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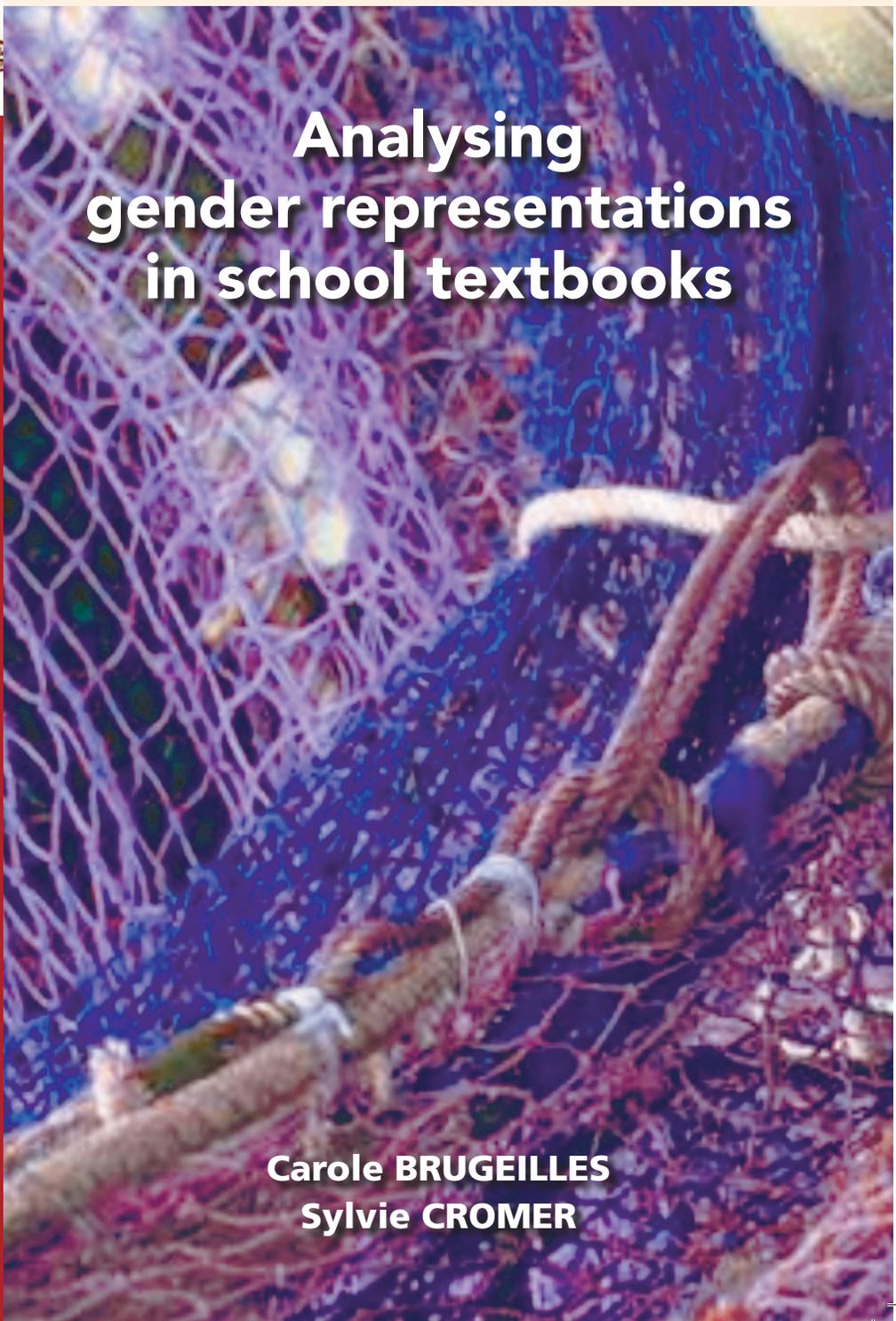
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Analysing gender representations in school textbooks

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Foreword and Note for the English edition

This is a methodological manual, not a data analysis text. Appropriate examples are given, but there has been no use made of the actual data.

Although this book is being published in English, the method can be applied to textbooks written in other languages. This explains why it refers to analytical categories that do not exist in English.

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1. Why and how should we study school textbooks?

1.1. The issues surrounding school textbooks

School textbooks have long been the object of a great deal of attention, debate and controversy on an international scale. Indeed, they represent a point at which ideological, economic and social issues meet; of course, these issues vary depending on the country and its state of development, but in poor countries they are more complex, more enmeshed, even somewhat more pronounced.

1.1.1. *Ideological and social issues*

Political bodies and associations have devoted sustained attention to teaching tools for many years. In 1925, following the 1914-1918 War, the Society of Nations proposed a comparative analysis of school textbooks in order to combat xenophobia and racism. After the Second World War, the first General Conference of Unesco launched, from 1946, an action plan to improve textbooks and teaching methods, and published a guide to making these improvements. In the 1970s, sex-related stereotypes in school textbooks were challenged, mainly under the impact of the feminist concept of *gender*¹, introduced by sociologist Ann Oakley (1972) in order to distinguish social sex from physiological sex: “ ‘Sex’ is a word that refers to the biological differences between male and female(...) ‘Gender’ however is a matter of culture: it refers to the social classification into ‘masculine’ and ‘feminine’ ”. From 1981, following the World Conference of the United Nations’ Decade for Women, *Equality, development and peace* (Copenhagen, 1980), a large-scale programme of national studies was initiated by Unesco, urging “governments to take all necessary measures to eliminate stereotypes on the basis of sex from educational materials of all levels”².

¹ For a picture of the issues, cf. Annie Labourie-Racapé and Thérèse Locoh (1999) and Margaret Maruani (ed.), *Femmes, genre et sociétés, l'état des savoirs*, La Découverte, 2005.

² UN, A/CONF. 94/35 p. 109. Andrée Michel (1986) provides a synthesis of various national studies, suggests a typology for sexism, and cites numerous bibliographic references.

The current *Guidelines for the Development of Curricula and Textbooks in International Education* (Unesco, 1988-1991) include among their objectives, defined in terms of knowledge to be acquired: equality of peoples, the maintenance of peace, human rights and the “*need to eliminate discrimination*”, which is then phrased a little more explicitly as: “*discrimination, such as racism and sexism, (...) is condemned*”.

1.1.2. Economic issues with social repercussions

A textbook cannot be viewed as a commodity like any other. In rich countries where compulsory schooling is increasing in length, the market in school textbooks is the object of fierce competition for possible profits; however, in a number of developing countries, this market generates serious concerns linked to the population’s lack of resources.

As far as Africa is concerned, studies (Askerud, 1997 and 1998; Montagnes, 2001) have emphasized, among other things, the scarcity of books, difficulties of provision and lack of funds. Therefore, as a crucial educational and ideological medium, the textbook has assumed another dimension, linked to poverty. Although in short supply, it is often the main teaching tool and the main – sometimes the only – medium of introduction to the written word. Against a background of shortage of books and teaching materials, its supremacy as a source of access to information and knowledge remains uncontested, given lack of access to new technologies. And success at school seems to be directly correlated with available resources, including these textbooks (Askerud, 1997). This explains the generally agreed recognition that, in developing countries, access to school textbooks is essential in order to achieve the objective of education for all³, which is urgently needed in order to promote development and combat poverty (Mbuyi, 1988).

Furthermore, inequality and forms of discrimination between boys and girls are reinforced by the textbook, a medium whose power of legitimation is increased by its high price. Firstly, girls have fewer books than boys (Montagnes, 2001); secondly, the representations of both sexes contained in textbooks and further disseminated through interactions with the teacher are unfavourable to girls: “*Despite the interest shown in equality between the sexes, stereotypes have survived*” (Montagnes, 2001). But, in a context where the textbook has such a strong impact, research has up to now done little or nothing to connect the crucial problem of the under-education of girls with the availability of textbooks and their content in regard to gender roles (Pearce, 1988; Pingel, 1999; Poth, 1997; Seguin, 1991; Djangone *et al.*, 2001).

³ The same is probably true elsewhere. In France, in a recent open letter “*Ecole, où sont passés tes livres ?* [Where have all the schoolbooks gone?]”, a group of prominent figures expressed indignation about the gradual disappearance of textbooks, citing the essential unifying position of the school textbook in education: “... *A book, whether it is a school textbook or any other work, is much more than a series of texts. It is a whole, a core and a mould, a consistent line of thinking and a sensory realm. School textbooks guarantee all children the bases for the same learning experience... It is impossible not to react when faced with the current situation of severe educational inequality*”. *Le Monde*, 7 January 2003.

1.2. The textbook as sum of knowledge and key tool of socialization

In so far as school textbooks create and stimulate interest beyond that of financial appetites, it is through their content, and above all through the purpose of this content. Sources of information, privileged organizers of the state of knowledge and learning, a society's cultural capital, they explicitly transmit not only an understanding of history and a world view – in other words, markers in time and space – but also models of social behaviours, norms and values: *“The creation of a textbook therefore amounts to a choice of values, norms and representations on which are based hopes of ensuring social cohesion and harmonious relations between people and institutions; school textbooks make up a literature that is consistently full of intentions, committed”* (Mollo-Bouvier and Pozo-Medina, 1991).

1.2.1. A vector for representations

Thus the textbook is revealed as a major route for socialization, which is understood as a complex, active, continuous process of constructing identity in social interaction situations (Dubar, 1996). In other words, it is part of a process that consists of *“learning to play roles, to share meanings with other people, to respond to and anticipate their expectations, to internalize norms, values and systems of thought”* (Cherkaoui, 1992). The reason for this is that representations are established in the textbook in a privileged manner, running through pictures and text, and forming a system.

Denise Jodelet gives the following definition of representations: *“A form of knowledge that is developed and shared socially, with a practical aim, contributing to the construction of a reality common to a social whole”* (Jodelet, 1989). Representations, which are both generated and acquired as “common sense” constructed in social interactions, are a mode of knowledge and a tool for adjusting to the world; but they are also a guide for action and communication at the interface of the social – since they are shared by a social group – and the psychological. They are a product of a social dynamic and, at the same time, of a psychological dynamic.

A representation is not the reflection of reality. It “reveals” a shaping, even an ordering, of reality that aims not only to explain an established social order but also to legitimate it. In fact, at the same time as being a mode of knowledge, a representation contributes to the development of individual and social identities, to the dissemination of norms, behaviours and values: any system of representation is also a value system.

Marie-Josée Chombart de Lauwe and Nelly Feuerhahn (1989) have clearly shown the importance of representations intended for children: *“Narratives presenting characters and situations convey representations that can be assimilated by young viewers or readers with reference to their experiences, to their earlier real lives. But the child is*

also confronted with new aspects of life and can be led to broaden and readjust his or her conceptions and representations without going through personal experiences or actually doing things (...). In any case, it seems that a suggested representation comes before what is done in practice”.

1.2.2. Gender representations and differences in the socialization of girls and boys

If we accept the hypothesis that sex is the primary social classification (Hurtig and Pichevin, 1986) then, in writing intended to socialize children, the central issue at work – however rarely it is formulated explicitly – is that of the construction of sexual identities and of social relations based on sex, through omnipresent gender representations. In fact, textbooks are one of the means of differential socialization, through symbolic ideological inculcation, in parallel with recurrent activities such as games, which function as direct training (Lahire, 2001). Through the discourses that they convey and through their depiction of everyday life – of which they offer one expression – they contribute to a “*sustained sorting process*” that leads to a gendered social division of identities, roles and statuses: “*From the start, persons who are sorted into the male class and persons who are sorted into the other are given different treatment, acquire different experience, enjoy and suffer different expectations*” (Goffman, 1977).

Discourse analysis and observation of adult/child interactions in a number of activities during childhood have long shown differential socialization at work. Here we mention just some of the leading studies.

In 1949, Simone de Beauvoir, in *Le Deuxième sexe (The Second Sex)*, emphasized the process of being socially assigned to one sex, which produces sex-role differentiation. The finger is pointed at literature, “*one long exaltation of man*”, and numerous other situations are explored: sex preferences at birth, the body, games, toys, literature, housework, etc. Published in 1974, Elena Gianini Belotti’s book makes use of personal observations: sex-differentiated expectations and preparations before a birth (layette, decorating the baby’s room, etc.), mothers’ practices in breast-feeding, weaning and toilet-training the child, the reactions/attitudes of adults to the first manifestations of sexuality or to children’s games. Also in the 1970s, Georges Falconnet and Nadine Lefaucheur’s book *La Fabrication des mâles (The Making of Males, 1977)* was devoted to the gendering process, highlighting the pressures to which boys are subjected in the family, in leisure and social interaction spaces and at school.

Psychological studies have revealed systems of parent/child relationships and the very early deployment of differentiated treatment depending on the sex of the parent and the sex of the child, whether interpreting a baby’s cries, handling the child, or in verbal interactions (Bergonnier-Dupuy, 1999; Dafflon Nouvelle, 2006). Parents, and the family network more broadly (child minders, grandparents, aunts, etc.), actively participate, according to their sex, in differentiating gendered characteristics. Toys and games – an excellent reflection of adults’ domestic and occupational values and

activities – are an illuminating example of this: even nowadays, they are still assigned to one sex (Tap, 1985; Vincent, 2001).

Over and above practices and discourses, it seems important to look more methodically at the social representations of male and female that are passed on, notably through textbooks, in the light of the issues we have emphasized.

1.3. A new approach to the classic question of sex stereotypes

Taking an interest in textbooks is nothing new. But with notable exceptions, such as Lise Dunnigan's in 1975, research has been qualitative in nature. It has essentially aimed to reveal sex stereotypes: "*simplified, deformed, rigid, anonymous representations, with certain characteristics attributed to an individual or to a group (for example: 'American Indians are good hunters')*" (Mollo-Bouvier and Pozo-Medina, 1991). Methodological difficulties very soon arise: how should such large corpora be studied? Given the ways it permeates the culture, how should sexism be perceived? On the one hand, perception of sexism is linked to a subjective threshold of tolerance of sexism; on the other hand, it is not easy to see the gaps and flaws in representations.

By looking at the intersection between an analysis of representations and a "gendered" reading of the social world, by establishing the feminine and the masculine as cultural and social constructs and, at the same time, by revealing power dynamics, it is possible to compare observed differences between male and female. Systems of prescribed, hierarchized relationships between male and female may thus be questioned within a perspective of equality (Condon *et al.*, 2000) and according to democratic principles (Fraisie, 2005).

Without taking a random or impressionistic approach, we have attempted to move beyond perceiving and then highlighting stereotypes, in order to develop – in the photographic sense of revealing – representations directed at children and linked to the two social categories of "male" and "female" and to their asymmetric relationship: what are the norms, values and opinions disseminated about identities, roles, the status of each sex and dealings between the sexes? What is the gender system shown – in other words, what are "*the set of gendered social roles and the system of representations defining the masculine and the feminine*" (Thébaud, 2005)?

1.3.1. *The character – a key element*

But how are representations to be captured? They are embodied in the character, a key element in writing – of whatever kind – for very young children. The character is fundamental to every story, even one as embryonic as these words taken from a maths exercise: "*Mum goes to the market. She buys six eggs for 2 euros. How much does*

each one cost?". This is because characters “*allow actions, take them on, are subjected to them, link them together and give them meaning*” (Reuter, 2000). As the mainspring of the story, the character is a melting-pot for the classic demographic characteristics of an individual – a sex, an age; the character is also the bearer of qualities, rules, status, actions and activities; the character evolves in a setting, a territory and is captured in a network of interactions with others that give the character a place in the fictional society being drawn.

For all these reasons, the character is at the heart of every piece of writing for a younger readership, encouraging the ideological and psychological investment of authors and readers, and “*providing a foundation for both value judgments and tastes*” (Reuter, 2000). Therefore, through the character, we can gain access to social representations of what is a man, what is a woman, a girl or a boy in a given society. Exhaustive examination of the characters in a corpus of written materials intended for children (school textbooks, other books, comics) helps to reveal the social construction of difference between the sexes, of the masculine and the feminine, identifying the relevant indicators that create social sex and lay the foundations for the gender system.

Our hypothesis is that gender representations are developed in a subtle and complex way, thanks to a combination of the particular features of each of the characters and their interactions.

1.3.2. *Indicators of social sex*

Characters are identified through characteristics viewed as determinants of social sex, and particular to the fictional realm in which they move. We should note that these characteristics change according to the medium concerned, its structure and its function: picture book, novel, school textbook. We list below the core characteristics of social sex, common to all characters. These confer gendered identity, role and status on the character. They locate the character within the private or public sphere and within types of sociability.

Sex and age are the first two classic identity criteria that must be revisited. Unlike socio-demographic studies, which take into account two sexes, several age/gender categories should be defined⁴.

A character, unlike a real individual, can be of a species other than human. Children’s literature, in particular, uses multiple forms of representation for its characters; to be specific, in order to appeal to the imagination or answer very young children’s questions about psychological and identity issues, the character can take on a colourful range of guises: the appearance of a human being, whether fictional, real or mythical; the appearance of a real animal or an anthropomorphic animal; talking objects, etc. All these different categories should be taken into account.

Fiction also allows for several forms of character, which modify identity: where the character is embodied in an individual, there is an individual character; but the

⁴ Chapter 2 explains each of the characteristics and the different categories linked to them.

character can also be a collective character, labelled in the text as “the boys” or “the family”; while, in the picture, we can see a group or indeed a crowd of characters.

A major characteristic of social sex is how a character is designated. According to Adama Ouadreago (1998): “...*the way a person is designated carries a set of social and emotional judgments, laid down and underpinned by rules and values that have preceded it*”. The character can be called by a forename, a patronymic, a kinship bond or function such as “Mum” or “brother”, a different kind of bond, such as one of friendship or companionship, or even a status (occupation, political function, etc.).

The character is given actions or activities as well as physical attributes (physical features, hairstyle or clothing), objects (personal, domestic, occupational: spectacles, basket, apron, school bag, etc.), psychological or moral qualities (strengths/weaknesses, values). Actions, activities, attributes and personality traits help to anchor the character in a sphere of life.

Depicting the character in a place (private or public, indoors or outdoors, rural or urban) and showing the character’s position and interactions – developed or not – with other characters contributes to and provides evidence of social involvement and social inclusion, varying in importance according to the degree of relationship. Moving in different places – an indoor setting, a private place such as home, an outdoor setting such as the street or a public place such as school – does not put the character in the same social role. More broadly, characters can also be situated in a geographical space or in another era.

Apart from simply being in the same place, are the characters doing things together? Are there any exchanges between them? Do they interact? Do they cooperate? Are they in competition – for example, sporting competition? In what spheres do these shared actions or comparisons happen? Sociologists analyse individuals’ different forms of capital: economic, social, educational, symbolic, etc. Our characters’ forms of capital can be read through their actions and attributes. Our hypothesis is that competition between forms of capital can also be read explicitly in comparisons and gives rise to a positive or negative connotation that we call, using Bourdieu’s expression, a symbolic coefficient.

Furthermore, relationships provide information about mixing of the sexes in the societies depicted: are they mixed – or segregated, defining male interpersonal spaces in opposition to female ones?

In short, characters do not all occupy the same position in a book, nor play the same role. Some are shown to advantage and in the foreground, others are just background figures, and others again are cited only in order to “situate the character” – in particular, within a family network. In addition, characters can take on various pedagogical functions, which help to determine and add to the character’s identity: illustrating scenes of everyday life, interacting with the reader, guiding the pupil in learning, etc.

Each of these characteristics not only takes various forms, but does not necessarily have the same importance. Therefore, for each medium, the possible forms of the characteristic under consideration must be understood, and the relevance of the characteristic must also be assessed. For example, the position of a character is

revealed differently in a picture book and in a book that is largely text: in one case, the frequency of a character appearing in the pictures can be examined; in the other, we are working with the concept of role, refining this by broadening the range of roles. As far as relevance is concerned, it is rare to encounter species other than humans in a maths textbook, and therefore it is not useful to plan a question about species; pursuing the concept of ‘the crowd’ is worthwhile in history, but inappropriate in mathematics, and so on.

