

SANDPLAY: A METHOD FOR DATA ANALYSIS

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The psychotherapeutic technique of the Sandplay has been increasingly used due to the excellent results obtained in the treatment of different pathologies. Nevertheless, due to the predominant use among Jungian clinicians of qualitative analysis, the results are restricted to the description and interpretation of scenes, without an analysis that allows generalization and comparison of results. It is necessary to develop a qualitative-quantitative method so that it is possible to compute the results obtained by different therapists, within a homogeneous patterns in different casuistic.

This study aims the construction of a method to analyze the results of the therapeutic data of the Sandplay. The objective is to develop a method that allows the standardization of data from the pictures and verbal expressions used by the patients while working in the sandplay, as well as qualitative and quantitative analysis in order to enable the comparison of data among several patients.

We will use, as an example, the data from three male patients between 6 and 8 years old, suffering with obsessive compulsive disorder (OCD). (Matta, 2006).

THE METHOD

Procedure

In this work we will consider verbal expressions as well as non-verbal expressions (pictures) produced by the subjects throughout the making of the scenes. These expressions are grouped in categories established and defined by different studies of cases. New categories can emerge according to the emerging material in each clinical study. Here we will describe only the categories found in the study mentioned above. (Matta, 2006)

In order to be able to duplicate the results it is also necessary to verify the amount and kind of miniatures present in the therapy's office and the grouping of such by theme.

1. Assessment of verbal expressions of each scene

We start by gathering all verbal expressions, thru literal transcription of the spontaneous verbal expressions as well as stories that the subject tells during the construction of scenes. These verbal expressions are grouped in categories, in relation to the central idea of the speech.

2-Gathering of imagery_

2. a) Survey of miniatures in each scenario.

We must add the number of miniatures presents in each theme, remembering that all the miniatures in the therapeutic room are already classified by theme before the beginning of the treatment. For instance, on scenario 1, within the theme “wild animals”, we have 4 miniatures. The miniature classification method developed by Grubbs (1997) can be here utilized.

It's important to observe that the same miniature can be used in different contexts. Although they might be kept in the same theme, it still could be classified in another category following the general dynamic of the scenario. For instance, the theme “ball” can be classified in the destruction category when it is used as “bomb” or classified as celebration when used as “Christmas ball”. Another example is a lion or a tiger which belong to the theme “wild animals”, but can be classified in the Category Conflict (if they are in an attack position) or in the Category Ego Identification when the patient uses one of these animals as an expression of her/him self.

2. b) The dynamic of the pictures

The description and categorization of the dynamic of scenarios are made thru the observation of each one of the pictures. Here, thru the notes made by the therapist during the making of the scenarios and observation of the photographs taken, it is described:

- the position of the miniatures in the sandbox (for instance, elephant in the lower half)
- use of water (dry or wet sand)
- orientation and movement of the sand (excavations or elevations and their position within box)

The analysis of these factors allows us to classify the dynamic of the scenario within one or more categories.

For instance, a scenario with an excavation with water in the center is classified in the Category Descendent Movement, but if the patient has drowned animals or people in the water, the scenario is also classified in the Category Destruction. In this way, a scenario may contain more than one category.

2.c) Clinical observations

The therapist observes and evaluates both the construction and the final aspect of the scenario and attributes it one or more predominant categories. For instance, when a patient in the construction of the scenario throws the miniatures on the sand, the therapist might consider this an aggressive behavior and classify it in the Category Conflict. This way, the therapist's interpretation is considered and computed in the final statistic analysis.

For example, in the following table, we'll see an example of the data assessment using the scenario number 1:



Table 1

N° of scene	Date	Patient's verbalization	Verbal Expression: Category	Miniature's themes	Scenario's dynamics	Clinical Observations	Imagery Expression: Category
1	09/04/04	“The city is separated from the forest”	Defense	5 Wild animal 1 Nature figure 1 Monument 2 Construction figures 1 Ball (bomb-destruction) 6 Celebration figures 5 Barrier figures	Threaten figures separated by fences in order to prevent them to invade the superior part of the scenario where there is a Christmas tree with presents. There is a bomb next to the nativity set and the Statue of Liberty.	The picture shows threatening situations. The symbols of celebration are limited by fences and surrounded by objects of destruction	Destruction Defense Conflict

Here we see that from the scenario number 1, three categories emerged: destruction, defense and conflict.

All the scenarios are put in the table, so that we have a picture with all the scenarios of the patient classified in categories.

3- Assessment of the categories' frequency

The total time in the process is divided into three periods. For instant, if the patient has been in analysis from 04/09/2002 to 07/28/2004, his time was of 816 days. The total of 816 is divided into 3 phases. That way we have the initial phase from 04/09/2002 to 10/29/2002, the intermediate phase from 02/03/2003 to 09/29/2003, and the final phase from 11/03/2003 to 07/28/2004. The patient made during his period a total of 38 scenarios.

We identify the total number of categories and the number of times that each one appears in each phase. In this case, in the whole process, 14 categories were identified. These categories repeat themselves, such as, in the initial phase we had 11 categories used 40 times, in the intermediate phase 11 categories were used 52 times, and in the final phase 10 categories were used 43 times.

We then add the number of time that each category appears in the different phases. For instance, the **Category Defense** appears 5 times (in 40) in the initial phase, 4 times (in 52) in the intermediate phase and zero times in the final phase. That is: 12.5% ($5 \times 100 /$

40) in the initial phase; 7,7% (4 x 100/ 52) in the intermediate phase and 0% in the final phase. These calculations allow us to observe a clear decrease of the defense mechanisms on the scenarios.

The **Category Centralization** appears a total of 18 times. In the initial phase it appears 3 times in 40 or 7.5%; in the intermediate phase 5 times in 52 or 9.6%; and in the final phase 10 times in 43 or 23.3%. Thru this we notice a gradual increase in the centralization movements. The Category Automatism appears 2 times in 40 (5%), 4 times in 52 (7,7%) and zero times in the final phase, demonstrating an increase in the middle of the process, followed by a decrease until disappearance.

