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The Epistemology of Analytic Cubism

I. Introduction

Analytic Cubism was central to the development of twentieth century art. It consists of the paintings Picasso and Braque created between 1908 and 1912. A principal influence of these works was the evolution in their style. Braque's »Viaduct at L'Estaque« of early 1908 commences the development. Picasso's »Ma Jolie« of early 1912 exemplifies its most advanced stage.

Contrasts between these two paintings illustrate five attributes toward which Picasso's and Braque's imagery evolved. They are:

(1) A minimum degree of realism[1]
(2) Shallow depth
(3) Fragmented and flattened forms
(4) Extensive passage
(5) A reduced palette

My purpose is to explain why the development of Analytic Cubism culminated in these particular features. This account will increase our understanding of what these influential paintings achieved.

I will show that three components of Structural Linguistics can contribute to this explanation and thereby to our understanding. Two are the concepts of »acceptability« and of an »environment« for a sign. Structural Linguistics investigates the environments for the signs of natural language. The third component is the certain manner in which this study develops.

Several critics have proposed that Analytic Cubism is an investigation of the signs for representation.[2] The above constituents of Structural Lin-

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[1] By »realism« I am speaking of the illusionistic depiction of the (supposed) visual appearance of one or more objects.

[2] Leo Steinberg interprets the paintings to be a »reflective analysis of *all* known formal devices. The whole inventory of space and body-building devices is up for trial.« [Steinberg(78), p. 126, his emphasis.] Rosalind Krauss takes Picasso and Braque to be investigating the »structure of the sign«.[Krauss, p. 273.] Edward Fry interprets the works to be an analysis of the »grammar of representation«.[Fry, p. 96.] Christine Poggi describes Picasso's approach as »self-consciously structural«.[Poggi, p. 27.] William Rubin finds him to be »exploring sequentially the more remote implications of one evolving language«.[Rubin (89), p. 26.] In contrast to Rubin I am maintaining that it is the exploration of the language that evolves, not the language itself.

guistics provide a more precise description of the type of analysis these commentators suggest.

I will show that specifically it is the environments of the signs that are being investigated. I will argue that the investigation being of this particular type accounts for the five features which characterize the culmination of Analytic Cubism's development.

Furthermore, I will use Structural Linguistics' concept of »acceptability« to establish that the progression of Analytic Cubism's investigation of the environments for the signs of representation is parallel to the progression of Structural Linguistics' investigation of the environments for the signs of natural language. This symmetry is part of the explanation of the five features.

My account of Analytic Cubism's evolution is philosophically relevant not only for aesthetics but also for epistemology. The reason is that we employ signs of representation in our acquisition of knowledge through visual perception. Philosophy's analysis of this process requires a description of the signs' structure. Analytic Cubism's investigation of the signs' environments and thereby of their structure is a significant contribution to this description.

II. *Structural Linguistics' Procedure*

Structural Linguistics employs a procedure to arrive at an analysis of the structure of a natural language's signs. The procedure proceeds from the fact that a sign occurs as a member of an arrangement of elements. The environments for a sign are those arrangements containing it which the language's fluent speakers consider to be acceptable.[3] The structure of a sign is a description of the types of environments for the sign.

Two dimensions of the procedure reveal the manner in which the analysis of a sign's environments develops. The first is that the procedure is designed so that it is applicable to unknown languages. Consequently it begins its investigation with a certain type of environment. It is one which occurs frequently and thereby is easier to discern.[4] Thus it has a higher degree of acceptability.[5]

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[3] Chomsky (57), p. 49. Harris, p. 31.

[4] Nida(62), p. 177, #25.

[5] Chomsky notes »Obviously, acceptability will be a matter of degree, along various dimensions.« He adds »The more acceptable sentences are those that are more likely to be produced, more easily understood, less clumsy, and in some sense more natural.« [Chomsky (65) pp. 10 and 11]
See Quine's »Progress on Two Fronts« and works referred to for a discussion of the investigation of unfamiliar languages from a philosophical point of view.

The procedure's second dimension is that each sign can occur in an indefinitely large number of types of environments. The set of a sign's possible environments includes not only ones with a higher degree of acceptability, but also those with the lowest degree. In order for Structural Linguistics' analysis to be adequate, it must provide for all of these types.[6] Thus to insure the accuracy of the investigation, it is necessary that the procedure be applied to a broad spectrum of kinds of environments.[7] This requires that it study those approximating the lowest degree of acceptability.

The progression of the investigation, therefore, takes a certain direction. As we have noted, it begins with more acceptable environments. Then in order to assure the accuracy of the structural analysis, it includes a wide diversity of types. This requires that it develop toward those environments which approach the limits of acceptability.[8] Consequently, most environments considered during the advanced stage of the investigation approximate the lowest degree of acceptability. One of the principal questions, then, at this level of the analysis is what are the parameters of acceptability.

