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*Sborník prací Filozofické fakulty brněnské univerzity. P, Řada psychologická.* 2004, vol. 52, iss. P8, pp. [99]-109

ISBN 80-210-3497-1

ISSN 1211-3522

Stable URL (handle): <https://hdl.handle.net/11222.digilib/114362>

Access Date: 16. 02. 2024

Version: 20220831

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WOLFGANG SEHRINGER

## HOW INSTRUCTION IMPACTS CHILDREN'S CREATIVE ACHIEVEMENTS

### The problem

When we look at children's drawings from a scientific point of view, we have certain theories in mind. At this time researchers prefer to use two main approaches: They either target emotional qualities, or they question certain cognitive abilities, believing that these can be studied using children's artwork.

In the first case, concepts stemming from depth psychology shape the researcher's point of view and how he formulates his findings. In the second case, when the questions aim at the cognitive functioning, quite another vocabulary is used. This indicates a totally different interest in the subject matter. Interest in the psychodiagnostic use of children's free drawings has largely been guided by concepts of depth psychology of any kind. However, there are situations where a cognitive approach may provide us with some convincing answers to problems, which have previously been dealt with from a speculative point of view.

One of these "problems" involves the widely unnoticed influence exercised by *the character of the test instruction* on the outcome of a subject's drawing performance.

Of course, no one may have ever disputed the idea that there is some unnoticed influence. Theoretically most researchers would agree that such a phenomenon does indeed exist (for a survey see Sehringer 1999). However, it is quite another thing to make this phenomenon tangible. Thus I decided that an experimental and cognitive approach might provide me with the most convincing evidence.

My question was: Is there any difference in the outcome of a reproductive task, 1) if I merely expose the subjects to the totality of a picture, or 2) if I demonstrate step-by-step to our subjects how this task has been carried out by someone else? Does the level of achievement change as I alter the type of instruction? Can I take it for granted that a copy task, which asks only for repetition of a *complete* pattern, will lead to the same results as one in which the subjects are exposed to a full-fledged *demonstration of the drawing sequences* by which that pattern had been created? In other words, I was asking how much influence does instruction that

allows imitation have? And by implication, I wanted to test the limits of a subject's drawing capacity as a consequence of the type of instruction given.

### **The experiment: Material, method**

Yet what I have to present and discuss here can only have the character of a pilot study. It is not based on hard-boiled experiments. Moreover the material I use is not common in psychological laboratories. Its discovery was rather accidental. I got to know it when I attended some lessons in a primary school. There pupils were shown a film presenting Picasso at work.

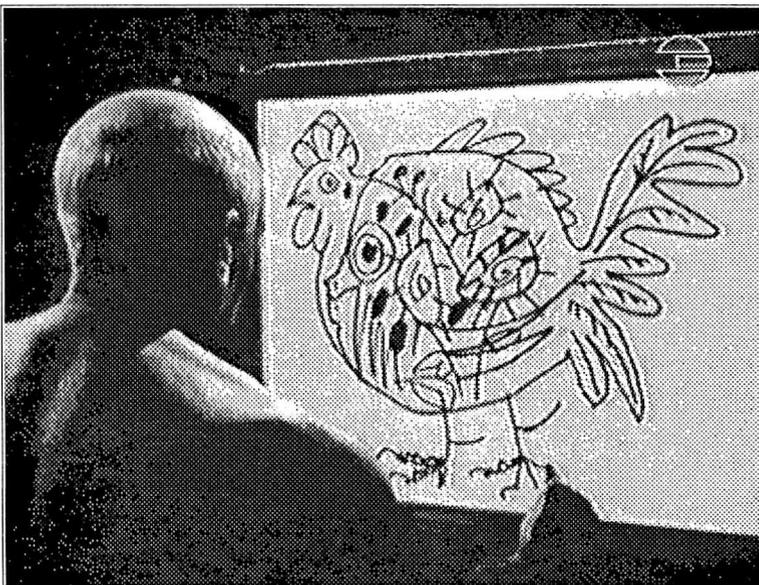
Fortunately Picasso once permitted filming during one of his drawing and painting sessions. Clouzot, a well-known film-maker in the fifties of the last century, made such a movie which was shown at the movie theatres at the time. Today it can be purchased as a video. From this film then I selected a special feature to conduct my study.