Table 2

Categories	Inicial	Middle	Final	Total
Automatism	2	4	0	6
Conflict	6	8	5	19
Defense	5	4	0	9
Destruction	0	5	2	7
Ego identification	6	11	4	21
Congestion	2	3	4	9
Ascending mov.	3	1	0	4
Descending mov.	4	4	0	8
Submersion	2	4	1	7
Transference	5	0	1	6
Centralization	3	5	10	18
Integratation	0	3	9	12
Transformation	0	0	4	4
Celebration	2	0	3	5
Total	40	52	43	135

If we take into account the total number that each category was used we have a more precise picture:

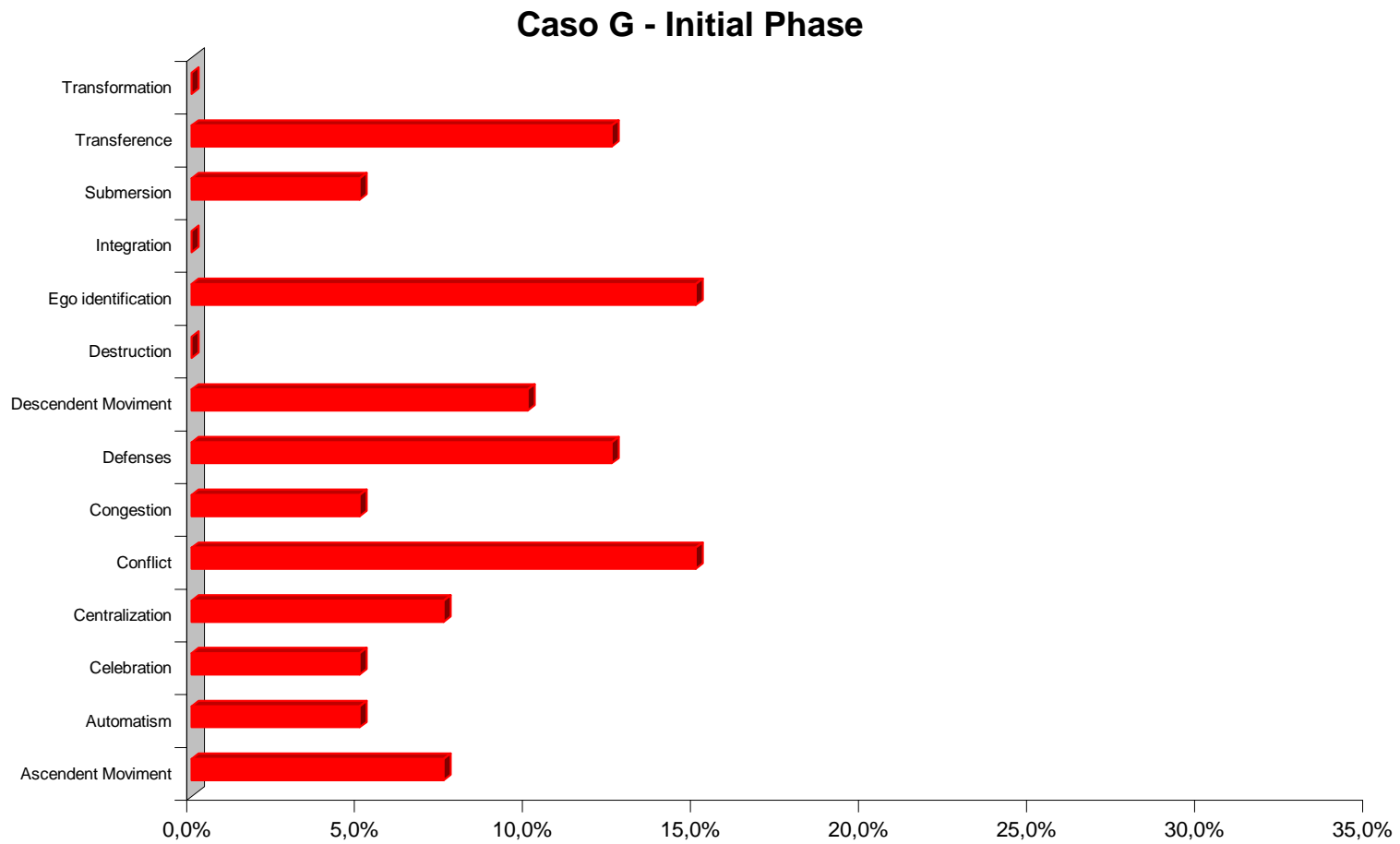
Table 3

Categories	Inicial	Middle	Final
Automatism	5,0%	7,7%	0,0%
Conflict	15,0%	15,4%	11,6%
Defense	12,5%	7,7%	0,0%
Destruction	0,0%	9,6%	4,7%
Ego identification	15,0%	21,2%	9,3%
Congestion	5,0%	5,8%	9,3%
Ascending mov.	7,5%	1,9%	0,0%
Descending mov.	10,0%	7,7%	0,0%
Submersion	5,0%	7,7%	2,3%
Transference	12,5%	0,0%	2,3%
Centralization	7,5%	9,6%	23,3%
Integration	0,0%	5,8%	20,9%
Transformation	0,0%	0,0%	9,3%
Celebration	5,0%	0,0%	7,0%

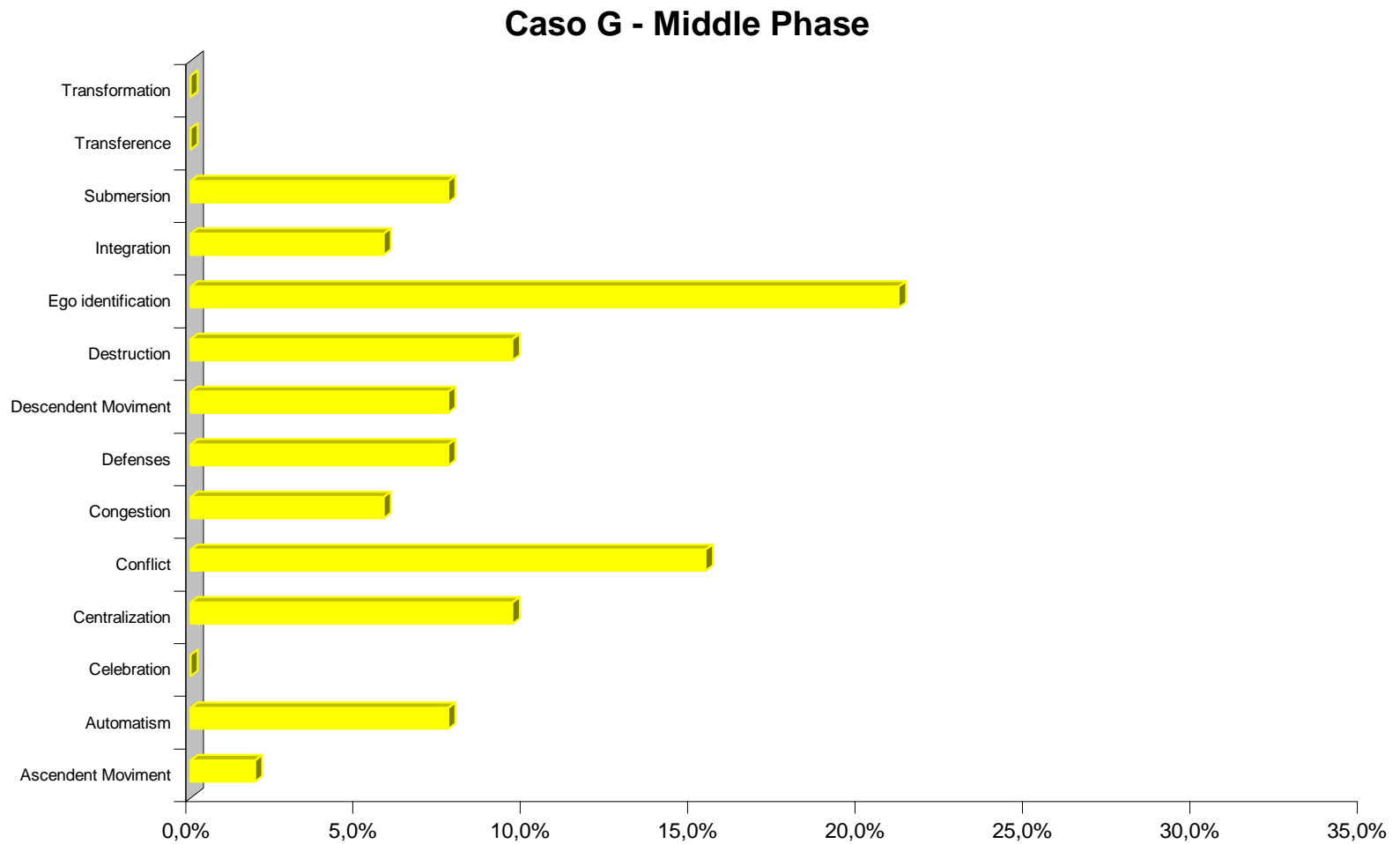
We can observe that the categories most used in the initial phase were: conflict, ego identification, transference and defense, whereas in the final phase the most frequent were centralization and integration.