In addition, the medium itself, through its purpose, generates a specific gender system, and an attempt must be made to grasp this through pictures, text and language. Representations “hung” on the character are necessarily sustained by the structure and functioning of the medium: the gender system is also embedded in discrepancies and imbalances, even in splits and inconsistencies between different parts of the book. Thus, in books where text and pictures are mixed, the way these work together must be questioned. In a school textbook, the pedagogical apparatus must be examined: how does it organize the knowledge that is to be learned? Can a distinction be made between texts or pictures with different pedagogical aims – lessons and exercises, for example? Do the questions about a text guide the way it is read?

1.3.3. A quantitative method

How can all the aspects mentioned be subjected to thorough examination? How can all the information be gathered exhaustively, and without a priori selection, so that the diverse features of a book can be taken into account and analysed statistically? The quantitative method is the most appropriate, since it avoids any selection from within the resource, whether of parts of documents or of characters. Moreover, it enables the processing and comparison of large corpora, which may reveal elements that are not identifiable from a straightforward reading, even the most attentive and the most sensitized to sexism. Once the theoretical and operational signposting has been developed, there is absolutely no need to rely on sharpness of mind in order to proceed to data collection. Analysing variables enables us to infer the mechanisms we are seeking to locate: denial, devaluation, marginalization, exclusion, exploitation, legitimation, making something less important or more ordinary, etc., and to deduce that these mechanisms rest on inconsistencies and dissonances between different parts of the document, omissions, insinuations or, on the other hand, assertions and repetitions, etc.

Putting a quantitative method into practice depends on choosing the kind of questionnaire that lists all the characters according to sex and age, and gathers information from text, pictures and language, identifying the section of the document. Our observation framework enables us to capture, count and then compare gender representations exhaustively and quantitatively. In addition, the value of a quantitative approach – apart from laying out variables and constructing indicators – is that it allows multiple approaches at the analysis stage, taking into account different aspects: what position and importance does the character actually have in the book? Which character is privileged for use in a course book or exercise? What do the fathers or the

mothers in a book do? Is mixing of the sexes acceptable? In Part 4, we give examples of these possible areas of questioning.

The quantitative approach does not exclude a qualitative analysis that will help to back it up.

1.3.4. Sampling

In developing a data collection tool, it is necessary to think in depth about the corpus under consideration in order to integrate, firstly, the specific nature of the medium concerned (its purpose, its organization and its internal logic) and, secondly, the expression of the characteristics of social sex particular to each medium. Although the proposed approach, including ideas about defining social sex from a character, will operate for most literary output intended for young people, it is unrealistic to try and imagine a framework for observing gender representations that would be valid for all media. The corpus of works to be studied must necessarily be broadly homogeneous.

For each resource or group of resources under consideration, a protocol for drawing up the sample should be defined, acknowledging that the corpus must be sufficiently extensive to guarantee enough characters for a statistical study. There is no single protocol for creating a sample. Of course, the corpus depends on the precise objectives of the research being conducted, but constituting the sample is often constrained by the existence or non-existence of a sampling frame and by the availability of books.

As far as school textbooks are concerned, the choice may be made to focus on a single discipline or to define a set of disciplines that can be studied using the same framework, because their structure is fairly close. Although it may seem difficult to use the same framework for a history book, a literary work and a maths textbook, on the other hand a maths textbook and a grammar textbook could be analysed with a data collection framework that was similar in some ways.

Thus the data collection tool developed for one discipline may be used for another, but may require a variety of adaptations, according to the extent of differences between the resources involved.

Once a decision has been made about the discipline or disciplines, the question of creating the sampling frame arises. Data on the publishing and distribution of textbooks should be sought from publishing houses, from the national Ministry of Education, from educational centres or from teachers' unions. These data are often fairly hard to obtain. Starting from this information, a sampling frame is defined, then selection rules drawn up. In some countries, just one collection per discipline is available; therefore the question of choice does not arise. In order to have enough characters, the researcher should study all the textbooks in the collection (for example, textbooks at all levels of primary school). In contrast, in other countries there are numerous collections. They can all be studied, or one or several of them can be selected using random sampling methods or reasoned choice: there may be an interest in the most widely used collections; in studying textbooks in one collection or from one publisher for all levels of primary school; in choosing just a few levels and

creating a corpus made up of all the works intended for these classes by the publishing houses in one country. The purpose of the study, its feasibility – notably the accessibility of books – and also the financial resources available will dictate the choice.

Our approach to applying this methodology was to base our survey on a series of school maths textbooks. Our choice of maths textbooks was a considered one. Although school textbooks are a much-favoured area of representations, certain disciplines seem to make more use of them than others: one thinks of history or of literature, both rich in texts and in iconography. However, we hypothesized that maths textbooks convey numerous representations into society, and that these are all the more readily absorbed because we are not consciously highly aware of them.

The first reason for choosing maths textbooks is that they are less often studied. Language or history textbooks (Guillaume, 1999; Lelièvre and Lelièvre, 2001) are generally favoured by researchers, who regard them as richer in social representations, with implications to which we have been sensitized for longer: for example, the way in which a given historical episode is presented can stir up hatred between peoples. However, the works of Lise Dunnigan (1975) and the national studies that Andrée Michel has presented in synthesis (1986) should be mentioned: these use maths books in their samples.

The second reason is the seeming neutrality of maths courses (Boisseau *et al.*, 2002). The mathematical concepts studied in these textbooks are drawn from curricula established by official bodies. How could social representations slip into them? In fact, in order to make understanding and therefore learning easier, abstract concepts are translated into examples in both the “*Lesson*” section and the “*Exercises*” section – examples ostensibly drawn from the child’s everyday life. This is why, in texts and in pictures, human characters appear in a simplified way, in their private or social activities, in order to “*make learning fun*” and to show concrete applications of the discipline, to give it meaning. In fact, books from this discipline include few imaginary variations or psychological portraits; they present a formulation of a strongly schematized reality, making their impact all the stronger.

Thirdly, the discipline of mathematics, at least in research carried out in France, has been accused of discriminating against girls (Jarlegan, 1999); few girls take scientific routes, and it is difficult for girls to access occupations that have high economic, social and symbolic value and where selection is based on mathematical abilities (Marry, 2001).

For all these reasons, we have chosen maths textbooks in order to present our method of analysing gender representations.

In the second chapter, we show how gender representations can be described and grasped operationally. Our presentation of the methodology is supported by examples taken from an English-language school maths textbook used in Cameroon – *Cameroon Primary Mathematics 6*, Macmillan. However, as the method can be applied to textbooks published in languages other than English, we shall from time to time introduce analytical categories that do not exist in the English language.

In the third chapter, we detail the data collection principles and the organization of the data collection document, presenting different sections of the questionnaire and its method of use in the context of application to school maths textbooks.

Finally, in the fourth chapter, we give some examples of processing and possible analysis of data collected. Our corpus is made up of six volumes in the maths series *Mon livre de Mathématiques*, a pupil's book published by Hatier International and distributed in a pan-African version. We looked at the whole collection, from the first year of primary school in African schools (see Appendix 1) – the introductory *Section d'Initiation au Langage (SIL)* – to the last year, the sixth year of primary school (CM2). The first edition dates from 1984, and the books analysed were from the revised 1997 and 1998 editions. The choice of this collection met our need to study recent French-language works that are widely distributed by an international publisher and used in several African countries.

2. How are representations of the gender system in a school textbook to be captured?

Having identified the features of the school textbook as a medium and discussed its characters, we shall now introduce precise indicators of social sex in this specific context. The character is subject to a dual logic of affiliation: the fictional realm in which the character moves within the course material or within an exercise, which represents his or her close, immediate microcosm, is inscribed within the broader realm of the textbook, or macrocosm. These two “realms” must be analysed.

2.1. Characteristics of the school textbook

2.1.1. A syllabus divided into sections and lessons into course material and exercises

A school textbook is designed according to a syllabus defined by official instructions. On the basis of the pedagogical choices made by the author(s), which are clarified in the *Teacher's Book* or in the Introduction to the *Pupil's Book*, this syllabus is divided up into lessons (in Extract 1, these are called “Units”). The latter may then be grouped into topics or into weeks or even into sequences, in order to avoid learning becoming too piecemeal. The material in any one book can be broken down or grouped at several levels.

Generally, each lesson is made up of a course material part that relies on a single observation, plus a part consisting of exercises; it is important to distinguish between these, even where the exercises supplement the course material. This is because the course material and exercise parts have different pedagogical uses: the course material is most likely to be studied, whether in class with the teacher or by the pupil as homework, whereas not all the exercises will be worked through. Thus the characters who populate the course material are more visible than those in the exercises. How are we to identify course material and exercises within a lesson? Here too, the *Teacher's Book* or the Introduction to the *Pupil's Book* should be consulted. Often, though not

always, the course material is distinguished graphically, through use of a box or a colour. The exercises are most often numbered.

Thus, knowledge of the textbook's structure is indispensable in situating the character. This is why data collection should be carried out after reading the whole manual, including the teaching inserts. In many books, there are two levels to be considered: the basic unit, commonly called "lesson", and the level immediately above that, which we call "section" and which comprises several lessons.

*Examples with commentary*⁵

- *Extract 1, which reproduces the unnumbered pages showing the Contents of the Class 6 textbook*

This Class 6 textbook is organized into 22 units, five "Revision Exercises" and three "Specimen Test Papers". There is also a "Word list".

- *Extract 2, which reproduces page 139 and Extract 3, which reproduces page 142*

Page 139 is the first page of Section 21 ("Unit 21"), entitled "Graphs", which consists of 10 pages in total (from page 139 to page 148). The first lesson appears on this first page of the section. Here we can pick out the "course material", followed by part of an exercise that applies it (Exercise 1), with the first problem (Question 1) consisting of several questions, numbered from a to d. In this particular collection, the exercises are highlighted in colours. In total, Section 21 consists of 4 lessons, each consisting of course material (covering bar charts, line graphs, picture graphs and travel graphs) followed by a box containing exercises with one or more questions. Thus, page 142 shows Exercise 1, Question 8; the Lesson 2 course material (line graphs); Exercise 2, Question 1.

2.1.2. Texts and pictures

Most textbooks include, within each lesson, both texts and pictures. The latter have two functions: for very young children, they make things easier to understand; for older ones, they make the texts and the learning process more enjoyable. Texts and pictures do not supply the same type of information: for example, the way a character is named is specific to the text, while the scene in which a character is portrayed is specific to the picture. But some information can appear in both: an action can be both described and illustrated. There are then three possible scenarios:

- either the text or the picture is superfluous: they are saying the same thing (Extract 3, Question 8);
- the text and the picture bear no relation to each other (Extract 2);
- the text and the picture provide complementary information; but that information may differ, and then there are discrepancies between the text and the picture (Extract 4, Question 4).

⁵ Except where expressly stated to the contrary, all the illustrative examples are taken from the Class 6 textbook in Macmillan Cameroon's collection *Cameroon Primary Mathematics*.

Consequently, investigations of a character must take into account the space in which he or she originates – text or picture. Characters from the texts and from the pictures can be studied separately, thanks to two distinct sections in the data collection tool: a “Text” section and an “Illustrations” section. It is important not to confuse these two information sources when gathering data. Links between text and picture can mean that characters enjoy a dual presence (in both texts and pictures), giving them a more important position by comparison with equivalent characters who are involved in only one fictional realm. In the “Illustrations” section, we ask whether the characters encountered in the picture are also identified in the text. This question is relevant for both individual characters and groups of characters (where one member is sometimes highlighted in the text). In a number of cases, it is not possible to answer the question with certainty. In order to situate a character in the fictional realm, we must identify in which basic unit – text or picture – he or she appears. So the issue of defining the basic text unit or the basic picture unit arises. There are two orders of text unit, depending on whether we are looking at the course material or the exercises. The course material should be viewed in its totality: in other words, the course material as a whole constitutes a single text unit. Similarly, it is the exercise as a whole – whatever its length or number of questions – that constitutes the unit. Defining a picture unit is trickier. The picture is not inevitably attached to a specific text: it “jumps out at” the pupil, whatever work he or she is doing at the time. However, the characters may be depicted in a box. A boxed picture constitutes one picture unit. Yet the characters in a picture may be “outlined” and more or less integrated into the text. Then the picture unit forms part of the text unit. For example, all the characters illustrating the course material may be grouped in the same picture unit. In some cases, the issue of how to process a particular piece of information arises. What should be done with information that appears in a cartoon-style speech or thought balloon accompanying a picture, for instance? Given the enmeshed nature of the text and the picture, we have chosen to view the balloon as an intrinsic part of the picture and record the information in the balloon when decoding the picture, not to treat it as text (Extract 5). Actions mentioned in a balloon should be viewed as actions performed by the character illustrated. In other cases, books show diagrams with explanatory legends. Since the legend is indispensable to understanding the diagram, it is analysed with the picture, not with the text.

Examples with commentary

▪ *Extract 2*

No character appears in Exercise 1, Question 1: the imperative “*calculate*” and the pronoun “*you*” apply to the pupil who is reading the textbook (cf. below), who is not viewed as a character. On the other hand, the picture shows two pupils. Text and picture therefore do not provide the same information.

▪ *Extract 3*

In Question 8, either the picture or the text is superfluous, since they provide the same information: a boy, designated in the text by his forename, is performing an educational activity. The information recorded in the “Text” and “Illustration” sections of the data collection grid will be the same.

- *Extract 4, which reproduces page 131*

In the exercises – to be more precise, in Question 4 – there are a picture and a text that do not provide the same information about the male characters. In the picture, we can see two male building workers carrying on their occupation. In the text, *20 men* are involved. The information recorded in the “Text” and “Illustration” sections of the data collection grid will not be the same.

- *Extract 5, which reproduces page 13*

In the picture, we can see a little boy accompanied by a thought balloon in which there is a question about a calculation, intended to help the pupil. Since a balloon is analysed with a picture, we take the view that here the little boy is interacting with the pupil and should be considered a “substitute” character (cf. below). As no text accompanies this picture, this “substitute” character will be recorded only in the “Illustration” grid.

2.1.3. *Situating a character in a textbook*

Once the structural elements have been highlighted – section/lesson, course material/exercise, text/picture – each character must be identified and situated precisely within the textbook being studied. This is for several reasons.

The first reason is technical: in order to facilitate data collection and verification. The second is to identify the character’s position and thus inscribe him or her in the fictional realm; this permits a subtle analysis of his or her characteristics and relationships with others – elements that constitute his or her position in the system of characters. The third reason is in order to carry out analyses at various scales. The unit of analysis may be the textbook, the section, the course material, the exercises, the character in the text or the character in the picture.

Therefore the first concrete step is to number the sections, then the lessons within each section and the exercises in each lesson, where this has not already been done by the textbook’s designers. Pictures, whether they are in boxes or not, are not already numbered; therefore it is necessary to allocate a number to each picture unit. The numbering of the exercises and of the pictures starts again with each new lesson. Finally, all the characters must be numbered. A number is allocated to each character in order of appearance, from the first to the last page of the textbook, in either the “Text” section or the “Illustration” section. The character numbers become higher as data collection progresses through the textbook.

Examples with commentary

- *Extract 3*

Achenkeng should be dealt with in the “Text” section; he is located in Unit 21, Exercise 1, Question 8, and he is the x^{th} character in the textbook to appear in the texts. The little boy pictured at his desk should be dealt with in the “Illustration” section. He belongs to the same unit, the same exercise and the same question; and he is the y^{th} character in the pictures.

2.2. Characteristics of the character in a school textbook

2.2.1. How is a character shown in a textbook?

A character is not a person, but creates a referential illusion, that of a “living individual”. Several kinds of characters are represented in children's literature or in language textbooks. As the main kinds, we can mention: humans, anthropomorphic animals (also known as “clothed animals” or “humanized animals”) and real animals who – in fairytales and fables – have the power of speech.

A character is not shown in the same way in a text and in a picture. In texts, a human character is brought to the fore through a proper noun or a common noun. The character may also appear through an isolated personal pronoun: I, you, s/he, we, they. Whether isolated pronouns are taken into account depends on the resource involved. In a grammar textbook, where it is best to examine the way conjugation exercises use different people, all the personal pronouns should be retained. In contrast, in a maths textbook, an isolated first- or second-person personal pronoun is not viewed as a character: it simply represents the person who is speaking or being spoken to. In general, the pronouns “I” and “you” relate to any pupil. Only the third person (he, she, they) may represent a defined character. However, the character must be explicitly cited and actualized – invented but existing, not a fantasy character. Thus, in stylistic devices or set phrases such as “*Peter is as strong as a Trojan*” or non-actualized expressions as in “*Peter has no friends*”, the Trojan and the friends are not viewed as characters: there is only one character, designated by the forename “Peter”. In the pictures, the issue arises of when, in terms of “quantity” and “quality” of representation, it should be considered that a character exists as such. Characters are not inevitably represented in full or realistically: they may be shown partially or in a non-realistic, stylized way. In order to determine whether a character appears in the picture or not, the following methodological choices were made. A character will be recorded as present:

- from the point at which half a body appears: the head, the upper part (the bust) or the lower part (the legs);
- when human figures appear, even if they are stylized (such as shadowgraphs of human characters).

On the other hand, the following are not viewed as characters:

- isolated hands or feet;
- representations of human beings through objects, such as human figures on banknotes, in photographs, on book covers, etc. The need for the character to be represented “directly” corresponds to the notion of actualization in the texts.

Examples with commentary

- *Extract 2*

In Exercise 1, Question 1, there are no characters: the imperative “*calculate*” and the pronoun “*you*” apply to the pupil.

- *Extract 4*

In Exercise 3, Questions 1, 2, 3, 4 and 5, characters designated by a common noun appear: *men, contractor, labourers, students*.

In Exercise 3, Question 5, there is also an imperative – *find* – which applies to the pupil, who is not viewed as a character.

2.2.2. Defining and counting characters: individuals, collective characters or groups of characters

A character appears individually or with other characters, whether in the text or in the picture.

In texts, there are two types of character: firstly, an individual character representing an individual – for example, Amadou, mother, a farmer; secondly, a collective character made up of several characters who may (or may not) be of varying ages and sexes – for example, the neighbours, friends, brothers and sisters, the family. Not only does the collective represent multiple characters, it also emphasizes the idea of sociability network, social group, even institution, as opposed to expressing individuality. It provides evidence of the character’s social inclusion, sometimes of shared socialization, and of sociability.

A character appears through a proper noun or a common noun. Collective characters are designated by the use of the plural, such as little girls or people, or the use of a generic noun – the family or the class, both of which refer to several characters. Counting as one character unit, a collective character is analysed as a whole.

The same individual character may be designated in several ways: “*Peter, James's father, works at the post office. Now he is doing the shopping*”. The first character in this example is designated in turn by a forename (*Peter*), a parental function (*father*) and a personal pronoun (*he*). For all that, this is one and the same character. The second character, on the other hand, is given only one name, *James*. A character, regardless of the number of ways he or she is designated, should be counted – and, therefore, analysed – only once, specifying the different designations used.

As far as collective characters are concerned, they may be divided up into sub-collectives that do not exactly match the whole collective. In any case, it is the most specific sub-collectives that should all be counted as characters.

Let us take the example of a maths exercise that includes the wording: “*In a class of 100 pupils, 40% are girls and 60% boys*”. Each of the sub-collectives – *girls* and *boys* – is viewed as one character, without taking into account the overall collective,

since that is represented by the sub-collectives. So here we have two collective characters.

In an exercise that begins “A *primary school has 300 pupils, of whom 50 are in Class 1, 60 in Class 2, 50 in Class 3, 50 in Class 4, 60 in Class 5 and 40 in Class 6*”, six sub-collectives of characters appear through the pronominal phrase *of whom*, even though the word *pupil* is not repeated. Therefore we have six collective characters here. In contrast, where it is evident that all the sub-collectives are not being counted specifically, then the overall collective is taken into account, along with any sub-collective(s) mentioned.

