

CHAPTER 6

INTEGRATED ANALYSIS

This body of work examines experiences using bilateral art with both individuals and dyads. Chapters 4 and 5 provide detailed descriptions via case studies of each intervention instance along with images of clients resultant art products. While Chapters 4 and 5 provide descriptive, qualitative data that argue for the effectiveness of bilateral art, this chapter coalesces these individual case studies and identifies additional quantitative patterns that may inform future effectiveness studies. The questions that are addressed include:

- Was handedness relevant? Was there a preferred hand --- dominant or non-dominant --- for the association of positive(negative) elements?
- For those interventions that were scaled pre- and post-intervention, were there significant changes in the strength of client beliefs in positive and negative elements that argue for effectiveness, i.e, was the mean positive (negative) pre-intervention scaling less (greater) than the mean positive (negative) post-intervention scaling?
- For those interventions that were scaled pre- and post-intervention, was the mean change in the scalings for the positive elements different from the mean change in the scalings for the negative elements?
- Did color selection for expression of positive elements differ from color selection for expression of negative elements?

Because the images appearing in client bilateral art drawings were responses to highly individual elements, no content coding was attempted. The remainder of this chapter addresses these questions.

Handedness and Association with Positive and Negative Elements

Was handedness relevant? Was there a preferred hand --- dominant or non-dominant --- for the association of positive(negative) elements?

In considering questions of handedness, all of the 31 intervention instances described in Chapters 4 and 5 were considered. Table 6.1 provides data identifying the handedness of each client/dyad member. Of the 11 individuals, ten were right handed and one was left-handed. While this sample's ratio of right to left-handedness is consistent with that of larger populations, it is certainly not sufficiently large to consider the relevance of handedness.

Additionally, Table 6.1 identifies the associations of hand to positive and negative elements. Of the 31 intervention instances, the positive element was associated with the dominant hand 14 times and the negative element was associated with the dominant hand 17 times. The client in Case 1 with nine intervention instances was the only client who might reveal a significant preference for association of elements with dominant or non-dominant hand. But the preference for dominant or non-dominant hand is balanced for that client, just as it is for the entire group. The data do not suggest a preference; however, the data are limited and additional studies could provide more definitive answers.

Table 6.1

Association of opposing positive and negative elements with dominant and non-dominant hands

	Dominant hand	No of interventions	Dominant -- non-dominant hand associated with positive element
Individuals			
Case 1	Right	9	5 --- 4
Case 2	Right	3	1 --- 2
Case 3	Right	1	0 --- 1
Case 4	Right	3	1 --- 2
Case 5	Left	3	1 --- 2
Case 6	Right	4	1 --- 3
Case 7	Right	1	1 --- 0
Case 8	Right	2	1 --- 1
Dyads			
Case 1	Right	1	1 --- 0
Supervisor 1	Right	1	1 --- 0
Supervisee 1	Right	1	0 --- 1
Supervisor 2	Right	1	0 --- 1
Supervisee 2	Right	1	1 --- 0
Total		31	14 --- 17

Comparison of Pre- and Post-Intervention Scaling

For those interventions that were scaled pre- and post-intervention, were there significant changes in the strength of client beliefs in positive and negative elements that argue for effectiveness, i.e, was the mean positive (negative) pre-intervention scaling less(greater) than the mean positive(negative) post-intervention scaling?

Only 16 of the 31 intervention instances were scaled, a consequence of the evolving nature of the intervention. Thus, in considering questions associated with scale values and changes in scale values, only the 16 scaled intervention instances described in Chapters 4 and 5 were used.

Pre- and post-bilateral art intervention scale values from 1-7 for the 16 scaled instances are shown in Table 6.2. The strength of belief in the positive element remained the same or increased in all 16 intervention instances and increased in 13 (81%) of the 16 instances. More

significantly, the strength of belief in the associated negative element decreased in all 16 (100%) of the intervention instances.

Table 6.2

Strength of belief in opposing positive and negative elements pre- and post-bilateral art intervention

	Number of interventions scaled	Scaling positive element		Scaling negative element		Positive element scaling change	Negative element scaling change
		Pre	Post	Pre	Post		
Individuals							
Case 1	3	5.5	5.5	5.5	1	0	-4.5
		3.5	5	6	2	1.5	-4
		5	5	8 ^a	6	0	-2
Case 2	0	-		-		-	-
Case 3	0	-		-		-	-
Case 4	1	4	5	3	2	1	-1
Case 5	3	4.5	6	7	6	1	-1
		1	3.5	7	6	2.5	-1
		6	7	7	4	1	-3
Case 6	1	3.5	5.5	4.5	2.5	2	-2
Case 7	1	6	7	5	3	1	-2
Case 8	2	3	5	5	3	2	-2
		2	6	7	1	4	-6
Dyads							
Case 1	1	7	7	2	1	0	-1
Supervisor 1	1	2	7	6	2	5	-4
Supervisee 1	1	5	6	4	2	1	-2
Supervisor 2	1	3	5	5	2.5	2	-2.5
Supervisee 2	1	5	6	6	3	1	-3
Total	16						

Note. Scale is 1 to 7 where 1 means element is “not true for me at all” and 7 means element is “completely true for me.”