This table permits some graphics which clarify the evolution of the patient:

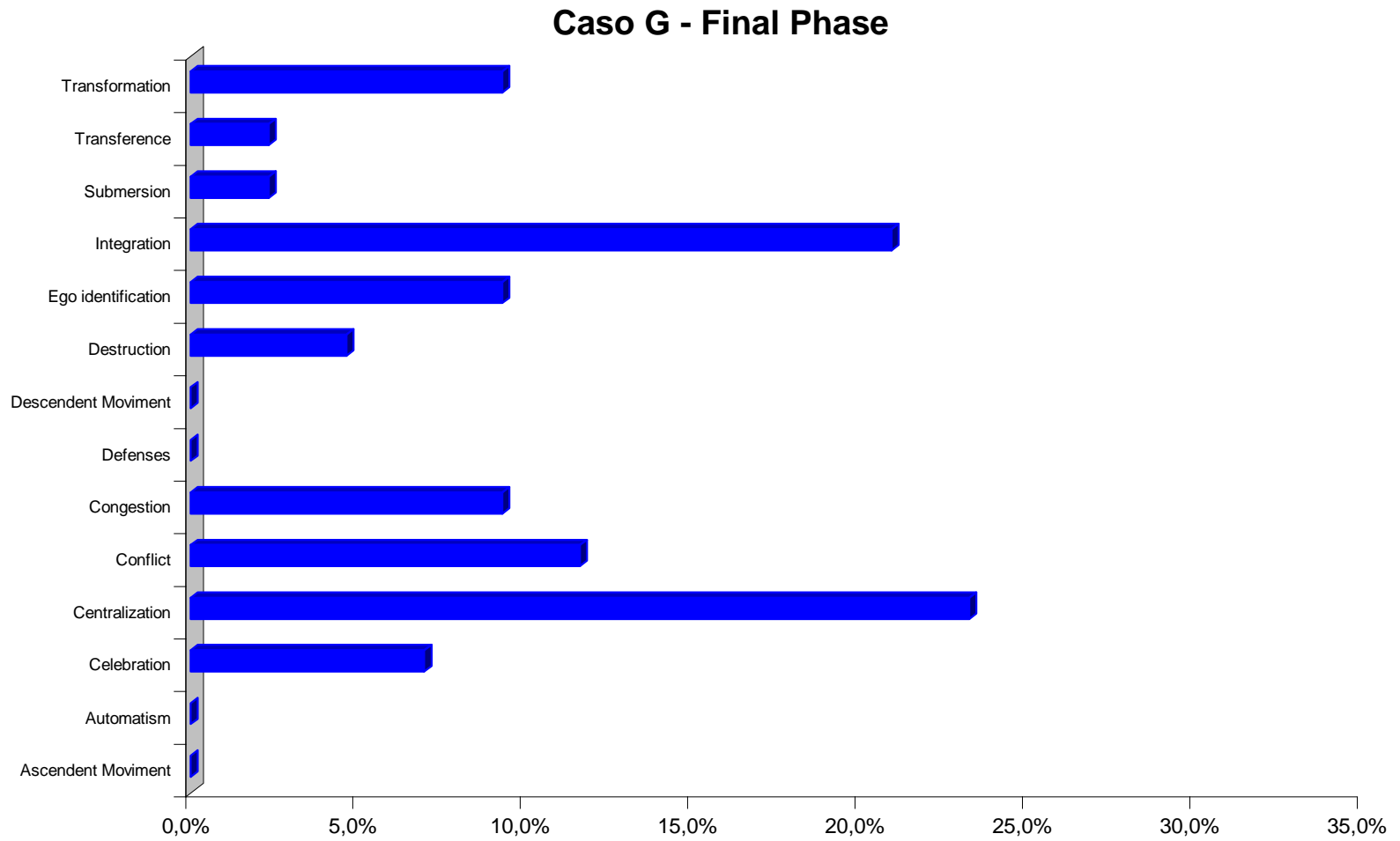
GRAPHIC 1 - Distribution of the categories in initial phase.