### **The experimental design was as follows:**

I confronted pupils of elementary school age with two different experiences:

- In experience one the pupils were introduced into the task by being told that they would see a picture made by Picasso and by giving them a few explanatory remarks about Picasso as a modern artist. Then they were only shown the semi-final picture of the selected part of the whole Picasso film for about three minutes (stand-still) containing the flowers, the fish and the hen (fig.1). After that, the pupils were asked to reproduce the picture they were shown from memory.

Fig. 1: Semi – final state of Picasso's drawing showing flowers, fish and hen



- In experience two, two weeks later, the same children were shown that particular part of the whole film that shows Picasso at work to create this picture. Yet there was one difficulty which complicated the task. After having drawn the three

Fig. 2: Final state of Picasso's drawing showing flowers, fish hen and cat



objects Picasso continued to work on his subject by destroying his achievement in a queer way: He tries to put a cat's head on top of all by sacrificing most of the elements of the objects he had drawn so far (fig. 2). So, showing the film to the pupils up to its final stage meant, they had to deal with a much more complex situation than in experience one. Again we asked them to draw the way Picasso did. The children were shown how Picasso managed to bring three objects intricately interwoven into one picture. But what about the cat?

The results produced some *expected* and some *unexpected* results:

## Results

### 1. *Expected results:*

Pictures completed in experience two proved to be richer than in experience one. With "richer" I mean that under the *procedural instruction* there were many pupils who did not simply stick to the final state of Picasso's drawing (the cat's face only as to be seen in fig. 3), but rather turned to one or more of the other patterns (the flowers, the fish, the hen). (For examples of first-graders see fig. 4 & 5, for fourth graders see fig. 5 & 6).

Fig. 3: Picture of a first grader having watched Picasso at work. Here the girl sticks to her impression of the final state of Picasso's drawing

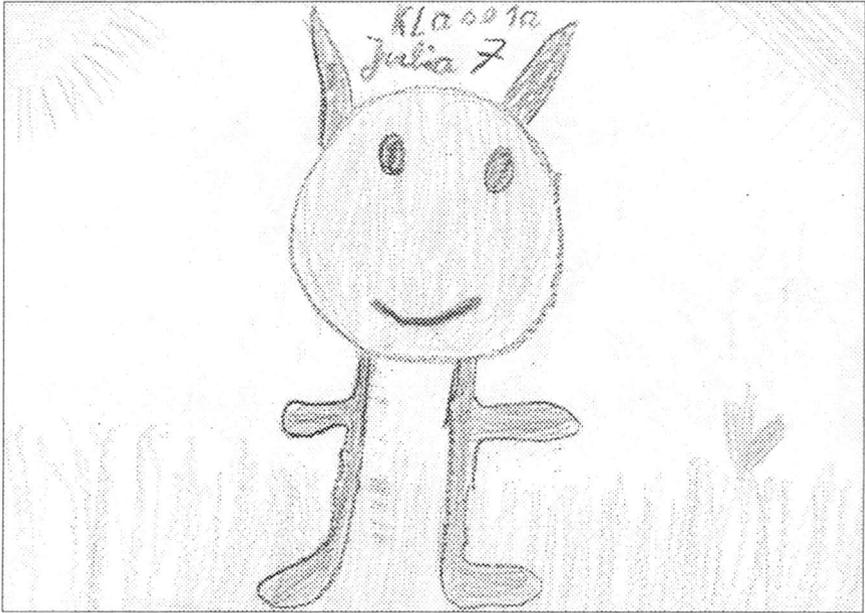


Fig. 4: Picture of a first grader having watched Picasso at work. Here the girl tries to deliver some of the details of the semi-final state.



