and Health Survey has been successful and remains a tradition in Africa. It has established itself as the reference source for all official communications on maternal, neonatal and child health. However, despite its relative effectiveness and relevance, the issue of morbidity and mortality is still a topical issue. Should we remain in methodological stand-patism? From this question, in my capacity as anthropologist, I have had recourse to another observation alternative; i.e. community scale.

#### Community Observation Scale Alternative

In contrast to the DHS individual observation scale, I propose a community observation scale; which corresponds to the micro-social scale according to DESJEU's theory. In this case, the unit of analysis is the community – referring to all populations living in a given geographical area and governed by a system of common institutions, beliefs, norms, values and ideals. This is justified for the very simple reason that the object of anthropology is not an isolated individual, but rather a global community having its organisation and functioning. It is therefore necessary to observe, from an anthropological perspective, maternal health in a collective or community way, in space and its process of construction and deconstruction over time. "The whole is different from the sum of its parts", they say. But why should we have recourse to the community perspective?

#### A Challenge of Having Recourse to Community Scale

The challenge of moving from the micro-individual scale to the so-called community scale in the process is about complying with the principle of "double-blind" assessment for more relevant and effective actions for mothers' health. According to DESJEU

(2004: 5), "results achieved in a survey depend on an observer's position, observation conditions, an observation scale and a reality division on a given scale. Depending on viewpoints, landmarks, the form of phenomena, methods and therefore the description of reality may change "[4]. Clearly, the results of a survey based on an individual scale will not be the same as those based on a community-scale observation. For this reason, the author (op. cit. 48) adds: "a division is neither true nor false in itself. It depends on a problem to be solved and the level of precision that actors need to understand and act." [4]. This is the foundation for choosing my community scale option. Indeed, my goal is not to question the individual scale approach. It would be far too pretentious.

The community scale rather reinforces the ESDCI tradition from a methodological triangulation perspective. Ultimately, it was in connection with this community approach to maternal health that I came up with the concept of "reproductive transition".

#### Conclusion

##### Explanation of variability

- Reproductive behaviours and reproductive practices relating to beliefs, norms and cultural values are variable in space and time within the same country;
- Unequal distribution of exposure factors underlies maternal mortality and mortality.

##### The challenge of community scale

The reproductive transition theory derived from the community-scale observation is as follows:

- A sociological early warning system on maternal health for cultural communities;
- A relevant decision-making tool in the accelerated maternal mortality reduction project.

##### Suggestion for solution efficiency

Finally, I suggest formatting data processing software, designing the reproductive transition for greater efficiency and excellent performance in addressing this worrying issue of maternal health in developing countries. This community-scale tool constitutes a support for an individual scale.

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