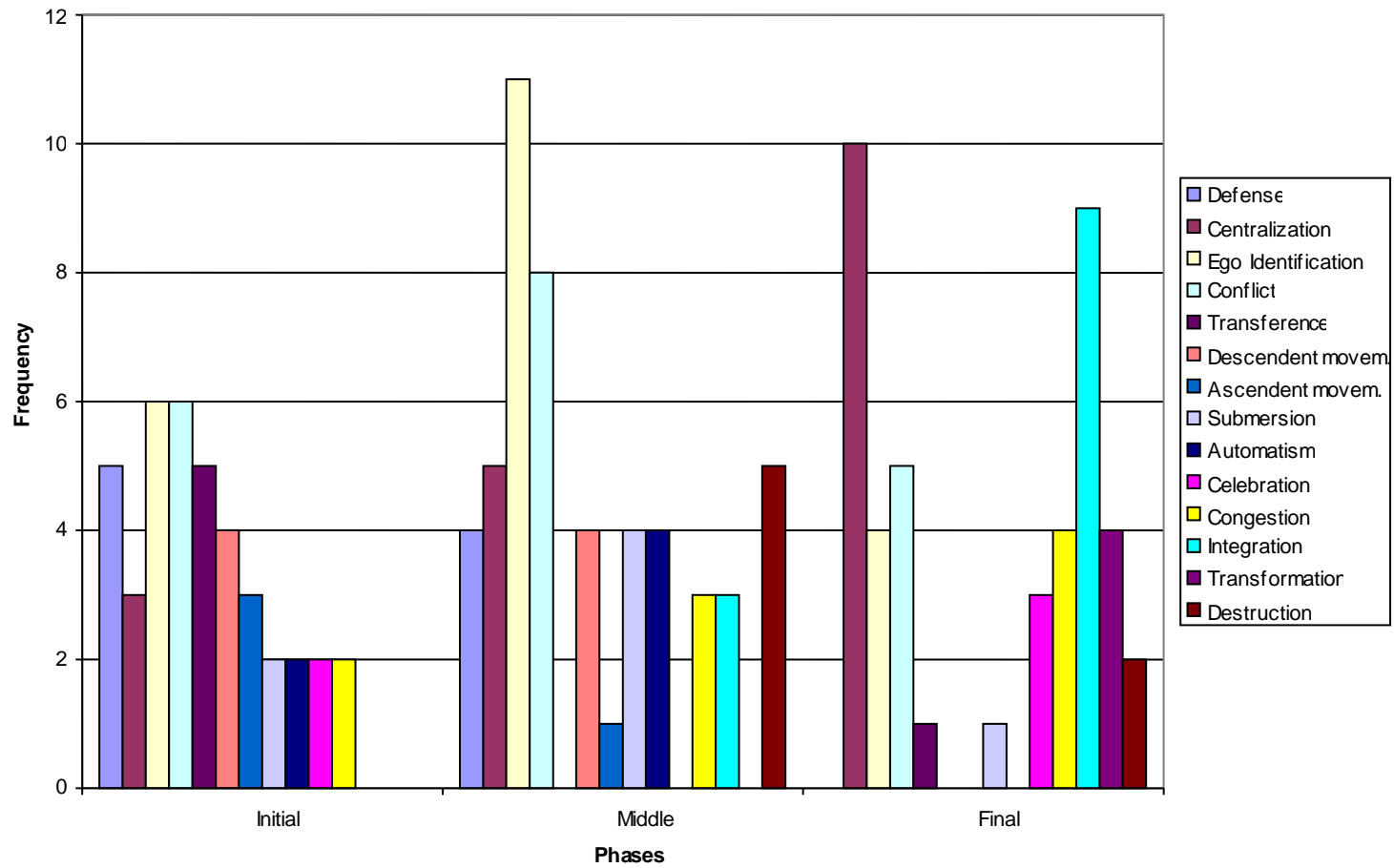
GRAPHIC 2 - Distribution of the categories in middle phase



GRAPHIC 3 - Distribution of the categories in final phase



GRAPHIC 4 -Evolution of the Categories of the patient G



With this graphic we can clearly visualize how the categories evolve throughout the process and make corresponding interpretations. It is expected, according to the patient's pathology that determined categories indicating of conflict decrease and others, which indicate harmonization increase. Hypothesis can be raised according to the patient's clinical case. For instance, we can raise the hypothesis that the application of the Sandplay technique will decrease the neurotic symptoms of a patient, expressed here as OCD. Analyzing the scenarios we will observe if there has been any change in the patient's clinical state. The Sandplay data will be compared to the medical, scholarly and familiar reports.

Comparison of patients

The method also allows another possibility: to compare the evolution and development of different patients. As an example, we will continue to use data of children with OCD (Matta, 2006) to verify if there is a similar pattern between them and the differences as well.

Questions:

- What is the most predominant category between the three patients?
- Can we observe a disease's pattern?
- Is there a predominant category in each phase for the three subjects?
- Do the patients follow a similar pattern of evolution through the process?

We can gather in one table the percentage of the categories by phase for the three patients, in a way to have a general idea of the evolution of the categories for all.

The next table shows the categories' evolution in each of the three patients

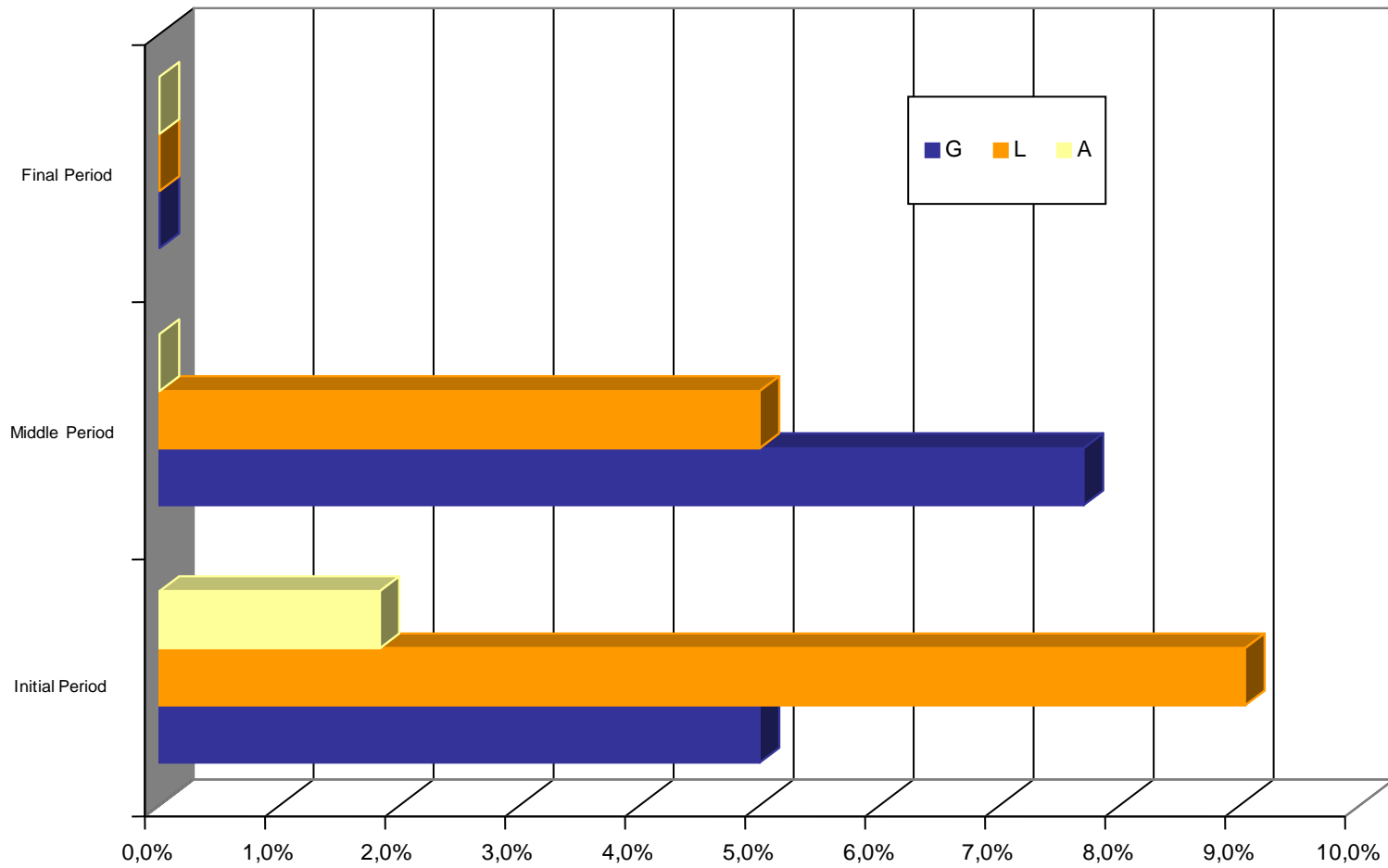
Table 4 - Table of evolution of categories for the three patients