Fig. 5: Picture of a first grader having watched Picasso at work. The child tries to deliver three of the subjects. Notice how the cat has been added!

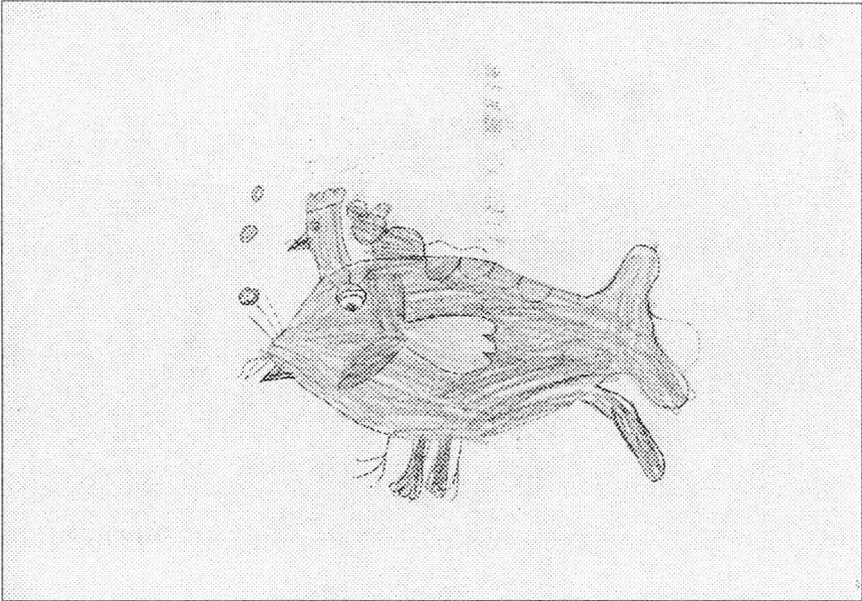


Fig. 6: Picture of a fourth grader having watched Picasso at work. The boy produces flowers, fish, hen and cat (including the 3 figures in the foreground).

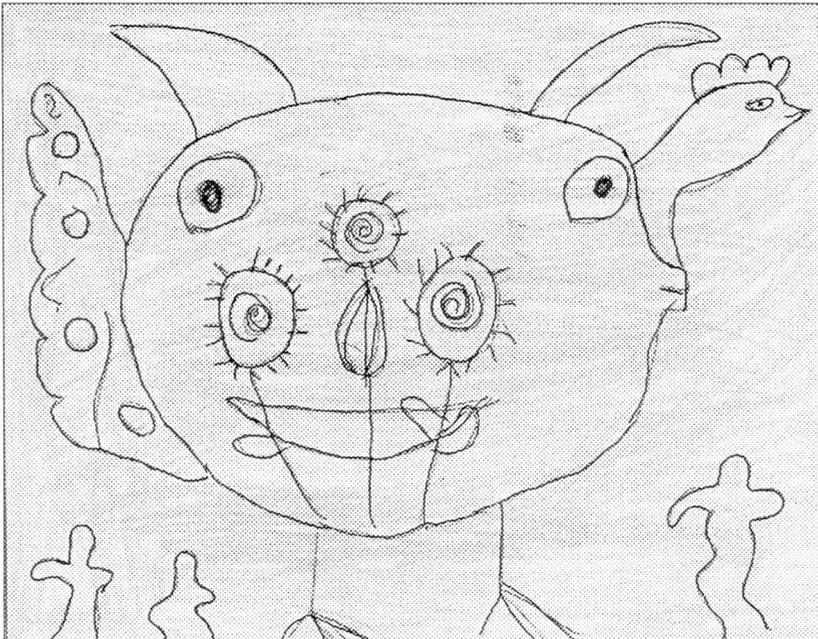
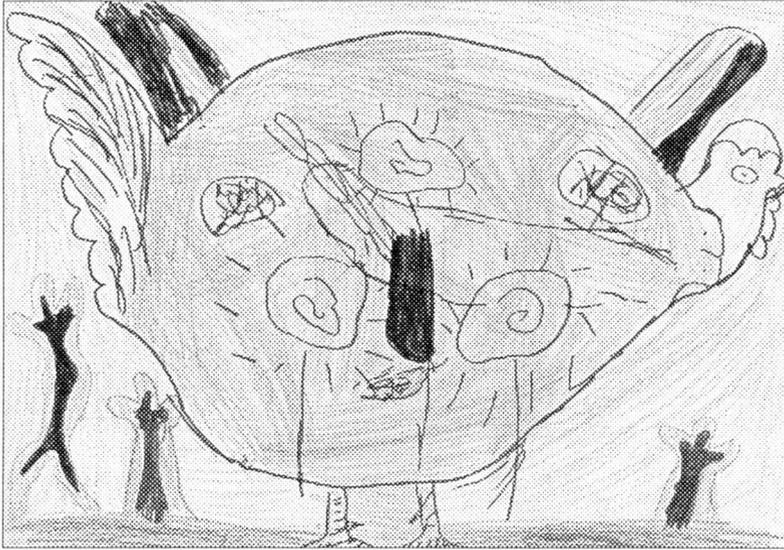