In pictures, the characters are represented either alone or in a group (whether doing the same activity or not). Like collective characters in the text, a “group of characters” is made up of several individuals and relates to the idea of social inclusion and sociability. However, when several characters appear in a picture, preliminary observations often show that either the characters have related or similar characteristics or that the characters – especially if there are a lot of them – are fairly weakly characterized and the detail is difficult to grasp. It then seems superfluous to note several identical, or almost identical, characters, as this would give these characters greater weight, unrelated to the reality of their impact. Our hypothesis is that, when several characters appear together in a picture, the impression of the whole is predominant. For practical reasons, we have taken the view that more than five characters constitute a group of characters that should be studied together and as one unit; there are no longer any individual characters that can be studied separately. The number five has been chosen because of the reduced format of the pictures in textbooks. Counting the characters in the picture may pose a problem. Sometimes the same character is repeated in a single picture. Where the repetition indicates movement or a changing situation, this character is counted only once. On the other hand, if the same character is shown in different situations or postures, he or she must be counted on each appearance. In order to distinguish between these two cases, the question must be asked: would it have been possible to choose another character instead of this one? If the answer is yes, then clearly two (or even more) different characters are counted; if the answer is no, the character is counted only once. The distinction between individual characters, collective characters and groups of characters generates different ways of individualizing the characters and different tools for capturing character-related information.

Examples with commentary

▪ *Extract 4*

In the text of Exercise 3, Question 1, there are two characters, who should be studied in the “Text” section: two adult male collective characters – the collective *32 men* and the collective *40 men*.

In the text of Question 3, there are two adult male collective characters – *60 labourers* and *labourers* – and one individual character, *a contractor*. These characters are engaged in their occupations.

In the text of Question 4, there are two adult male collective characters – *20 men* and *men*. In the picture, we can count 2 men, who will be analysed in the

“Illustration” section under the “Individual character” module. Again, the action they are performing is work.

- *Extract 6, which reproduces page 156*

Let us consider Revision Question 2, which relates to Unit 18. In the text, there is a collective of *two market traders* – an ungendered collective character engaged in an occupation. In the picture, five characters are visible, whom we can view as a single group of characters, to be studied in the “Illustration” section under the “Group characters” module. The subject is a market scene that includes only female characters, predominantly adults. Two characters are identified in the text. But the picture shows something different: the market traders are women.

2.2.3. Characters according to their pedagogical function

Textbooks are populated by various kinds of human characters, most often fictional (mostly evoking scenes of everyday life, including school life) but sometimes real, through the inclusion of well-known personalities. These characters do not all have the same pedagogical function, and we should distinguish between them according to their pedagogical function.

Most characters appear occasionally, or from time to time. They support the general learning process or a particular exercise, in order to make them more concrete and attractive. These characters remain anonymous or are identified in the texts by a forename, a bond or a status. They are referred to as “ordinary” (pictures and texts in Extracts 3, 4 and 6). More particular types of characters result from the pedagogical function that they have, giving them a more important position. These are “learning icon characters”, “pilot characters” and “substitute characters”. Models of a sort, they are guaranteed a strong impact that is often linked to a process of identification. Learning icon characters appear only in illustrations. These characters help pupils to get their bearings in the different pedagogical parts of the book: I'm learning this, I'm remembering that, I'm doing an exercise, etc. In some books, they are replaced by abstract pictograms or animal figures. These characters are always identical, with unchanging characteristics; illustrative rather than representational, they are devoid of any background setting and may appear in recurring vignettes or frames (Extract 7). It would therefore be superfluous to consider them every time they appear. Learning icon characters are listed only in a special section of the questionnaire and must not be recounted or analysed in the other sections. Pilot characters are recurring characters: they accompany the pupil in his or her learning throughout the textbook. They appear in both text and pictures. They aim to guide and reassure the pupil, especially in books for very young children. These characters have an identity that is made specific by a forename or other name, even a social function, and they become familiar to the pupil, who can identify with them. As a rule, pilot characters are shown in the *Teacher's Book* or at the beginning of the *Pupil's Book*. Where they are not shown explicitly, the fact that they are pilot characters can be deduced from their recurrence in the early lessons: if characters with an identity are mentioned several times, they are to be viewed as pilot characters. Present only in the pictures, substitute characters are mirrors for the pupil, or doubles of the teacher (Extract 2 – course material; Extract 5 –

with the exercise; Extract 6 – person next to the title). They interact with the pupils, relating to them, guiding them in learning, supporting them in their schoolwork. This interaction is indicated by a speech or thought balloon or a gesture. They show, explain, recommend, give instructions, ask themselves questions, work out problems, comment on the results, hesitate, etc. These substitutes may be children or adults. They are not always the same, and may vary throughout the textbook. So an adult substitute for the teacher asks the pupil who is reading the textbook: “*How do you read and write a number that has more than three figures?*”; a child substitute for the pupil explains through the presentation: “*I write down the sum and count by starting from the units column*”, or in another instance, “*I put an s on the end to indicate the plural of common nouns*”; another advises “*Remember*” or even makes a statement promoting complicity and empathy with the pupil: “*It's not easy – all these tenses are complicated*”. Substitutes must not be confused with characters depicted in school situations, who are performing tasks as pupils but not interacting with the reader (Extract 3).

Cultural references in the form of famous people are sometimes inserted into textbooks, notably those intended for older pupils. Their presence does not have the same meaning in all study disciplines, so their status must be viewed differently. In maths books, scholars, or even other famous characters, may appear in the texts or the pictures. They are listed in a special section and must not be recounted or analysed in the other sections of the questionnaire. This is because they are linked to a historical context (for example, a photograph of Marie Curie in her laboratory) and cannot be likened to an anonymous fictional character involved in a situation that is meant to show the present.

Examples with commentary

- *Extract 4*

In the texts of the Examples in this lesson and in the Questions in this Exercise, all the characters mentioned, whether collective or individual, are ordinary characters and are designated as such by a common noun. In the picture, the two men are ordinary characters

- *Extract 5*

In the picture, a substitute for the pupil is doing an exercise.

- *Extract 6*

In the texts we have *Two market traders* (Q. 2) and *Mr Brown* (Q. 3); these are ordinary characters, as are those in the picture for Question 2.

2.2.4. Characters according to their role

In the texts, the study of the pedagogical function of ordinary characters or pilot characters may be refined by introducing the concept of role. According to their role, characters are not all of the same degree of importance and, consequently, do not have the same impact on the pupil. In the pictures, the hierarchy of less visible characters is

difficult to establish. In the texts, the individual or collective characters are distinguished from one another through their actions, according to the importance attributed to them by the role they are given. Some characters are shown to advantage and in the foreground, others are just background figures, and others again are mentioned only in order to situate the character within a network of relationships. In school textbooks, where the texts are embryonic, roles remain limited: the main character – the one who performs the action or possesses a specific quality or who has a specific attribute – can be distinguished from other characters who give him or her substance and depth.

Three situations may be recorded:

- “main characters”. They perform an action or possess something. They are the “actors”, and it is around them that the situation illustrating the course material or supporting the exercise is built. In the example “*Peter is playing marbles*”, Peter is a main character;
- “extras”. They do not perform the action, but take part in the situation. In the example “*Peter buys a book from the bookseller*”, the bookseller is an extra;
- “identifying characters”. They do not take part in the situation, but help to define the identity of the main character. They put the main characters or the extras into context by involving them in various bonds. In the example, “*Fatou’s father is reading*”, the father is the actor: he is performing the action of reading, and Fatou, in the possessive form, is an identifying character who plays no part in the situation.

There is no equivalent to the “role” for characters who appear in the pictures, except where, following the example of the text, a distinction is made between actors and extras, through reducing the size of the images and sometimes through non-explicit hierarchization of the characters. This is why role as such is not taken into account directly in analysing the picture. However, other elements, such as posture (see below) and pedagogical function, help to bring out the position of individual characters.

Examples with commentary

▪ *Extract 4*

All the characters on this page are actors. We should note that the role of actor is the most frequently encountered one.

2.3. Personal characteristics of the character – the basis of social sex

The textbook’s characteristics and the features of textbook characters that we have just highlighted form a macrocosm in which the character is situated; they combine with the character’s distinctive characteristics, which are conferred by the immediate fictional world in which the character moves. These personal characteristics form the basis of the character’s social sex. We list these indicators below, both for each type of character – individual or not – and for the text and the picture.

2.3.1. Sex

In a school textbook, characters are most often gendered, unlike those in children's literature; the sex of the character rarely remains unspecified, in order not to leave room for ambiguity or imagination. However, it is not always obvious which gender should be ascribed to a character. Therefore we distinguish between several possibilities, since the choices are not the same for the illustrations and for the text, for individual and collective characters or for groups. Gender should never be determined through the use of deduction, traditional stereotypes or one's own intuition. In the texts, a character, whether individual or collective, is visible to the reader:

- either through a proper noun: a surname with courtesy title, or a forename – *Mrs Awah, Mr Brown, Mr Ewane, Mary, Peter, Achenkeng*;
- or through a common noun that refers:
 - to an individual: a market trader, father, a neighbour;
 - or a collective of people, shown through the use of a plural or of a generic term: the little girls, the children, the family or the class.

In the absence of any other elements in the sentence, the name might not reveal the sex: the sentence “*Alex is going to the sports field*” tells us nothing about Alex's sex. On the other hand, the use of a gendered common noun or a pronoun can eliminate ambiguity: “*Alex is a keen sportswoman*” or “*He is a good footballer*”.

In languages where adjectives agree with nouns, the adjective may give an indication of a character's sex. In contrast, where characters are identified by common nouns, in many cases (teacher, market trader, farmer, etc.) their sex cannot be presumed with any certainty. In fact, there are several situations in which identification of sex is blurred; these vary according to language:

- use of generic terms: *la classe*, a grammatically feminine generic noun in French, does not refer to a collective of people who are female;
- the use of words that end in a silent *e* in French: *élève* and *cycliste*, for example, carry no grammatical marker unless they are accompanied by an article: *un élève, la cycliste*;
- the rule, which applies in French, Arabic and other languages, that the grammatical masculine plural stands for both sexes: *les joueurs* (players) can also include some *joueuses* (female players).

In order to take into account a particular language and its grammatical influence, we developed several sex-based categories, in which the meaning of the word and the relevant grammatical rules intersected. These can be used to define the sex of the character, without recourse to induction.

– For individual characters:

- “Male character”: *Achenkeng*, a boy;
- “Female character”: *Jane*, a girl;
- “Ungendered character”, who could be male or female: *a pupil*;

- A character whose sex is unspecified: this happens particularly when the cultural context is unknown and the linguistic context makes it impossible to decide (e.g. “*Asanji tells Fon that he has spend 600 fr*” – in this sentence, without knowledge of the Cameroon context, it is impossible to determine Fon’s sex, although the personal pronoun shows that Asanji is a male character).

– For collective characters:

- “Collective male characters”: *boys, men*;
- “Collective female characters”: *girls, saleswomen*;
- “Collective ungendered characters”: *the pupils, the children, the class*;
- Characters covered by the grammatical masculine plural. This is not a valid character category for all languages: it applies to French and Arabic, for example, but not to English. It corresponds to the rule that the grammatical masculine plural includes the feminine: *les joueurs* (players).

Distinguishing between the last two categories enables us to evaluate both the influence of language and the impact of grammar.

In the pictures, it is not always easy to attribute a sex to the character, who may be small or ill- defined. A picture can leave room for ambiguity. Attributes such as hairstyles and clothes, which are highly stereotyped according to cultural context, may sometimes provide a basis for classification. Thus, the following can be viewed as indicators of sex:

- hairstyles, including male styles: beard, moustache, very short hair, etc. and female styles: braiding, plaiting or knotting; ribbons or bows in the hair, etc.;
- clothes viewed as female: skirt or dress, boubou, etc. and as male: trousers, djellaba.

Determining sex indicators presupposes a very good knowledge of the cultural context in which the textbook has been produced and of the one for which is intended. If there is no doubt, male or female sex can be attributed. If there is any doubt, the character is put into the character category “Unspecified sex”. For groups of characters, the analysis is not an individual one: the concept of “dominance” is used. The following procedure is used to determine “dominance”: all the characters whose sex can be determined are counted according to sex. Characters of unspecified sex are also counted. If most of the characters are ungendered, the record will show “Most characters ungendered”. If most of the characters are gendered, dominance is to be analysed overall, for all the characters represented to whom gender can be attributed. The view is taken that dominance exists when a group of one sex has one more character than the other – that is, when the difference between the two sex groups is 1. Where both sexes are equally represented, there is no dominance. Six categories have been identified:

- “Male characters only”;
- “Female characters only”;
- “Males dominate”;
- “Females dominate”;

- “Neither dominant”;
- “Most characters ungendered”.

Examples with commentary

- *Extract 8, which reproduces page 47 and includes Exercise 5*

In Question 3, the common noun *pupil* is ungendered – this could be a girl or a boy. In contrast, in Question 1, the common noun *boy* is unambiguously a male child.

In Question 5, we have two sub-collectives of defined sex and age – one female, *girls*, and the other male, *boys*.

In Question 9, if there is any doubt about the gender of the forenames *Ewusi*, *Ambe* and *Tita*, sex is recorded as unspecified; on the other hand, in Question 8, the possibility of not being able to determine the sex of the forename *Ekota* is excluded by the presence of the possessive adjective *her* and the personal pronoun *she*.

- *Let us consider the top of the page in Extract 8, which shows Example b from one of the lessons in Unit 8.*

In the text, a single character appears – *the girl*. In the picture, a little girl can be distinctly seen getting into a coach with her school bag, while a bus driver and a group of children are indistinctly visible: this set of more than 4 characters will be processed in the “Illustration” grid under the “Group characters” module, recording that most of these characters are ungendered.

2.3.2. Age

Age may prove less easily identifiable than sex. Except where age actually appears in the text or is indicated through terms with age connotations, such as *child* or *grandmother*, it may remain impossible to determine. Some designations, like some actions or some attributes, are not peculiar to a single age-group. Where pictures are concerned, in certain instances their small size and sometimes mediocre quality prevents an age being assigned.

– For individual characters, in both picture and text, we distinguish three categories:

- “Child”;
- “Adult”;
- “Age unspecified” category that brings together characters about whom neither text nor picture is explicit.

In case of doubt, the character should be classified in the “Age unspecified” category. Ideally, the distinction between children and adults should be based on age: as the age of majority marks the boundary, characters of 17 and under are viewed as children and those aged 18 or more as adults. Since this information is rarely available, the decision must be based on the most objective criteria possible, and established according to cultural context.

– For collective characters in the texts, three age categories are identified:

- “Child”;
- “Adult”;
- “Age unspecified”.

Six categories are identified for groups of characters in the pictures. As with sex, the concept of “dominance” is applied. Distinctions are made as follows:

- “Child characters only”;
- “Adult characters only”;
- “Child characters dominate”;
- “Adult characters dominate”;
- “Neither dominant”, where there are equal numbers of children and adults
- “Impossible to determine dominance”, if most characters are of unspecified age.

Examples with commentary

- *Extract 8 and the questions in Exercise 5*

Nouns such as *boy*, *girl*, *children* refer to children.

In Question 9, we cannot tell how old *Ewusi*, *Ambe* and *Tita*, who are buying a goat, are.

- *Extract 3*

In the text of Question 8, the male character who is doing schoolwork, designated by his forename, *Achenkeng*, is quite obviously a child; in the picture, sex and age are also clearly identified.

- *Extract 9, which reproduces page 148*

In Question 5, the two characters *Mr Ndifor* and *Mr Ngollo* are of an age and sex defined by the use of *Mr* and the mention of their occupations: *cycles to work* and *drives a bus*.

In Question 6, the ages of the two female characters designated by their forenames, *Mary* and *Alice*, are not defined a priori, since their activity – *travelling 30 km by bus* – is not a defining one, though knowledge of the cultural context may eliminate doubt (use of an age-related forename; the likelihood of their travelling this distance by bus).

- *Extract 10, which reproduces page 56*

In the course material, in Example 3, the sex and age of the character, both in the text (*Mr Awah got 48 bags of coffee...*) and in the picture (a man in long trousers) are defined: this is an adult male character.

2.3.3. Designations

Several ways of designating characters are used and combined in texts to indicate individual or collective characters:

- A forename, or a surname accompanied by a courtesy title: *Mr Awah, Mbuh, David, Ashu, Mary* (Extract 10);
- A family bond or function: *cousin* (Question 4, Extract 9), *mother, son-in-law*;
- A non-family bond: *friend, neighbour, etc.*;
- A status evoked by a social function, an occupation, or even by ownership: *a workman* (Extract 4), *a market trader* (Extract 6), *a farmer* (Extract 10); one might also find *a student, a minister, a chairman, an engineer, etc.*;
- A generic noun (*person, child*) or a generic term that indicates sex (*man, girls*).

The ways in which particular characters are designated make them part of a community, positioning each one more in the private or more in the public sphere. They can also confer a certain prestige: the designations *Mrs Saida* and *Saida* are not identical. Thus, the ways people are designated help to reveal the statuses, roles and social positions attributed to each of the sexes according to age.

All a character's designations must be recorded. At the first level, this record may follow the major categories listed above: surname, forename; family function; other bond; status, etc. But, at a second level, detailed study of the different categories is worthwhile. For example, it enables us to find out which family function is most often chosen: are women who are designated by family function mothers, grandmothers, sisters or aunts? Apart from quantitative analysis, some aspects may be captured through qualitative analysis – for example, checking the diversity of forenames and surnames.

Methodological choices about the use of periphrasis in relation to status should be determined by the context and purpose of the study. We can hypothesize that periphrases are designators of status: so, in the example “*the person who is selling...*”, the person concerned is taken to be a saleswoman. But it is also possible to choose not to extrapolate status from a periphrase.

In the pictures, this concept of designation is of no use. Instead, a character must be situated in a public or private sphere on the basis of visual indicators, such as his or her actions and attributes or the place where s/he is portrayed.

2.3.4. Actions

In both texts and pictures, characters may be described or represented in the course of performing one or more actions. Individual and collective characters' actions can be readily picked out of the texts. In the pictures, although picking out individual characters' actions poses no methodological problem, the same cannot be said for groups. This is because all the characters in a group of characters are not necessarily

performing the same action. Consequently we chose just to note the topic of the scene represented.

The level of detail at which actions are to be recorded is open to discussion, depending on the type of study undertaken. For example, if a character seated at a table is eating and drinking, both the actions of “eating” and “drinking” can be recorded, or the choice can be made to look at them comprehensively, noting them as just one everyday activity. In various studies, a comprehensive thematic treatment of actions may be more relevant than a detailed record. This is because such a treatment offers the possibility of grouping together similar actions, which may be numerous, and thus of being exhaustive without biasing data collection by operating selection of activities. Moreover, given the diversity of actions and the small number of characters performing the same action, *a posteriori* creation of broad categories during later coding or recoding is vital if scattering of the results is to be avoided. When opting for broad categories, noting a maximum of two actions will in most cases ensure exhaustive recording.

Certain “broad categories” of activities or actions appear to be particularly relevant, such as:

- “Educational activities.” This category brings together all the educational activities undertaken by a child who is engaged in schoolwork. Knowing precisely whether the child is calculating, reading or drawing, etc., does not add anything to the analysis (Extract 3, Question 8, text and picture; Extract 8, Exercise 5, Question 3).
- “Work.” Work activities being performed by a character identified through his or her occupational status are grouped together under the code “Work” (Extract 6, Question 2). This is also the case for characters not designated by an occupational status but whose activities are diffuse and extensive (picture in Extract 6). In order to avoid unnecessarily extending a list of specific occupational activities, the detail is not recorded. For example, if a baker is presented as cooking 20 loaves, this is marked as “Work”; it is of no significance whether the baker is cooking the loaves or kneading the dough. On the other hand, given the economic context of Africa, we did distinguish “Agricultural activities”.
- “Work-equivalent activities.” Work activities which are not being performed by a character identified through his or her occupational status or which seem to be part of small-scale economic activity are grouped together under this code. This enables the importance of “informal work” to be captured.

Here are a few other examples of possible categories: buying food, pursuing an outdoor leisure activity, taking part in sporting activity, doing household tasks (though the specific action of “cooking” may be retained).

Deeper thought should be given to broad categories and to the individualization of certain activities, depending on the cultural context, the particular resource being analysed and the objectives of the study.

Examples with commentary

- *Extract 5*

The substitute character is performing an “educational activity”. Like all balloons, the substitute character’s thought balloon does not lead to a record of an action (“to think”).

- *Extract 9*

In the text of Question 5, the two characters *Mr Ndifor* and *Mr Ngollo* are engaged in the same activity: work. In addition, they are travelling from one place to another. In the picture, we can distinguish a character of unspecified sex driving the bus (to be recorded as an occupation, cf. below), and a male character travelling by bike.

