

Emotional Qualities of Colours Added to Humorous Illustrations

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ABSTRACT

Many humorous illustrations concerning office work and published in Italy in national periodicals and specific books were firstly collected. Three typical illustrations were selected and arranged in four versions: black and white; with alarming and serious colorations or reassuring and playful ones, or mixed hues, using acrylics. Each version was evaluated individually and given a humour score from 0 (minimum) to 10 (maximum), by 116 University students or ministry employees of both genders. The hypothesis was that average humour scores would be significantly greater with the reassuring and playful colorations, lower with the alarming and serious hues, and intermediate with the mixed colourings or black and white versions. The colorations are based on indications from works by Bonaiuto (1978), Biasi & Bonaiuto (2006), Biasi, Bonaiuto & Giannini (2007), Biasi, Bonaiuto & Levin (2014). The statistical analysis includes means and standard deviations, Student t test and others. The results fully confirmed the working hypotheses.

KEYWORDS

Emotional Qualities, Colours, Humorous illustrations, Reassuring and playful colours, Alarming and serious colours

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Prof. **Paolo Bonaiuto** is, from 1975, Full Professor of General Psychology at "La Sapienza" University of Rome. He has made many scientific contributions on psychology of perception and motivation. He has distinguished "alarming colours" and "reassuring colours", conducting experiments on their functional effects. He has promoted studies of the psychology of visual arts, architecture, dance and humor.

1. INTRODUCTION

Some hundred humorous illustrations concerning office work and published in Italy in national periodicals and specific books were firstly collected. These images were analysed by the research group through frequency analysis in order identify the most recurrent work themes. The next step was to extract three illustrations to be used for the study, which involved adding experimental colorations. A total of twelve experimental boards were thus arranged – three in black and white, three with “reassuring and playful” colorations, three with “alarming and serious” hues, and three with mixed or ambiguous colourings. These last are useful for comparison because they may generate intermediate effects.

We should focus on contrasting groups of physiognomic properties placed in a configuration and on colours. These properties are those corresponding to adjectives like “reassuring”, “relaxing” and “protective” or, on the contrary, “alarming”, “worrying” and “threatening”. These adjectives are part of the group of terms that Metzger [1] called “valences” or “bridging qualities”, taken to mean the quality of the relationship between the phenomenal ego and objects, events, persons or environments. Moreover, meanings such as “playful”, “cheerful” or, on the contrary, “serious” or “sad”, belong to the category of emotional tonalities, for which configurations – and colours – appear to bring out coexisting feelings and emotions [2]. In addition, the terms “playful” and “serious” have common nuances with the area of intentional qualities in the sense that the corresponding

images bring out apparent intentions. Studies on this topic have been carried out by Hippus [3] and especially by Arnheim [4]; as well as by others.

In relation to this, in the 1970s we set up a new test in order to evaluate expressive sensibility. The test was called “*Linear Forms and Coloured Bands*” by Bonaiuto, [5], and consisted of 50 black-and-white boards and 50 full-colour boards concerning the relations between positive, neutral or “negative” affective meanings. After the early 1980s, experiments were carried out in Rome on perceptual defence or facilitation processes triggered by using models of incongruent and paradoxical buildings, connected to simultaneous verbal or non-verbal messages that were either of the stressing or relaxing kind [6].

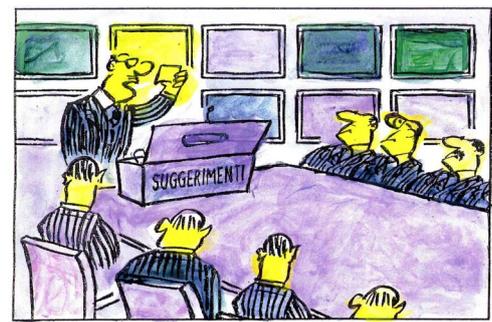
2. HYPOTHESIS AND PROCEDURE

The hypothesis envisaged that the “alarming and serious” colorations would trigger certain perceptual defence mechanisms in the person, such to inhibit the humorous experience. The “reassuring and playful” hues would instead give rise to an effect of facilitating humour, for which the average scores obtained would be significantly higher compared to those of the other versions. We shall now describe the chosen illustrations.