^a Client unable to respond within requested 1-7 scale.

Table 6.3

Means and standard deviations for strength of belief in positive element pre and post bilateral art intervention, strength of belief in opposing negative element pre and post bilateral art intervention, change in strength of belief in positive element, and change in strength of belief in opposing negative element.

	Scaling positive element		Scaling negative element		Positive element scaling change	Negative element scaling change
	Pre	Post	Pre	Post		
Mean	4.1	5.7	5.5	2.9	1.6	-2.6
Standard Deviation	1.7	.98	1.6	1.7	1.4	1.4

The results, shown in Table 6.3, indicated that the mean strength of belief in the positive element post-intervention ($\underline{M} = 5.7$, $\underline{SD} = .98$) was greater than the mean strength of belief in the positive element pre-intervention ($\underline{M} = 4.1$, $\underline{SD} = 1.7$). The mean difference between the post- and pre-intervention 7-point scales for strength of belief was 1.6 points, although there was significant overlap in the distributions, as shown in the box plots in Figure 6.1.

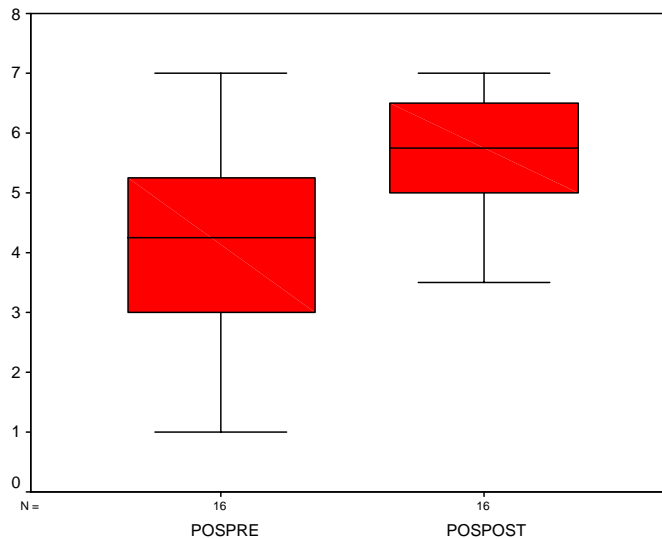


Figure 6.1 Distribution of pre and post intervention scalings of strength of belief in the positive element.

Similarly, the results, shown in Table 6.3, indicated that the mean strength of belief in the negative element post-intervention ($\underline{M} = 2.9$, $\underline{SD} = 1.7$) was less than the mean strength of belief in the negative element pre-intervention ($\underline{M} = 5.5$, $\underline{SD} = 1.6$). The mean difference between post- and pre-intervention 7-point scales was -2.6 points, although there was significant overlap in the distributions for the two scalings, as shown in the box plots in Figure 6.2.

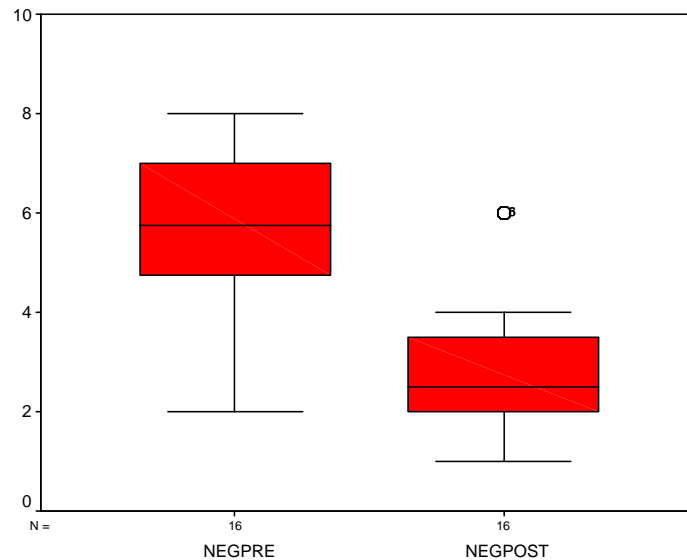


Figure 6.2 Distribution of pre and post intervention scalings of strength of belief in the negative element.

Comparison of Change in Scaling of Positive and Negative Elements

For those interventions that were scaled pre- and post-intervention, was the mean change in the scalings for the positive elements different from the mean change in the scalings for the negative elements?