In the text of Question 6, Mary and Alice are engaged in the same activity – “travel”.

- *Extract 10*

In the text of the example in the course material, although *Mr Awah* is not designated as “a farmer”, we ascribed the action “agricultural activity” to him, given that *his farm*, *his crop* and *48 bags of coffee* are mentioned. The same is true of the picture: the adult male character’s action must be considered agricultural, given the size of the bag.

In the text of Question 6, there is a character designated by his forename *Mbuh*; knowing the context, we can record that as a male name. The character is buying a ball and therefore he is performing a “purchasing” action. It should be noted that the age of the character cannot be determined from the action; a boy or an adult male could be making the purchase. In the picture, we see a young boy who is not performing any specific action (unless we want to take into account the expression of feelings such as being happy or sad).

In Question 13, an adult male appears, designated by the status *a farmer*; he is performing an “agricultural activity”, signalled by the increase in his herd of cows.

2.3.5. Attributes

An attribute fleshes out a character’s personal, occupational and social identity. It is a physical characteristic – height, weight, skin colour, hairstyle in the broadest sense, etc. – or an object: clothing; personal, domestic, educational or occupational objects given to the character or temporarily associated with him or her (for example: prescribed medicines being taken, a basket being carried on someone’s head, a ball being played with). There can be a large number of these.

How should we associate an attribute with a character? In the texts, an attribute is designated as belonging to, associated with or used by the character. The presence of a possessive adjective is illuminating, as is the use of any verb that indicates possession (have, own, possess, etc.). In the pictures, in order to be designated as an attribute, a

pictorial feature must appear on the character or within reach of his/her hand or foot. It need not be linked directly to the character graphically, but a link must be evident. For example, a little girl who is running after a ball has the ball as an attribute. The fact that something appears in the same picture is not enough to designate it as an attribute.

As with actions, the attributes of individual and collective characters in the texts are recorded; in the pictures, only the attributes of individual characters are noted, for the same methodological reasons as those explained above for actions.

Similarly, it is advisable to set up a priori broad categories, grouping objects that are alike in some way. So all the basic educational supplies (pencil, felt-tip pen, exercise book, ruler, school bag, etc.) could be brought together under the label “Educational materials”. Work-related objects could be amalgamated into a single category. When opting for broad categories, noting a maximum of three attributes will in most cases ensure exhaustive recording. Here are a few other examples of possible categories: “Outdoor games”, “DIY materials”, “Domestic animals”, “Small household objects”, “Individual means of transport”. However, a question on the specific presence of certain attributes can be planned. This avoids omissions and offers the advantage of not occupying one of the three responses available for attributes in general.

Certain attributes, such as physical features, clothes and money, merit particular attention.

It may be relevant to know certain physical characteristics. This is true of a beard or moustache, specific hairstyles or accessories such as plaits or ribbons, which help in analysing how characters are gendered.

Physique and clothing are rarely mentioned in texts. So when they are described, this constitutes emphasis and justifies recording them.

In pictures, characters are all given physical characteristics and clothing. Methodological discussion is required to define the elements that should be collected. Since characters are rarely shown without clothes, it does not seem particularly appropriate to record all clothing systematically. However, provision should be made to take into account accessories or clothing with particular cultural or social significance. Thus, for male characters, ties, bow ties or hats may be noted. If the context is one where traditional clothing (*boubou*, *loin cloth*, etc.) is predominantly worn, then European clothes may be recorded.

School textbooks, notably maths textbooks, often mention money. Is it useful to record the possession of money when the character is a shopkeeper, since money is one of the attributes needed to engage in this occupation? Sometimes the possession of money is expressed explicitly, and sometimes it is implied. In order not to become embroiled in such considerations, risking bias in data collection because of vagueness, the following solution is envisaged. In the text, money is always counted as an attribute, except for characters identified by an occupational status. Therefore money is not noted as an attribute when it is circulating in the context of an habitual occupational activity. In “*Peter buys a pen costing 20 Euros. The shopkeeper gives him back 30 Euros. How much did Peter give the shopkeeper?*”, the character of the shopkeeper does not have money as an attribute, since he is carrying out a work-related transaction (note: there is no explicit statement that he has money). On the other hand, the character of Peter has

money and a pen as attributes. In another example: “*Mum has 10 Euros. She goes to the market. How many bananas at 1.50 Euros each can she buy?*”, the attributes of money and fruit are recorded for the character of Mum. In contrast, money represented in the pictures is viewed as an attribute, without any distinction according to the character’s status – a status which is most often not indicated anyway.

Examples with commentary

- *Let us consider the picture in Extract 2*

The two ordinary characters appear only in the picture and will be recorded in the “Illustration” grid, under the “Individual characters” module, noting a girl and a boy. Only the girl has an educational attribute – a school bag. The two children are not performing any specific action.

- *Extract 3*

In the picture and in the text, the boy is performing an educational activity and has an educational attribute (“marks”).

- *Extract 4*

In the picture, the two adult males are engaged in work and have work tools as an attribute, while one of them is wearing a helmet.

- *Extract 10*

In the text of Question 6, mentioned above, *Mbuh* is performing the action of buying and has “a ball” as an attribute. In the picture, the young boy, who is not performing any specific action (unless we want to take into account the expression of feelings such as being happy or sad), has the same attribute, a ball.

- *Extract 11, which reproduces page 125*

In the picture, the salesman is engaged in work and has cloth as an attribute, while the boy has money and cloth.

2.3.6. Relationships

Individual characters’ relationships should be studied both in the texts and in the pictures. On the other hand, collective characters’ relationships can be examined only in the texts. In the pictures, given the definition of a group, all the characters in a group are viewed as co-existing. We do not go into any depth in analysing their relationships.

Within one text or picture unit, if there are two or more characters, the characters are viewed at least as co-existing, since pupils are supposed to read the lesson or exercise in full. But, apart from co-existing, characters may also be interacting or compared.

Coexistence is to be understood in the broad sense: it is where two or more characters are mentioned in the same spatial and temporal unit of the course material or the exercise, but do not interact and will not be associated with one another by the pupil who reads about them. Analysis of coexistence enables us, in particular, to define a

“minimal gender mix”, established by a shared presence (compare the pictures in Extracts 2 and 4).

In interaction, characters do things together, exchange things, act in response to one another. As with the characters’ actions and attributes, it is preferable to categorize interactions *a priori*. Here are a few examples of possible categories: “Educational interactions”, “Occupational interactions”, (picture in Extract 11), “Social interactions”, “Gratification interactions” (giving a present, rewarding someone, congratulating someone). An interaction is unilateral if it describes the action of one person towards another, without the latter's reaction being mentioned. In the example “*Dad is giving sweets to his children*”, Dad is the actor, the “doer” of the interaction; the children to whom he is giving are passive in the relationship; so the interaction is unilateral. The interaction is reciprocal when the characters do something together or when the action of one triggers a reaction on the part of the other. In the example, “*Amina and Samia are playing marbles*”, interaction is reciprocal. It is envisaged that this nuance will appear only in the texts, since ambiguity about the role of each participant is too frequent in the pictures.

Characters are compared when they are shown as competing, in sports or other situations. This may be directly – “*who has more, who has less?*” – or indirectly – “*I child has 8 marbles, another 12, how many do they have altogether?*”. Therefore we should not focus on the kind of exercise (which is going to change according to the age of the children), but on taking into account whether the wording makes it possible to classify the characters in this way. This is a very frequent scenario in maths textbooks, given that numbers and calculations lie at the heart of maths exercises. Comparison can relate to:

- characters’ physical characteristics: weight, age, height, etc.;
- qualities: beauty, intelligence (though we have not actually encountered this scenario), etc.;
- educational skills: working faster, finding an answer, etc.;
- sporting abilities: running faster, etc.;
- goods owned: small items, money, etc.;
- gender balance: the number of girls and boys in a class.

The use of broad categories is also recommended here – for example: “Sporting competition”, “Physical comparison”, “Comparison of possessions”.

The result of the comparison, which will to some extent value one character above another, allows us to ascribe a symbolic positive, negative or neutral coefficient to the character. These coefficients can be discerned solely from the texts. The character who obtains the least good result is classified with a negative symbolic coefficient, while the one who obtains the best is classified with a positive one. If the characters have the same result, the coefficient is neutral. If more than two characters are being compared, it is the character or characters who have the intermediate result who are given a neutral coefficient. However, it is not enough to focus on the actual form of words; an interpretation must be made according to meaning. When one person spends more on the same purchase, s/he has a negative coefficient. On the other hand, spending more in the absolute sense is positive.

It should be noted that a comparison between an adult and a child is regarded in a specific way: the view is taken that in this situation there can be no positive or negative coefficient, and so there is no basis for allocating a symbolic coefficient.

For some characters, an accumulation of different types of relationships may occur. For example, in the same unit, two characters may be interacting with each other and coexisting with a third character. For each character, one relationship of each type can be recorded. Sometimes, within the same unit, one character is involved in several interactions or several comparisons. In principle, the categories used should allow an exhaustive record.

Whatever the nature of the relationship, the characters involved must be identified precisely. In the case of coexistence, all the characters involved can be recognized by the numbers of the section, the lesson and the text or picture unit to which they belong. Where interaction or comparison is involved, this information is not enough: it must be specified which other character(s) the relationship involves, by recording the reference number(s) of the character(s).

Examples with commentary

▪ *Extract 2*

In the course material, the substitute character is alone in the picture

In Exercise 1, the girl and the boy co-exist

▪ *Extract 4*

In Exercise 3, Question 4, there are two co-existing collective characters – *20 men* and *more men*. In the picture, the two men co-exist.

▪ *Extract 8*

In the course material, the girl is alone.

In Exercise 5, Question 1, the boy is alone. The same is true of the pupil in Question 3.

In Question 5, there are two sub collectives being compared: boys and girls, compared from the point of view of numbers; the girls are more numerous and so have a positive coefficient.

In Question 9, the three characters of undetermined sex and age (see above) are in a relationship of comparison, and compared from the point of view of each one's share of money spent on the purchase of a goat: *Ewusi* pays the largest share (positive coefficient), *Tita* the smallest (negative coefficient), and therefore *Ambe* is allocated the neutral coefficient.

▪ *Extract 10*

In the course material, in both the text and the picture, *Mr Awah* is alone.

In Exercise 8, Question 6, the male character is alone in both the text and the picture.

In Question 15, there are two sub-collectives of ungendered plural characters – pupils who are present and those who are absent, with those who are present more numerous, so given the positive coefficient, and those who are absent being allocated the negative coefficient.

- *Extract 11*

In the picture, the salesman and the boy are interacting reciprocally. Therefore each one is recorded in a reciprocal interaction – one a purchasing interaction, the other a selling interaction. On the other hand, in the text, the boy designated by the status *house boy* is alone.

2.3.7. *The place and posture of an individual character in the pictures*

Choices about where to place a character who appears in the pictures, and about his/her posture, are not insignificant. We can try to find out if the place is identifiable or not, using explicit indicators and precise information. *A priori* classifications, such as “school”, “road”, “village” are desirable. But care must be exercised – a child sitting at a desk is not necessarily at school.

Analysis of the character’s posture is broken down into two stages. First of all we look at whether the character is represented full-length or just head and shoulders. The second stage is to define the precise position in which the character is represented: is s/he standing, sitting, lying down or kneeling? Like place, position may not be identifiable.

Examples with commentary

- *Extract 2*

The boy and the girl are shown full-length, standing in an unidentified place.

- *Extract 3*

The boy is sitting in an unidentified place.

- *Extract 4*

The two workers are standing on an outdoor building site.

- *Extract 10*

In the course material, the man is shown full-length, engaged in an agricultural activity in a field.

In Question 6, the boy is shown, head and shoulders, in an unidentified place.

In Question 14, the female character is shown, head and shoulders, sitting in an unidentified place.

- *Extract 11*

The salesman and the boy who is buying from him are shown, head and shoulders, standing in a shop.

2.3.8. *Occupations in the pictures*

Occupations shown in the pictures are studied by making an overall record in a special module of the “Illustration” section.

Examples with commentary

- *Extract 4*
The two adult males are workmen.
- *Extract 6*
Two of the female characters are market traders.
- *Extract 8*
A bus driver is visible.
- *Extract 10*
The adult male is a farmer.
- *Extract 11*
The adult male is a salesman.

3. Putting the method into practice

The data collection document

In this chapter, we set out the formal structure of the tool for collecting data on gender representations – the questionnaire – and explain precisely how to use it.

The structure of the data collection document is intended to record general information about the textbook, to describe the cover and to outline the typology of characters used in the textbook, then to record all the characters appearing in the text and/or the pictures, following the order of the pages. The data collection framework consists of five sections in total (see Appendix 4).

SECTION I: IDENTITY CARD

The first section, entitled “Textbook identity card”, captures information from the publisher about the design, publication and organization of the book. As publishers notes are often inadequate, publishing houses should be consulted in order to obtain reliable information.

SECTION II: COVER

The second section focuses on the cover and any characters that appear on it. As the first page the pupil sees every time s/he uses the textbook, the cover has a great deal of impact. This section consists of two modules: title and cover illustration. The objective is to record any characters that may appear, looking first at the title and then at the illustration.

SECTION III: TYPOLOGY OF CHARACTERS WHO APPEAR IN THE TEXTBOOK

The third section defines characters according to three specific pedagogical functions: learning icon characters, pilot characters and real, famous characters (cf. below).

This section consists of one module for each pedagogical function being considered.

Why is there a special section for these three types of characters?

The first reason is that not all textbooks include these types of characters, whereas all textbooks make use of two other functions: characters who can be referred to as

“ordinary”, and substitute characters. These three other character types must be carefully delimited, therefore.

The second reason is that two of these categories – learning icon characters and famous characters – should not be merged with the general mass of characters. Learning icon characters are always identical. Famous characters do not form part of the fictional world created by textbook designers. Therefore, both should be studied separately; each should be recorded just once in this section, regardless of how many times the character appears throughout the textbook.

Finally, although pilot characters are to be studied as part of the general mass of ordinary characters, they should also be identified at the outset, in order to improve accuracy of collection throughout the book and of subsequent data coding and capture.

SECTION IV: TEXT

The “Text” section is devoted to studying all the characters who appear in the text, with the exception of learning icon characters and famous characters, who are listed in Section III, “Typology of characters who appear in the textbook”. The “Text” section consists of a single module, which is applicable to both individual and collective characters and allows all the information relating to each person to be recorded. Each line of the table is allocated to one character, whether individual or collective.

SECTION V: ILLUSTRATIONS

The fifth and final section enables the study of characters who appear in the pictures, whether these are ordinary, substitute or pilot characters. It consists of three modules: one module for individual characters, another for groups of characters and a third for recording occupations explicitly represented in the illustrations.

We shall now present the various sections of the questionnaire, explaining a given category the first time it appears in a table. Where it is more convenient, a module may be broken down into parts for analysis.

3.1. Section I: Textbook identity card

Identification number:		
Title:		
Publisher:		
Collection:		
Educational level:		
Year first published:		
Year of edition studied:		
Country of publication:		
Target country:		
Author(s):		
Cover illustrations by:		
Textbook illustrations by:		
Number of pages:		
Number of sections:		
Is there the same number of lessons in each section? :	Yes	No
if yes, number of lessons per section:		
if no, give exact number in each case:		
Are there appendices that are not included in these sections:	Yes	No
If yes: What is the nature of these appendices?		

- ⇒ Identification number: give an identification number to each textbook being studied.
- ⇒ Title: record the title in full, including any sub-titles. On the other hand, it is unnecessary to add the description *Pupil's book*, which conventionally appears on a textbook in order to distinguish the book intended for the pupil from the one to be used by the teacher.
- ⇒ Collection: record any collection title here. Publishing houses that produce more than one collection of textbooks in the same subject area may give each a title in order to distinguish between them.
- ⇒ Number of sections: give the number of sections. The textbook syllabus is broken down into topics, weeks or sequences referred to as 'sections', each of which consists of several lessons.
- ⇒ Is there the same number of lessons in each section? Reply 'yes' or 'no' and count the lessons in each section. If the number of lessons differs from one section to another, enter the details of this, noting the number of lessons per section.
Example: in Sections 1, 2, 3, 4, 6, 7, 8 and 9, there are five lessons; in Sections 5 and 10, two lessons.
- ⇒ Are there appendices that are not included in these sections? Answer 'yes' or 'no'. If 'yes', specify.

Examples of appendices: formulae at the end of the book, addition and/or multiplication tables, etc.

3.2. Section II: Textbook cover

3.2.1. "Title" module

Does the title of the book mention a human character? Yes No
If yes, include this character in the following table.

Characters	Male			Female			Sex unspecified		
	adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
Number									

⇒ Title: do not take into account the description "Pupil's book", where this appears.

Examples:

- *I learn maths with Fatou and Mamadou* (invented title): record two gendered characters. If a preliminary reading of the textbook has revealed that Fatou and Mamadou are children, put "1" in the "Male child" box and "1" in the "Female child" box.

- *My Maths Book; My Maths Week*: there is no specific character, since the possessive adjective refers to every pupil and does not evoke a person.

3.2.2. "Cover illustration" module

The first table in this module records the number of pictures on the cover. The rest of the module is divided into two sub-modules: "Cover illustration, individual character" and "Cover illustration, group of characters".

Does a human character appear in the cover illustration? Yes No
If yes, complete the following table.

Total number of pictures on the cover		
Total number of pictures with human characters		
Number of pictures that include 1 to 4 human characters		-> Complete the Individual character Module
Number of pictures that include more than 4 human characters		-> Complete the Group character Module

- ⇒ Total number of pictures: count the number of pictures on the cover; the cover may consist of a single full-page illustration or of several pictures, which are generally framed. At this first stage, all the pictures are to be counted, even if they do not include any characters.
- ⇒ Total number of pictures with human characters: at this second stage, count pictures with human characters.
- ⇒ Number of pictures that include 1 to 4 human characters. Count the pictures that include 1 to 4 characters, and in this case use the sub-module “Cover illustration, individual character” to create an individual record.
- ⇒ Number of pictures that include more than 4 human characters: count the pictures that include 5 or more characters, and use the sub-module “Cover illustration, group of characters” to record observations on the “dominant” sex and age in the group of characters.

3.2.3. “Cover illustration, individual character” module

For pictures that include 1 to 4 characters, complete the following table.

Illustration 1	Characters	Male			Female			Sex unspecified		
Topic:		adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
	Number									
Illustration 2	Characters	Male			Female			Sex unspecified		
Topic:		adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
	Number									

- ⇒ Add the same number of lines to the table as there are pictures counted.
- ⇒ For each of the pictures, list the number of characters according to their sex and their age.
- ⇒ Topic: note the topic of each picture. For example: school, the market, a cycle race, etc.

3.2.4. “Cover illustration, group of characters” module

For pictures that include more than 4 characters, complete the following table.

Illustration “Scene” 1	Topic	<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance
Illustration “Scene” 2	Topic	<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance

⇒ Dominant sex in a group of characters: indicate dominance by marking only one of the six options.

⇒ Dominant age: indicate dominance by marking only one of the six options.

3.3. Section III: Typology of characters

3.3.1. “Learning icon characters” module

Does the textbook use learning icon characters? Yes No
If yes, include them in this table.

Character no.	Sex	Age	How used
1	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify:</i>
2	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify:</i>

⇒ This question must be answered. If the answer is in the affirmative, complete the table.

⇒ Use one line for each different learning icon character. Add lines to the table as necessary.

⇒ Give the sex and age of the learning icon characters and specify how each is used. There is no further counting or analysis of these characters in the rest of the data collection framework.

3.3.2. “Pilot characters” module

Does the textbook use recurring pilot characters? Yes No
If yes, include them in this table.

Character no.	Sex	Age	Identity
1	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
2	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	

- ⇒ This question must be answered. If the answer is in the affirmative, complete the table. Use one line for each different pilot character. Add lines to the table as necessary.
- ⇒ Give the sex and age of the pilot characters and record their identity, specifying forename, surname, kinship bond, etc.
- ⇒ Pilot characters are recorded every time they appear and are analysed throughout the rest of the data collection framework in the “Text” section and/or the “Illustration” section.

3.3.3. “Famous characters” module

Are any well-known personalities mentioned? Yes No
If yes, record them here, giving their names.

