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An investigation of the vocabulary of line in Vincent van Gogh's Expression of Space

AN awkward angularity and an idiocyncratic distortion of space are persistent characteristics of van Gogh's style. In spite of Vincent himself having once said that 'clumsiness and awkwardness' not only characterized his best work but were present because they were 'most certainly reasoned out and willed' (R37, III, p. 389)[1], the measurable relationship between that angularity and van Gogh's deviations from the conventions of two-point perspective[2] has been overlooked. To understand how the angularity of Vincent's style and his particular expression of space are related parts of a dynamic whole it is necessary to examine carefully the two authors he depended on to guide the first year of his artistic career.

During his childhood and youth van Gogh had liked to draw. Only a few of theses early efforts survive[3], but in view of the development of his eventual style they present us with a curious paradox. As we can see from the little farmyard scene (Fig. 1) done before Vincent was twelve and the two farmers (Fig. 2) done when he was sixteen, the young van Gogh had a remarkably discerning eye and a facile hand for both landscape and figure drawing. Why should an artist have lost—and never recovered—the particular facility he showed as a child and adolescent?

Vincent's correspondence with his friend van Rappard reveals a second puzzling paradox. Some two years after turning to a career in art Vincent wrote van Rappard to explain what he felt distinguished his more successful drawings.

> If I have the good fortune to find a model who is quiet and collected, then I draw it repeatedly, and then at last a study turns up which is different from an ordinary *study*—I mean more characteristic, more deeply *felt* . . . You yourself said (of certain of my studies) that they are *felt;* all right, but it was not accidental; I drew them over and over again before, and that feeling was *not* in them. After that—after the iron-like ones

1. The references in this article to van Gogh's correspondence are all, unless otherwise noted, from the three volume New York Graphic Society Edition, *The Complete Letters of Vincent van Gogh*, 1958. The underlining is as it appears in this edition. Because of the number of references to the correspondence, they are included in the text of this article, for the convenience of the reader; the number of the letter comes first and is followed by the volume number in Roman numerals and the page reference.

2. Examples of critical appraisal of the relationship of van Gogh's expression of space to that of classic perspective include the following: 'The power of expressive perception of space, which (van Gogh) possessed, was quite different from the application of the reasoned perspective doctrine of the Renaissance'. A. M. Hammacher, *Van Gogh's Life in his Drawings; Van Gogh's Relationship with Signac, Introduction and Notes*, (Exhibition Catalogue), London, May-June 1962, 30.

'. . . what can be said to remain of classical Italian perspective and *trompe-l'oeil?* Exactly nothing, apart from a semblance of depth—which however is purely imaginary. For what we have here is a new notion of space—that of modern painting—whose effect depends on a counterpoint of two-dimensional references.' C. Estienne, 'Etude critique' in C. Estienne et C. H. Sibert, *Van Gogh*, Geneva 1953, 37.

'The perspective of smaller objects, too, is caught in the dynamism of a representation of space that is no longer subject to the laws of linear perspective . . .' F. Novotny, 'Reflections', *Art Bulletin*, March 1953, 37.

3. For a brief, useful discussion of van Gogh's earliest work see: *Catalogue of 272 Works by Vincent van Gogh with an Essay on van Gogh's childhood drawings by J. G. van Gelder*, State Museum, Kröller-Müller, Otterlo 1959, xv-xx.

—came these, and also that clumsiness and awkwardness. *How does it happen that I express something with that?*—Because the thing has shaped itself in my mind before I start on it . . . I say this to make you understand that, *when* there is something in it, this is not accidental but most certainly *reasoned out and willed* (R37, III, p. 389).

Almost a year later, in April 1884, Vincent wrote van Rappard free associating on the question of technique.

. . . I most decidedly expect that, as I gain in what I call expressive force, people will not say *less* frequently, but on the contrary *even more* frequently, that I have *no* technique. (R43, III, p. 397).

Toward the end of the letter he recapitulates:

What I am saying in this letter amounts to this. Let us try to master the mysteries of technique to such an extent that people are deceived by it and will swear by all that is holy that we have *no* technique. Let our work be so savant that it seems naive and does not stink of our sapience. (R43, III, p. 401).

To understand the angularity and distortion which characterize van Gogh's adult work[4] one must explain this double paradox of a childhood talent's being denied and the mature artist's not only taking pride in his clumsiness but citing it as being at the heart of his creativity.

A year after beginning his career in art Vincent wrote Théo that his work had changed; the announcement was abrupt, enthusiastic, and singularly specific.

Dear Theo, Though it is such a short time ago since I wrote you, I already have some news to tell you. That is to say, my drawing has changed, the technique as well as the results. (150, I, p. 239).

In addition to illustrating the letter with several pages of sketches (Fig. 3) Vincent briefly reviewed the first twelve months of his career. Only when we know exactly what his earliest training had entailed can we see why the harsh angularity of the roughest of these sketches—a winnower drawn with a flange of lines outside the frame enclosing the figure—is the touchstone to understanding what van Gogh could specifically have meant by pointing to the clumsiness of his technique as being at the heart of his expressive power.

During the autumn and early winter of 1880–81 Vincent wrote of the possibility of studying at the Academy of Art in Brussels, but in fact this was only an abortive foray into the usual paths of artistic training[5]. Actually Vincent was singularly independent in carrying out his artistic apprenticeship and followed two drawing courses, nineteenth-century versions of mail-order art lessons, one might call them. To learn to draw the figure van Gogh used the two volume course of graduated drawing exercises, *Le Cours de Dessin* by Charles Bargue[6]; to overcome 'the difficulties of perspective' (142, I, p. 218)

4. Examples of critical appraisal of the angular quality of van Gogh's style include the following:
'(van Gogh's) *penchant* for angularities, for grotesquerie, is basic to his artistic personality and it is one of the characteristics of his style which can be discovered in all periods of his work'. Chetham, *Role*, 67.
'For one thing, we have the continental breaks and turns in the drawing of the outlines . . . Such angular breaks in the outline remain a characteristic of van Gogh's art to the end'. *Art Bulletin*, March 1953, 37.
'Even in the last months of his life, Vincent sometimes disturbs the order, even in already fierce, moving paintings by violent angular accents'. A. M. Hammacher, *Genius and Disaster: The Ten Creative Years of Vincent van Gogh*, New York 1959, 159.

5. See *Letters*, 137-143.

6. Bargue, *Cours de Dessin exécuté avec le concours de J. J. Gérôme*, Paris 1870. Vol. I: 1ère partie—modèles d'après la bosse. 70 pl. 2ème partie—modèles d'après les maîtres de toutes les époques et toutes les écoles. 67 pl. fol.; Vol. II: Exercices au fusain pour préparer à l'étude de l'académie d'après nature. 60 pl., fol.
The two volumes of this title were consulted in London in the Library of the Victoria and Albert Museum. In the United States they are not

he chose the works of Armand Cassagne[7].

When Vincent wrote Théo from Etten in the fall of 1881 he said of the change in his art which so excited him:

> Studying the *Exercices au Fusain* by Bargue carefully and copying them over and over again have given me a better insight into drawing the figure. (150, I, p. 239).

The first time he had mentioned Bargue was in August 1880[8]; he had begun his self-directed career by copying Millet, copies whose size he says 'is almost that of a page from the 'Cours de Dessin Bargue' ". (134, I, p. 200) In the same letter Vincent tells of having written to the dealer Tersteeg, a family friend and his former employer, to see if he might borrow the large volumes. By September 7 he had the books. (135, I, p. 201).

By the time Vincent wrote Theo of the change in his art, he had already worked through Bargue's *Exercices au Fusain* three times. (148, I, p. 236) .It was a considerable accomplishment for this section of Bargue consists of sixty large sheets, 'studies from the nude' as van Gogh describes them (134, I, p. 201). Actually the studies begin with several pages labelled 'Fragments de têtes'—a page each for eyes, mouth, nose, ears—all done in a simple, angular style (Fig. 4). Similar exercises for drawing legs, arms, etc. follow until the whole is assembled and the student given the full figure to copy (Fig. 5).

Vincent first mentioned Cassagne by name in the spring of 1881. He reported that he had just bought and was studying the *Traité d'Aquarelle*[9]. The author was not new to him, however, for at this time van Rappard, who was visiting with Vincent at his parents' house, was having trouble with his perspective and planned to buy all Cassagne's books'. (146, I, p. 234). Vincent wrote Théo:

> . . . I know of no better remedy for this ailment; at least if I am quite cured of it I shall have those books to thank for it—that is to say, I put into practice the theory they contain. (146, I, 234-235).

This was not the last time van Gogh expressed enthusiasm for Cassagne. In the spring of 1882 in trying to persuade Théo to become an artist, too, he said:

> I remember quite well, now that you write about it, that at the time when you spoke of my becoming a painter, I thought it very impractical and would not hear of it. What made me stop doubting was reading a clear book on perspective, Cassagne's *Guide to the ABC of Drawing*[10]; and a week later I drew the interior of a kitchen with stove, chair, table and window—in their places and on their legs—whereas before it has seemed to me that getting depth and the right perspective into a drawing was witchcraft or pure chance. (184, I, p. 31)

available in the collections of: The Boston Public Library; the Library of the Boston Museum of Fine Art; Widener Library, Harvard University; the New York Public Library; the Library of the Metropolitan Museum of Art; the Library of the Frick Collection; the Library of Congress: the Library of the National Gallery, Washington D.C.; the libraries listed with the Union Catalogue for the Philadelphia area; the Ryerson Library, Chicago, as well as a number of smaller college and university art libraries. In Paris, a systematic search failed to locate the volumes; the title is listed in the catalogue of the Bibliothèque Nationale, but even long, cooperative efforts by the staff did not result in finding the books themselves. The librarian of the Stedelijk Museum in Amsterdam could not find the title for me in any collection in either the Hague or in Amsterdam. Recently, however, Engineer van Gogh has written that although not yet catalogued, a copy of Bargue—presumably the one used by Vincent in Auvers in 1890—is in the collection of material he has given the state and which will soon be housed in the new van Gogh library and study center in Amsterdam.