Fig. 7: Picture of a fourth grader having watched Picasso at work. The boy produces flowers, fish, hen and cat (including the three figures in the foreground).



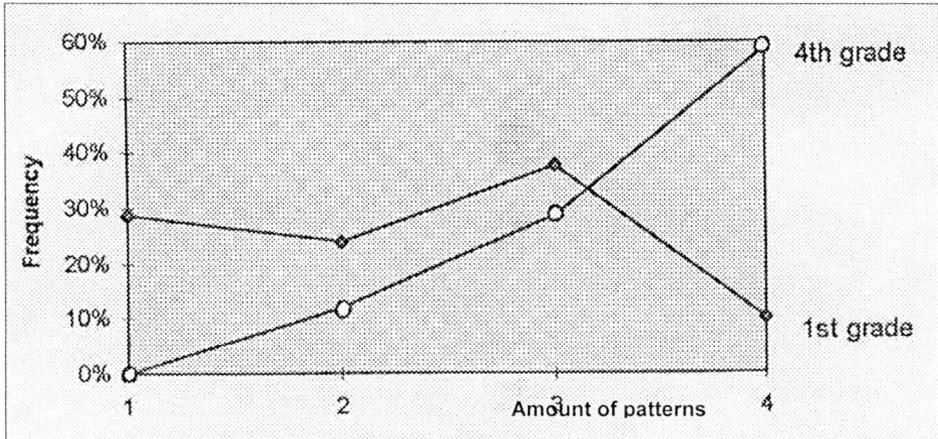
Theoretically the children had a choice: either they could simply repeat what they had done two weeks before, perhaps elaborating on it here and there, hereby demonstrating a better understanding of the details. Or they could try to follow Picasso's procedure. And indeed that is just what many of them did, all the more the older they were: After having had the opportunity to watch the creation of the picture, 48 % of the first graders (the 6 and 7 year-olds) focused on one or more of the other configurations in Picasso's picture. 61 % of the second graders and 82 % of the fourth graders did so too. The task was by no means an easy one, even when given a procedural instruction. Table 2 shows that under a procedural instruction 30% of the first graders failed to follow the task demand. They drew whatever occurred to them. And only 60% of the fourth graders managed to bring all four objects into their drawing. .

Table 1: Differences in tackling the problem according to the age of the pupils having seen Picasso at work

	1st grade	2nd grade	4th grade
Sticking to the final state of Picasso's picture	52%	39%	17%
Extending the final state by taking up other patterns (flowers, hen, fish)	48%	61%	82%
	n = 21	n = 23	n = 17

Having seen the emergence of the picture:

Table 2: Amount of objects (flowers, fish, hen, cat) drawn after the procedural instruction by different age groups