In summary, Structural Linguistics' investigation of environments is a certain type: It evolves from the more to the least acceptable. I will argue that Analytic Cubism's evolution is analogous.

Two similarities are notable. One is that Analytic Cubism's investigation also includes environments which have a minimum degree of acceptability. The second is that it is this type of environment which occurs during the investigation's most advanced stage, high Analytic Cubism.[9]

III. Realism

One reason the progressions of the two investigations are analogous is that, like Structural Linguistics, Picasso and Braque employed a crite-

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[6] Chomsky (65), p. 4
[7] Ibid. Nida (61), p. 145.
[8] Harris briefly describes how this might be accomplished, which would be during the latter stages of the investigation. See Harris, p. 1.
[9] A principal difference between the two investigations is that Structural Linguistics' includes a larger variety of highly acceptable environments. In contrast Analytic Cubism's focus, as I will discuss, is on environments with a minimum degree of acceptability.

rion of acceptability.[10] It was that a painting must to some extent be realistic.[11]

A painting comprises an arrangement of signs. Thus it can be viewed as an environment. Employing this concept from Structural Linguistics, then, we can interpret Picasso's and Braque's requirement to have been that in order for a painting to be acceptable and thus constitute an environment, it is necessary that to some degree it be realistic.

IV. Minimal Realism

This is my thesis: *The paintings of Analytic Cubism constitute an investigation of the environments of the signs for representation.*

We have seen that an investigation of environments progresses from the more acceptable to the least acceptable. Picasso and Braque equated acceptability with realism. Therefore, through the use of concepts from Structural Linguistics my thesis predicts that Analytic Cubism's development will progress from the more realistic to the least realistic.[12] The paintings from 1908 to 1912 demonstrate that this prediction is correct.[13] Thus my thesis accounts for the first feature which culminated Analytic Cubism's evolution: A minimum degree of realism.

I would like now to discuss the manner in which Picasso and Braque decreased depth in order to diminish realism. This compression of space

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[10] In *Semiotics of Visual Language*, Fernande Saint-Martin provides an excellent discussion of the importance of this criterion for establishing the structure of the signs for representation.

[11] As Yve-Alain Bois points out, they never go as far as »total pictorial abstraction«. [Bois (92), p. 174] Similarly, Rubin maintains that »Representation is more than a commitment for Picasso, it is an obsession.« [Rubin(89), p. 24] Kahnweiler states »Les peintres cubistes étaient profondément conscients de la mission de l'art plastique qui est de créer - en fait, de recréer, constamment - le monde exte'rieur des hommes.«[Kahnweiler, p. 4]

[12] I take Bois to have this point in mind when he maintains that Braque and Picasso are »reflecting on the minimal conditions for the readability of pictorial signs«.[Bois(90), p. 82]

[13] For examples of paintings which exemplify this type of evolution consider Braque, »Viaduct at L'Estaque«, early 1908; Picasso, »Cottage and Trees«, 1908; Picasso, »Reservoir at Horta«, summer 1909; Braque, »Violin and Pitcher«, early 1910; Picasso, »Portrait of Ambroise Vollard«, 1910; Picasso, »Ma Jolie«, 1911/12; and Braque, »Le Portugais«, autumn 1911-early 1912. All are reproduced in *Picasso and Braque: Pioneering Cubism.*
See Hempel, pp. 365-376, for a discussion of the relationship between prediction and explanation.

fragmented and flattened the forms. As a result, compositional unity became central for maintaining some degree of realism. The principal means by which this was achieved was through the use of both types of passage in conjunction with a reduced palette.

V. Decreasing Depth: Flatness and Fragmentation

The perception of a three-dimensional space is the primary illusionistic component of a realistic image. Thus the reduction of depth was the principal method by which Picasso and Braque diminished realism.

It occurred in two respects. One was a decrease in those portions of a figure which occupy depth. The other was a contraction of the space between the ground and the picture plane. Thus neither of these types of spatial reduction occurred laterally, i.e. either vertically or horizontally across the canvas. In fact, with the decrease in depth there was a corresponding increase in the significance of lateral space. We will see that this occurred with Picasso's and Braque's use of one of the types of passage.

In order to appreciate the consequences of their reducing depth, let's consider their approach to realism at the beginning of Analytic Cubism.

Braque's »Viaduct at L'Estaque« from early 1908 is an illustrative example. Here surfaces are oblique to one another and to the viewer. Figures with a sense of amplitude are the result. This approach to the depiction of objects occurs within an inwardly extended space. The consequence is a moderate amount of illusionism.

The investigation then moves toward a minimal degree of realism. The progression occurs by bringing the ground forward. This compresses the space between it and the picture plane. Nevertheless, the number of aspects is maintained. Thus the contraction in depth causes many of the forms to fragment and flattened to a position approximately parallel with the canvas' surface.