7. See note 13.

8. Actually van Gogh mentioned Bargue in a passing reference in 1877 (115, I, p. 153). Here I am concerned with the ten years of van Gogh's career as an artist.

9. A. Cassagne, *Traité d'Aquarelle*, Paris 1875.

10. *Re:* this title, see note 13.

The last time Vincent wrote of Cassagne was from Arles in the spring of 1888. Vincent wanted Theo to send him Cassagne's *ABC of Drawing*[11]. In an outburst of impatience he wrote:

> I'd be astonished if that book of Cassagne's were out of print. They ought to know it, or know where it could be got, at Lalouche's or the color shop in the Chaussée d'Antin. If I ever come to give lessons in drawing, or to have to speak to painters on the principles of technique, I must have it at hand. It is the *only* practical book I know, and I know pretty well from experience how useful it is. (519, III, p. 5).

We must look carefully at these books on perspective in which van Gogh put such stock[12].

In the past those of van Gogh's critics who mention his having used Cassagne do so in passing, assuming I suppose that these books contain only conventional explanations and illustrations of the principles of perspective. That in addition Cassagne had devised what he saw as a unique *method* for applying these principles has been overlooked. An English translator of Cassagne describes the method as ' . . . without going too deeply into the scientific demonstration of the laws of perspective mak(ing) them perfectly clear and also show(ing) their application in an interesting and practical way to the art of drawing from Nature'[13]. The 'interesting and practical' aspect of Cassagne's method depended on the artist's studying every motif through a rectangular frame for the express purpose of relating his drawing to the sequential development of the perspective projection of a square.

Isolating a motif by looking at it through a frame is a useful and uncomplicated procedure, but for Cassagne a frame was more than 'un cadre isolateur'. Divided into four equal parts by thread or horsehair[14] it was also what he saw as 'un cadre rectificateur', its borders and pattern of crossed lines expressing the lowest common denominator of the projection of a square. Using the frame as a 'cadre rectificateur' was the basis of Cassagne's method[15], and his students were given strict instructions not even

11. See the following letters: 502, II, 596; 505, II, 601; 510, II, 612; 519, III, 5; 522, III, 10.

12. Because van Gogh's references to Cassagne's books are not sufficiently precise, and because all the titles and all editions of books by this author are not available, it is not possible to establish an unquestionably accurate bibliography of the Cassagne books van Gogh knew.
In 1881 van Gogh spoke of 'all Cassagne's books' (146, I, 234), but in the entire correspondence he identifies only two titles: *Le Traité d'Aquarelle* and what he calls the *A.B.C.D. du Dessin*. He further identifies the latter as 'le texte (se vendant séparément, je crois au prix de 5 francs) du *Dessin pour tous* par Cassagne, les 100 cahiers que tu connais sans aucun doute'. 510, III, 136 from *Correspondance complète de Vincent van Gogh*. Paris 1960.
I have seen *Le Traité d'Aquarelle*. I have also been able to examine an incomplete collection of what van Gogh called the '100 cahiers' of *Le Dessin pour tous* (A. Cassagne, *Le Dessin pour tous*, Paris 1862–63). On the basis of the advertisement for this book in the 1873 edition of *Le Traité pratique de perspective* . . ., however, one hundred seems to have been only a manner of speaking, for in fact the title consisted of 56 notebooks. Of these I have seen 36.
Unfortunately I have never been able to find the five notebooks of the section van Gogh refers to as the *A.B.C.D. du Dessin* and in which the above mentioned advertisement is called the 'ABéCéDaire du Dessin'. Although *Le Dessin pour tous* consists primarily of studies for the student to copy, there are occasional textual comments. Most of these brief explanations are in the Première série, Cahier 12, which is entitled 'Perspective.—Dessin d'application'. The section concludes with the following note:
'Pour l'étude complète de la perspective, voir notre *Traité pratique de perspective*, chez le même éditeur . . .' (16) In *Le Traité d'Aquarelle*, which we know van Gogh owned and had studied, the same source (i.e., *Le Traité pratique* . . .) is cited (88) for a full discussion of the rules of perspective. Because of these two confirmatory notes it may be assumed that van Gogh included one of the three similar editions of *Le Traité pratique* . . . among the titles he referred to as 'all Cassagne's books'. This is therefore the only Cassagne book, in addition to the two Vincent himself specifically mentioned, which has been used in writing the parts of this article explaining Cassagne's method. The references are to the 1873 edition. Items marked with an asterisk in the bibliography are the titles and editions which van Gogh *could have meant* by 'all Cassagne's books' when he used this expression in 1881.

13. A. Cassagne, *Practical Perspective applied to artistic and industrial design*. Translated by G. Murray Wilson. New and enlarged edition containing 265 geometric figures and 60 picturesque applications drawn by the author. Paris 1886, viii.

14. A Cassagne, *Traité pratique*, 20.

15. Cassagne puts the same emphasis on the study of the projection

to begin a sketch until the paper had been marked with the same pattern of lines which subdivided the frame[16].

In Cassagne's view a single principle of perspective was the key to being able to make an accurate sequential statement of three-dimensional space. This principle he illustrated by a diagram labeled 'Exemple des différents degrés de déformation du carré selon son éloignement d'horizon' (Fig. 6)[17]. (The illustration, as we shall see, is so important in understanding van Gogh's idiom of angle that for convenience I shall refer to such a diagram as a 'layered cube'). According to the principle of 'déformation' the angle formed by the intersection of the lines of flight defining any given horizontal plane reflects the distance of that plane from the horizon[18]. In short Cassagne's method was to view any chosen motif through a frame in order first to visualize the cubic space it occupied and secondly to be able accurately to record the systematic distortion of the descriptive angularity of the parts of that given cubic space.

To draw a motif which was actually rectangular Cassagne illustrated the application of his method with straight-forward diagrams like the one of a chair from *Le Dessin pour tous* (Fig. 7). For applying his method to a landscape drawing Cassagne suggested that a rectangular object in the scene, a square tower, for instance, could be used to control the perspective projection of the entire motif (Fig. 8).

> Après avoir bien jugé qu'un des côtés de la tour est parallèle au tableau, établir le carré principal de cette tour, conduire au point de vue et faire les divisions selon leur éloignement au-dessus ou au-dessous de l'horizon; puis, guidé par ce carré principal, continuer les autres constructions.[19]

For drawing a figure Cassagne showed how the motif could be fitted into the projection of a layered cube. The illustration he used was a horse, boxed as it were, in the projection of a suitably proportioned rectangular solid (Fig. 9)[20]. Nowhere in his books is Cassagne equally explicit in showing how the

of the square, and by extension the cube, in the two books of his we are certain van Gogh had used by 1881. In *Le Traité d'Aquarelle*, Cassagne calls a knowledge of the perspective of the square 'la pierre fondamentale, la base de toute espèce de tracé'. (77) Not only are there repeated visual references to this subject in *Le Dessin pour tous*, but the first section of the first notebook, 'Premiers principes—le trait et la perspective' is headed 'Savoir mettre un cube en perspective, c'est savoir la perspective'.

16. A Cassagne, *Le Traité d'Aquarelle*, 78.
It ought also be noted that by early 1888, when van Gogh went to southern France, Cassagne had had three books published in addition to the ones van Gogh already knew (or might have known) in 1881. For reasons which will become apparent later in this paper, it seems probable that van Gogh would have known the new book entitled *Guides des modèles à silhouette*, (Paris 1884). This book stressed the importance of marking the paper or canvas with the same cross which divided the frame: 'Tracer d'abord légèrement, avec le crayon et dans les proportions semblables à celles du modèle, le cadre et la croix, puis chercher dans chacun des carrés le mouvement des lignes et la place des détails'. (75) 'Il est bien entendu que l'élève fera également sur son papier le croix indiquée sur le modèle' (104).
Cassagne only gave scanty instructions of how precisely to relate the projection of a cube to the frame. His one specific guide line was that the base of the frame represents the 'ligne de terre' or bounding line nearest the spectator. Consequently, as he explains, the area viewed as being between this base line and the horizon represents the depth of the picture space. (A. Cassagne, *Traité pratique*, 21-22). Whether the cross bar of the frame was to coincide with the horizon depended on the motif, although it was essential, Cassagne, insisted that the artist be certain of the relation of the horizon to both the base line and the horizontal line bisecting the frame. Cassagne also stressed the importance of knowing the precise location of the distance points, but again he neglects to say exactly how the frame might be used to key this fact. (A. Cassagne, *Traité pratique*, 31).

17. A. Cassagne, *Dessin*, Première série, 1er cahier: 'Premiers principes.—(Suite de l'*ABéCéDaire*)—Le Trait et la Perspective', 3.