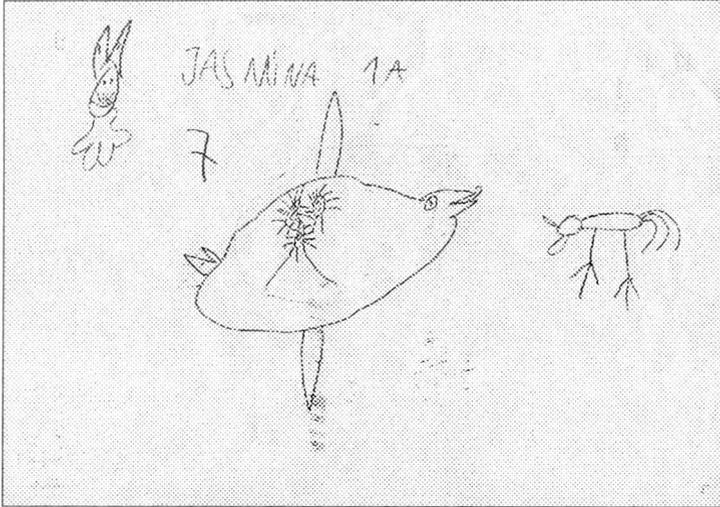


## 2. Unexpected results:

Within a cognitive frame of reference children's drawings are used to understand how children think and solve problems. And since Jacqueline Goodnow wrote her book, "Children's Drawings" (1977), we have learned to recognize certain properties of drawings as indicative for a particular structure of the child's mind. According to Goodnow young children usually try to overcome the well-known difficulties of space and place by applying the following principles:

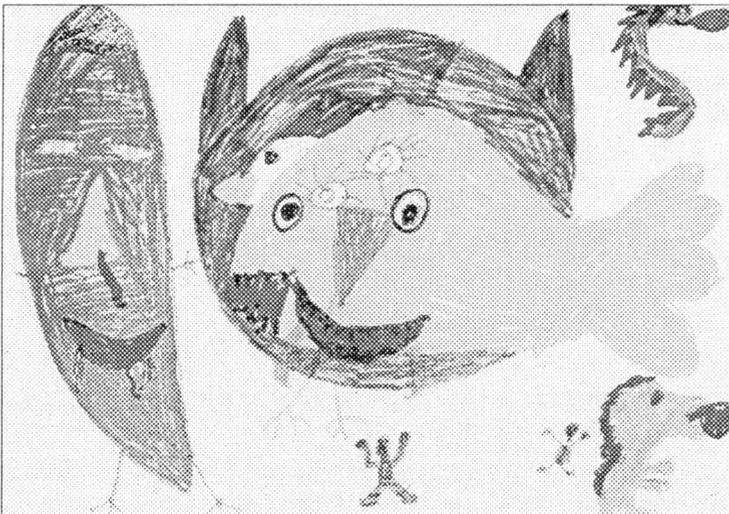
"To each its own boundary" and "to each its own space" (p. 44). If this is so, and if a drawing is composed of separate units, it seems to represent a different kind of thinking compared to the child's later use of all embracing lines. In the latter case, the child no longer constructs a list of parts, but rather a number of interactive relationships *between* parts, thus representing a higher level of thinking. Fig.8 represents an example from our Picasso material from a first grader for the *additive* stage. After having watched the film, the child manages to reproduce all the objects, but only by rendering each separately. Each object has been clearly separated from

Fig. 8: Picture of a first grader having watched Picasso at work: Additive stage.



the others. Space seems to be the organizational principle. At the other end of the scale, let us compare the achievement of a fourth grader, a ten year old boy, with his very elaborate interlocking of objects (Fig. 9). His painting contains all the objects from Picasso's picture, intricately interwoven, thereby showing their interdependence even more clearly and emphatically than Picasso did! If you take one of the objects away, you would no longer understand the others in the same way. That is a fantastic achievement! Of course I expected to see differences within the age groups, but not to this extend.

Fig. 9: Picture of a fourth grader having watched Picasso at work: A perfect integrative achievement (better than Picasso did), plus some esthetical enrichments.



