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# Study on the cancer's representations from primary school pupils and their filing systems

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*Representation is an act of thought through which a subject relates to an object. There is no representation without an object. In order to comprehend the representation's content, it is thus necessary to emphasize on the components from the representations which scientific information belongs to and that is of great interest for us on this study on cancer.*

*This study aims to identify the cancer's representations that 10 years old pupils possess (in Year 5). The variable taken into account in this study is the knowledge of cancer these young pupils have and its relative position compared with other illnesses.*

*The sample is composed of 64 pupils from Year 5. The pieces of information were gathered from the filing systems intuitively established by the pupils (Intuitive classifying systems). A first questionnaire (pre-study) required listing the names of the illnesses that come straight to their minds. The second questionnaire suggested 4 features (contagious illness, fatal, curable with or without medicines) and asked to classify illnesses according to the latter.*

*The results showed the strong importance of cancer in the pupils' minds while they should feel less concerned about it, particularly because this subject is not seen at school at this age. Cancer is the most spontaneously quoted illness before influenza and HIV. It is perceived as non-contagious (For 92% of the pupils) but highly associated to death (89%) even though the chances of survival are higher than for the other illnesses evoked (HIV, influenza, Ebola) thanks to a treatment (30% of the answers). This relation to cancer seems to be correlated to the personal background of the pupils, who were touched by this illness in their close relations, as cancer is often presented as really serious without being explained with simple explanations.*

*These results raised the importance of teaching and giving detailed information in the school or extracurricular environments to young people. It is hoped that such an education would demystify cancer.*

## 1. Introduction

Representation is an act of thought through which a subject relates to an object. There is no representation without an object [1,2,3]. In order to comprehend the representation's content, it is thus necessary to bring out the components related to the object cancer which scientific information belongs to.

The cancer's representations have been widely studied by psychologists and health anthropologists [4]. However, the school population had never been specifically targeted. This study thus aims to partially rectify this lack of information thanks to the identification of the cancer's representations on a school population.

This study takes an interest in the cancer's representations among Year 5 pupils. The notion of cancer is not tackled at this age, yet it so happens that pupils may speak about it while discussing other subjects (for example: Intervention of a school partner who introduces the tobacco's harmful effects).

## **2. Methodology:**

For this study, two variables are taken into account: the school level (French Primary school compared with another study led in a comprehensive school, a high school and at the university) and the cancer's relative position compared with other illnesses.

### **2.1 Data collection:**

The questioned sample includes n=64 French pupils in Year 5, aged from 10 to 11 years old and divided in three different schools: 2 of them are situated in Nevers (Nevers A and Nevers B) and the last one is located in a village near Nevers (Nevers C). The representations are identified thanks to the answers brought by the questionnaires. The questions are opened in order to let the pupils use their own vocabulary and to not orientate the pupils' answers.

A first questionnaire (pre-study) asks to list the illnesses that came straight to the pupils' mind. The second questionnaire is composed of 4 questions: 1) Can you list the illnesses you know which, according to you, can be transmitted from a person to another (=contagious), 2) Can you list the illnesses one can die from?, 3) According to you, are there illnesses one can recover from without medicines? If so, which ones?, 4) Which are the illnesses only curable thanks to medicines?.

The representations were gathered from the filing systems intuitively established by the pupils (Intuitive classifying systems). The interest of this method is doubled: 1° it avoids the askew effect of direct questions (which makes pupils tick suggested answers), 2° it situates cancer in the representations' field among other common illnesses. This way of proceeding provides what semi-directive discussions can't: a list of spontaneously cited illnesses, the order in which they were quoted and an intuitive classifying system of illnesses, among which cancer.

### **2.2 Representations of the graphs:**

The results are all displayed in bar graphs. On each graph, the data of each class are dissociated (Nevers A, Nevers B and Nevers C): the vertical axis stands for the number of answers given by the pupils compared to the total number of the answers collected on the subject/the horizontal axis indicates the name of the illnesses the most cited by the pupils.