18. Because in his view the measurement of angles is so important, Cassagne described a simple angle meter which certain students would be well advised to use.
'Le preneur d'angle s'adresse surtout aux personnes qui désirent établir avec une grande précision la direction des fuyantes et leur point de fuite sur l'horizon'. (A. Cassagne, *Le Traité d'Aquarelle*, 84).

19. A. Cassagne, *Traité pratique*, 80.

20. A, Cassagne, *Traité pratique*, 75, 80, Prof. J. G. van Gelder points out to me that many of the illustrations Cassagne used were taken directly from Christpijn de Passe, *Della Luce del Dipingere et*

projection of such a layered cube could be used in drawing the human figure, but for those who are familiar with his method, various figures in *Le Dessin pour tous*[21] clearly occupy the summarily yet precisely indicated boxes fitting their particular proportions (Fig. 10).

These two sources, Bargue and Cassagne, on which van Gogh depended during the first year of his training as an artist are the necessary background for understanding his 1881 statement that his drawing had changed—'the technique as well as the results'. (150, I, p. 239). The figure of the winnower (Fig. 3) which accompanied this announcement is immediately reminiscent of Bargue. In addition, however, the flange of lines outside the frame in which Vincent has placed the figure make one think of a perspective projection. In the context of Cassagne's fully 'boxed' horse (Fig. 9) and the back-view of a man (Fig. 10), illustration 11a shows how these seemingly extraneous lines in the sketch of the winnower do in fact combine with the two verticals within its frame to key a projection of a layered cube suitably proportioned to contain the Bargue-like figure.

In fact van Gogh had discovered a way to use Bargue's descriptive angularity to state the specifically measured angles Cassagne saw as the key to a correct statement of the picture space, for as we see in the diagram (Fig. 11b) the descriptive angularity of van Gogh's winnower can be found among the lines of the projection of a layered cube. The reason for the clumsiness of the figure now becomes apparent; the outline is awkward because it has been built up from the descriptive angles of the several planes of the layered cube containing the figure.

Since Vincent's 'new technique' was a fusion of Bargue and Cassagne into a single system, the awkwardness of his early work is hardly surprising. In the finished drawing of the winnower (Fig. 11c), for example, the right arm is short and seemingly unnecessarily distorted. This distortion is justified, however, when we discover from the diagram (Fig. 11b) that the angle of the elbow was determined by the descriptive intersection of the lines of flight in the perspective framework of the total picture space. This derivative angularity, accounting for the characteristic awkwardness of van Gogh's technique, is indeed properly described as 'reasoned out and willed', for Bargue's angularity had been both *adapted to* the linear framework of a layered cube and at the same time *derived from* such a projection.

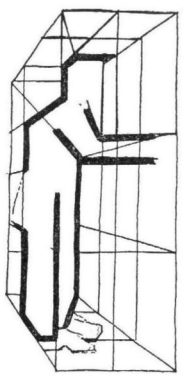
In addition to the visible awkwardness which resulted from the fusion of Bargue and Cassagne, van Gogh's new technique misstates apparent reality in another less obvious but no less specific way. A silhouette is normally a two-dimensional truth, but van Gogh's new outlines also represent the three-dimensional truth of the space which the figure occupies. With a systematic language of angle Vincent had found a way to make reality and distortion one.

Although his new technique emphasized the picture plane and its patterning, there is concrete evidence that van Gogh—like Cassagne—visualized the figure as occupying a fixed cubic area. In an 1885 doodle of several heads and a man with his back to us Vincent actually drew the Cassagne cube in which he perceived the figure of the *Walking Peasant* (Fig. 12).

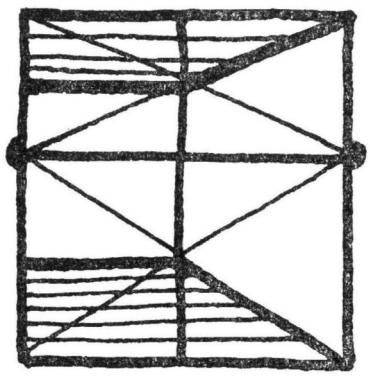
disegnare, Amsterdam 1643, e.g. La prima parte: XI: 'les trois changements de la vue'; la V partita (van 't light der Teken en Schilder konst ... Dat vijfde Deel) II La maniera di disegnare il Cavallo in prospectiva (Deux chevaux mis en racourcicement par la perspective . . .').

21. A. Cassagne, *Dessin*, Troisième série: 'Etude de la figure'. *passim*.

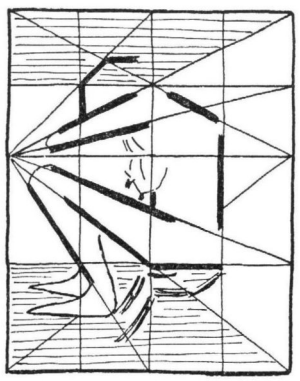
Some six months after announcing the change in his technique van Gogh made the original drawing of *Sorrow* (Fig. 13a). He was pleased with this work, we know—he once described it as 'the best I've done so far' (219, I, p. 419)—but because he also made specific comments on its artistic qualities, submitting it to the kind of analysis used for the sketch of the winnower is rewarding. Vincent reminded Théo that he had taken 'a great deal of trouble' with the silhouette of *Sorrow* because of his belief in 'the great importance of the outline'. (221, I, p. 426). As soon as we construct a layered cube to contain this figure, we will discover that its basic outline—like that of the winnower—has also been derived from the linear patterning of its layered cube.



(11b). Layered cube winnower.



(13b). A simple box for Sorrow.



(13c). Diagram of Sorrow.

Here in illustration 13b we have as straightforward as possible an application of Cassagne's frame to guide the development of the picture space: the horizontal bisector marks the horizon, the principal vanishing point lies on the left edge of the frame, the distance point on the right edge. Consequently the vertical bisector of the area indicates the visible back edge of the cubic space. Diagram 13c, based on the preceding illustration, shows that the angularity of the Bargue-like figure of *Sorrow* is again not haphazard. The generative power first harnassed to determine the ouline of the winnower also animates the silhouette of this sorrowing figure.

Van Gogh described *Sorrow* and *The Great Lady*, which he had drawn at the same time, as 'greatly resembl(ing) the Bargues', but, he asked, 'are they less original for that?' (185, I, p. 335). He described their line as 'quite simple' but said that his simplicity was not easy to determine.

> . . . when you are sitting in front of your model it is difficult enough to get those simple characteristic lines. Those lines are so simple one can trace them with the pen, but I repeat, the problem is to find those principal lines, so that the essence is expressed with a few strokes or scratches. It is not easy to select the lines *which will seem entirely natural.* (Ibid).

Vincent's having underlined this last phrase points to an inherent difficulty in putting Cassagne's method into practice; how *can* one perceive a given motif if a pattern of lines marked on a near, transparent plane must be incorporated into the record of the motif itself? To put Cassagne's method into practice one must somehow increase one's depth of field to include in a single act of perception both the frame with its controlling pattern of lines and the motif which is being studied. Cassagne himself

overlooked this problem[22], but these are several clues suggesting how van Gogh may have solved the very real dilemma.

In the summer of 1883, Vincent wrote Théo that he had seen a 'kind of revolution' in his working methods, a revolution, he said, which had come about because 'I let myself go a little, and look more through the eyelashes instead of staring at the joints and analysing the structure of things . . .' (309, II, p. 104). I suggest that this statement may be related to van Gogh's use of the perspective frame, for among the effects of looking through one's eye-lashes is an increase in the depth of field. If a pattern of lines lies between the viewer and an object, the lines are superimposed on the motif when one squints. Therefore if a frame is being used to control the development of a drawing, squinting makes it possible to select those important descriptive lines which will 'seem entirely natural' and also coincide with the pattern of lines in the frame.

Van Gogh's habit of looking through half-shut eyes was noted by outsiders both early in his career and during the last months of his life. In 1884, in Nuenen, Vincent gave lessons to an amateur painter who later reminisced about their frequent meetings. Kerssemaker recalled that van Gogh used a perspective frame which had been made to his specifications (435c, II, p. 446); in addition he reconstructed a conversation of Vincent's:

> 'Take care you never forget to half shut your eyes when you are painting in the open air. Once in a while those clod-hoppers in Nuenen say I am mad when they see me shuffling about over the moor, and stop, and crouch down in a half-sitting position, every now and then screwing my eyes half-shut, holding my hand by my eyes, now in this way, now in that, in order to screen things off. But I don't give a damn about that, I just go my own way'. (*op. cit.*, p. 448).

Six years later Dr. Gachet's son wrote:

> It was very odd to watch him. Every time he put his little strokes of paint on the canvas, he would first of all lean his head back to look up with half-closed eyes at the flowers . . .[23].

Throughout his career van Gogh considered a perspective frame a basic part of his equipment; he was to replace, refine and think about this device repeatedly until the very last weeks of his life. Within the first year of his career van Gogh had already had a far more substantial frame made than the simple one Cassagne suggested an artist's using. Vincent was remembered by the villagers of Brabant as setting off for work with a camp-stool under one arm, a 'square frame' under the other. (165b, I, p. 292) .In the summer of 1882 he told Théo that he may have spent less on paints than other artists but that he had 'spent *more* on making an instrument for studying proportions and perspective' (205, I, p. 383).