The first illustration (Figure 1) shows a business meeting in which seven employees are sitting at the table and looking towards the manager, who is standing up and has extracted a note from the suggestion box at the end of the table; he says, “Here is a really excellent one: it’s mine!” The



— Qui ce n'è uno veramente ottimo: è il mio!



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— Qui ce n'è uno veramente ottimo: è il mio!



— Qui ce n'è uno veramente ottimo: è il mio!

Figure 1 - (on the left) The “black and white” board

Figure 2 – (on the right) The board with “alarming and serious” hues

Figure 3 - (on the left) The board with “reassuring and playful” colorations

Figure 4 – (on the right) The board with “mixed or ambiguous” colourings.

scene contradicts the common expectation that in a meeting people have to discuss things in order to arrive at a joint decision. Paradoxically, the meeting seems to be a pure formality: any suggestions made by the seven employees of the meeting are not taken into consideration at all.

Here are the four chromatic versions of this first board which we have called "Suggestions" (Figure 2-4).

The second board (Figure 5) shows five employees sitting at a meeting table. Standing up at one end is the manager with a smoking pistol in his hand. One of the employees is slumped on the table and the manager says, "Is

there anybody else here who does not approve my idea?"

The scene contradicts the normal expectation that a business meeting does not envisage physical violence. Here are the four chromatic versions of this second board, which we have called "Shot" (Figure 6-8).

The third board (Figure 9) shows two people sitting on a park bench. The one on the right is smartly dressed while the one on the left has tattered clothes and a broken hat. The latter says, "... And so, when the manager said 'Correct me if I'm wrong', I corrected him. That's why I'm here".

The scene contradicts the expectation that a good natured conversation cannot have tragic