Categories	G			A			L		
	Inicial	Middle	Final	Inicial	Middle	Final	Inicial	Middle	Final
Automatism	5,00%	7,70%	0,00%	9,00%	5,00%	0,00%	1,80%	0,00%	0,00%
Defenses	12,50%	7,70%	0,00%	10,60%	5,00%	4,20%	5,50%	3,50%	1,60%
Destruction	0,00%	9,60%	4,70%	3,00%	5,00%	7,60%	7,30%	1,80%	0,00%
Conflict	15,00%	15,40%	11,60%	8,50%	5,60%	9,30%	12,80%	5,90%	9,50%
Congestion	5,00%	5,80%	9,30%	6,50%	0,60%	2,50%	3,70%	0,60%	0,00%
Transference	12,50%	0,00%	2,30%	3,00%	3,10%	6,80%	2,80%	1,20%	0,00%
Celebration	5,00%	0,00%	7,00%	3,50%	1,30%	0,00%	7,30%	6,50%	11,10%
Egoic Identification	15,00%	21,20%	9,30%	14,10%	18,80%	21,20%	14,70%	4,70%	11,10%
Ascending mov.	7,50%	1,90%	0,00%	9,50%	9,40%	10,20%	5,50%	14,10%	1,60%
Descending mov.	10,00%	7,70%	0,00%	11,10%	18,10%	14,40%	22,90%	30,00%	19,00%
Submersion	5,00%	7,70%	2,30%	4,00%	9,40%	4,20%	4,60%	12,90%	3,20%
Transformation	0,00%	0,00%	9,30%	8,00%	10,00%	5,90%	0,00%	0,00%	9,50%
Centralization	7,50%	9,60%	23,30%	4,50%	7,50%	5,90%	9,20%	15,30%	17,50%
Integration	0,00%	5,80%	20,90%	4,50%	1,30%	7,60%	1,80%	3,50%	15,90%

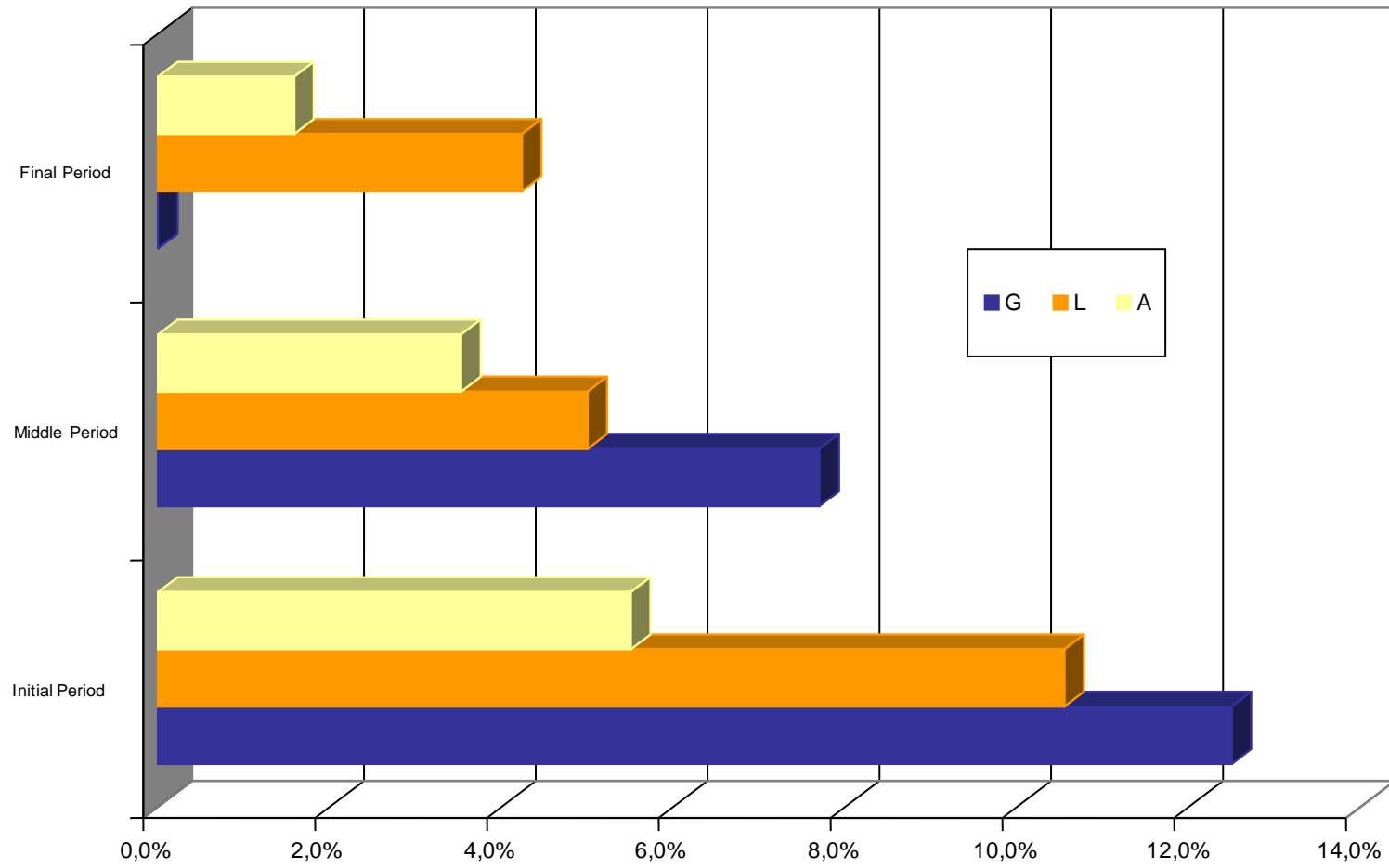
As we can we observe in the table above, there have been a significant increase in the Categories Integration and Transformation and a significant decrease in the Categories Automatism, Conflict, Defenses and Destruction.