	Male	Female
In text		
In illustrations		

- ⇒ This question must be answered. If the answer is in the affirmative, record their exact identity according to sex and whether they appear in the text and/or the pictures. For example: a photograph of Marie Curie.

3.4. Section IV: Text

3.4.1. Locating a character in the textbook

Character no.	Section no.	Lesson no.	Course material/Exercise no.

- ⇒ Character n^o (Ch(s) n^o): allocate numbers to the characters in order of appearance, from the first to the last page of the textbook. Thus, the numbers become higher as you work through the book.
- ⇒ Section n^o (Sec. n^o): note the number of the textbook section. Where the various parts of the book use multiple hierarchies, record the number of the level immediately above that of “lesson”.
- ⇒ Lesson n^o (L. n^o): note the number of the lesson within the section.
- ⇒ Course material/Exercise n^o (C/E n^o) : if the character appears in the course material, record “0”; if the character appears in an exercise, note the number of the exercise.

3.4.2. Character’s identity by sex, age and designations

Sex	Age	Identified	If ‘yes’, identified by (<i>more than one possible response</i>):
<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other bond <input type="checkbox"/> Status <i>Specify</i>

- ⇒ Sex: mark only one of the eight categories.
- ⇒ Age: mark only one of the three categories.
- ⇒ Identity: does the character have an identity? If the character is designated other than by a personal pronoun (he, she) or a generic term (whether indicating sex or not: child, boy), reply in the affirmative and specify how identity is conferred.

Give all possible responses and record the exact designation(s).

If it does not exist in the language in which the textbook is written, the category “Grammatical masculine plural” should be eliminated.

3.4.3. Character's role, actions and attributes

Character's role	Actions (maximum 2)	Attributes (maximum 3)
<input type="checkbox"/> Actor	-	-
<input type="checkbox"/> Extra	-	-
<input type="checkbox"/> Identifying character	-	-

- ⇒ Role: mark one of the three (mutually exclusive) categories.
- ⇒ Actions: record a maximum of two actions according to what is specifically mentioned in the text and to any pre-coded lists of actions.
- ⇒ Attributes: record a maximum of three attributes according to what is specifically mentioned in the text and to any pre-coded lists of attributes.

3.4.4. Character's relationships

Character's relationships	Compared/Interacting with Character n°?	Symbolic coefficient
Character alone?: <input type="checkbox"/> Yes <input type="checkbox"/> No If no, is the character*: <input type="checkbox"/> Co-existing	Relationship 1: -	<input type="checkbox"/> Positive
<input type="checkbox"/> Compared. <i>Object</i> :	Relationship 2: -	<input type="checkbox"/> Negative
<input type="checkbox"/> Interacting. Nature:	-	<input type="checkbox"/> Neutral
	-	<input type="checkbox"/> No basis

- ⇒ Character's relationships: answer the question – in the unit of text being analysed (*i.e.* the course material as a whole, or a single exercise), does the character appear alone or with other characters?
- ⇒ If the answer is in the affirmative – that is, if the character being studied is alone – move on to the question about pilot characters.
- ⇒ If the answer is in the negative – that is, if the character being studied is with other characters – record the nature of the relationship(s). There may be more than one possible response. Three categories of relationship are distinguished:
 - Co-existing: mark this response if the character being studied is mentioned in the same spatial and temporal unit of text as one or more other characters. If the character is shown only co-existing (and not in any other relationship), move on to the question about pilot characters.

- Compared: mark this response if the character being studied is shown as competing with one or more other characters in the same spatial and temporal unit of text, whether directly or indirectly.
 - Interacting: mark this response if the character being studied is engaging in a shared activity with another character in the same spatial and temporal unit, whether exchanging something with or acting in response to the other character.
- ⇒ Object of comparison: if the character is being compared, record the object of the comparison. Where several characters are equally involved, the object of comparison for each one should be mentioned.
- ⇒ Nature of the interaction: record the nature of the interaction. The interaction may be unilateral or reciprocal. The nature of the interaction is to be recorded only for the character or characters who initiate it or for direct actors in it.
- ⇒ Character compared/interacting with Character(s) n^o:
- Relationship 1: record here the number(s) of the character or characters with whom the character being studied is compared.
 - Relationship 2: record here the number(s) of the character or characters with whom the character being studied is interacting.
- ⇒ Symbolic coefficient: indicate the result of the comparison for each of the characters involved. Mark one of the four categories. If the character is not being compared or if assigning a symbolic coefficient would be meaningless (where an adult and child are compared), mark “No basis”.

3.4.5. Pilot character

Pilot character?
<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No

- ⇒ Pilot character? Record here, in every case, whether or not the character being studied is a pilot character already listed in Section III. Record the character's identity as necessary.

3.5. Section V: Illustrations

3.5.1. “Individual character (no more than 4 characters)” module

Locating a character in the textbook and recording sex, age and pedagogical function

Character n°	Section n°	Lesson n°	Picture n°	Course material/ Exercise	Sex	Age	Function
					<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input type="checkbox"/> Ordinary

- ⇒ Sex: mark only one of the three categories.
 ⇒ Age: mark only one of the three categories.
 ⇒ Function: mark only one of the two categories.

Character’s posture, place, actions and attributes

Posture	Place	Actions (maximum 2)	Attributes (maximum 3)
<input type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where:</i>	-	-
		-	-

- ⇒ Posture: the response here is in two stages. First look at whether the character is represented full-length (that is, completely, or at least as far down as the knees) or “head and shoulders” – that is, partially (N.B. mark this response if either the upper part of the body, *i.e.* the torso, the head and shoulders or just the face, or the lower part, *i.e.* the pelvis or legs, is visible). The second stage involves defining the precise position in which the character is represented. Choose only one of the five options.

⇒ Place: the response here is in two stages. First record whether the place is identifiable or not, using explicit indicators and precise information from the picture.

If the answer is in the affirmative, the second stage is to specify the place concerned (“where”).

⇒ Actions: record what the character is doing. Record a maximum of two actions with the help of any pre-coded lists of actions.

⇒ Attributes: record a maximum of three attributes, according to any pre-coded lists of attributes.

Character's relationships

Character's relationships	Comparison or Interaction
Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No If <i>no</i> : <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- Object/Nature: With Character n ^o : - -

⇒ Relationship: the question “Character alone?” leads to a record of whether or not the character is alone in the picture unit being analysed, which may or may not be in a box or frame.

⇒ If the answer is in the affirmative – that is, if the character being studied is alone – move on to the question of identification in the text.

⇒ If the answer is in the negative – that is, if the character being studied is with other characters – record the nature of the relationship in one of the three categories.

⇒ Comparison/Interaction: where there is comparison or interaction, specify:

- Object/Nature:
 Object: if the character is being compared, record the object of the comparison.
 Nature: if the character is interacting, record the nature of the interaction.
- With Character n^o. Record here the number(s) of the character or characters with whom the character being studied is compared or is interacting.

Links between text and picture

Character identified in text?
<input type="checkbox"/> Yes <input type="checkbox"/> No If yes: <input type="checkbox"/> forename/surname <input type="checkbox"/> status/bond <input type="checkbox"/> ungendered name <input type="checkbox"/> generic term that indicates sex/generic noun

- ⇒ Character identified in the text? Refer to the text to find out whether the character in the picture is mentioned there. Answer “yes” or “no”.
- ⇒ If the answer is in the affirmative, specify how the character is identified in the text. There is more than one possible response.

Pilot character

Pilot character?
<input type="checkbox"/> Yes Who: <input type="checkbox"/> No

- ⇒ Pilot character? Record whether or not the character illustrated is a pilot character already listed in the Section III table. Record the character's identity as necessary.

3.5.2. “Group of characters” module

Are there scenes with more than 4 characters in the same picture? Yes No
 If yes, complete the following table.

Group n°	Section n°	Lesson n°	Course material or Exercise	Topic	Dominance by sex	Dominance by age	Is at least one character identified in the text?
			<input type="checkbox"/> C <input type="checkbox"/> E		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No

- ⇒ Complete one line per group.
- ⇒ Group n^o: allocate a number to each group in order of appearance, from the first to the last page of the textbook. Thus, the numbers become higher as you work through the book.
- ⇒ Is at least one character identified in the text? Refer to the text to find out whether at least one character in the group is mentioned in the text. Answer “yes” or “no”.
If the answer is in the affirmative, specify how the character is identified. If more than one person in the group is identified, specify the designation of each one.

3.5.3. “Adult characters occupations throughout the whole book” module

Occupations List	Of adult males		Of adult females		Of adults whose sex is unspecified	
	Count	Total	Count	Total	Count	Total

- ⇒ “Occupations”: record all the occupations of adult characters.
- ⇒ “Adult males”: count the number of men engaged in an occupation. The first of these two columns (“Count”) is provided in order to help with counting: mark this column each time a representative of one particular occupation is encountered, then record the total in the following column. If 8 teachers have been found in the textbook, record “8” in the “Total” column.
- ⇒ “Adult females” and “Adults whose sex is unspecified”: proceed as for adult males.

3.6. Practical advice

Circle or underline characters as they are mentioned in the texts, and number them in sequence from beginning to end of the textbook.

Use a pencil to number the pictures that include characters, in sequence from beginning to end of the textbook (excluding the cover), distinguishing between individual characters and groups of characters.

To improve accuracy and clarity, deal with the characters in the illustrations from left to right and in the text in order of appearance.

If it is to be efficient, data collection should be carried out over a short time period. Where the data cannot be double-coded, collection should as far as possible be done by two people working together.

Do not extrapolate or infer anything. Complete the framework according to what can be explicitly seen in the picture or what is written verbatim in the text.

Pay attention to the standard of handwriting and to any abbreviations used. As far as actions are concerned, use verbs in their infinitive form.

Answer all questions by marking or writing the relevant option. If there is no response – for example, there is no action – strike out the box.

If necessary, use pre-coding for open questions, retaining the possibility of creating new categories as data collection progresses.

Photocopy interesting pictures and make records of interesting text, giving exact references to the textbook (title, year, educational level, page). Similarly, relevant examples should be recorded in a survey log. These will serve as examples and resources for analysis of gender representations.

3.7. Putting the method into practice

Having explained the principles of the data collection framework, we shall now offer an example of how to put the method into practice, by completing Sections IV and V – “TEXT” and “ILLUSTRATIONS” – from a maths textbook, *Cameroon Primary Mathematics 6*, Macmillan, 2005 edition, 178 p.

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- 3 This year Mr Awah got 48 bags of coffee from his farm. If that was only 25% of last year's crop, what was his crop last year?

$$25\% \text{ of last year's crop} = 48 \text{ bags}$$

$$1\% \text{ of last year's crop} = \frac{48}{25}$$

$$100\% \text{ of last year's crop} = \frac{48}{25} \times 100 = 192 \text{ bags}$$

Mr Awah's crop was 192 bags last year.



EXERCISE 8

- 1 10% of a number equals 12. Find the number.
- 2 A price is decreased by 35% to 1430 fr. What was the original price?
- 3 A number is increased by 5% to 651. What was the number?
- 4 The price of a chair after a 25% increase is 20 000 fr. How much did it cost before the increase?
- 5 At a school the number of pupils increased by 35% to 486. How many pupils were there before the increase?
- 6 Mbuh bought a ball at the reduced price of 240 fr. This was only 20% of the original price. What was the original price?
- 7 If 2800 kg is decreased by 11%, what is the new weight?
- 8 Air fares are increased by 5%. If the new fare is 378 000 fr what was the old fare?
- 9 The value of a car has decreased by 22% this year to 1 560 000 fr. What was its value last year?
- 10 David's wages are increased by 5% to 525 fr per hour. What was he paid before the increase?
- 11 The price of a bicycle was increased by 25% to 125 000 fr. What was the original price?
- 12 Ashu bought a pair of shoes for 2400 fr which was 60% of the original price. Find the original price.
- 13 This year the size of a farmer's herd of cows has increased by 10%. He now has 33 cows. How many cows did he have last year?
- 14 Mary improved her typing speed by 20%. If she can now type 42 words per minute, what was her old speed?
- 15 If 28 pupils are present and this is 80% of the class, how many are absent?



SECTION IV: TEXT

Ch(s) n°	Sect. n°	L. n°	C/E n°	Sex	Age	Ident. ch	If “yes”, identified by*	Character’s role	Actions (max. 2)	Attributes (max. 3)	Character’s relationships	Compared/ Interacting with Character n°?	Symbolic coefficient	Pilot characer?
1	9	8	0	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input checked="" type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i> Farmer	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>Agricultural activity</i> -	- <i>Crop</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
2	9	8	5	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input checked="" type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input checked="" type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input checked="" type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i> Pupils	<input type="checkbox"/> Actor <input checked="" type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- / -	- / -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
3	9	8	6	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input checked="" type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>To buy</i> -	- <i>Ball</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
4	9	8	10	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input type="checkbox"/> Status <i>Specify</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- / -	- <i>Wage</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No

SECTION IV: TEXT - following

Ch(s) n°	Sect. n°	L. n°	C/E n°	Sex	Age	Ident. ch	If "yes", identified by*	Character's role	Actions (max. 2)	Attributes (max. 3)	Character's relationships	Compared/ Interacting with Character n°?	Symbolic coefficient	Pilot character?
5	9	8	12	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input checked="" type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input type="checkbox"/> Status <i>Specify</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>To buy</i> -	- <i>Shoes</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
6	9	8	13	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i> <i>Farmer</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>To have</i> -	- <i>Cows</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
7	9	8	14	<input type="checkbox"/> M <input checked="" type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input type="checkbox"/> Status <i>Specify</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>To type</i> -	- / -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - / - Relationship 2: - / -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input checked="" type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
8	9	8	15	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input checked="" type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input checked="" type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i> <i>Pupils</i>	<input checked="" type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- - <i>Educational</i>	- / -	Character alone? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input checked="" type="checkbox"/> Compared. <i>Object:</i> <i>Number</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - 9 - Relationship 2: - / -	<input checked="" type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No

SECTION IV: TEXT - following

Ch(s) n°	Sect. n°	L. n°	C/E n°	Sex	Age	Ident. ch	If "yes", identified by*	Character's role	Actions (max. 2)	Attributes (max. 3)	Character's relationships	Compared/ Interacting with Character n°?	Symbolic coefficient	Pilot characrer?
9	9	8	15	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input checked="" type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input checked="" type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other nond <input checked="" type="checkbox"/> Status <i>Specify</i> <i>Pupils (absent)</i>	<input type="checkbox"/> Actor <input checked="" type="checkbox"/> Extra <input type="checkbox"/> Identifying character	- <i>Educational</i> -	- / -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input checked="" type="checkbox"/> Compared. <i>Object:</i> <i>Number</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - 8 - Relationship 2: - / -	<input type="checkbox"/> Positive <input checked="" type="checkbox"/> Negative <input type="checkbox"/> Neutral <input type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No

**More than one possible response*

SECTION V: ILLUSTRATIONS

Ch(s) n°	Sect. n°	L. n°	Pict. n°	Course material/ Exercise	Sex of character	Age of character	Type of character	Character's posture	Place	Actions (max. 2)	Attributes (max. 3)	Character's relationships	Compared/ Interacting with Character n°?	Character identified in text?	Pilot character
1	9	8	1	<input checked="" type="checkbox"/> Course material <input type="checkbox"/> Exercise	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspe cified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input checked="" type="checkbox"/> Ordinary	<input type="checkbox"/> Head & shoulders <input checked="" type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where:</i>	<i>-Agricultural activity</i> -	<i>-Crop</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- / -	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input checked="" type="checkbox"/> Forename/ surname <input checked="" type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
2	9	8	2	<input type="checkbox"/> Course material <input checked="" type="checkbox"/> Exercise	<input checked="" type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspe cified	<input checked="" type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input checked="" type="checkbox"/> Ordinary	<input checked="" type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, state where:</i>	- / -	<i>-Ball</i> - -	Character alone? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- / -	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input checked="" type="checkbox"/> Forename/ surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No
3	9	8	3	<input type="checkbox"/> Course material <input checked="" type="checkbox"/> Exercise	<input type="checkbox"/> M <input checked="" type="checkbox"/> F <input type="checkbox"/> Unspe cified	<input type="checkbox"/> Child <input checked="" type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input checked="" type="checkbox"/> Ordinary	<input checked="" type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> Standing <input type="checkbox"/> Lying down <input checked="" type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where:</i>	<i>-To type</i> -	<i>-Type writer</i> - -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- / -	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input type="checkbox"/> Forename/ surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input checked="" type="checkbox"/> No

*More than one possible response

4. Data processing, analysis and application

4.1. Data processing

Information collected using the research tool explained above is processed in an absolutely traditional manner. Databases are created by translating the questions into variables and then proceeding to code and enter the data. For greater convenience at the analysis stage, the information may be entered into several different databases:

- a database containing general information on the textbook: its “identity card”; cover; typology of characters appearing in the textbook. Note that where the study relates to a limited corpus, this information could be treated qualitatively rather than entered in a database;
- a database of information relating to individual or collective characters encountered in the texts;
- a database of information relating to the individual characters encountered in the pictures;
- a database of information relating to groups of characters encountered in the pictures;
- a database listing occupations identified in the pictures.

If necessary, links between databases can be easily established using numbers for the textbook, the section and the lesson. Matching these numbers with the character number during data processing also enables the creation of an identification number for each character, allowing the character to be situated within the text.

The translation of questions into variables presents no difficulties. By way of example, the structure of the database relating to characters appearing in the texts is appended. Coding is also done in the traditional way; the majority of the questions are closed, so they can be pre-coded. The desired level of detail will obviously determine the use and form of open questions, which relate in particular to activities or characteristics.

Data can be entered using database software like Access and then processed with the same type of software or with any statistical software (SAS, SPSS, STATA, etc.). Data analysis uses traditional quantitative survey analysis methods: frequency distribution tables, cross-tabulation, descriptive statistics, PCA, etc.

4.2. Applying this methodology to a corpus of six mathematics textbooks

During development of this methodology, we applied⁶ it to a series of school maths textbooks used in French-speaking Africa⁷. The corpus is made up of six volumes in the series *Mon livre de Mathématiques (My Maths Book)*, a pupil's book published by Hatier International and distributed in a pan-African version; the collection covers the whole of primary education in African schools, from the first year – the introductory *Section d'Initiation au Langage (SIL)* – to the final, sixth year (*CM2*) (see Appendix 1).

The textbooks in this corpus are all organized on the same model: they are divided into sections corresponding to weeks of work, then each section is divided into lessons. One lesson is set out on a single page and contains, in theory, an observation situation presented in a box – the course material – followed by several exercises. The number of pages varies from one level to another (from 96 to 128 pages), as do the number of sections (from 24 to 35) and the number of lessons per section (4 or 5).

We shall rely on this study for our analytical examples; however, we cannot set out all the data in full here, as it would be too long. We shall present just those elements that help to verify the hypotheses underlying our research. The first hypothesis was that maths textbooks make use of characters; the second was that the characters are predominantly male⁸; and the third was that a gender system operates between the characters, since male and female characters have differentiated social identities and a male character is more highly valued.

In order to confirm these hypotheses, we chose to answer three questions:

- Do maths textbooks use characters? Who are the characters inhabiting these textbooks?
- What are the respective places reserved for male and female characters in the maths lesson?
- Are the male and female characters set in a public or a private social sphere?

Through the answers to these questions, we hope to show what types of analysis are justified by the data collected. The results do not constitute a single exhaustive response to the questions posed, but they play a part in verifying the complex hypotheses that we put forward. The statistical significance of the results was verified using the chi-squared test. Non-significant results are shown below the tables.

⁶ The methodology has also been applied to four other African corpora. See details of the international research network on school textbooks, appended. A CD-Rom with a compilation of several of these studies is available from the CEPED web site (Brugeilles, Cromer and Locoh, 2008): www.ceped.org

⁷ The preliminary results were presented at the Fourth African Population Conference "Population and Poverty in Africa: Facing the 21st-Century Challenges", Tunis, 8-12 December 2003.

⁸ Throughout the rest of the text, we use the expression "male (or female) characters" always in reference to physical sex, without prejudging a character's social qualities.

4.2.1. Who are the characters inhabiting these textbooks?

Numbers of characters

A great many characters are encountered in the pages of the six textbooks: we counted 1278 individual and collective characters in the texts and 436 individual characters and groups of characters in the pictures.