## **3. Results and discussion**

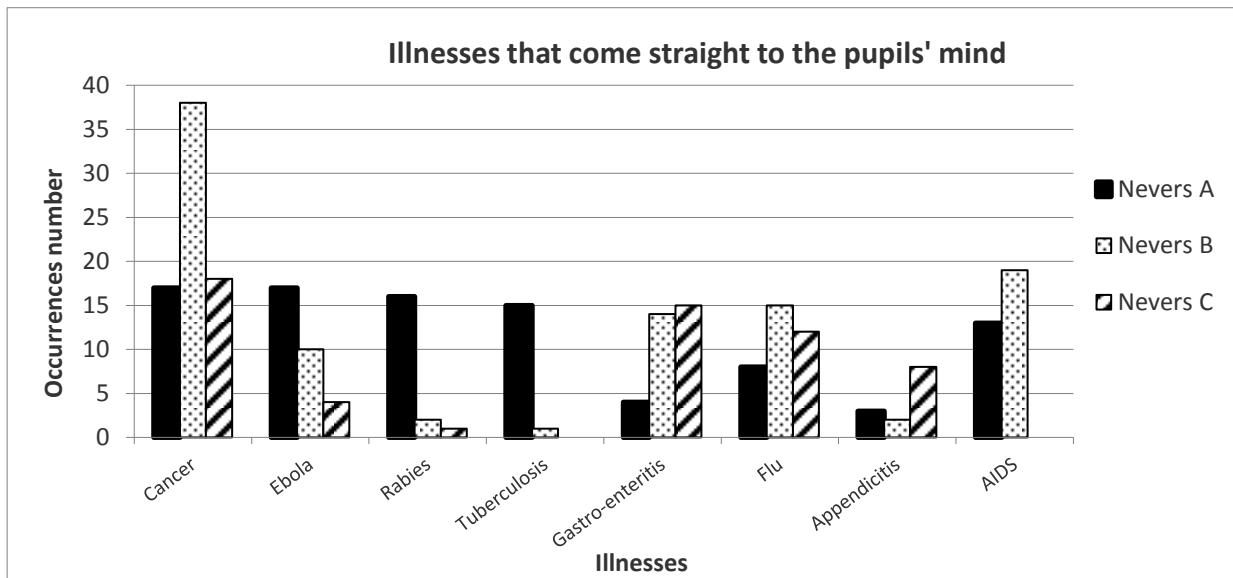
### **3.1 Is cancer an illness that comes straight to the pupils' mind?**

The illnesses that come straight to Year 5 pupils' mind mainly are, in order of importance, cancer, HIV, Ebola and the flu (fig. 1) (illnesses that were also quoted by older pupils as indicated in former works [5]). The other illnesses cited are tuberculosis and rabies. Other illnesses were evoked but they were less regular. (It was noticed that both schools in the city quoted HIV but not the school in the countryside).

Most of the Year 5 pupils (93%) cited cancer in the list of illnesses (fig. 1). Half of these quoted it in their top 3 (51% of the pupils) and some of them (12.5%) even cited it several times in their list (fig. 1). Cancer is the first illness quoted by almost a quarter of the pupils of this age (32.8%). Some of these pupils added the word "tumour" in their list of illnesses that came straight to their mind, in addition to cancer, already cited.

The pupils mainly cited cancer but also the illnesses encountered in their everyday life (such as appendicitis, flu epidemic, suspicions of tuberculosis and its systematic screening, or even diarrhoea and gastroenteritis, often reported in schools).

It was also noticed that pupils either cite cancer, cancers or even drew a list of several cancer types (lungs cancer ...) as if all these cancers were different illnesses.

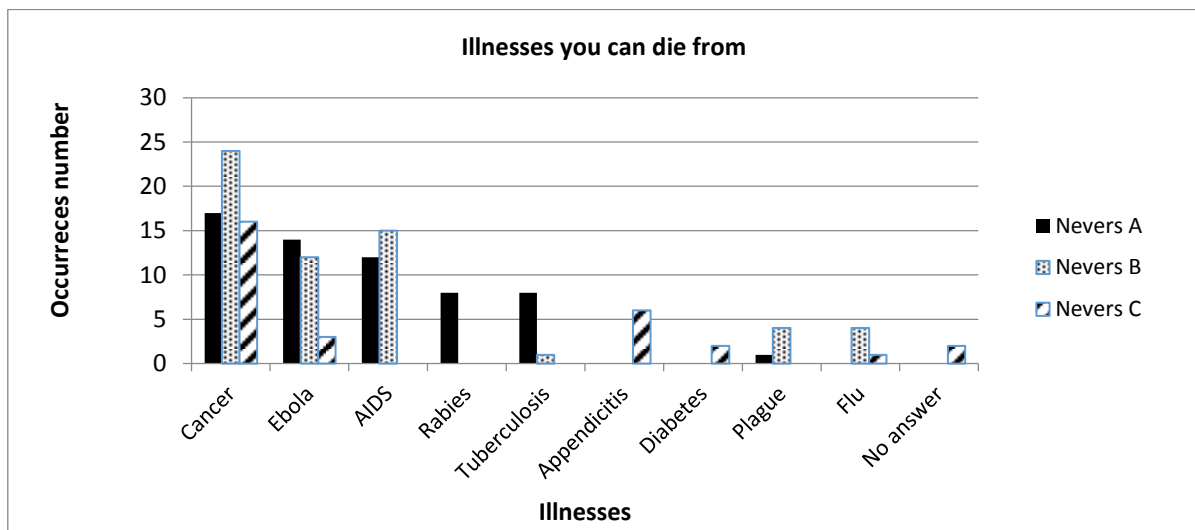


**Fig. 1: Number of cumulated answers brought by Year 5 pupils (n= 64) to the question “Illnesses that come straight to the pupils’ mind”**

Thus, in Nevers B’s class, the pupils cited cancer many times in their list but identified it as well (that is why there are 38 answers for 26 pupils). Ex: Lungs cancer, skin cancer ...

There are significant differences between the three classes interrogated. However, only one illness is always the most quoted no matter which class is questioned: it is cancer.