Other possible comparative graphics:

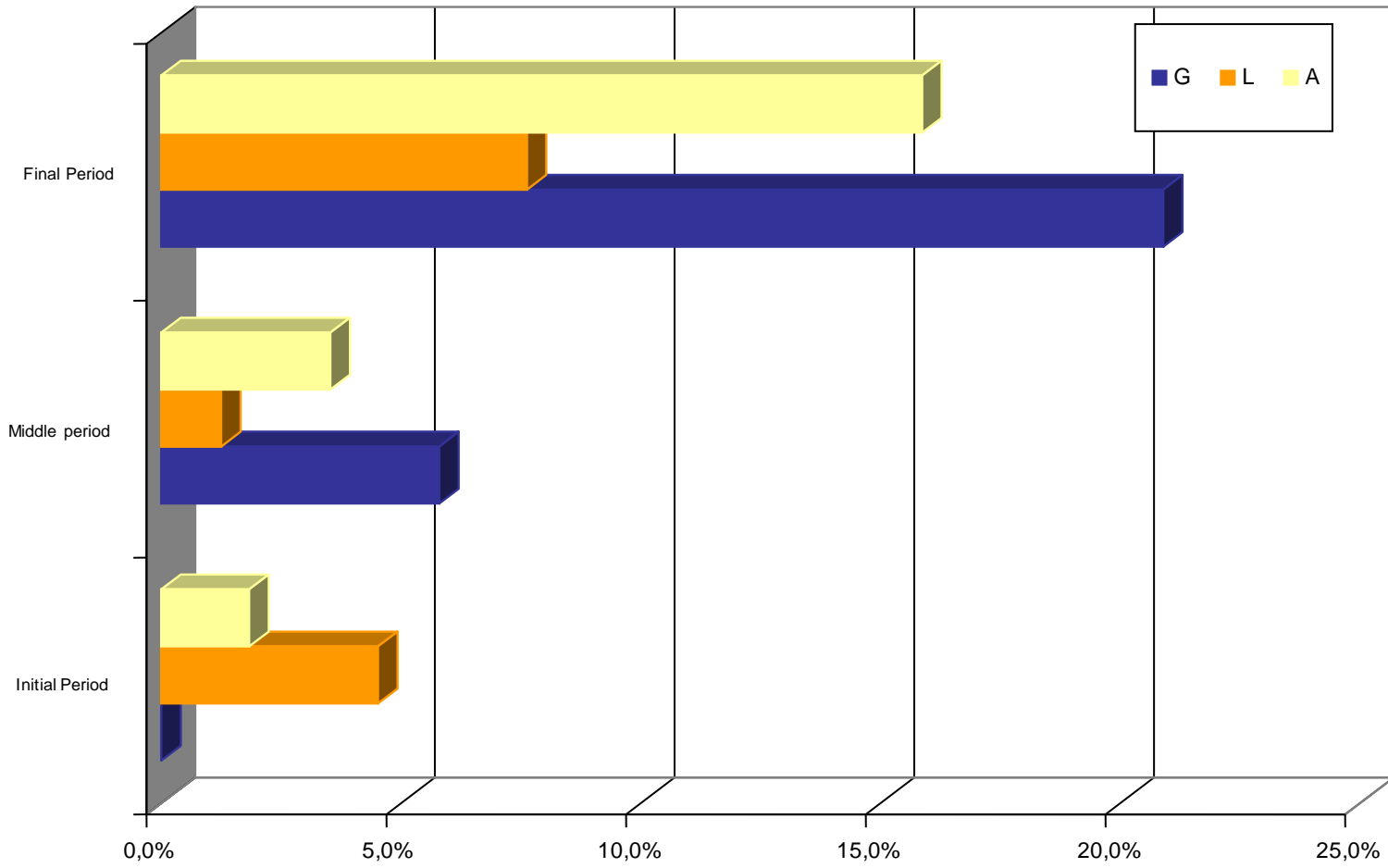
GRAPHIC 5 – Evolution of the Category Automatism in 3 cases



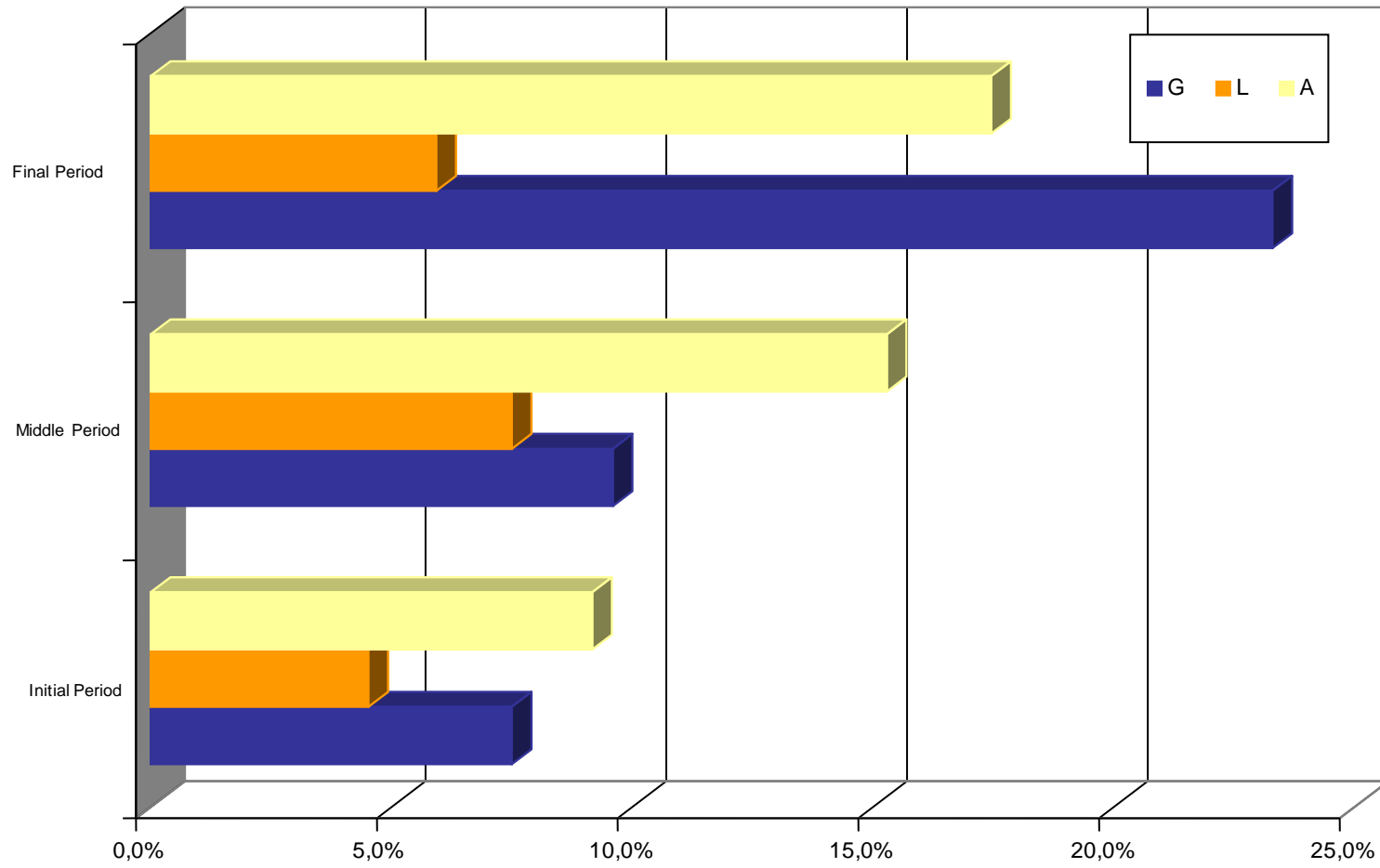
GRAPHIC 6 - Evolution of the Category Defense in 3 cases