The number of characters varied considerably from one level to another, although no systematic trend could be observed across the whole course (Tables 1 and 2). However, there were more pictures in the books for the two youngest classes (*Section d'Initiation au Langage [SIL]* and *Cours préparatoire [CP]*); this is consistent with the fact that these pupils cannot read – or at least, not much – so their interest must be aroused through the dimension of play. In addition, the concepts to be studied lend themselves to the use of graphic representations (location in space, forming a whole, classification). For the youngest pupils, the use of a character in the pictures was even more frequent than in the text. A first-year primary pupil encounters on average 2.58 characters per lesson in the pictures and 2.32 in the texts. But from the second year, there were more characters in the texts than in the pictures. The variation in number of characters no doubt depends not only on which volume of the collection is involved, but also on the concepts in the syllabus and the pedagogical choices made by its designers.

Table 1 – Distribution of individual and collective characters in texts, by educational level

	Total numbers	%	Average number of characters per lesson
First-year primary (<i>SIL</i>)	72	5.6	2.32
Second-year primary (<i>CP</i>)	91	7.1	2.60
Third-year primary (<i>CE1</i>)	317	24.8	3.40
Fourth-year primary (<i>CE2</i>)	275	21.5	2.95
Fifth-year primary (<i>CM1</i>)	214	16.7	2.04
Sixth-year primary (<i>CM2</i>)	309	24.3	2.49
Total	1278	100	-

Table 2 – Distribution of individual and group characters in pictures, by educational level

	Total numbers	%	Average number of characters per lesson
First-year primary (<i>SIL</i>)	80	18.3	2.58
Second-year primary (<i>CP</i>)	48	11.0	1.37
Third-year primary (<i>CE1</i>)	82	18.8	0.89
Fourth-year primary (<i>CE2</i>)	60	13.8	0.64
Fifth-year primary (<i>CM1</i>)	65	14.9	0.62
Sixth-year primary (<i>CM2</i>)	101	23.2	0.81
Total	436	100	-

Individual characters, collective characters

In both texts and pictures, individual characters were much more frequent than collective characters or groups. Across all six levels, we counted 1164 individual and 114 collective characters in the texts, with 404 individual characters and 32 groups of characters in the pictures. Thus, 91.1% of characters in the texts were individuals, as were 92.7% of characters in the pictures.

This dominance of the individual character was confirmed at all educational levels. However, it is worth examining the use of different types of characters according to the age of the pupils for whom the textbook is intended (Tables 3 and 4). In the first year of primary schooling (*SIL*), collective characters and groups were much more often presented in the texts and pictures: 37.5% of characters who appeared in the texts were collective ones, while 30% of characters in the pictures were groups. This use of collectives probably aims to construct a peer-group identity for users who have recently started school. In contrast, by the time it came to the books for the oldest classes, groups had disappeared from the pictures, and in the final-year primary-school book (*CM2*) collective characters were rare: 95.5% of the characters were individuals.

Table 3 – Proportions of individual characters and collective characters in texts, by educational level (%)

	First-year primary (SIL)	Second-year primary (CP)	Third-year primary (CE1)	Fourth-year primary (CE2)	Fifth-year primary (CM1)	Sixth-year primary (CM2)
Individual characters	62.5	92.3	91.5	92.4	91.6	95.5
Collective characters	37.5	7.7	8.5	7.6	8.4	4.5
Total	100	100	100	100	100	100
Total number	72	91	317	275	214	309

Table 4 – Proportions of individual characters and groups of characters in pictures, by educational level (%)

	First-year primary (SIL)	Second-year primary (CP)	Third-year primary (CE1)	Fourth-year primary (CE2)	Fifth-year primary (CM1)	Sixth-year primary (CM2)
Individual characters	70	85.4	98.9	100	100	100
Groups of characters	30	14.6	1.1	0	0	0
Total	100	100	100	100	100	100
Total number	80	48	82	60	65	101

Sex and age of characters

Given the preponderance of individual characters, we focused our attention on these, looking first of all at their age and their sex.

Half the individual characters were children, 38.1% were adults, and 11.6% were of unidentifiable age. The predominant position accorded to children was even clearer in the pictures: 76% of the characters represented were children and 13.6% were adults, while the age of 10.4% of the characters could not be discerned.

The presence of children and adults varied according to educational level. Generally speaking, in the texts for younger classes, a large majority of characters were children, while from fourth-year primary onwards less than half the characters were children (Table 5). In the fifth and sixth years, adults became clearly more numerous than children. Thus the textbooks offer very young pupils a world of children; their interest is aroused by being invited to identify with characters of their own age. On the other hand, the oldest pupils are projected forward to an adult world. No similar trend could be observed in the pictures (Table 6), where children were always more numerous than adults. Illustration, which can be more playful in tone, remains in the sphere of

childhood. We should note that the proportion of characters whose age could not be identified was markedly higher in the first-year (*SIL*) material. In the texts, such characters were ungendered ones, like “pupil” or “schoolmate”, who promote the child's identification with his or her new status within the school community.

Table 5 – Age of individual characters in texts, by educational level (%)

	First-year primary (<i>SIL</i>)	Second-year primary (<i>CP</i>)	Third-year primary (<i>CE1</i>)	Fourth-year primary (<i>CE2</i>)	Fifth-year primary (<i>CM1</i>)	Sixth-year primary (<i>CM2</i>)
Children	57.8	83.3	56.6	47.6	42.4	41.4
Adults	17.8	13.1	31.0	33.9	51.5	49.8
Age unspecified	24.4	3.6	12.4	18.5	6.1	8.8
Total	100	100	100	100	100	100
Total numbers	45	84	290	254	196	295

Table 6 – Age of individual characters in pictures, by educational level (%)

	First-year primary (<i>SIL</i>)	Second-year primary (<i>CP</i>)	Third-year primary (<i>CE1</i>)	Fourth-year primary (<i>CE2</i>)	Fifth-year primary (<i>CM1</i>)	Sixth-year primary (<i>CM2</i>)
Children	51.8	43.9	90.1	83.3	93.9	75.3
Adults	14.3	36.6	8.7	10.0	1.5	17.8
Age unspecified	33.9	19.5	1.2	6.7	4.6	6.9
Total	100	100	100	100	100	100
Total numbers	56	41	81	60	65	101

Characters were gendered, and males unquestionably predominated. In the texts, we identified 72% male characters, 26.6% female characters and 1.4% ungendered characters. The same was true in the pictures, where the respective proportions were 68.8% and 30.2%, with 0.1% of unspecified sex. Therefore, it was rare for sex to be unspecified – markedly more rare than for age.

In both the texts and the pictures, the materials for younger classes were better in terms of equality, even though it was far from being achieved (Tables 7 and 8). Thus, the least unequal situation was seen in the first-year (*SIL*) material, where 57.8% of the characters were male and 33.3% female. The greatest imbalance was in the fifth-year (*CM1*) textbook, which had 80.1% male characters and 18.9% female. In the pictures, the smallest gap was observed in the second-year (*CP*) material, where – exceptionally – females predominated (51.2% as against 48.8%), while the largest gap was recorded in the fifth-year (*CM1*), with 80% male characters and 20% female. Thus, female characters became rare in the materials for older classes.

Table 7 – Sex of individual characters in texts, by educational level (%)

	First-year primary (SIL)	Second-year primary (CP)	Third-year primary (CE1)	Fourth-year primary (CE2)	Fifth-year primary (CM1)	Sixth-year primary (CM2)
Male	57.8	67.9	64.1	72.0	80.1	77.6
Female	33.3	29.7	35.2	27.6	18.9	20.7
Ungendered	8.9	2.4	0.7	0.4	1.0	1.7
Total	100	100	100	100	100	100
Total numbers	45	84	290	254	196	295

Table 8 – Sex of individual characters in pictures, by educational level (%)

	First-year primary (SIL)	Second-year primary (CP)	Third-year primary (CE1)	Fourth-year primary (CE2)	Fifth-year primary (CM1)	Sixth-year primary (CM2)
Male	57.1	48.8	64.2	73.3	80.0	77.3
Female	41.1	51.2	34.6	25.0	20.0	21.8
Sex unspecified	1.8	0	1.2	1.7	0	1.0
Total	100	100	100	100	65	100
Total numbers	56	41	81	60	100	101

Stereotypical profile of most favoured character

By combining age and sex characteristics, we can draw up a stereotypical profile of the character most favoured by the authors of these textbooks. This character is chosen by the textbook's authors not only in order to engage the pupil's interest, but also as a legitimate vector for the transmission of mathematical knowledge. It can be hypothesized that the choice of character is dictated by a concern to be effective from both these points of view.

The preferred character to “play a part” in teaching maths turned out to be male (Table 9). In the texts, it was more often a boy (34.4%), while the second most likely character was a man (29.1%). A little girl was third choice, and there were half as many little girls as adult males. 8.8% of the characters were adult females. Ungendered characters were very rarely used. In the pictures, the favourite choice remained the same: more than half the individual characters were boys. Nevertheless, little girls appeared in second place here, so they were preferred to men. Women represented fewer than 5% of the characters appearing in the illustrations. We should stress that, here too, it was rare for sex not to be specified.

Table 9 – Distribution of characters mentioned in texts, by sex or grammatical gender and age (%)

	%
Individual male characters	
- Adults	29.1
- Children	34.4
- Age unspecified	8.4
Individual female characters	
- Adults	8.8
- Children	14.8
- Age unspecified	3.1
Individual ungendered characters	
- Adults	0.2
- Children	1.1
- Age unspecified	0.1
Total	100
Total number	1164

Table 10 – Distribution of individual characters in pictures, by sex and age (%)

	%
Individual male characters:	
- Adults	8.6
- Children	52.0
- Age unspecified	8.2
Individual female characters:	
- Adults	4.7
- Children	24.0
- Age unspecified	1.5
Characters whose sex is unspecified	1.0
Total	100
Total number	404

In texts for the very young, equality is acceptable: there were fewer adults, and pupils – both girls and boys – encountered their “doubles” in maths lessons (Table 11). From the second year of primary school (*CP*), boys gained ground, although little girls still represented almost a quarter of the characters. From the third year (*CE1*) onwards, the number of adult males increased, to the detriment of girls, while the space allocated to boys and to women remained more or less the same. The adult male also predominated in the oldest classes, though a lot of space (about 30%) was still reserved for male children; female characters had almost disappeared.

In the pictures, as we have already seen, there were markedly more children than adults. As with the texts, the results for the illustrations in the first-year primary-school (*SIL*) textbook were the exception: girls were even more numerous than boys (Table 12). The second year (*CP*) was also unusual: more than a quarter of the characters represented were women. But from the third year (*CE1*) onwards, the proportion of girls tended to decrease, and women disappeared. Boys took the predominant position.

Table 11 – Distribution of characters mentioned in texts, by sex or grammatical gender, age and educational level (%)

	First year (<i>SIL</i>)	Second year (<i>CP</i>)	Third year (<i>CE1</i>)	Fourth year (<i>CE2</i>)	Fifth year (<i>CM1</i>)	Sixth year (<i>CM2</i>)
Individual male characters:						
- Adults	8.9	7.1	22.1	25.2	42.4	40.0
- Children	24.4	57.1	34.8	33.8	32.6	30.9
- Age unspecified	24.5	3.6	7.2	13.0	5.1	6.8
Individual female characters:						
- Adults	8.9	6.0	9.0	8.7	9.2	9.1
- Children	24.4	23.8	21.4	13.4	8.7	9.5
- Age unspecified	0	0	4.8	5.5	1.0	2.0
Individual ungendered characters	8.9	2.4	0.7	0.4	1.0	1.7
Total	100	100	100	100	100	100
Total number	45	84	290	254	196	295

Table 12 – Distribution of individual characters in pictures, by sex, age and educational level (%)

	First year (<i>SIL</i>)	Second year (<i>CP</i>)	Third year (<i>CE1</i>)	Fourth year (<i>CE2</i>)	Fifth year (<i>CM1</i>)	Sixth year (<i>CM2</i>)
Individual male characters						
- Adults	7.1	7.3	8.6	10.0	1.5	13.9
- Children	21.4	26.8	55.6	58.3	76.9	56.4
- Age unspecified	28.6	14.6	0	5.0	1.6	6.9
Individual female characters						
- Adults	7.1	29.3	0.0	0.0	0.0	3.0
- Children	30.4	17.1	34.6	25.0	16.9	18.8
- Age unspecified	3.6	4.9	0	0	3.1	0
Characters whose sex is unspecified	1.8	0	1.2	1.7	0	0.1
Total	100	100	100	100	100	100
Total number	56	41	81	60	65	101

This preliminary run, processing several variables, confirms our basic hypothesis about the use of characters. It demonstrates the important position of the character, and more particularly of the gendered character, in this collection of school maths textbooks. The authors trust male characters to arouse pupils' interest. Is it that they want, even unconsciously, to appeal more directly to male pupils? Is it judged to be more important and more legitimate for the latter to be learning maths? Be that as it may, male characters appear to be privileged vectors for the learning of mathematical concepts. Our analysis also allows us to see how, as the school career progresses, the gender system changes and is constructed – notably with the growing exclusion of female characters – and how texts and pictures play differing parts in this development.

4.2.2. What are the respective positions of male and female characters in the pedagogical system of the maths lesson?

Even if female characters are markedly less numerous than male ones in the corpus studied, there is still a need to examine the respective importance accorded to each sex. Several indicators reveal this. Here we considered the position given to a character in the pedagogical system, using three variables:

- the space in which the character is presented – that is, the course material or the exercises – for both the texts and the pictures,
- the role attributed to the character in the texts – namely, actor, extra or identifying character,
- the pedagogical function of the character in the pictures: the character can be a substitute for the teacher or for the pupil, distinguishing this character from ordinary ones.

The space the character inhabits in the lesson

The importance given to a character can be perceived from the space he or she inhabits in the pedagogical system: does the character appear in the course material that is systematically read and studied and – in the particular layout of the collection we were studying – at the top of the page, or does s/he appear in an exercise?

In the texts, as might be expected, the majority of characters appeared in the exercises. Although there were no significant differences for children, there were more adult males presented in the course material than adult females (Table 13).

In the pictures, children – of either sex – were found above all in the course material. This was also true of adult males, though to a lesser extent (Table 14). On the other hand, the exercise was the chosen space for the rarely represented adult females.

Table 13 – Position in the lesson of individual characters in texts,
by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Course material	22.7	26.2	19.5	9.8
Exercises	77.3	73.8	80.5	90.2
Total	100	100	100	100
Total number	401	172	339	102

Note: For children, the differences are not significant according to the chi-squared test.

Table 14 – Position in the lesson of individual characters in pictures,
by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Course material	75.7	75.3	68.6	26.3
Exercises	24.3	24.7	31.4	73.7
Total	100	100	100	100
Total number	210	97	35	19

Note: For children, the differences are not significant according to the chi-squared test.

The role of characters in the texts

The great majority of individual characters encountered in the texts of these books were actors. As actors, these characters were the ones carrying out an action or who possessed something, and it was around them that the situation illustrating the course material or supporting the exercise was built. Extras – characters who flesh out the situation – appeared rarely, while identifying characters – those who help to define the identity of another character – were marginal. This is because exercises for primary-school pupils are short, scarcely allowing for multiple characters to be presented or for the characters' level of involvement to become more diverse.

The role of actor was more often given to little boys than to little girls (Table 15). Little girls were more often extras. On the other hand, contrary to our hypotheses that female characters would be less valued, among adults the reverse was true: a higher proportion of women were actors than men. However, we should not forget that, given the numerical imbalance between adult male and adult female characters, pupils are in fact encountering far more male than female actors.

Table 15 – Role of individual characters in texts, by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Actor	91.8	88.9	87.9	95.1
Extra	6.0	10.5	11.2	3.9
Identifying character	2.2	0.6	0.9	1.0
Total	100	100	100	100
Total number	401	172	339	102

The pedagogical function of the substitute in the pictures

In our corpus, we found neither learning icon characters nor famous characters. Our characters were distributed across three other categories: pilot characters, ordinary characters and substitutes. Below, we compare ordinary characters and substitutes appearing in the pictures. A character who substitutes for the teacher or for the pupil has a stronger pedagogical function than an ordinary character does.

Boys more often substituted for the pupil than girls did, and the gap was even wider for adults (Table 16). Half the male adults had a teacher-substitute function, while this was the case for only 5.3% of female adults. Thus the textbook reveals a world where pupils and teachers are more often male.

Table 16 – Role of individual characters in pictures, by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Substitute	71.9	62.9	51.4	5.3
Ordinary character	28.1	37.1	48.6	94.7
Total	100	100	100	100
Total number	210	97	35	19

Note: For children, the differences are not significant according to the chi-squared test.

Indicators of the position of male and female characters in the pedagogical system – and therefore, in practical terms, in the lesson – and role analysis (looking at the pedagogical function of the substitute or the ordinary character) reveal differences in treatment according to the sex and age of the characters. Less numerous, female characters were also less likely to be in the foreground in maths lessons. Women were rarely given a position in the course material section of a lesson; little girls were less often actors than little boys; finally, male characters were over-represented in situations involving ownership and transmission of scientific knowledge, reinforcing

the invitation to a male pupil to identify with them. In fact, the maths book, by not representing girls and boys or men and women in equal proportions, does little to favour the development of girls' motivation to study maths: in this less important position, how are they to feel legitimized?

4.2.3. Are the characters set in the private or the public sphere?

In order to answer this question, we chose two of the various possible indicators. The way in which characters are designated – which, as will be seen, is sexually differentiated – is one indicator of the social functions attributed to a character. This indicator was considered for characters who figured in the texts. A character's actions or activities are another indicator of his or her social involvement in the private or in the public world. This indicator can be constructed using characters from the texts, as we did here, or from the pictures.

How characters are designated

In textbooks, characters are rarely anonymous. The name reinforces the gendering process and helps to create a character's referential illusion – that is, to relate him or her to a reality. The choice of designation is not neutral: a designation – or possibly designations – makes a given character part of the human community, clarifying his or her position in society and setting him or her more in the private or more in the public sphere. Thus, designations are revealing of the roles attributed to each of the sexes according to age.

The forename was used for the great majority of children, with only a relatively small proportion designated in other ways, so we could not conclude that each of the sexes had been assigned specifically to one sphere of social life (Table 17). However, little girls were slightly more frequently designated in terms of a kinship bond.

For adults, use of the forename was rare, while that of the surname was widespread for both men and women. Social functions were strongly differentiated according to sex: almost 60% of women were identified through their position within the family, while 53.7% of men were designated by a social status linked to an occupation or an activity outside the private sphere. Conversely, 11.9% of men were designated by a family tie and 11% of women by a status that gave them a position in public life.

Childhood, therefore, appears to be a kind of protected period, whereas gender differences in adulthood are very marked. A detailed study of the social functions that appear in textbooks can refine the analysis; given the numbers involved in our case study, this had to be qualitative. As far as family functions were concerned, fathers and – especially – mothers were predominant among adults; 9 women out of 10 identified by a family function were mothers, while 8 men out of 10 identified by a family function were fathers. For children, the functions of brothers and sisters were the most widely used. But then the family positions of characters diverged according to sex. We identified more sons than daughters, although the results were not very reliable from a

statistical point of view. Similarly, we encountered some grandfathers but not one grandmother – results that were consistent with the differing symbolic and social values of old people of each sex.

The status most often conferred on children was that of pupil. For adults, the range of statuses granted to male characters was markedly wider than that used for female characters. It was extremely rare for women to be designated by their occupation. Basically, we found two primary-school teachers, one secretary and some market traders. Apart from occupations, two other statuses were granted to women: housewife or customer. Social, non-family identities were more diverse among male characters.

Generally speaking, jobs were limited to shop-keeping (where the men were bakers, butchers, grocers, booksellers – 36% of the men identified by status), craft occupations (carpenters, painters, tailors, etc. – 13.8%), the two school-linked functions of teacher and headmaster (10.5%) and agricultural activities (farmers, herdsman, peasants, etc. – 7.7%). However, 21% of the characters were designated in terms of another occupational activity: workers, unskilled labourers, delivery drivers, wholesalers, clerks and also one doctor, one waiter, one journalist/radio presenter, and one singer. When they were not described in terms of their occupation, male characters could be sportsmen (cyclists, players of various team games, etc.), pedestrians or car drivers.