In the summer of 1882 Vincent occupied himself during a stay of several weeks in the hospital by reading; but except for some Dickens, he had brought only his books on perspective, he told his brother (207, I, p. 387). He was soon to write about his 'new and I hope better perspective frame' (222. I, p. 430).

22. Cassagne had told his students how far from their subject they ought stand and where the frame ought be placed—but only in order to 'embrasser facilement d'un seul regard le motif'. (A. Cassagne, *Traité pratique*, 18). The advice did not help, however, in using the frame for what he saw as its essential function, i.e., the application of the perspective analysis of the cubic space it represented.

23. Marc Edo Tralbaut, *Vincent van Gogh*, Lausanne 1969, 314.

This substantial piece of equipment he both illustrated and described in detail:

> Dear Théo, In my last letter you will have found a little sketch of that perspective frame I mentioned.(Fig. 14a and b) I just came back from the blacksmith who made iron points for the stick and iron corners for the frame. It consists of two long stakes; the frame can be attached to them in either way with strong wooden pegs. So on the shore or in the meadows or in the fields one can look through it *like a window*. The vertical lines and the horizontal line of the frame and the diagonal lines and the intersection, or else the division in the squares, certainly give a few fundamental pointers which can help one make a solid drawing and which indicate the main lines and proportions—at least for those who have some understanding of why and how the perspective causes an apparent change in direction in the lines and change of size in the planes (Cassagne's 'déformation du carré selon son éloignement de l'horizon', one notes) and in the whole mass. Without this the instrument is of little or no use, and looking through it makes one *dizzy*. I think you can imagine how delightful it is to turn this spy-hole frame on the sea, on the green meadows, or on the snowy fields in winter, or on the fantastic network of thin and thick branches and trunks in autumn or on a stormy day. Long and continuous practice with it enables one to draw quick as lightening—and, once the drawing is done firmly, to paint quick as lightning, too. (223, I, pp. 432–433).

In unpublished sketch books[24] which date from the time he spent in Nuenen, van Gogh made a number of what seem to be detailed working drawings for a perspective frame. The instrument Vincent now had in mind was a complex piece of equipment, although how what seem to be its adjustable and/or moveable parts were to function has not yet been explained.

Van Gogh last mentioned using a frame in the spring of 1888. His three most recent paintings, he told Theo, were done with what he here refers to as 'un cadre perspective'. *(Correspondance complète de Vincent van Gogh.* Gallimard-Grasset, (1960), Vol. III, p. 31).

> I attach some importance to the use of the frame because it seems not unlikely to me that in the near future many artists will make use of it, just as the old German and Italian painters certainly did, and, as I am inclined to think, the Flemish too.[25] The modern use of it may differ from the ancient practice, but in the same way isn't it true that in the process of painting in oils one gets very different effects today from those of the men who invented the process, Jan and Hubert van Eyck? (469, II, p. 533).

There is, however, solid evidence that this device on which he had so consistently and for so long related his interpretation of space was still on Vincent's mind. Fig. 15 shows the careful sketch of a perspective frame which he draw during these last months of his life.

Now that we have seen the tenacity with which van Gogh kept the idea of a perspective frame in mind, I want to suggest—even though summarily—how the unique system he had evolved for putting Cassagne's method into practice continued to influence his art.

24. These notebooks are mentioned by Nordenfalk. (C. Nordenfalk, *The Life and Work of van Gogh*, London 1953, p. 57) Thanks to Engineer van Gogh's generosity and sustained interest in my work, I was able, in Laren in 1963, leisurely to examine the three little volumes and take notes on them and then, in 1967, to verify those notes and sketches I had made four years before.

25. A second book by Cassagne published after 1881 which van Gogh may have been acquianted with by 1888 was *Guide de l'Alphabet du Dessin ou l'art d'apprendre et d'enseigner les principes rationnels du dessin d'après Nature*, (Paris [before 1884]). Its first pages state that Dürer knew and made use of the principle of the 'application du carré'. (1895 edition, 3) Although this citation is from the second edition (I have never been able to locate the first), I feel justified in referring to the later edition here, since Cassagne's habit was to add a few pages when a work of his was reissued, but as far as I know, never to alter or delete material previously published.

By November 1884, Vincent had begun working on a series of fifty portrait heads—in order to express his new ideas of color he said (386, II, p. 329). An analysis of these portraits shows that in spite of what he wrote, Vincent continued to focus on problems of line, however. In the late summer he bought Blanc's *Grammaire des arts du dessin*[26]. Blanc's opinion that drawing was more important than color must have appealed to van Gogh.

> La supériorité du dessin sur la couleur est écrite dans les lois mêmes de la nature . . . Des milliers d'hommes ont le même teint, mais chacun d'eux projète sur l'horizon une silhouette particulière[27].

In addition Blanc felt that morally line was superior to color, a superiority particularly evident in the human face[28], but whether this idea also attracted van Gogh is an open question. It seems inevitable, however, that the three faces Blanc used to illustrate his theory must have reminded Vincent of Cassagne's instructions for drawing a head (Fig. 16a)[29].

In *Le Traité pratique* . . . Cassagne emphasized the necessity of interpreting the perspective of any circular solid in terms of the projection of a bounding cube. In the section 'Application pratique du cercle à l'étude de la figure'[30] diagrams of three faces illustrated the fundamental importance in drawing a portrait of being certain of the location of the horizon (Fig. 16b).

> Ainsi dans la tête de la fig. 214, l'horizon est placé à la hauteur des yeux du modèle, qui se trouvent ainsi sur une ligne droite mais les ailes du nez et les coins de la bouche ayant pour bases des lignes circulaires qui s'éloignent de l'horizon de légères courbes, mais qui est toujours modifié suivant l'éloignement de l'horizon[31].

The 'more or less accentuated ovals' correspond to the more or less distorted squares in the projection of a layered cube. In *Le Dessin pour tous* Cassagne emphasized particularly what he refers to as 'les divisions de la tête' showing clearly how a portrait drawing must be based on an oval (Fig. 17)[32].

By February 1885, van Gogh had already 'painted at least thirty and drawn as many more' of the projected fifty portraits and in addition, as he said, he was 'looking for blue all the time' (394, II, p. 349). A description of some of the blues he has found is soon put aside.

> But this is a question of color, and what matters more to me at the point I'm at now is the question of form. *(Ibid.)*.

He goes back to the subject of color for a bit but again can not keep on the subject for long.

> I certainly see all this too—I think it just as superb as anybody else, but I am even more interested in the proportion of a figure, the *division of the oval of the head* (italics mine), and I cannot master the rest before I have a better grip on the figure. (*Op. cit.*, pp. 349–350).

26. C. Blanc. *Grammaire des Arts du Dessin*, Paris 1867.

27. C. Blanc, *Grammaire*, 22–23.

28. C. Blanc, *Grammaire*, 36. 'Réduite à de simple lignes, la tête de l'homme, par exemple, a déjà tant d'expression qu'elle même pourrait déterminer des systèmes entiers d'architecture et les grandes variétés de la physionomie morale des choses'. (C. Blanc, *Grammaire*, 35).

29. The three basic-figures were taken by Charles Blanc from David Pierre Giottin Humbert de Superville's *Essai sur les signes inconditionnels dans l'Art*, Leiden 1827, 6, 7. John Rewald, *Post-Impressionism from van Gogh to Gauguin*, New York (1956), 79.

30. A. Cassagne, *Traité pratique*, 159-160.

31. A. Cassagne, *Traité pratique*, 160.

32. A. Cassagne, *Dessin*, Troisième série: 'Etude de la figure'. *passim*. The following drawings show traces of van Gogh's pencilled lines of the Cassagne frame:
F 1414 Orchard in the Provence.
F 1415 The farmhouse in the wheatfield.
F 1420 La Crau seen from Montmajour.
F 1499 Path through a field with willows.
F 1421 The park opposite the yellow house.
F 1500 The factory.

Actually Vincent worked very little on figure drawing at this period but devoted himself to what he, like Cassagne, called the 'division of the oval of the head'. The tell-tale trace of the basic oval can still be seen in the drawing of a woman's head (Fig. 18) which Vincent sent with a letter in early 1885, and it is easy to imagine its counterpart in all the portrait drawings from this period. In the *Young Peasant Smoking* (Fig. 19a) we see how van Gogh has added the boy's cap and ears to the basic oval just as Cassagne appended details to the oval in his illustration in *Le Dessin pour tous* (Fig. 17). In fact the left ear, so differently drawn from the more realistically rendered right ear, is a Bargue ear. In an indirect though none the less precise way it defines the basic oval of the head, for when the lines of its angled contour are projected they express the exact limits of the space occupied by the head (Fig. 19b).

The *Young Peasant* shows a new development in van Gogh's idiom of angle. The specific lines accenting the boy's features stand out from the overall drawing with an awkward purposefulness: the left ear as we have already noted is startlingly as well as purposefully angular, the angled upper lids of both eyes have been reinforced, precise diagnonal lines define the upper left lip and the left nostril (Fig. 19a). Possibly these lines in the pensive young face were made to fullfill Blanc's dictum that to express sadness one must use lines with a downward thrust. For our purpose the particular significance of these few angled lines is in the context of Cassagne, however. Earlier van Gogh had depended on the angled silhouette of an entire figure to key the picture space; by 1885 he had found a way to use the less confining angularity of Bargue-like ears, eyes, mouth for the same purpose.