During the reduction, most curved shapes became linear. This accounts for the considerable angularity in high Analytic Cubism, the culminating stage. Picasso's »Ma Jolie« from this period exemplifies the resulting type of imagery with its extensive planarity.

VI. Composition Unity

I have been considering Picasso's and Braque's manner of significantly reducing depth with its resulting flatness and fragmentation. This interpre-

tation accounts for these salient features of the type of minimum degree of realism found in works during the advanced stage of the investigation, e.g. Braque's »Le Portugais«, Picasso's »Man with a Violin«, and »Ma Jolie«.

During the progression towards this culminating phase, fragmentation threatened to compromise composition unity and thus realism. Therefore methods for preserving structural coherence became of prime importance. The following analysis of some of Picasso's and Braque's techniques reveals further aspects of the investigation's evolution.

Their methods employed versions of the signs for representation. As discussed in the preceding section, in the shallow space of high Analytic Cubism these signs typically occurred as arrangements of angular segments of shading.

Two of Picasso's and Braque's techniques for maintaining compositional unity involving these signs employed both types of passage. One type integrates the over-all image internally. The other unifies it laterally.[14] Furthermore, achieving both of these kinds of integration motivated the particular hues Picasso and Braque selected and the manner in which they employed them. Thus the use of passage is a reason for the reduction in palette.

One of Picasso and Braque's techniques is applied to interior space. It employs a limited range of moderate hues in representing the principal figure(s). This consistent subdued tonality is presented against a ground of a similar value. Picasso and Braque then employ these diminished shades to integrate their imagery inwardly. The result is one of the types of passage.

As »Le Portugais« illustrates, their method of achieving this kind is to allow intermittently the shade of the ground to show through the figure's image. Similarly, periodically the hue of one plane in the shallow depth occurs on another. Their employing moderate tones in conjunction with this technique enables them to create a subtle modulation that contributes to two types of partial unification: 1) of forms on different planes, and 2) of forms with the ground.

Picasso's and Braque's second type of passage employs modelling. It incorporates their reduced palette as well. Its purpose is to conjoin continuous forms.

They accomplish this lateral linkage by subtly gradating the shade inside the forms. This decreases their delineation. In addition, their contours are drawn as incomplete allowing them to open onto one another. Picasso's »Portrait of Ambroise Vollard« demonstrates how the resulting elision en-

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[14] For an insightful analysis of passage and its significance, see the discussions in Steinberg(79)and Rubin(79).

ables the close-value gradation to progress from one form to the next. This creates a continuous flow of light and space that links the forms together.[15]

Note that this kind of passage is neither a horizontal nor a vertical compression of the forms. Hence it does not reduce lateral space. On the other hand, the passage that integrates forms and the ground inwardly creates a more shallow depth.

This consequence of interior integration brings out a paradox of high Analytic Cubism. It is that this type of passage simultaneously both increases and decreases the degree of realism. Its contribution to compositional unity increases realism. Whereas its reduction of depth decreases it. This paradox is a source of the tension found in the paintings.[16]

Reconsider the two kinds of passage, which achieve both types of integration: lateral linkage and modulation between planes. The preceding discussion demonstrates that they require a minimum variation in subdued shades. Thus the principal formal procedures Picasso and Braque employed to achieve structural unity are one part of the explanation of their use of a reduced palette. The other is that the employment throughout the canvas of a restricted spectrum of neutral hues contributed further to this coherency.[17]

VII. Conclusion

I have given an analysis of the methods by which Picasso and Braque employed both types of passage in conjunction with diminished hues. Their purpose, I proposed, was to maintain structural unity and thereby preserve a degree of realism. I argued for an account of why Analytic Cubism's evolution resulted in extensive passage and a reduced palette as well as a considerable reduction in depth with the resulting flattened and fractured forms. Employing concepts from Structural Linguistics, the explanation of these particular features is that the paintings constitute an investigation of the environments of the signs for representation. The features are the con-

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[15] »The handling of space, of light, and the linkage of planes are...central to a definition of Cubism.« Rubin (77), p. 180. The effectiveness of Picasso's and Braque's techniques in achieving the second type of passage is brought out be contrasting them with the process by which contours are formed in visual perception. Cf. Osgood, chapter 6.

[16] »the dramatic tension of...high Analytic Cubism«. Rubin (89), p. 24.

[17] Additional contributions include the rhythmic distribution of light and dark across the canvas and the use of only one subject which is presented iconically, i.e. it is frontal, vertically centralized, and anchored to the base of the canvas. Simplified themes contributed to the unity of the content.

sequence of this investigation's evolution toward a minimum degree of realism.

Two results of my explanation are philosophically relevant. One is that it increases our aesthetic understanding of what the paintings accomplish. The other is that it shows that Picasso's and Braque's investigation of the environments of the signs for representation can contribute to the espistemological analysis of the process by which we acquire knowledge through visual perception.

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