Table 17 – Ways of designating individual characters in texts, by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Forename	92.5	92.4	9.2	5.0
Surname	0.2	1.2	28.5	23.0
Kinship bond	7.2	11.6	11.9	59.0
Other bond	2.7	1.2	1.5	2.0
Status	0.2	0.6	53.7	11.0
Total number	400	172	337	100

Note: Some characters are designated in several different ways.

For children, the differences are not significant according to the chi-squared test, except where they are designated in terms of a kinship bond.

Characters' actions

Children engaged in similar activities, regardless of sex: educational activities predominated heavily, and were slightly more frequent for boys (Table 18). We should note that boys were not excluded from domestic tasks, which they performed almost as much as girls.

As before, differences increased with age. Almost half the men were shown to have an occupation, and if we include informal economic activities (“Work-equivalent activity”), the figure comes close to 60%. The proportion of men performing some other type of activity remained below 8%. For women, there were two privileged activities:

half of them were making purchases, while a quarter devoted themselves to domestic activities. Only 10% of women had a job; they were just as likely to be engaged in activities of a social nature (bargaining, giving something, paying a visit, etc.).

Table 18 – Activities of individual characters in texts, by sex and age (%)

	Children		Adults	
	Male	Female	Male	Female
Educational activities	38.4	32.0	-	-
Work	1.2	0.6	47.2	9.8
Work-equivalent activity	2.0	0.6	10.9	1.0
Shopping	9.5	6.4	7.7	52.0
Domestic activities	8.5	9.3	7.1	25.5
Leisure activities	5.0	8.1	4.1	1.0
“Sociability”	6.5	6.4	7.1	10.8
Failing action (making a mistake, etc.)	2.5	2.9	1.5	0
Total number	401	172	339	102

Note: Some characters were engaged in several different activities.

The differences for children are not significant according to the chi-squared test. For adults, they are not significant for leisure activities, sociability or failing actions.

It would be possible to devise a combined analysis, in which these two indicators were more closely integrated, in order to study a given representation of certain social functions. Thus, we might look at how parenting is represented – in other words, examine the activities of the mothers and fathers presented in the textbooks. Given the total numbers involved in this particular corpus, this analysis would have to take a qualitative approach. Over half the mums were shopping or doing housework, with one in 10 engaged in a sociable activity. Just one had a job. The fathers were more oriented towards the private sphere than other men: they were doing the shopping (20%) or engaged in sociable activities (15.4%). They were much less often shown in a work situation (13%).

Thus some diversity can be observed in male role models – first of all because the pupil comes into contact with fathers and with men who are not inside the family, but also because, by involving themselves more than other men in domestic activities, fathers offer another model of masculinity. In contrast, women were very often mothers, and other women’s activities were similar to those of the mothers. So from this point of view, a single female role model is being offered.

Our analyses of characters’ designations and activities converged and provided some elements descriptive of the gender system presented in the textbooks of the corpus we studied. Childhood is a protected time; designations and activities are similar and do not seal the characters into a social function – except that of pupil, which is ungendered. In adulthood, on the other hand, specialization comes into the picture; male

characters have status and activities that make them part of the public world, while female characters are assigned to the private, domestic sphere. The combination of these two indicators plays a part in the construction of social sex: male and female characters are associated with strongly differentiated representations. The beginnings of a more subtle analysis enable us to catch a glimpse of a plurality of male role models, while the female role model seems to remain monolithic.

Conclusion

We have tried to base our exploration of gender representations in school maths textbooks on the concept of gender and on the complex notion of representation, rather than on peripheral concepts such as stereotype or prejudice, and then to put into practice a quantitative analysis. The objective here is to understand, in a sociological perspective, how ‘male’ and ‘female’ are constructed in materials directed at very young children. Collection and analysis of quantitative data reveal the social representations that a society deems acceptable to disseminate on the respective positions of men and women. It is not a question of capturing facts, but the norms and values thus revealed; these are the norms and values which society hopes will guide the pupil towards his or her gendered adult role and, similarly, influence his or her behavioural choices in regard to family, occupation, relationships with the opposite sex, demographic behaviours, etc.

The methodology set out here is completely ‘adaptable’ to the analysis not only of school textbooks from disciplines other than mathematics, but also of other educational resources such as children’s literature (picture books, short novels, etc.), magazines, school literacy materials or those for combating wider illiteracy, as well as any writing based on the key concept of ‘character’. The approach is the same every time: analyse the structure of the resource and how it works, then deconstruct the characteristics of social sex in the resource concerned. In addition, the method is adaptable to other types of investigation into the representation of a given population, whatever the defining criteria: ethnic, cultural, religious or occupational background, age, etc., through the addition of appropriate questions. This is because a character potentially demonstrates many social relationships other than sex.

The results presented here apply to the whole of a collection of African French-language school maths textbooks, and confirm the value of working on a sizeable corpus. They show that, by taking into account the pupil’s whole school career, we can grasp the process of developing representations and the dynamic process of socialization – processes that are not visible at first sight. Thus, over the course of the school career, two trends emerge: as the pupil gets older, male supremacy is accompanied by an increasing scarcity of female characters, while the predominance of children among those who populate the books becomes less marked. For very young children, socialization by the peer group is reinforced not only by the number of children who appear in books but also by collective characters and by the pilot character. For older pupils, this socialization is more and more markedly constructed around the image of the adult male. The large number of characters we studied and the multiple ways of looking at them that we adopted (designations, types of characters,

activities, actions, attributes) revealed that possibilities for female characters are more restricted than those for male characters. Thus, the female characters were the only ones for whom we did not record any sporting activity nor any possession of objects that mark autonomy, occupational involvement or intellectual recognition. In a general, diffuse way, girls and women are confined within the bonds of family or in informal-type work. At the same time, male characters function in a privileged way in the public sphere. In addition, the world of learning and knowledge acquisition is the exclusive preserve of male characters: the teacher is a man, while the majority of Class 6 pupils, shown in the process of completing their primary school education, are represented as boys.

The fact that these results relate to a collection of school textbooks distributed in French-speaking Africa should not lead to mistaken interpretations: the persistence of unequal representations is not the preserve of one culture. Insofar as comparison can be established – since neither corpuses nor disciplines are ever directly comparable – these results corroborate previous studies carried out in various contexts. Our previous research into children's literature, for example, looked at 537 fictional picture books published in France in 1994, and found not only male over-representation but also hierarchization of the sexes (Brugeilles *et al.*, 2002).

School textbooks, in the same way as other writings involved in socialization, do not represent a true reflection of the realities of a society, but a place where norms and values that have served as a bedrock are preserved. It may be hoped that textbooks could also become levers for change, by integrating universal principles such as the principle of equality. So now it is just a matter of thinking about how acceptance might be gained for this view among the people who design textbooks, and of developing tools that will encourage this to come about.

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Extract 2

UNIT 21

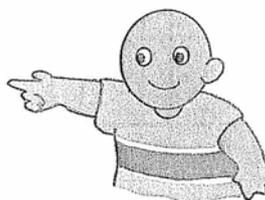
Graphs

Graphs help us to display and understand information.

Bar charts

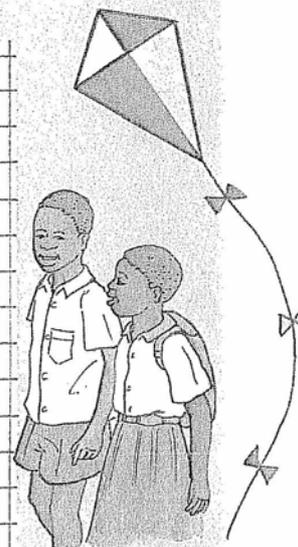
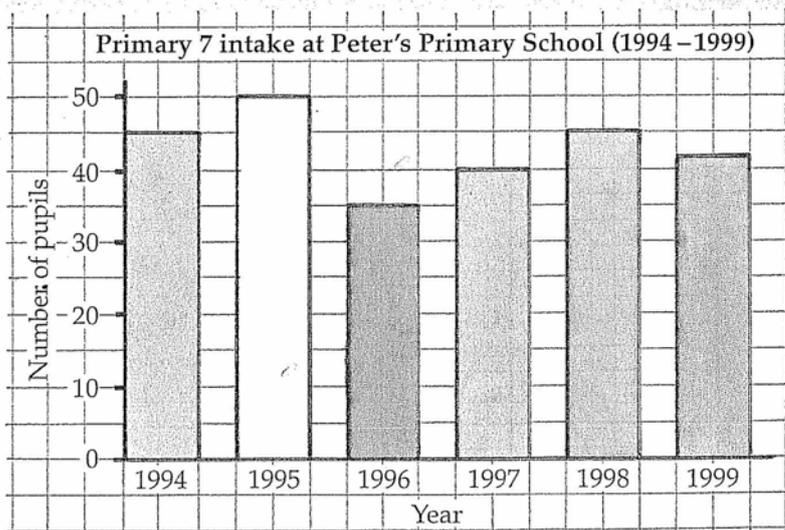
The height of the bar tells us how many there are.

Each axis needs a label and the chart needs a title.



EXERCISE 1

1



- In which year was the intake for P7 highest?
- In which year was it lowest?
- Calculate the average intake for the six years.
- How could you show this average on the chart?

Extract 3

21

- 8 Achenkeng wrote down his marks in some tests. They were all marked out of 50. He worked out that his average mark was 39, but then he lost his History mark. The other marks were:

English	42
Maths	37
Science	43
General paper	38
Geography	43

- a What was Achenkeng's History mark?
b Draw a bar graph to show his results.



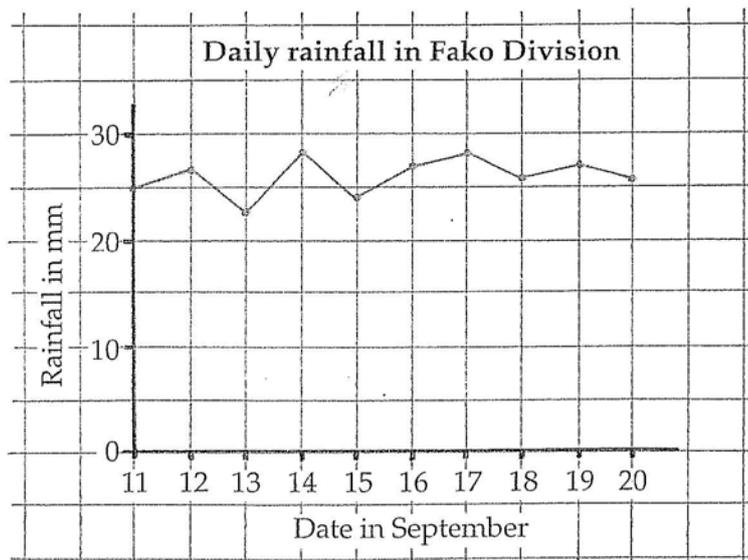
Line graphs

We use line graphs to show a continuous change (such as temperature, rainfall or interest rates).

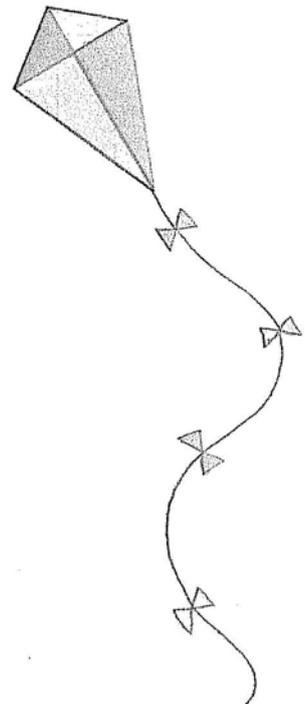
The lines joining the points show us if the quantity we are measuring is going up or down.

EXERCISE 2

- 1 The graph shows the daily rainfall in Fako Division.



- a What was the rainfall on 16 September?
b Between which dates did the rainfall increase?
c What was the difference between the highest and lowest rainfall?



Extract 4

19

Inverse proportion

Examples

- 1 6 men can build a wall in 3 days. How long would it take 2 men to build the same wall?

6 men for 3 days

1 man for 6×3 days

2 men for $6 \times 3 \div 2$ days = $\frac{6 \times 3}{2} = 9$ days

- 2 24 men clear a piece of land in 30 days. How long will 60 men take to clear the same piece of land?

24 men for 30 days

1 man for 24×30 days

60 men for $\frac{24 \times 30}{60} = 12$ days

- Always arrange the data so that what is to be found comes at the end of your statement.

EXERCISE 3

- 32 men do a piece of work in 25 days. How long will it take 40 men to do it, working at the same rate?
- 72 workmen can construct a drainage system in 70 days. In how many days could 126 men construct the same drainage system?
- A contractor employed 60 labourers to do a certain job in 15 days. How many labourers working at the same rate could complete the work in 18 days?
- 20 men can build a classroom $15 \times 7 \times 4$ m in 10 days. How many more men would be needed if the school wants the classroom in 4 days?



- To feed 80 students per day costs 200 000 fr. Find how many students can be fed for a day on 160 000 fr.

Extract 5

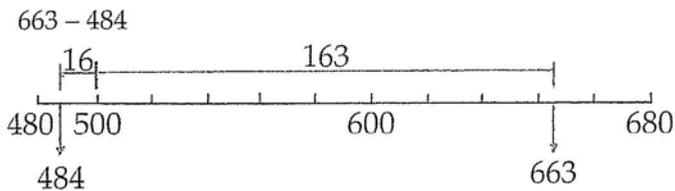
2

Some quick methods

Addition

$$\begin{aligned}
 590 + 362 & \quad \text{Use 10 of the 362 to add to the 590 to make 600.} \\
 & = (590 + 10) + 352 \\
 & = 600 + 352 \\
 & = 952
 \end{aligned}$$

Subtraction



Think of a number line.

16 takes 484 to 500.

Then 500 to 663 = 163.

Altogether the gap is $16 + 163 = 179$.

$$663 - 484 = 179$$

Multiplication

$$\begin{aligned}
 567 \times 200 & = (567 \times 2) \times 100 \\
 & = 1134 \times 100 \\
 & = 113\,400
 \end{aligned}$$

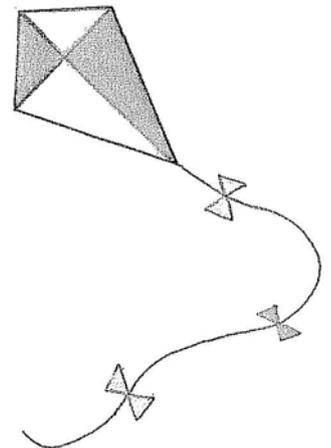
Division

$$\begin{aligned}
 3750 \div 500 & = (375 \div 5) \div 100 \\
 & = 75 \div 100 \\
 & = 0.75
 \end{aligned}$$

EXERCISE 5

Find quick methods to do these in your head.

- | | | |
|--------------------|-----------------------|--------------------|
| 1 $390 + 480$ | 2 $270 + 476$ | 3 $4900 + 516$ |
| 4 $564 - 498$ | 5 $925 - 790$ | 6 $7500 - 4995$ |
| 7 787×200 | 8 561×300 | 9 643×200 |
| 10 $6980 \div 200$ | 11 $35\,760 \div 400$ | 12 $753 \div 300$ |



$$\begin{aligned}
 390 + 480 \\
 & = 390 + 10 + 470 \\
 & = ?
 \end{aligned}$$



Extract 6

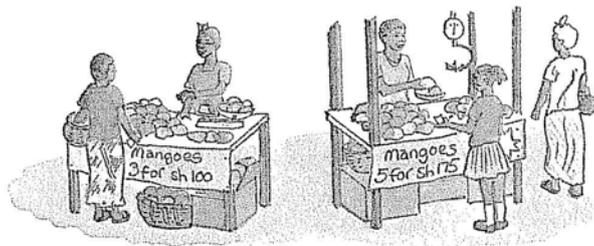


Revision Exercise E

UNIT

18

- 500 g of meat costs 700 fr, or 750 g of meat costs 1000 fr. Which purchase offers better value?
- Two market traders have special offers. The first offers mangoes at '3 for 100 fr'. The second offers mangoes at '5 for 175 fr'. Which trader offers better value?



- A bank is offering these exchange rates:

Cameroon francs	10 000
British pounds (£)	10
US dollars (\$)	14
French francs (f)	100

- For 500 000 Cameroon francs how many
 - British pounds
 - US dollars
 - French francs
 will you get?
- Roughly how many times more French francs do you get than British pounds?
 - If Mr Brown changes £200 into French francs, how many will he get, approximately?

UNIT

19

- Express the ratio of the first of the following quantities to the second, in its simplest form.

a 96, 120	b 60, 320	c 36, 18
d 49, 56	e 120, 320	

Extract 7

Invented learning icon characters



Extract 8

8

b Fraction of money remaining = $1 - \frac{8}{15}$
 $= \frac{15}{15} - \frac{8}{15}$
 $= \frac{7}{15}$

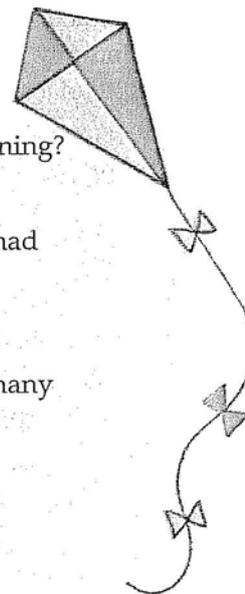
If the girl had 420 francs remaining, how much had she at first?

Amount of money remaining = 420 fr
 Fraction of money remaining = $\frac{7}{15}$
 so $\frac{7}{15}$ of initial money = 420 fr
 Initial amount of money = $420 \div \frac{7}{15}$ fr
 $= 420 \times \frac{15}{7}$ fr
 $= 900$ fr



EXERCISE 5

- 1 A boy spends $\frac{1}{4}$ of his money on food. What fraction of his money is remaining?
- 2 What fraction of my work remains after I have done $\frac{5}{7}$ of it?
- 3 A pupil read $\frac{1}{2}$ of a story book on Monday and $\frac{1}{3}$ of it on Tuesday and still had 10 pages left. Find:
 - a the total fraction of the book read
 - b the number of pages in the book.
- 4 In a class, $\frac{2}{5}$ of the children are boys. If there are 18 boys in the class, how many children are in the class?
- 5 $\frac{3}{5}$ of the children of a school are girls.
 - a Find the fraction of boys in it.
 - b If there are 360 girls, find the number of children in the school.
 - c Also find the number of boys in the school.
- 6 From a plank 300 cm long, $\frac{1}{10}$ is cut off.
 - a What length of plank is cut off?
 - b What length of plank is left?
- 7 A basket contains 120 oranges. How many must I take out to have only $\frac{1}{4}$ of all the oranges?
- 8 Ekota still had 900 fr left after spending $\frac{3}{4}$ of her money. How much had she at first?
- 9 Ewusi, Ambe and Tita buy a goat for a feast. Ewusi pays $\frac{2}{5}$ of its cost and Ambe pays $\frac{4}{15}$ of it. If Ewusi pays 6000 fr, find:
 - a the cost of the goat
 - b how much Ambe pays
 - c how much Tita pays.



Extract 9

21

- 4 When Mr Ngole returns home from his cousin Ngi's village he has some appointments to keep on the way. Here is his plan. He knows that he can do at least an average of 50 km/h.

Leave Ngi's village	_____ a.m.
Meet Mr Ndifor	10:30 a.m.
Leave Mr Ndifor	11:30 a.m.
Stop for lunch	_____
Start journey again	_____
Meet Mr Kum	2:15 p.m.
Leave Mr Kum	3:00 p.m.
Reach home	_____

Read this information and use it to fill in Mr Ngole's plan. Then draw a travel graph of his return journey.

Mr Ndifor lives 50 km from Ngi's village, towards Mr Ngole's village.