In diagram 19c the strong, straight line of the brows is read as the horizon. In this context the angled, linear details accenting the features can be read as suggesting the rule of perspective so emphasized by Cassagne that the nearer the horizon a plane lies the more open will be the descriptive angularity of the intersecting lines of flight. The lines of the Nuenen boy's upper lids, only slightly tipped from the horizontal of his brows, make an open angle; the lines of his upper lips form the more acute angle necessary to describe a more distant plane. We see, however, that the realities of two- and three-dimensional space continue to be mixed, for the downward slope of a lip and the radius of a horizontal disc are not on the same plane. The change in van Gogh's technique is a change therefore in degree, not in essence, for the motif is still recorded in direct relation to the *patterning* of a perspective projection.

The typical patchwork effect of van Gogh's mature landscapes is similarly explained in the context of Cassagne. The diamond-shaped patterning of the fields in both the drawing of a *View of Arles with Irises in the Foreground* (Fig. 20a) and the painting of *A View of Arles* (Fig. 21a), for instance, is the same design element which strikes us in the illustration in *Le Dessin pour tous* of the dynamics of the perspective of a square seen askew (Fig. 6b). The two cubes placed one behind the other and just touching at one corner make the same zig-zag patterning which so repeatedly characterize van Gogh's landscapes.

In a *View of Arles with Irises in the Foreground* the guide posts to interpreting the linear patterning of the fields are the still visible pencilled lines of a Cassagne cross, drawn as precisely as if they were done with a straight-edge (Fig. 20b). (As we know from his 1882 sketches of a perspective frame, van Gogh had early added the diagonal of the rectangle to the divisions of the frame). On the other hand, the guide posts to interpreting *A View of Arles* are a series of those curiously 'naked' lines so often

found in van Gogh's paintings. They are usually done with a thin, blue paint and have been left uncovered even when the picture appears 'finished' and even though the pigment on the rest of the canvas may be thick. Diagrams 20c and 21b show how the linear details mentioned above and the zig-zag patterning combine in both works to coincide with a projection of a layered cube, a cube in each case seen askew hand indicating the core of the picture space.

Analyses of this sort, showing the importance in understanding van Gogh's technique of fusing Cassagne and Bargue, become increasingly significant when we realize that they carry us beyond the pictures themselves to a fuller appreciation of van Gogh's particular creative genius. In conclusion, therefore, I would like to suggest a direction continuing investigation of Vincent's idiom of angle could take by pointing out the relationship between a few important episodes in van Gogh's life and brief analyses of work he did at those times.

At the first crucial stage in his artistic development when Vincent wrote Théo of the change in his drawing, he was living with their parents in the village of Etten where their father was the pastor of a small Protestant church. Vincent's first cousin, Kee, who had recently been widowed, had been at the parsonage for the summer. The two cousins and Kee's four-year-old son had spent apparently relaxed and restoring days together, when suddenly in early autumn Vincent declared his love to Kee. The answer was an unequivocal 'No, no, never', and Kee left immediately for her parents' house in Amsterdam. Not only did Vincent never see Kee again, but a barrage of letters during the next month went unanswered. Both Kee's parents and Vincent's cooperated in her 'No, no, never'.

Vincent was determined to push his suit, however—in fact attack was in order, he said. ' . . . but I must not show (my enthusiastic determination) and must attack her again in some other way. But how to approach her, how to come near her? I must do it some day quite unexpectedly and take her unawares' (155, I, p. 260). It was just at this time that van Gogh reported the change in his technique; the same vocabulary he used in telling of his passion for Kee he used in discussing his artistic development. He wrote Théo of the problem he was facing in his art:

> Nature always begins by resisting the artist, but he who really takes it seriously does not allow that resistance to put him off his stride; on the contrary, it is that much more of a stimulus to fight for victory, and at bottom nature and a true artist agree. Nature certainly is 'intangible' yet one must seize her, and with a strong hand. And then after one has struggled and wrestled with Nature, sometimes she becomes a little more docile and yielding. I do not mean to say that I have reached that point already—no one thinks so less than I—but somehow I get on better. (152, I, p. 249).

In spite of his insistence, Vincent made no progress in his pursuit of Kee and of how he tried to 'attack' or 'take her unawares' we know very little. Yet suddenly the presumably desperate suitor gave an amazing cry of joy.

> Theo, I love her—her and no other—her forever. And—and—and—Théo, although as yet it never seems to be in full activity, there is a feeling of deliverance within me and it is as if she and I had stopped being two and were united forever and ever. (158, I, p. 268).

That Vincent felt this is for him to say; we only know that Vincent and Kee were separated for the rest

of their lives. We can add, however, that in his art the fact is that van Gogh had united Bargue and Cassagne and fixed *them* 'forever and ever' as the basis of his drawing technique[33].

Although Vincent was very likely unaware of the link between his art and his feelings for Kee, the metaphor he chose in telling Théo of his love shows that the link existed. In the first letter he wrote to tell Théo of the 'no, no, never' Vincent apologized for what he described as 'the harsh outlines in which I draw things'. (153, I, p. 253). His next letter relies even more specifically on the vocabulary of his current artistic concerns.

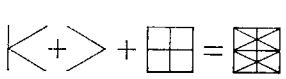
> I should not be surprised, Théo, if my last letter made a somewhat strange impression on you. But I hope the impression has been such as to give you some idea of the whole situation. I tried to indicate the proportion and planes with long, straight charcoal strokes; when the necessary auxillary lines have been traced, then we brush off with a handkerchief or a wing and begin to draw the more intimate details. So this letter will be written in a more intimate, less harsh and angular tone than the former (154, I, p. 254).

This sequence of gradually reducing the outspoken harshness of his words is the same sequence which accounts for the difference between the harsh outline of the little winnower (Fig. 3) in the letters and Vincent's finished drawing of the motif (Fig. 11c).

During his first months in Arles Vincent wrote repeatedly and at length about a little night café. He described his first painting of it as one of the few 'attempts at finished pictures' he had made in the eight months he had spent in southern France (534, III, p. 31). In drawing it he says he had tried to 'express the idea that the café is a place where one can ruin oneself, go mad, or commit a crime' *(Ibid.)*. It is evident that the motif was charged with emotion for van Gogh; in connection with it he wrote of ugliness, madness, brothels and whores, death, his mother, suicide, the infinite one sees in the eyes of an infant in his cradle. The infinite, Vincent wrote Bernard at this same period, was to be seen in certain works of art—' . . . a Greek statue, a peasant by Millet, a Dutch portrait, a nude woman by Courbet or Degas . . .' (B12, III, p. 503). All these works he saw as 'calm, modeled perfections' rendering the infinite tangible: '. . . une chose complète, une perfection nous rend l'infini tangible, et jouir d'une belle chose, c'est comme le coït, le moment de l'infini'. *(Correspondance complète de Vincent van Gogh*, Gallimard-Grasset, (1960), B12, III, p. 146).

It was in the late summer and early autumn of 1888 that Vincent was so taken by the motif of the night café. He first described it as 'une maison de passe' *(op. cit.*, B16, III, p. 203); another time as 'pas un bordel' *(op. cit.*, B19, III, p. 233). His frequent letters to Bernard during those weeks make it clear that visiting the brothels in Arles was very much on Vincent's mind. Should he, would he —in fact *could* he?—take advantage of their services? Even though Vincent had a room at the café his letters reveal a troubled uncertainty about what went on behind the door at the back of the little room.

33. It may be provocative to note that the fundamentals for the simplified perspective projection on which most of van Gogh's early drawings were based (see page 216, re: *Sorrow*, for Vincent's simplification of Cassagne's 'box') are in fact made by adding a 'K' and a 'V'-albeit a tipped 'V'-to the basic cross marking Cassagne's frame.



Has van Gogh told us something of these feelings by his drawing technique? Does his use of line reflect in some specific way his ambivalence and the confused feelings he expressed in his letters? Although Vincent's presentation of the motif makes the room immediately recognizable (Fig. 22a), there is a puzzling distortion of what seems the everyday reality of this rectangular space. Since Vincent once described the clumsiness in his art as 'reasoned out and willed', can we find a reason for the particular awkwardness in this picture?

One can begin to scan the projection of the room by analyzing the strong lines of the ceiling and the wainscoating on the left (Fig. 22b). Because they are close to one another—as well as so precisely drawn in the water-color version of the motif[34]—it is easy to see that their vanishing point is securely situated on the head of the man sitting with a woman in the back left corner of the café. One's eye then moves easily to the long line of the wainscoating on the right; the vanishing point is confirmed. But now van Gogh's clumsiness comes into play. The ceiling line on the right ought pose no problem, for this is a simple rectangular room. However something is wrong. We drop our eyes to the right-hand line of the wainscoating. It is not difficult to project these two strong lines in our imagination. The horizon has not changed, but what has happened to the vanishing point? We find that infinity is no longer fixed on the couple sitting in the café; infinity is now fixed on the opening leading to the back room. Can one not say that with a purposeful distortion of a phenomenal truth the artist has set the viewer on a course of inquiry and answer—and then inquiry again? With his reasoned clumsiness and awkward technique, van Gogh would seem to have expressed what for him was the all-important psychological reality—and mystery—of the little night café.