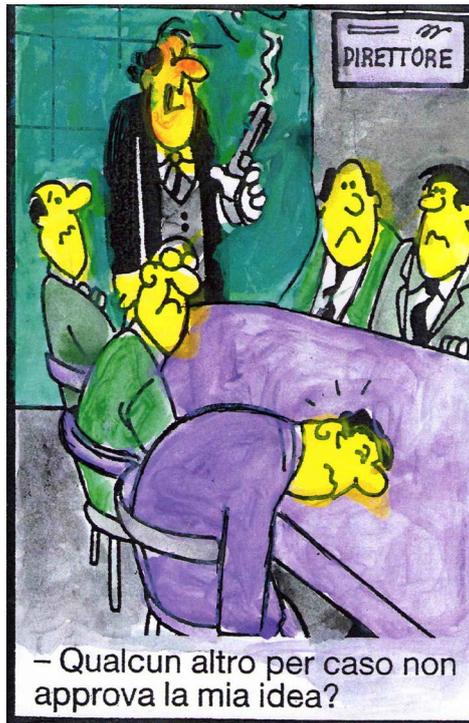


Figure 5 - (on the left) The "black and white" board

Figure 6 - (on the right) The board with "alarming and serious" hues

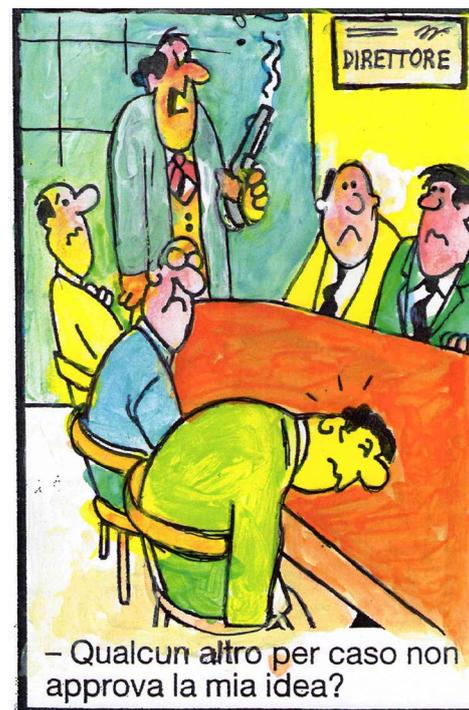
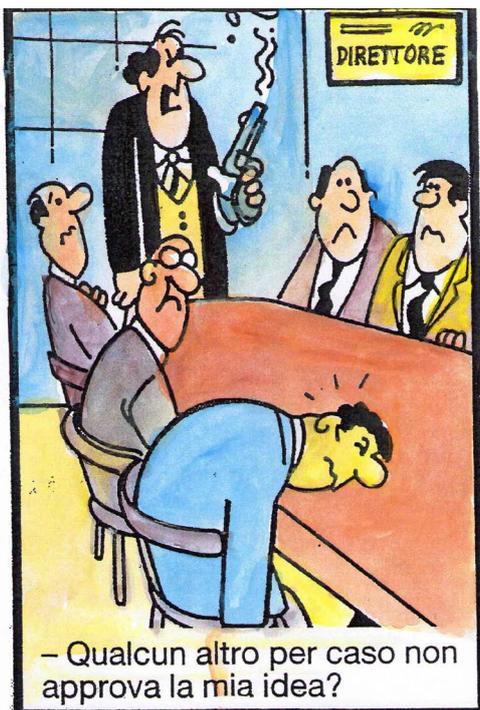


Figure 7 - (on the left) The board with "reassuring and playful" hues

Figure 8 - (on the right) The board with "mixed or ambiguous" hues

consequences. Here are the four chromatic versions of this third board, which we have called "Bench" (Figure 10-12).

The twelve tables were individually evaluated one at a time by a group of 116 adult participants of both genders (58 males and 58 females),

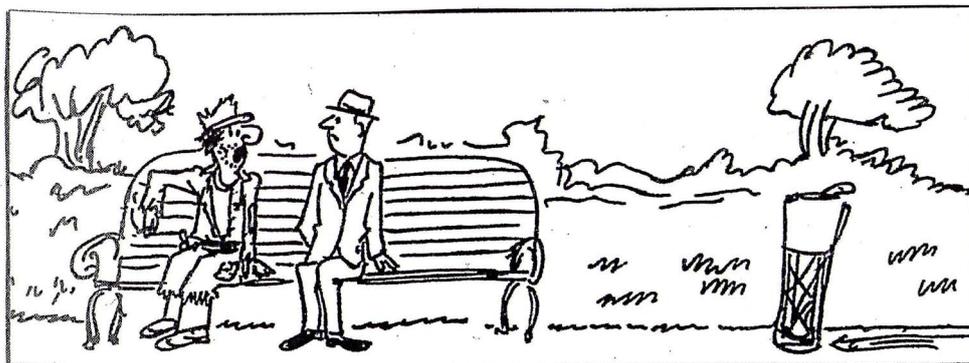


Figure 9 - The "black and white" board

— ...e così, quando il direttore disse «Correggetemi se sbaglio», io lo corressi. Ecco perché mi ritrovo qui.



Figure 10 - The board with "alarming and serious" hues

— ...e così, quando il direttore disse «Correggetemi se sbaglio», io lo corressi. Ecco perché mi ritrovo qui.