GRAPHIC 7 - Evolution of the Category Integration in 3 cases



GRAPHIC 8 - Evolution of the Category Centralization in 3 cases



Conclusions

The use of this method enables to objectively follow the evolution and development of the patient as well as a comparison to other patients. Here we have a possibility to verify if there are patterns of development in a Sandplay, according to the determined pathology or age group.

In the other hand, the classification of scenarios and the categorization of the patient's verbalization depend on the therapist's ability as well. These categories must be described in the clearest way so that it allows other researchers to use it, creating a data base.

The ideal when doing this research is that the classification of the scenarios is made by someone other than the therapist him/herself. Although, of course, the way that the therapist will describe his/her observations will be highly important, for only he or she will be able to set the proper tone to what took place in the sessions. Thus, the transference, counter transference and resonance questions may be only be answered by the therapist and then included in the categories.

It is clear that the increase or decrease of a determined category throughout the process doesn't necessarily means a progress in the patient's clinical case. For instance, the increase in the Category Conflict can mean an improvement in a patient who is passive and submissive. Although its been observed the relationship of the tendency for scenes that are classified in Categories that may be translated as positive transformation, the patient's final evaluation depends on his general clinical case, and it cannot be dependent of a literal transcription of the scenes. The data then obtained need to be evaluated in comparison to other clinical and behavioral observation.

Annex

DESCRIPTION OF THE CATEGORIES

The development of categories was based on the studies of other researchers. Bolgar and Fisher described six categories to understand sand tray productions: choice, quantity, form, contents, behavior and verbalizations and Bowyer develop an interesting scoring category to evaluate the World Technique Test described by Friedman & Mitchell (1994). Others followed their work. The books by E. Weinrib (1983) R. Amann (1991) H.Friedman & R.R. Mitchell (1994) among others have valuable suggestions about the development of different criteria to evaluate the sand trays.

Based on these studies we are going to describe the criteria adopted in this study. As we can see, one same sand tray may contain one or more categories. Here we are going to use as example the most evident ones.

Automatism

Use of verbal expressions and images in the scenes that suggest something automatic: a machine or engine consisting of a mechanism that repeats certain movements (clock, electronic plate) or equipment that looks almost human that reproduces human movements by mechanical means (robot).

It is considered to be something that moves on its own and performs an activity or movement as a result of external/internal stimulus irrespective of its will and to a certain extent it is unconscious.

Constructions in the sand and use of miniatures such as: robots, clocks, electronic plates.

The category automatism is a series of activities performed without any conscious intention and in relation to a psychopathological behavior. It can be understood as a sign of perturbation between a voluntary and involuntary behavior. The repetition of the same behavior numerous times and the time spent in performing these rituals can be symbolized, for example, by a clock and by robots.

Example:



Celebration

Verbal expressions where there is the act or effect of celebrating, for example: homage, celebration or commemoration of a date, performing a ritual, public praise, festivals or solemn ceremony.

Examples of verbal expressions: terms related to dates (festivals such as Natal and birthdays); terms related to power and royalty; terms related to values: *“These are precious stones at the bottom of the sea”*; *“These are official balls from the World Cup”*.

Terms related to the past and associated values: *“Museum of valuable things”*, *“I’m going to make a museum of precious things”*.

Constructions in the sand and use of miniatures that are presents or symbols of commemorative dates (Christmas trees and cakes, nativity scene) gold and shiny miniatures, personalities that symbolize feelings of happiness and entertainment (clown), accessories (gold or colored chains, jewelry) and musical instruments; colored feathers; mythological figures and glass balls.

Celebration can be considered to be a time when individuals express feelings of happiness and victory. The act of celebrating an achievement can be considered as an expression of recognition of the effort and work invested in search of an objective. Example:



Centralization

Verbal expressions or images in scenes that appear to be joining or concentrating sand in the center of the sandtray, and the placing and converging of objects towards the center of the sand tray.

Examples of verbal expressions: terms related to movement towards the center of the tray: *“It’s a mountain where people jump to do hand-gliding”*.

Constructions in the sand and use of miniatures in the center of the sandtray, lamps, candles, glass balls, coins, the world, means of transport, construction of islands, elevations (mountains) and circles.

The process of centralization within the context of analytical psychology represents one of the most important points in the therapeutic process related to the process of individuation. Centralization can be considered as the place where creative transformation takes place, the meeting between the unconscious and the conscious towards a goal or centre. Example:



Conflict

Verbal expressions of the unknown, frightening, terms related to a state of shock, confrontation or verbal expressions considered to mean opposition, such as: threat x protection, fear x courage, danger x security, unknown x known, difficulties x ease, peace x war. Examples: *“I am going to go to war against the evil house”*, *“This penguin looks frightened”*, *“The elephant and the giraffe are going to fight”*.