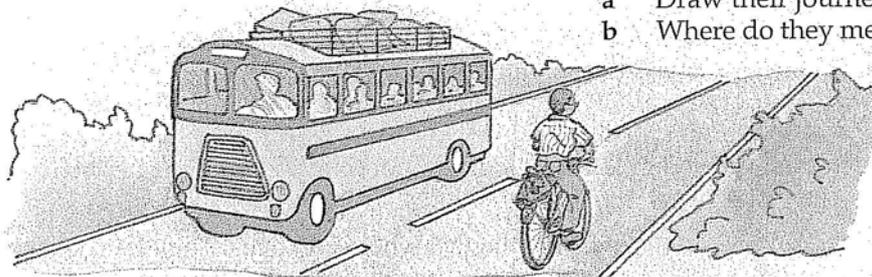
Mr Ngole likes to lunch at a restaurant which is 75 km from Mr Ndifor's house, travelling towards home.

Mr Kum lives 25 km from the restaurant, on the way to Mr Ngole's village.

After Mr Ngole has left Mr Kum the road is good and there is not much traffic so he can do an average of 75 km/h.

- 5 Mr Ndifor lives in village X and cycles to work in town Y, 8 km away. Mr Ngollo lives in town Y and drives a bus to village X. Mr Ndifor leaves his village at 8:00 a.m., cycling at 10 km/h, and Mr Ngollo leaves town Y at the same time. The average speed of the bus is 30 km/h.

- a Draw their journeys on the same axes.
- b Where do they meet and at what time?



- 6 Mary and Alice both travel from their village to Douala, 30 km away. Mary travels by bus and Alice travels by car. They both leave at 7:30 a.m. The bus travels at an average speed of 35 km/h all the way. The car travels at 50 km/h for half an hour and then breaks down. It takes quarter of an hour to be mended, then it goes on at 45 km/h.
- a Draw the graphs of these journeys on the same axes.
 - b When do the bus and car pass each other?
 - c When does Mary reach Douala?
 - d When does Alice reach Douala?

Extract 10

9

- 3 This year Mr Awah got 48 bags of coffee from his farm. If that was only 25% of last year's crop, what was his crop last year?

$$25\% \text{ of last year's crop} = 48 \text{ bags}$$

$$1\% \text{ of last year's crop} = \frac{48}{25}$$

$$100\% \text{ of last year's crop} = \frac{48}{25} \times 100 = 192 \text{ bags}$$

Mr Awah's crop was 192 bags last year.



EXERCISE 8

- 1 10% of a number equals 12. Find the number.
- 2 A price is decreased by 35% to 1430 fr. What was the original price?
- 3 A number is increased by 5% to 651. What was the number?
- 4 The price of a chair after a 25% increase is 20 000 fr. How much did it cost before the increase?
- 5 At a school the number of pupils increased by 35% to 486. How many pupils were there before the increase?
- 6 Mbuh bought a ball at the reduced price of 240 fr. This was only 20% of the original price. What was the original price?
- 7 If 2800 kg is decreased by 11%, what is the new weight?
- 8 Air fares are increased by 5%. If the new fare is 378 000 fr what was the old fare?
- 9 The value of a car has decreased by 22% this year to 1 560 000 fr. What was its value last year?
- 10 David's wages are increased by 5% to 525 fr per hour. What was he paid before the increase?
- 11 The price of a bicycle was increased by 25% to 125 000 fr. What was the original price?
- 12 Ashu bought a pair of shoes for 2400 fr which was 60% of the original price. Find the original price.
- 13 This year the size of a farmer's herd of cows has increased by 10%. He now has 33 cows. How many cows did he have last year?
- 14 Mary improved her typing speed by 20%. If she can now type 42 words per minute, what was her old speed?
- 15 If 28 pupils are present and this is 80% of the class, how many are absent?



Extract 11

UNIT

18

Shopping and bills

Example

Find the cost of 2 packets of sugar at 550 fr each, 2 kg of meat at 1100 fr per kg, 12 eggs at 60 fr per egg, and 13 exercise books at 75 fr each.

Cost of 2 pkts of sugar at 550 fr each	= 1100 fr
Cost of 2 kg of meat at 1100 fr per kg	= 2200 fr
Cost of 12 eggs at 60 fr each	= 720 fr
Cost of 13 ex. books at 75 fr each	= 975 fr
	= <u>4995 fr</u>

Example

A house boy took 10 000 fr to the shop and bought the following: 3 metres of cloth at 750 fr per metre, 4 rulers at 125 fr each, 9 cubes of savon at 225 fr each, 40 oranges at 5 for 30 fr, a bunch of plantains at 1800 fr.



Find:

- a his total bill
- b the balance he brought home after the shopping.

Cost of 3 m of cloth at 750 fr per m	= 2250 fr
Cost of 4 rulers at 125 fr each	= 500 fr
Cost of 9 cubes of savon at 225 fr each	= 2025 fr
Cost of 40 oranges at 5 for 30 fr	= 240 fr
Cost of 1 bunch of plantains at 1800 fr	= 1800 fr
a His total bill	= <u>6815 fr</u>
b His balance = 10 000 - 6815 fr	= 3185 fr

APPENDIX

Appendix 1

Primary education

Cameroon has two systems, or sub-systems, of education, one French-speaking, the other English-speaking. As far as primary education is concerned, there is “l’enseignement primaire” and “primary school”, with the following levels:

SIL: (Section d’initiation au langage) in the French-language system is equivalent to CL1 (Class 1) in the English system

CP: (Cours préparatoire) is equivalent to CL2 (Class 2)

CE1: (Cours élémentaire 1^{ère} année) is equivalent to CL3 (Class 3)

CE2: (Cours élémentaire 2^{ème} année) is equivalent to CL4 (Class 4)

CM1: (Cours moyen 1^{ère} année) is equivalent to CL5 (Class 5)

CM2: (Cours moyen 2^{ème} année) is equivalent to CL6 (Class 6)

The extracts used in this work come from a Class 6 English-language textbook

Appendix 2

Specification of extracts

Except where stated to the contrary, all the examples are taken from *Cameroon Primary Mathematics 6*, Macmillan, 2005 edition, 178 p.

Extract 1: Contents (2 unnumbered pages)

Extract 2: Unit 21, p. 139

Extract 3: Unit 21, p. 142

Extract 4: Unit 19, p. 131

Extract 5: Unit 2, p. 13

Extract 6: Revision Exercise E, p. 156

Extract 7: Invented learning icon characters.

Extract 8: Unit 8, p. 47

Extract 9: Unit 21, p. 148

Extract 10: Unit 9, p. 56

Extract 11: Unit 18, p. 125

Appendix 3

The International Research Network on Gender Representations in School Textbooks (RIRRS)

At the Conference of the Union for African Population Studies (UAPS) at Tunis in 2003, an encounter between Africanist researchers with interests in school textbooks and a demographer and a sociologist who had already worked on analysing gender representations in children's literature in France (Brugeilles *et al.*, 2002) led to the creation of the initial nucleus of a research network on gender representations in school textbooks. This network set itself a twofold ambition:

- to study gender representations and improve knowledge about textbooks through the application of a common method drawing from the sociology of social relations based on sex and the concept of social representation, backed by a quantitative approach;
- from the results obtained, to promote changes in textbooks in order to present equal relationships between the sexes. In fact, quantitative results may enable educational institutions in the countries concerned and the designers of school books to better identify the concrete biases in representation of gender roles, with the objectives of promoting the education of girls and, more broadly, of change in social sex roles.

Thanks to the support of the *Centre français sur la population et le développement* (CEPED – the French Centre for Population and Development), the *Institut National d'Études Démographiques* (INED – the National Institute for Demographic Studies) and the Union for African Population Studies (UAPS), as well as the United Nations Population Fund (UNFPA) and the Demographic Research Unit of the University of Lomé, several seminars were scheduled at intervals between 2004 and 2006, to discuss the work of teams in Cameroon, Ivory Coast, Togo and Tunisia. Publication of the present book in French (Brugeilles and Cromer, 2005) encouraged new studies of textbooks in Mexico, Senegal, Algeria, the Democratic Republic of Congo, China, Madagascar, and others. A CD-Rom with a compilation of several of these studies is available from the CEPED web site (Brugeilles, Cromer and Locoh, 2008).

In order to meet RIRRS's second objective – changes to school textbooks – a partnership was set up with UNESCO to promote greater sensitivity to these issues among the actors in the school textbook production chain. Several training sessions have taken place, each involving more than one African country: in Cameroon (November 2005), Togo (December 2006), the Democratic Republic of Congo (July 2007) and Senegal (December 2007). A guide has also been published (Brugeilles and Cromer, 2008).

For further information, contact the authors of this book:

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sylvie.cromer@univ-lille2.fr

Module: Cover illustration

Does a **human character** appear in the **cover illustration**? Yes No

If **yes**, complete the **following table**:

Total number of pictures on the cover	
Total number of pictures with human characters	
Number of pictures that include 1 to 4 human characters	-> <i>Complete ind. Char.</i>
Number of pictures that include more than 4 human characters	-> <i>Complete group of Char.</i>

Module: Cover illustration, individual character

For pictures that include **1 to 4 characters**, complete the **following table**, recording the number of characters and specifying the topic of the illustration:

Illustration 1	Characters	Male			Female			Sex unspecified		
	Topic: _____	adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
	Number									
Illustration 2	Characters	Male			Female			Sex unspecified		
	Topic: _____	adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
	Number									
Illustration 3	Characters	Male			Female			Sex unspecified		
	Topic: _____	adult	child	age unspecified	adult	child	age unspecified	adult	child	age unspecified
	Number									

Module: Cover illustration, group of characters

For pictures that include **more than 4 characters**, complete the **following table**:

Illustration, "Scene" 1	Topic	<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance
Illustration, "Scene" 2	Topic	<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance
Illustration, "Scene" 3	Topic	<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance

SECTION III: TYPOLOGY OF CHARACTERS WHO APPEAR IN THE TEXTBOOK

Module: learning icon characters

Does the textbook use **learning icon characters**? Yes No

If *yes*, include them in this table:

Character n°.	Sex	Age	How used
1	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify</i> :
2	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify</i> :
3	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify</i> :
4	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify</i> :
5	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Course material <input type="checkbox"/> Exercise <input type="checkbox"/> Other <i>Specify</i> :

Module: Pilot characters

Does the textbook use **recurring pilot characters**? Yes No

If *yes*, include them in this table:

Character no.	Sex	Age	Identity
1	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
2	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
3	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
4	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
5	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
6	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
7	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	
8	<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	

Module: Well-known personalities

Are any **well-known personalities** mentioned?
If *yes*, record them here, giving their names:

 Yes No

	Male	Female
In text		
In illustrations		

SECTION IV: TEXT

For course material and exercises mentioning a human character, whether individual or collective, complete the following table (one character per line):

Ch(s) n°	Sec n°	L n°.	Course material/ Exercise n°	Sex	Age	Identified	If "yes", identified by*	Character's role	Actions (max. 2)	Attributes (max. 3)	Character's relationships	Compared/ Interacting with Character no. ?	Symbolic coefficient	Pilot character?
				<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other bond <input type="checkbox"/> Status <i>Specify</i>	<input type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	-	-	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - - Relationship 2: - -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No
				<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other bond <input type="checkbox"/> Status <i>Specify</i>	<input type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	-	-	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature:	Relationship 1: - - Relationship 2: - -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No
				<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Ungendered <input type="checkbox"/> M collective <input type="checkbox"/> F collective <input type="checkbox"/> Ungendered collective <input type="checkbox"/> Grammatical masculine plural <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Forename <input type="checkbox"/> Courtesy title <input type="checkbox"/> Kinship bond <input type="checkbox"/> Other bond <input type="checkbox"/> Status <i>Specify</i>	<input type="checkbox"/> Actor <input type="checkbox"/> Extra <input type="checkbox"/> Identifying character	-	-	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no, is the character*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared. <i>Object:</i> <input type="checkbox"/> Interacting. Nature :	Relationship 1: - - Relationship 2: - -	<input type="checkbox"/> Positive <input type="checkbox"/> Negative <input type="checkbox"/> Neutral <input type="checkbox"/> No basis	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No

* *More than one possible response*

SECTION V: ILLUSTRATIONS

Individual character. For each character represented in a picture that includes at least 1 but no more than 4 characters, complete the following table (one character per line):

Ch(s) n°	Sec n°	L n°	Pic n°	Course material/ Exercise	Sex of character	Age of character	Type of character	Character's posture	Place	Actions (max. 2)	Attributes (max. 3)	Character's relationships	Compared/ Interacting with Character n°:	Character identified in text?	Pilot character?
				<input type="checkbox"/> Course material <input type="checkbox"/> Exercise	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input type="checkbox"/> Ordinary	<input type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where:</i>	- -	- -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- - -	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input type="checkbox"/> Forename/surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No
				<input type="checkbox"/> Course material <input type="checkbox"/> Exercise	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input type="checkbox"/> Ordinary	<input type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where::</i>	- -	- -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- - -	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input type="checkbox"/> Forename/surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No
				<input type="checkbox"/> Course material <input type="checkbox"/> Exercise	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input type="checkbox"/> Ordinary	<input type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where::</i>	- -	- -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- - -	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If ye*:</i> <input type="checkbox"/> Forename/surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No
				<input type="checkbox"/> Course material <input type="checkbox"/> Exercise	<input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unspecified	<input type="checkbox"/> Child <input type="checkbox"/> Adult <input type="checkbox"/> Unspecified	<input type="checkbox"/> Substitute <input type="checkbox"/> Ordinary	<input type="checkbox"/> Head & shoulders <input type="checkbox"/> Full-length <i>Specify:</i> <input type="checkbox"/> Standing <input type="checkbox"/> Lying down <input type="checkbox"/> Sitting <input type="checkbox"/> Kneeling <input type="checkbox"/> Unknown	Identifiable: <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, state where::</i>	- -	- -	Character alone? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no*:</i> <input type="checkbox"/> Co-existing <input type="checkbox"/> Compared <input type="checkbox"/> Interacting	- - -	<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes*:</i> <input type="checkbox"/> Forename/surname <input type="checkbox"/> Status/bond <input type="checkbox"/> Ungendered name <input type="checkbox"/> Generic term that indicates sex/generic noun	<input type="checkbox"/> Yes <i>Who:</i> <input type="checkbox"/> No

* More than one possible response

Module: Group of characters

Is a **group of characters** – *i.e.* more than 4 characters – **represented** in the **same** picture?

Yes No

If **yes**, complete the following table:

Group n°	Section n°	Lesson n°	Course material or Exercise	Topic	Dominance by sex	Dominance by age	Is at least one character identified in the text?
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No
			<input type="checkbox"/> Course material <input type="checkbox"/> Exercise		<input type="checkbox"/> Male characters only <input type="checkbox"/> Female characters only <input type="checkbox"/> Males dominate <input type="checkbox"/> Females dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Most characters ungendered	<input type="checkbox"/> Child characters only <input type="checkbox"/> Adult characters only <input type="checkbox"/> Child characters dominate <input type="checkbox"/> Adult characters dominate <input type="checkbox"/> Neither dominant <input type="checkbox"/> Impossible to determine dominance	<input type="checkbox"/> Yes How? <input type="checkbox"/> No

Appendix 5

Database structure

TEXT DATABASE

This database contains information relating to the Texts. All the variables start with the letter T. When working in French, we chose to give the variables mnemonic names, but we could equally well have applied a conventional form of numbering for the variables within each section of the framework.

NUMMAN

Textbook identifier, for example:

- 1: Class 1 Mathematics
- 2: Class 2 Mathematics
- 3: Class 3 Mathematics
- 4: Class 4 Mathematics
- 5: Class 5 Mathematics
- 6: Class 6 Mathematics

TNUMP

Character identifier. Identifies the characters in each textbook.

TSEC

Number of the textbook section.

TLEC

Number of the lesson, within the section.

TCE

Presence of a character in course material or exercise.

0: Course material

Number of the exercise

TSEXE

Character's sex

1: Male

2: Female

3: Ungendered

4: Male collective

5: Female collective

6: Ungendered collective

7: Grammatical masculine plural

8: Unspecified

TAGE

Age category of the character

- 1: Child
- 2: Adult
- 3: Unspecified

TIDENT

Does the character have an identity?

- 1: Yes
- 2: No

TIDPRE

Is the character identified by a forename?

- 0: Not applicable (Response 2 'No' to TIDENT)
- 1: Yes
- 2: No

TIDPAT

Is the character identified by a surname?

- 0: Not applicable (Response 2 'No' to TIDENT)
- 1: Yes
- 2: No

TIDPAR

Is the character identified by a kinship bond?

- 0: Not applicable (Response 2 'No' to TIDENT)
- 1: Yes
- 2: No

TIDLIEN

Is the character identified by a bond other than a kinship bond?

- 0: Not applicable (Response 2 'No' to TIDENT)
- 1: Yes
- 2: No

TIDSTAT

Is the character identified by a status?

- 0: Not applicable (Response 2 'No' to TIDENT)
- 1: Yes
- 2: No

TDETPAR

Details of kinship bond.

0: where TIDPAR is coded 0 or 2

Here the list of kinship bonds encountered should be coded. For example:

1: Father/Mother

2: Brother/Sister

3: Grandfather/Grandmother, etc.

TDETAL

Detail of other bond

0: where TIDLIEN is coded 0 or 2

Here the list of other bonds encountered should be coded. For example:

1: Friend

2: Neighbour

TDETSTAT

Detail of status

0: where TIDSTAT is coded 0 or 2

Here the list of statuses encountered should be coded. For example:

1: Cyclist, players, athletes

2: Market traders

TROLE

Character's role

1: Actor

2: Extra

3: Identifying character

TACTION_1**TACTION_2**

Record the character's actions

0: No action

The list of codes for actions should be drawn up here.

TATTRIB_1**TATTRIB_2****TATTRIB_3**

Record the character's attributes

0: No attributes

The list of codes for attributes should be drawn up here.

TRELA

Is the character alone?

1: Yes

2: No

TRELA_1

Is the character co-existing?

0: Not applicable if TRELA is coded 1 'Yes'

1: Yes

2: No

TRELA_2

Is the character being compared?

0: Not applicable if TRELA is coded 1 'Yes'

1: Yes

2: No

TRELA_3

Is the character interacting?

0: Not applicable if TRELA is coded 1 'Yes'

1: Yes

2: No

TRELAT_COMP

Record the object of the comparison

0: where TRELA_2 is coded 0 or 2

Make a coded list of objects of comparison.

TRELAT_INT

Record the nature of interaction between the characters.

0: where TRELA_3 is coded 0 or 2

Make a coded list of interactions.

TINTER_1**TINTER_2****TINTER_3**

Record the character numbers of characters involved in the comparison.

TINTER_4**TINTER_5****TINTER_6**

Record the character numbers of characters involved in the second relationship.

TPOSI

Character's symbolic position

- 1: Valued
- 2: Devalued
- 3: Neutral
- 4: No basis. The character is not being compared.

TCONDU

Is the character a pilot character?

- 1: Yes
- 2: No

TCONDU_1

Pilot character identifier

0: Not applicable (Response 2 'No' to TCONDU)

List the pilot characters and allocate a number to each one.

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Children's books, as key vectors of socialisation in contemporary societies, convey norms and values with respect to differentiated gender roles. How does this gender-based socialisation accommodate the principles of equality and education for all? For the last thirty years, this question has been a focus of concern in many countries, notably via the activities of international institutions. The challenge is vast: to provide high-quality education and promote equality, for boys and girls alike.

Using the concepts of "social representations" and "gender" and applying a quantitative method to objects that are traditionally studied from a qualitative standpoint, a practical approach was developed to analyse male and female representations in the various printed media intended for a child readership (school textbooks, illustrated albums, etc.). The aim is to decompose the construction of social gender by looking at the varied attributes associated with the characters portrayed in children's books – who are key to the production of social representations – and to consider the structure and internal logic of this written medium.

This manual presents an analytical approach and the data collection methods used to capture gender representations. We show how the data collection tool presented provides a means to answer questions such as: What are the prescribed gender identities and roles? To what extent are the two sexes shown together or apart? Are the societies depicted gender-equal?

The methodology described in this book is designed for the analysis of school textbooks. We make use of an English-language mathematics textbook used in Cameroon to detail the method, and present a study of a series of primary school mathematics textbooks used in francophone Africa to illustrate our approach and demonstrate how it can be applied.

The methodology presented can be readily adapted for other types of printed media – children's novels, magazines, etc. – and for other issues, such as cultural discrimination or ethnic segregation. It provides a general framework for examining the treatment of difference in society.

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