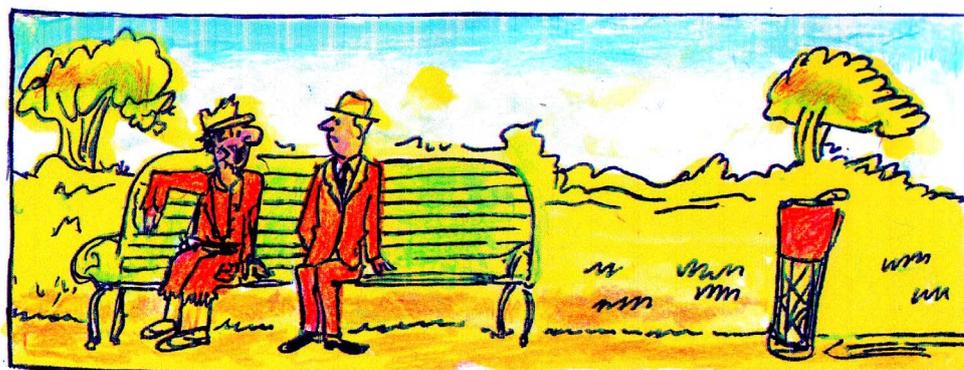


Figure 11 - The board with "reassuring and playful" colorations

— ...e così, quando il direttore disse «Correggetemi se sbaglio», io lo corressi. Ecco perché mi ritrovo qui.

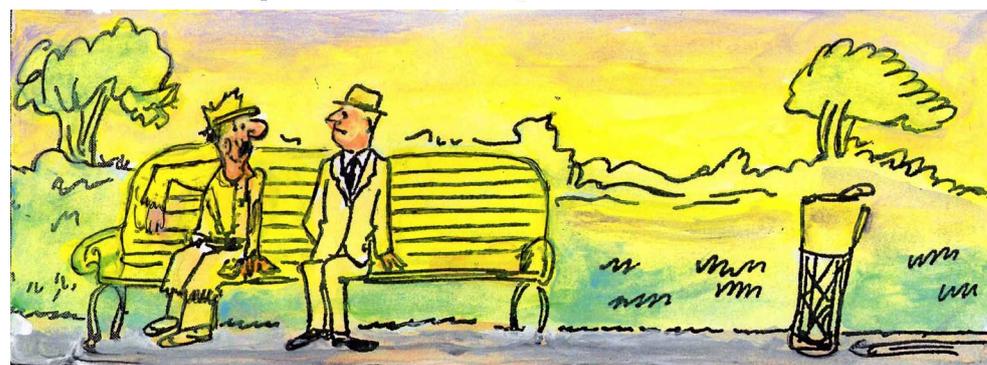
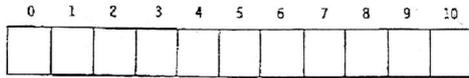


Figure 12 - The board with "mixed or ambiguous" colourings

— ...e così, quando il direttore disse «Correggetemi se sbaglio», io lo corressi. Ecco perché mi ritrovo qui.

aged 18-50 years. Each participant evaluated each illustration in the different versions and colorations. The coloured boards were presented randomly after the black and white version. For each image, the participant gave a humour score on an 11-step scale from 0 (minimum level of humour) to 10 (maximum) (Figure 13). For statistical analysis, the means, standard deviations (s.d.) and Student t test were calculated for each situation.



3. RESULTS

The results appear to confirm the research hypothesis. The mean humour scores vary as expected: systematically, the “alarming and serious” versions obtained lower humour scores compared to the “reassuring and playful” versions, thereby confirming the aforesaid hypothesis. There were no significant gender differences.

Here are the tables with the quantitative results obtained (Tables 1, 2 and 3).

	Average scores	S.D.
Allarming and Serious Version	4.41	2.00
Reassuring and Playful Version	5.75	2.23
Mixed Version	5.64	2.07
Black and White Version	5.16	2.48

	Average scores	S.D.
Allarming and Serious Version	4.74	2.17
Reassuring and Playful Version	6.50	2.40
Mixed Version	5.83	2.21
Black and White Version	5.87	2.36

	Average scores	S.D.
Allarming and Serious Version	4.66	2.15
Reassuring and Playful Version	5.00	2.09
Mixed Version	5.18	1.99
Black and White Version	5.09	2.44

There is a strong significant inhibiting influence of the “alarming and serious” colorations compared to the “reassuring and playful” ones for all the boards: “Suggestion” (t 115= 9.36; p<0.001); “Shot” (t 115= 12.37; p<0.001) and “Bench”

(t 115= 2.25; p<0.02).