Constructions in the sand and use of miniatures including a Chinese ball (Bomb), wild animals, wild birds, insects, sea animals, predatory animals and prehistoric animals in threatening positions; war weapons; soldiers, Indians and warriors in threatening positions or positions of attack, miniatures that had been knocked over in a position of destruction; sticks/wood used as spears. Conflict is also considered to be those scenes that present miniatures in opposition, in threatening and confrontational positions, such as: the presence of battles between soldiers and Indians, possibilities of threat and confrontation between predatory wild animals and non predatory animals, confrontation between animals and robots.

Conflict may appear also as opposition, contradiction or a fight between different structures, principles or attitudes. In analytical psychology, psychic conflict is a state of collision between unconscious and conscious, and from this state of conflict it is possible to recognize unconscious contents, so that the process of integration can subsequently occur. Example:



Congestion

Verbal expressions using terms related to feelings of stagnation and unpaired movement, such as: “*everything is clogged*”, “*one car is on the top of another*”.

Images in the scenes that refer to miniatures or constructions in the sand that prevent free circulation or make circulation difficult, with a mixture of miniatures in total imbalance, chaos and difficulty to visualize objects or objects hidden by other objects on the surface of the sand. For example, constructions in the sand and use of miniatures such as trucks that are obstructed and objects on top of each other.

Congestion can be compared to stagnation in the flow of psychic energy. The energy does not have a way out, and becomes stagnant, preventing creativity and productivity. The expression of feelings of anguish is frequently at this stage. Example:



Defenses

Verbal expressions related to separation, defined and limited spaces, protection or resistance. For examples: *“the fences are here to protect the plants”*, *“the chain surrounds the city”*.

Constructions in the sand and use of miniatures such as: fences, open or closed boxes, boxes that are tied up, cages, safe, sticks marking space, jails. Images in scenes related to separation of the construction, closing off and defining spaces within the sandtray. In the images created in the trays it was possible to visualize the action of defense and resistance to attacks. The presence of miniatures used that suggest defensive or protective equipment or structures.

In analytical psychology, defense means the act or effect of defending oneself to prevent changes occurring. We may see the closed fences as more rigid defenses whilst the open fences with ways out, more flexible and adaptive defenses. Or closed fences may be used as healthy separation, protecting the individual against uncontrollable impulses. For example: fences closing wild animals in the zoo. Example:



Destruction

Verbal expressions using terms that are related to natural disasters, such as volcano, storms, avalanches and floods: *“It was a type of zoo with sinking sand”* and *“There was a flood and it destroyed everything”*.

Constructions in the sand and use of miniatures that are buried or semi-buried, thrown or up side down and sand that has been mixed around. Images where it is possible to observe an action or effect of placing face down what has been constructed, including demolition, elimination, devastation, ruins, total extinction, annihilation.

Destruction could represent a moment when the patient is feeling anxious or threatened by his or her impulses. Impulses can be considered to be psychic processes that consciousness does not control. Conflicts may provoke a dangerous situation, expressed by destructive acts represented by natural disasters, for example. Example:



Egoic Identification

Verbal expressions related to the patient him or herself. Examples of verbal expressions including auto-reference, consciousness of oneself and the process: *“I love dogs, but I don’t have one because I live in an apartment”* and *“I am going to study biology because I love plants and animals”*.

Constructions in the sand and use of miniatures that are repeated for the purpose of representing oneself (animals/objects with which the client identifies).

The process of identification can be understood as the time when the subject places in an external object something that he or she is unable to recognize in him or herself, which is important for the development of the personality. Example:



Integration

Verbal expressions related to connections, links and relationships. Also, verbal expressions with terms related to union: “*Here is a bridge*” and “*I am going to put a bridge here*”.

Images that represent a connection between various parts of a scene forming a coherent and harmonious whole. Constructions in the sand and the use of bridges, rivers and barriers as connecting elements. The same miniatures placed at opposite ends. Constructions of circles or mandalas in the sand. Tracing paths in the sand.

Integration can be understood as an improved ability to organize the personality and improved interaction between conscious and unconscious contents. Example:



Ascending movement

Verbal expressions related to geographic accidents, such as mountains or elevations: *“I want to make a mountain for the car to go up”*.
Terms related to paths (ascendant): *“There are several paths here”*.

Movement in the sand from one side of the sandtray to another with the intention of building constructions of islands, elevations or mounds in the sandtray. Miniatures such as, towers, lighthouse, and high monuments.

Elevated movements may represent progression towards adaptation to external life. This movement also may be an attempt to go to another position where the patient may see his situation from an upper level or may be developing an uprising vision. Example:



Descending movements

Verbal expressions related to feelings of going down or to dig a hole, such as *“I am going down”* or *“this man is crazy, he is going to dive in the volcano”*. Examples of verbal expressions with terms related to geographic accidents such as caves and grottos: *“They discovered an emerald mine”*.

Constructions in the sand and use of digging miniatures such as excavator or trowel in the dry/wet sand forming holes with or without water, simulating rivers, lakes, caves and grottos. Descendent movements may represent regression towards internal life, feelings of going deep or desire to find or to hide precious treasures. Example:



Submersion

Verbal expressions related to diving, flooding or submerging in water, such us *“I feel I am drowning”*, *“This is an inundation”*, *“Two men are diving with the whales”*.

The sand may be inundated with water as if it were a swamp.

Miniatures placed at the bottom of the mud and buried in the sand. The presence of glass balls symbolizing water (river or lake), miniatures of wells, swimming pools and toilets.

Like the descending movement, submersion can mean a regressive movement of psychic energy and the return of deeper unconscious contents. Floods are threat to man, since water may represent ego dissolution or a destructive power, carrying both good and bad elements. Example:



Transference

Verbal expressions with terms related to curiosity about the therapist or feelings of love and anger towards the same: *“It’s a heart for you”*; *“I am throwing bombs at R. (the therapist) and she is not reacting”*; *“How old are you?”*; *“Who are you going to leave the miniatures to when you stop working?”*.

Constructions in the sand such as of a heart and the therapist’s name.

Use of miniatures that may represent the therapist such as a figure of a psychologist, doctor, nurse or a figure that resembles the same. The position of miniatures often placed near the therapist or against he/she. Example:



Transformation

Verbal expressions with terms related to changes in the physical state of materials (liquids, gases, pastes and solids). For example: *“Glass comes from sand”*; *“where is that pan that evaporates water?”*

Miniatures that represent different forms of energy or changes in the material state. For example, the use of fire from candles or lamps, stove, fire place, matches, electric wiring.

The use of miniatures such as transformers that alters the electric current and enables energy to be available in lamp posts, conducting electricity from one place to another, may be expressing a movement from a primitive impulse to a more elaborate state of mind; perhaps a more controllable and conscious behavior. Example:



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