During the years of his apprenticeship in the Netherlands the method on which van Gogh's art was based became gradually less obtrusive. Vincent was aware that his work rested on a systematic foundation, however. Once in response to Théo's suggestion that he use a smaller format to make his work more saleable Vincent firmly rejected the idea because it would conflict with the 'system' on which his work was based.

> What I have said now is only to show you how I have tried to keep some system in my work from the very beginning; I have set a kind of rule for myself—not to become a slave of that rule, but because it helps one to think more clearly. (250, I, p. 502).

By the time van Gogh had moved to France, his technical facility was so developed that he had little need to be consciously aware—and therefore precise—in revealing the model on which his technique was based. He himself suggests the process by pointing to the parallel between the work of a mature draughtsman and the handwriting of an adult.

> When a child learns to write, it seems almost impossible to him that he will ever learn, and seeing the teacher write so quickly seems almost like a miracle. But nevertheless in time every child learns. And I really believe one must learn to draw in such a way that it becomes as easy as writing . . . (232, I, p. 458).

34. 'I am making a drawing of it with the tones in water color to send to you tomorrow to give you some idea of it' (533, III, p. 29).

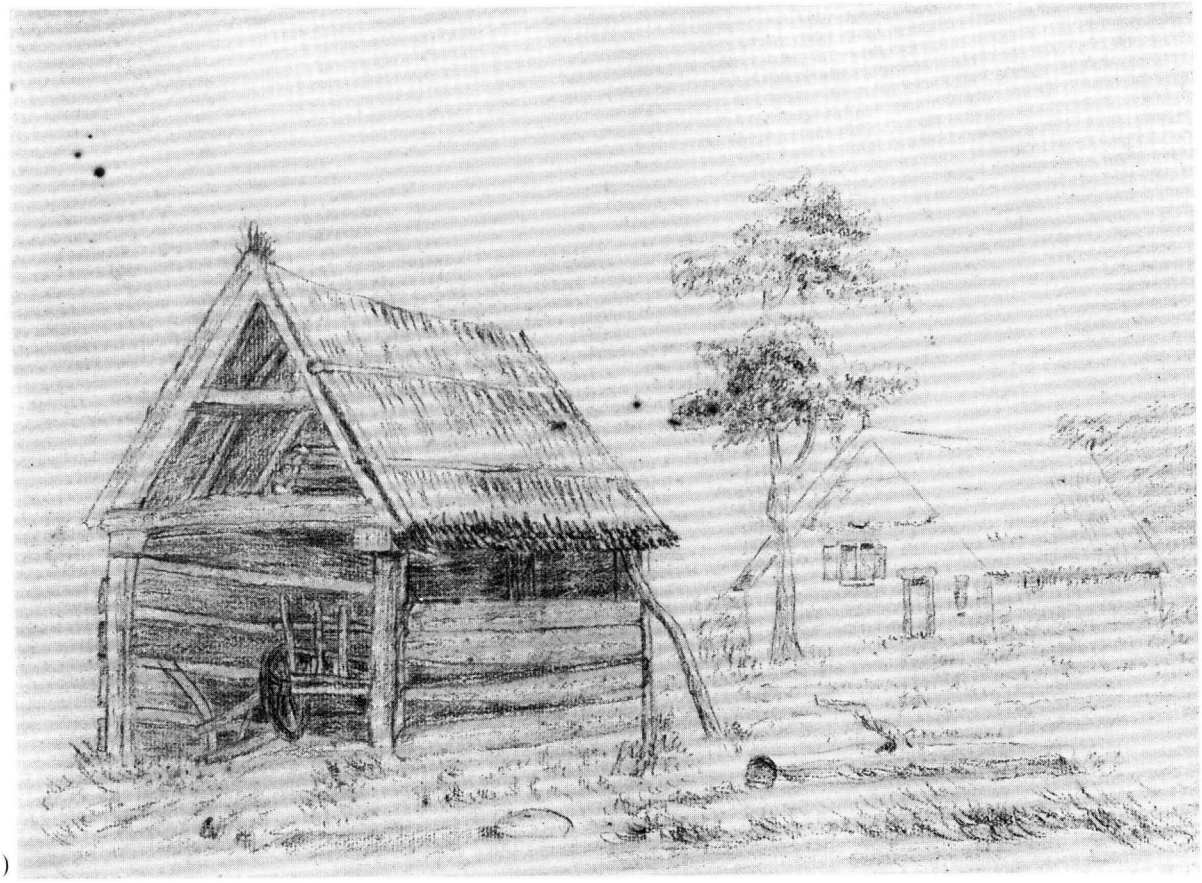
The tone of the long letter in which van Gogh first wrote of having set a 'rule' for himself makes it clear that his dependence on that rule was as much emotional as rational. Later in Paris he was more quietly articulate on the importance of the relationship he saw between his art and his emotional equilibrium. He wrote his sister, Wilhelmina:

> . . . what one has within oneself 'will out'; for me, for instance, it is a relief to paint a picture, and without it I would be more miserable than I am. (W1, III, p. 428).

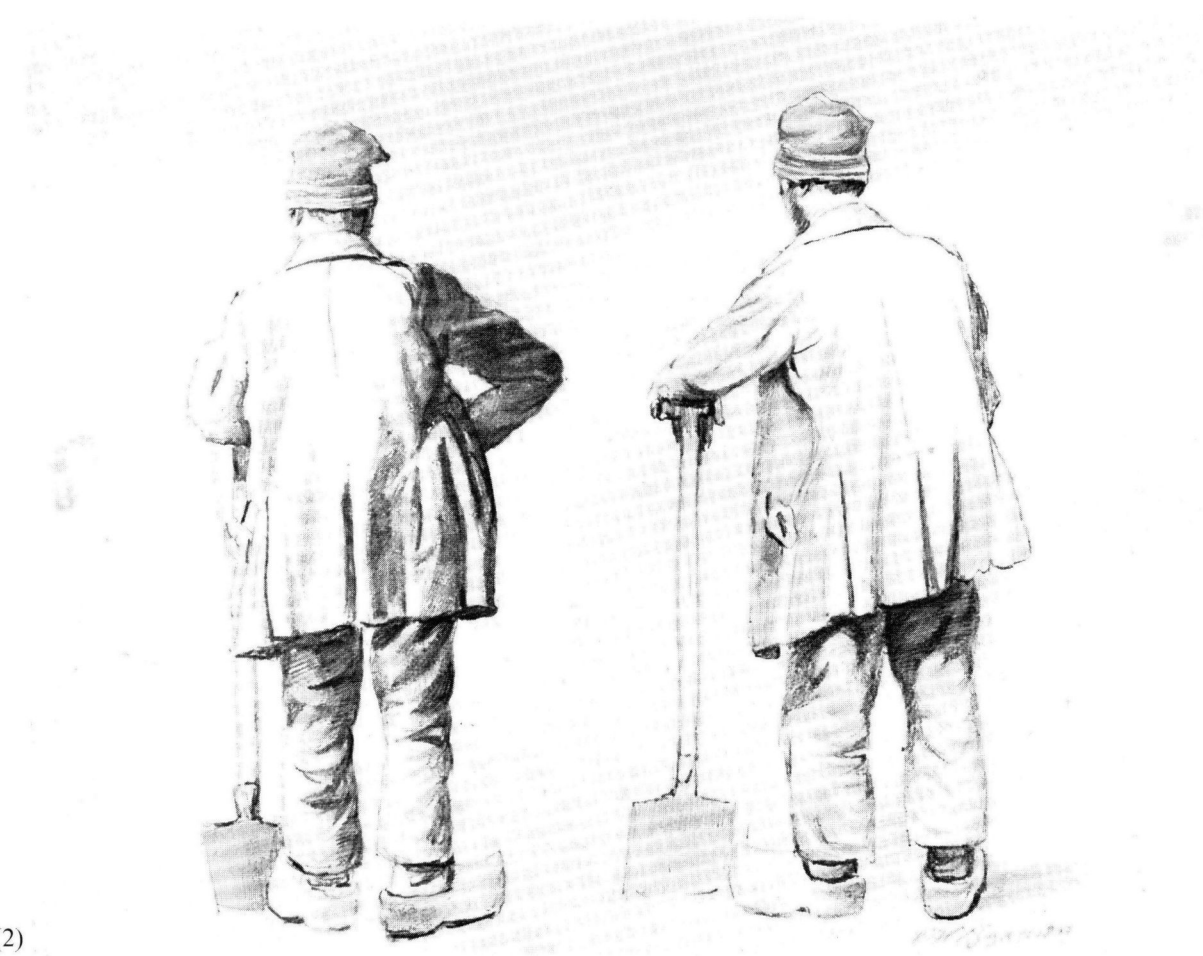
The dynamics of van Gogh's creative drive, the reasons why he found such 'relief' in his art[35], can be better understood by referring his work to that systematic framework on which it was originally based. Just as handwriting differs from the copybook model with the maturity of the writer and in relation to the originality and complexity of his personality, so does the development of van Gogh's shorthand of angular distortion show subtleties of both simplification and elaboration when compared to the copybook example of his first simple fusion of Bargue and Cassagne. The characteristic spatial distortion in van Gogh's mature work is in essence, however, no different from the characteristic awkwardness of his early drawings.