The results, shown in Table 6.3, indicated that the mean change in the strength of belief in the positive element ($\underline{M} = 1.6$, $\underline{SD} = 1.4$) was less than the mean change in the strength of belief in the negative element ($\underline{M} = 2.6$, $\underline{SD} = 1.4$). The mean difference between change in the strength of positive and negative elements was -1.0 points, although there was significant overlap in the distributions for the two measures, as shown in the box plots in Figure 6.3. This

result is congruent with the investigator’s intuitive belief that the negative beliefs represented more distorted viewpoints and that a client’s strength of belief in the distorted element would change more than the belief in the more logical positive element.

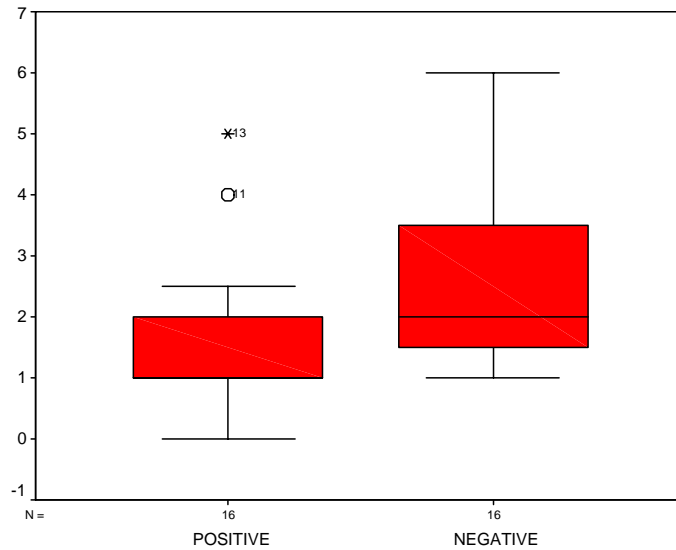


Figure 6.3 Distribution of changes in scalings of strength of belief in opposing positive and negative elements.

Comparison of Positive and Negative Element Color Selections

Did color selection for expression of positive elements differ from color selection for expression of negative elements?

While the discussion of change in scalings provides evidence of intervention effectiveness, this section’s discussion of color selection is a form a data triangulation. Color and content of art work are reflective of the element being expressed and provide confidence that client/dyad artwork did, in fact, reflect the identified positive and negative elements. As mentioned earlier, content was not coded due to the varying nature of the expressed elements. However, Table 6.4 provides color selections for positive and negative element responses for all 31 intervention instances. In cases where more than one color appears in the art work, they were

recorded in order of dominance (as perceived by the investigator) and the most dominant color is used for coding purposes.

Table 6.4

Color selections for response to opposing positive and negative elements

	No of interventions	Colors (Positive element)	Colors (Negative element)
Individuals			
Case 1	9	Green Gray Green/yellow Flesh Blue Purple/flesh/black Green/yellow Brown (chocolate)	Purple Red Pink/black Brown Red Brown/blue Gray Gray
Case 2	3	Green Red Black	Lt blue Red Black
Case 3	1	Red	Red
Case 4	1	Blue	Green
Case 5	3	Red Black Green	Purple Black Black
Case 6	4	Black Flesh Purple Lt blue Lt blue Lt blue	Purple Flesh Purple Blue Brown -
Case 7	1	Lt blue	Black
Case 8	2	Green Black/white Red	Purple Brown Yellow/brown
Dyads			
Case 1	1	Black	Black
Supervisor 1	1	Orange/green/blue	Black
Supervisee 1	1	Lt blue	Black
Supervisor 2	1	Yellow	Black
Supervisee 2	1	Yellow/orange	Black
Total	31		

Tables 6.5 provides frequency distributions of color selections for response to positive elements. It is perhaps not surprising that 42% of the positive responses used blue (22.6%) and green (19.4%). Blue(lt) and green are both colors that are often associated with serene, happy mood states. Adding black(19.4%) and red/pink(12.9%) into the mix covers 73.3% of the positive responses. It is worth noting that of the positive responses using black (6), 50% used black for the corresponding negative response. Similarly, of the positive responses using red (4), 50% used red for the corresponding negative response. Because this study relies upon case notes, it is not possible to determine if these selections are completely reliable or, if perhaps, the protocol was implemented in such a way that the client was able to avoid making a second selection. Refinements to the protocol can be easily implemented as described later in this section.

Table 6.5
Frequency distribution of positive element color selections

Positive Elements		
Colors	Frequency	Percent
Lt blue/blue	7	22.6
Green	6	19.4
Black/gray	6	19.4
Red	4	12.9
Flesh	2	6.5
Purple	2	6.5
Yellow	2	6.5
Brown	1	3.2
Orange	1	3.2
Total	31	100

Tables 6.6 provides frequency distributions of color selections for response to negative elements. Similarly, it is not surprising that 83.4% of the negative responses used black/gray (36.7%) purple (16.7%), red/pink(16.7%), and brown (13.3%). Black, purple, and brown are

often associated with negative, depressed mood states and red is often associated with angry, aggressive mood states (Malchiodi, 1998; Furth, 2002).