The “alarming and serious” boards appear to significantly inhibit humour also in comparison with the black and white boards: “Suggestion” (t 115= 4.84; p<0.001); “Shot” (t 115= 7.74; p<0.001); “Bench” (t 115= 2.92 ; p<0.01).

The mean humour scores in the humorous illustrations with “reassuring and playful” colorations are significantly higher than those of the black and white version with regard to the boards “Suggestion” (t 115= 4.86; p<0.001) and “Shot” (t 115= 6.53; p<0.001).

Finally, there were no differences in mean humour scores between the black and white versions and mixed versions; the only significant difference was found in the board entitled “Suggestion” (t 115= 3.81; p<0.001).

4. COMMENTS AND CONCLUSIONS

The experimental study confirmed the starting hypothesis, demonstrating that the colorations with a strong emotional valence can significantly influence humour perception. Two main ranges of hues were recognised: one which includes colorations defined as “reassuring and playful”, consisting of colours such as pink, orange, light green, pale yellow, sky blue and other pastel hues; while a second range defined as “alarming and serious” includes such colours as black, grey, olive green, purple, dark blue and possible red and yellow stripes [5] [7] [8].

It was hypothesised and then statistically confirmed that this influence moves in two opposite directions: “reassuring and playful” colorations have a “facilitating” effect on humour perception, i.e., they favour humorous experience. The “alarming and serious” colorations instead have an opposite effect on humour because they tend to hinder and inhibit humorous experience.

In line with the reference contributions and with the working hypothesis that guided the research, we could thus confirm that the humorous effect is significantly greater when the illustrations are presented in the “reassuring and playful” colour versions rather than in the “alarming and serious” ones.

This hypothesis was precisely confirmed in all three cases examined in the study by systematically obtaining higher means for humour with the “reassuring and playful” colorations in comparison with the “alarming and serious” ones. The mixed (or ambiguous) hues coherently gave rise to intermediate scores.

This shift in humorous experience can be explained in terms of an increase or decrease in emotional conflict experienced by the ordinary beholder: the “reassuring and playful” colorations trigger positive emotions in the beholder and enable the feeling of reassurance which in

Figure 13 - Reproduction of the self-evaluation scale for assessing humorous experience, from 0 (minimum) to 10 (maximum)

Table 1 - Mean scores and standard deviations of the 116 participants with regard to the board “Suggestion”

Table 2 - Mean scores and standard deviations of the 116 participants with regard to the board “Shot”

Table 3 - Mean scores and standard deviations of the 116 participants with regard to the board “Bench”

turn facilitates emotional detachment; these necessary components particularly facilitate humorous experience. On the other hand, "alarming and serious" colorations trigger negative emotions which stimulate the onset of psychic defences on the part of the beholder. These defence mechanisms increase conflict and therefore inhibit humorous experience.

As explained in detail in the theoretical model by Bonaiuto and Giannini [9] cf. also Bonaiuto [10]; Biasi, Bonaiuto and Levin [11] [12], humour springs from the perception of an anomaly or a paradox, that is, something which strongly contradicts the beholder's expectations. Faced with such incongruent and bizarre images, the individual manages to smile and experience humour thanks to certain psychological ingredients. The main ones are emotional detachment with regard to the observed incongruity, and thus experiencing feelings of reassurance and protection, and feelings of superiority, which all enable the beholder to reprocess in a comic and humorous manner what is initially perceived as conflictual. This role of humour as a defence mechanism in the face of conflictual and partly frustrating situations has been amply dealt with by various authors, starting with Freud [13], and has been recently discussed with experimental demonstrations by Bartoli and Bonaiuto [14] and by Biasi [15].

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CONFLICT OF INTEREST

I disclose any actual or potential conflicts of interest including financial, personal or other relationships with other people or organizations within three years of beginning the submitted work that could inappropriately influence, or be perceived to influence, the work. I declare explicitly that potential conflicts don't exist.

NOTE

Dr. Sara Longo helped in finding original humorous illustrations in black and white and some of the participants of the experiment.

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