#### IV. Discussion

What do we make of these results? Of course we expected to see an increase in richness by age, but we were surprised at the extent of this relationship. If they would hold true for a larger number of subjects and with a different material, they would clearly indicate that a *procedurally* presented task allows for far more differentiated insight into a person's performance capacity than an instruction type that presents the pattern to be copied as a static object. Consequently, the main diagnostic question should no longer be aimed solely at the reproductive quality of a given configuration achieved by a person, but rather at that person's capacity to improve on a task when given the chance with procedural instruction.

In other words, our goal is *to change our common diagnostic focus by incorporating learning opportunities into our psychodiagnostic inquiries*. Are we not oftentimes in danger of taking a person's drawing as undeniable proof of his drawing capacity – not allowing for the possibility that it may have been the instruction which limited his performance and therefore our insight? Therefore I strongly recommend that when we carry out our diagnostic questioning, we include an opportunity to gather information of a person's learning capacity by means of procedural instruction.

I admit that such an idea is very foreign to our diagnostic tradition. We are used to taking whatever kind of achievement a drawing offers us by its face value. This is true even if we are prepared to consider text-context conditions, serial position effects and the like, which belong to a dynamic interpretation such as Robert Heiß introduced into Personality Psychology (see Groffmann & Wewetzer 1968) or István Hárđi proposed for a psychodiagnostic analysis of drawings (2002). But if we are expected to make judgements not only about a person's current status, but of a prognostic character, we must take a person's *learning capacity* into consideration. Could we not then imagine how to complete the classic projective drawing instructions (draw a person, a tree, a house, etc.) with a procedure in which our client is exposed to a short video-clip demonstrating the process by which the instructor creates the relevant pattern? Perhaps our interest should then focus on the *amount and kind of progress* our client can achieve when we show him how to proceed step-by-step?

There was something else which really surprised me. It was the extent to which the first graders produced interactive arrangements within their drawing reproductions after being given a procedural instruction – and this in spite of the difficulty to deal with two final states within the experiment (see fig. 4 & 5). I think these findings merit further study. If they could be confirmed using different material, then I think we would have to revise our understanding of how a child's mind develops. "Knowing that" has long been considered to be of primary importance in a child's development and in our teaching, instead of "knowing how". Our results challenge such a notion. "Knowing that" quite obviously does not lead to "knowing how". We found that our children, particularly the younger ones, achieved better results when we instructed them by means of "knowing how". "Knowing that"

requires a translation into the action of drawing; whereas, “knowing how” seems to be a short-cut to establish improved graphic competence. In so many cases children of elementary school age seem to reflect the additive stage in their drawings (see fig. 8). We are now cautioned to interpret this as a direct reflection of their mental age or their mental organization. If we consider our results, I am then inclined to ask if this is because we do not instruct our children in a more suitable way. Such a way that answers their ever-present question: “How did you do that?”

What can pupils learn from the part of the Picasso film shown to them? My answer is simple and straightforward. They may see how enormously they can improve their drawing skills by watching someone else in the process of creating, when given the chance. But how do art teachers guide their pupils? What do they think is more important: “Knowing that” or “Knowing how”? Their pupils’ drawings and paintings might be able to tell them – and provide them with a fresh look at their teaching philosophy. (By the way, to music teachers it is common practice to invite pupils to imitate them!).

### V. Summary:

Does children’s level of achievement in creative drawing or painting change in relation to instructional styles? And if so, in what way? The results of this pilot study show that:

1. The task presented in a *procedural* manner allowed more differential insight into the child’s performing capacity than an instructional approach which exposed a pattern to be copied as a *static* object.
2. The younger children in particular exhibited very interesting differences in their creative performances (additive vs. integrative).

Implications of these findings are discussed:

1. In the light of learning opportunities an instructional style may offer or prevent in a psychodiagnostic setting and
2. In the light of teaching styles used to teach art in schools.

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My thanks go to Mrs Christa Boston, Konrektorin, Jahn-Grundschule Brhl/Baden, Germany, who did all the experimental work with the pupils and to the pupils who enthusiastically did their best to follow the instructions!

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