### 3.2 What are the illnesses one can die from according to the pupils?



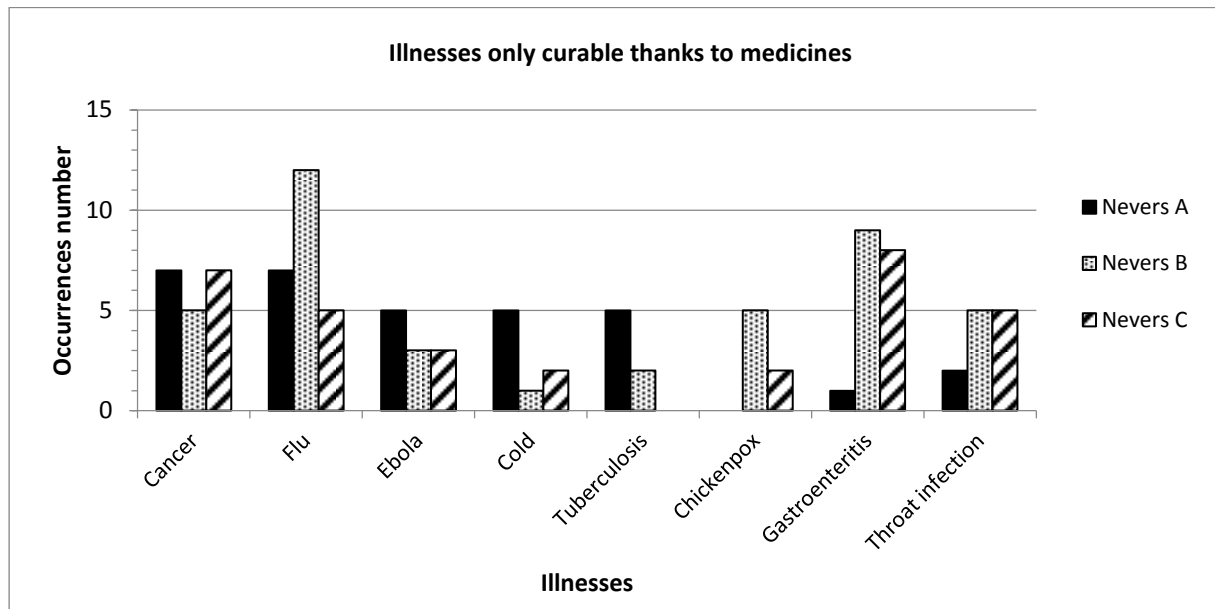
**Fig. 2: Number of cumulated answers brought by Year 5 pupils (n= 64) to the question on the illnesses one can die from**

For 89% of the Year 5 pupils interrogated, cancer is mainly cited as a mortal illness (fig. 2). Several pupils (9%) quoted cancer several times by indicating the affected organ (breast cancer, skin cancer ...). Finally, some pupils (3%) cited cancer and “tumour” as illnesses one can die from.

Among Year 5 pupils, it is cancer that is mainly quoted as a mortal illness.

### 3.3 According to the pupils, which are the illnesses only curable thanks to medicines?

Cancer is quoted by 29.5% of the pupils as an illness only curable thanks to medicines, in the same way as the flu or the gastroenteritis (fig. 3).



**Fig. 3: Number of cumulated answers brought by Year 5 pupils (n= 64) to the question on the illnesses only curable thanks to medicines**

While Cancer is the illness that comes straight to Year 5 pupils' mind, 7 out of 10 pupils did not mention cancer in any of both questions on the recovery. The answers' cross-analysis to these two questions thus reveal that most of the pupils do not consider a possible recovery, which emphasize and comfort the previous answer which indicated that 89% of them perceived cancer as a mortal illness.

#### 4. Conclusion :

Cancer is an illness really present in Year 5 pupils' mind even though this subject was not seen during a lesson and many other illnesses affect them in their everyday life (flu, gastroenteritis, cold ...). This study allowed to draw a rather gloomy sketch of cancer in Year 5 pupils' mind. Although this illness is not contagious, it is perceived as mortal and without hope of being cured for most of the pupils.

These results showed that the pupils had access to varied extracurricular information which allowed them to build their own opinion and/or a detailed system on cancer. Because of its association to mortality and the emotional aspects linked to this illness, it is possible that these first explanations might resist or evolve with difficulty/late toward more elaborated detailed systems.

Even though our previous studies [5] were based on a secondary-school pupils' audience, the same assessment is drawn, with a certain modification of the representations on that subject among high school pupils and master students [5]. Maturity, a possible interaction with the contribution from the scholar or academic spheres and the evolution of the pupil's relation to cancer might explain such modifications.

In a broader perspective, this study cast light on the evidence that our representations are supplied by other factors than those brought by the scholar sphere only. The values, opinions, imagination associated to cancer and mediated through the extracurricular and social spheres are, all the more, factors to take into account in the representations structure. This study joins Clément's KVP model [6]

in which the representations are presented as a triptych's product which values, in addition to knowledge, are one of the three pillars participating in the genesis of social representations.

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