Table 6.6
Frequency distribution of negative element color selections

Negative Elements		
Colors	Frequency	Percent
Black/gray	11	36.7
Purple	5	16.7
Red/pink	5	16.7
Brown	4	13.3
Blue	2	6.7
Green	1	3.3
Flesh	1	3.3
Yellow	1	3.3
Total	30	100

Figure 6.4 clearly illustrates the differences in frequency of color sections for expression of positive and negative elements. Blue, green, and to a far lesser extent yellow, and flesh were more popular colors for expression of positive elements. Black, purple, and brown were more frequent selections for expression of negative elements. Red was chosen for expression of negative elements only slightly more often than for expression of positive elements.

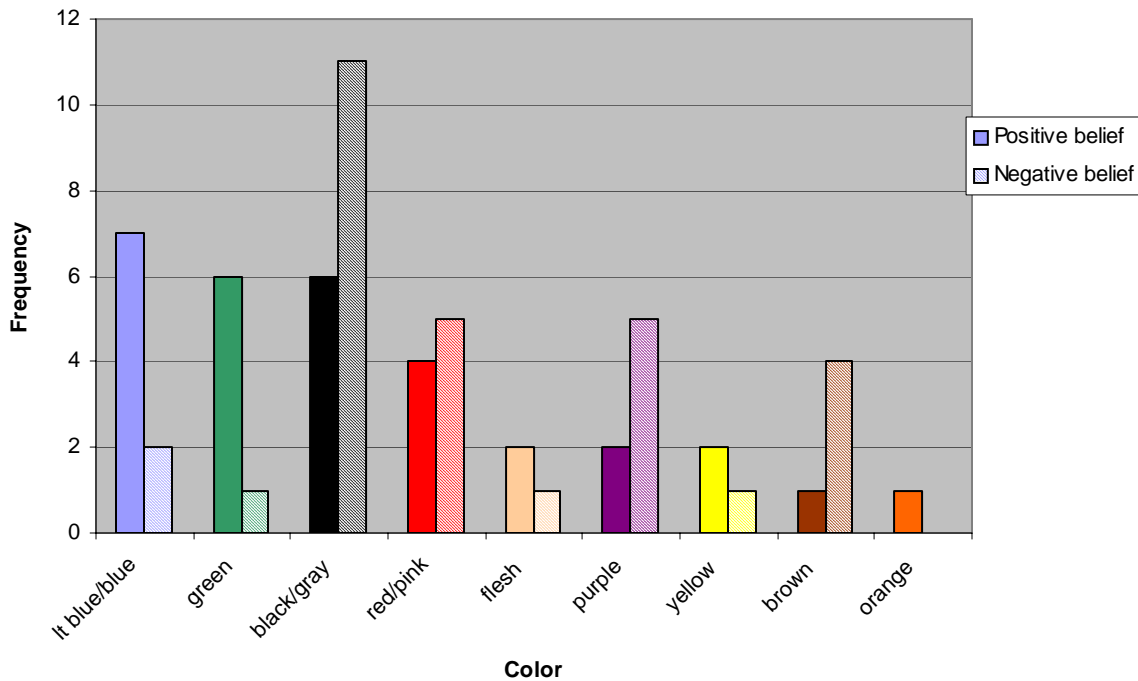


Figure 6.4 Histogram comparing positive and negative element color selections.

It would be interesting to explore color selections further. Recommendations for such an effort include the following:

- Consider restriction to one color per response. This could be implemented directly by instruction or subtly by simply removing the marking pens once one has been selected.
- Ensure that a pen is selected at the beginning of each response. This will ensure that identical color selection for positive and negative elements is not due to inertia associated with selecting a new marking pen.
- Provide a consistent and small set of colors.
- Query subject about personal meanings associated with selected colors.

Summary

The chapter coalesces results of the experiences using bilateral art described in the case studies of Chapters 4 and 5 and explores handedness, changes in strength of belief in intervention elements, and color selection. Data were insufficient to explore the relevance of handedness, however it is worth noting that there appears to be not preference for dominant hand association with either positive or negative elements. Analysis of the 16 interventions that were scaled revealed increases in the strength of belief in positive elements as well as decreases in the strength of belief in negative elements. These findings, argue for effectiveness of the intervention and for further study. Additionally, analysis of these 16 instances indicated that changes in the scalings of negative elements were greater than the changes in the scalings of positive elements. Finally, an exploration of color selections for expression of positive and negative elements provided confidence that client/dyad artistic responses were, in fact, expressions of the identified positive and negative elements.