35. In his psychological study of van Gogh Nagera discusses in considerable detail the feeling of relief Vincent describes. He points out that when religion eventually failed to provide a 'sufficiently strong and adaptable framework' for the expression of Vincent's conflicting emotions, his art quickly became 'a very suitable sublimatory outlet'. H. Nagera, *Vincent van Gogh, A Psychological Study*, New York 1967, 60 and passim. Many of Nagera's views can profitably be further considered in the context of van Gogh's use of Bargue and Cassagne.

(1)

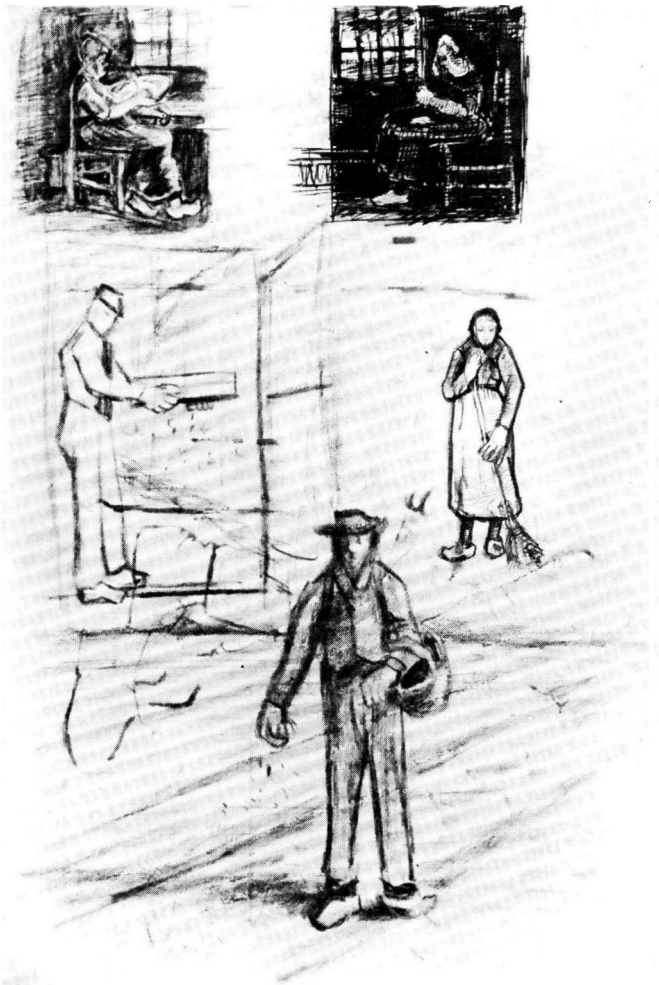


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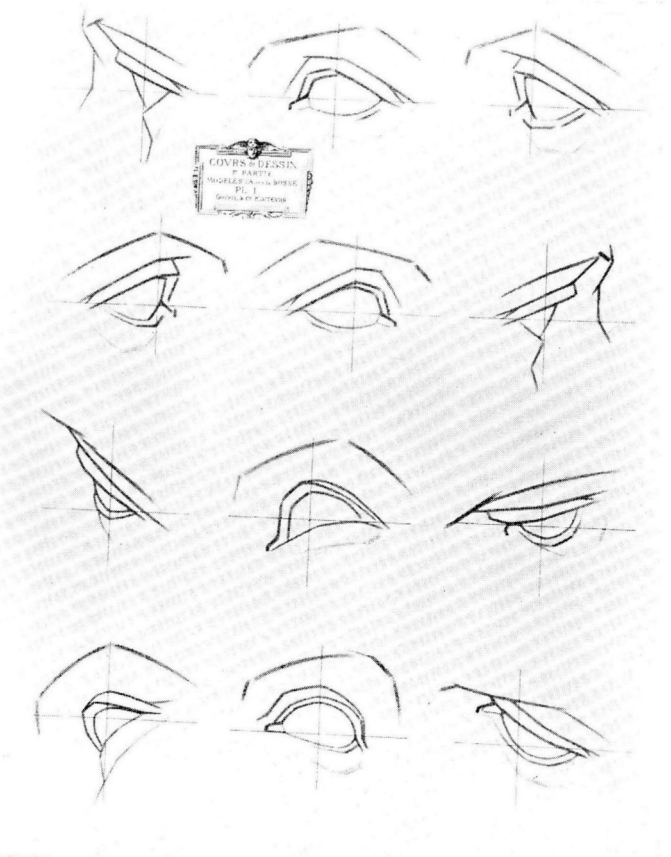


(1). Vincent van Gogh, Barn and Farmhouse, *Lochem, Coll. Scholte-van Houten.*

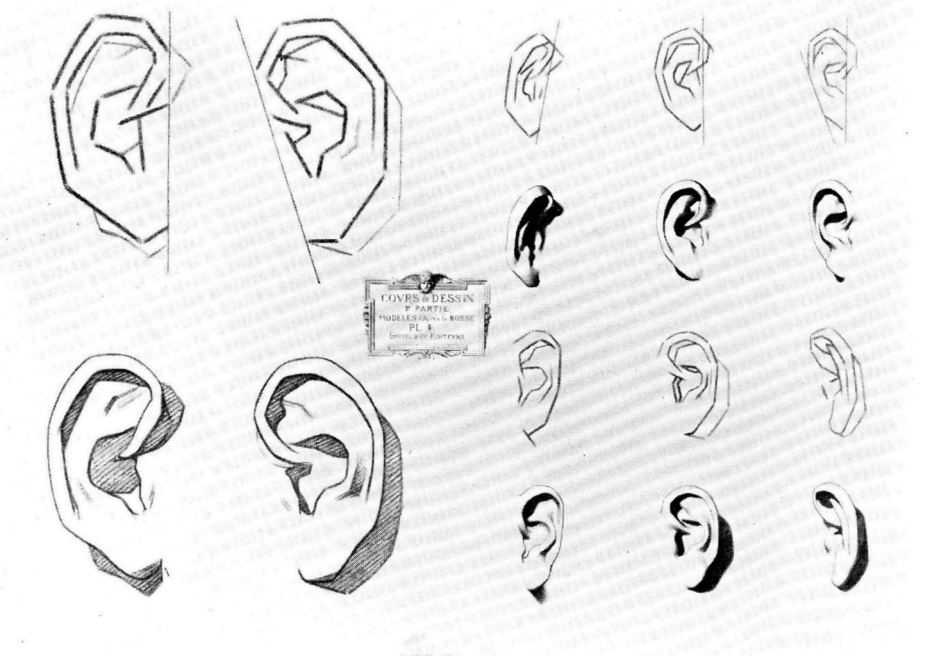
(2). Vincent van Gogh, Two sketches of a man leaning on his spade, *Den Haag, E. H. Held.*



(3)



(4a)



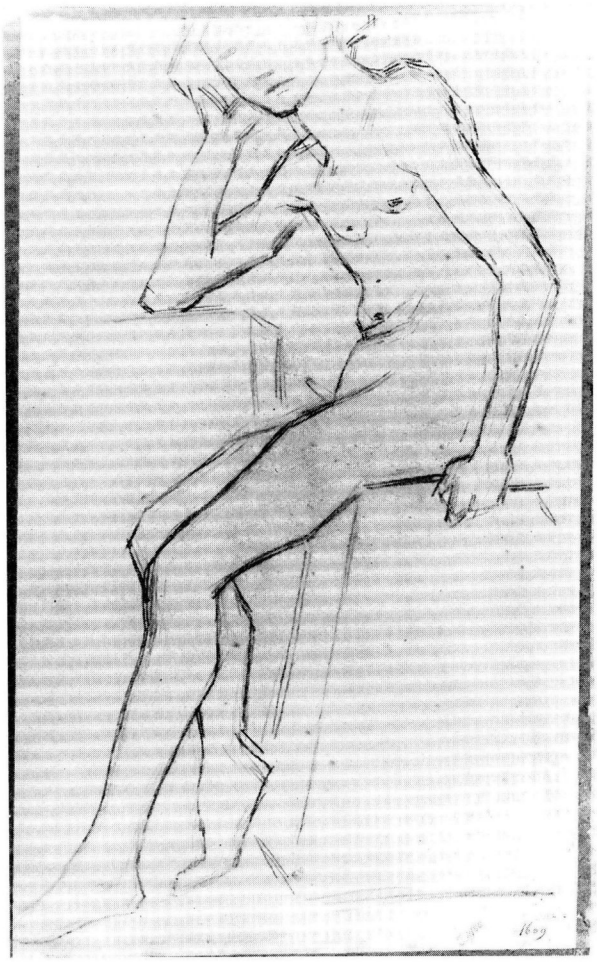
(4b)

(3). Vincent van Gogh. Illustration from Letter 150.—(4a). Bargue. Eyes. Plate I. 'Fragments de têtes'. *Exercices au Fusain.*—(b). Bargue. Ears. Plate IV. 'Fragments de têtes'. *Exercices au Fusain.*



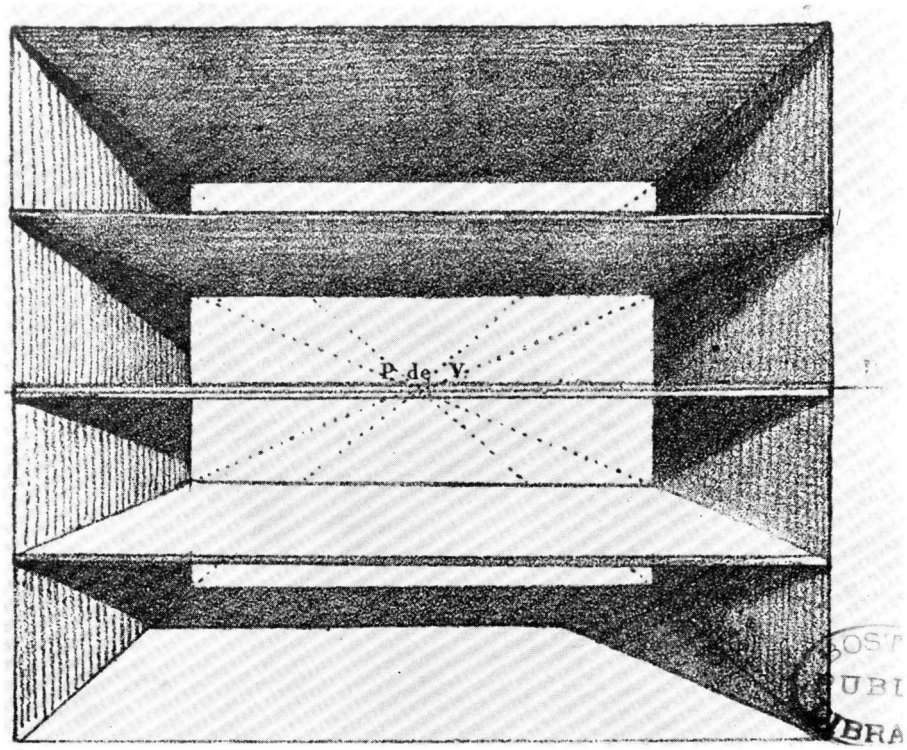
(5a)

(5a). Bargue, Seated Figure. *Exserices an Frisain*, Ex. 3 (traced by ASW from Chetham manuscript).

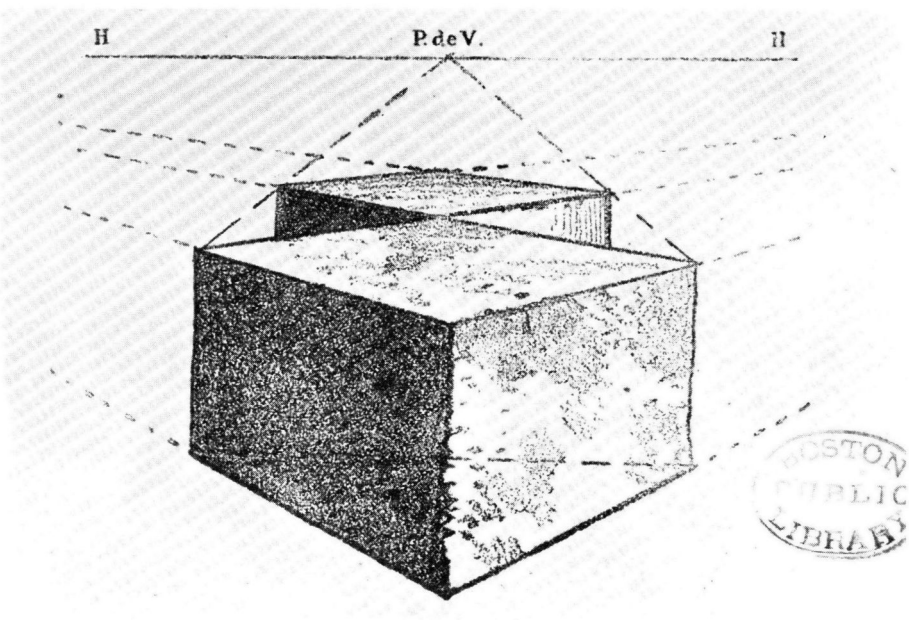


(5b)

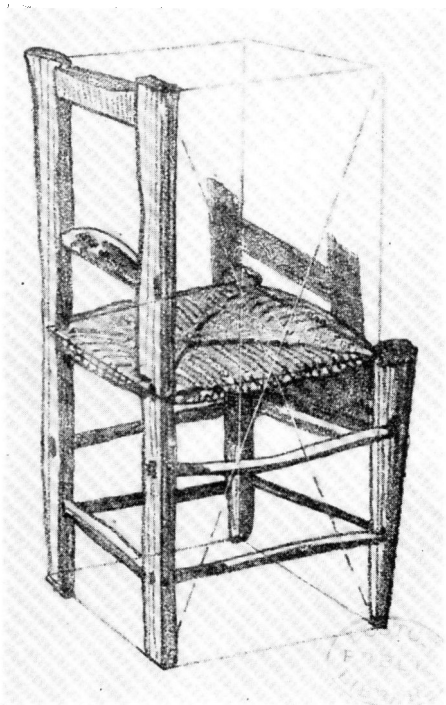
(5b). Vincent van Gogh, Seated nude (after Bargue). *Amsterdam Rijksmuseum Vincent van Gogh.*



(6a)



(6b)



(7)

EXEMPLE.

Le cadre ABCD (fig. 46) représente la dimension du tableau.



Fig. 46.

Les lignes EFGH le partagent en quatre parties égales, et la zone LK, glissant sur le cadre, en change à volonté la proportion selon que le motif l'exige.

(8)

(6). Illustrations from Cassagne, *Le Dessin pour tous. Méthode Cassagne*, 1862–1863. Première série, 1er cahier, p. 3. (a). The perspective projection of a cube having several horizontal planes (a 'layered cube'). (b). The perspective projection of two adjacent cubes askew.—(7). A Chair. Cassagne, *Le Dessin pour tous. Méthode Cassagne*, 1862–1863. Première cahier, fig. 8 p. 2.—(8). Un cadre rectificateur. *Cassagne, Traité pratique de perspective*, 1873, fig. 46 p. 20.

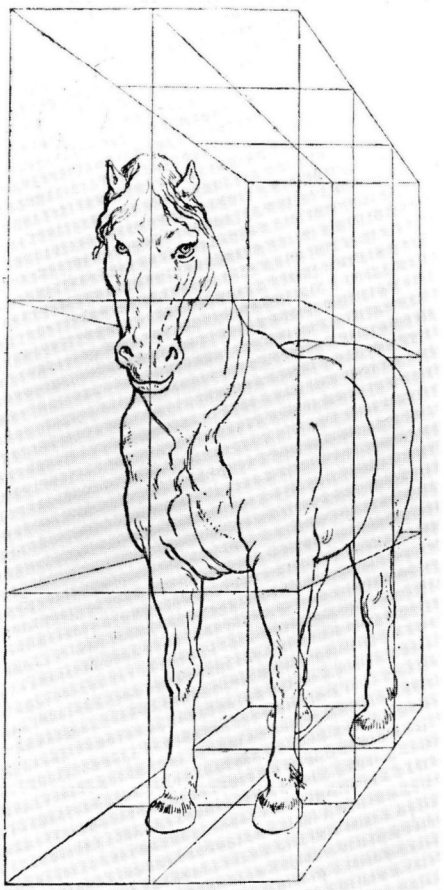
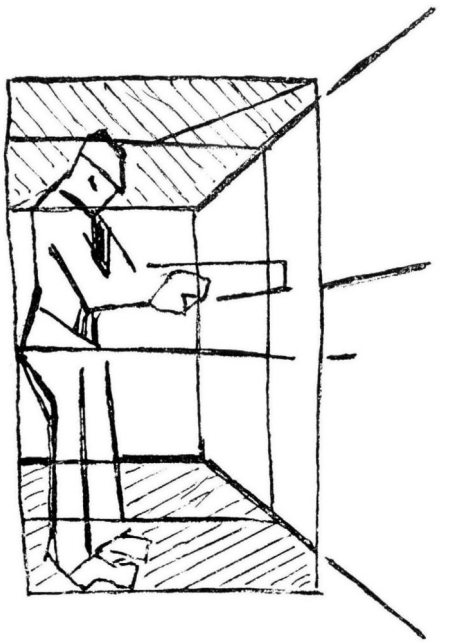


Fig. 114.
Application de la règle 87.

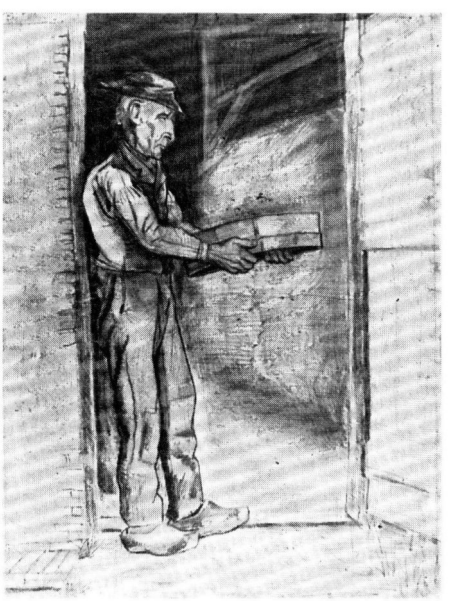
(9)



(10)



(11a)



(11c)

(9). A Horse. Cassagne, *Traité pratique de perspective*, 1873. fig. 114 p. 75. (10). A Man. Cassagne, *Le Dessin pour tous. Méthode Cassagne*, 1862–1863. Première cahier, 6ème série, étude du genre fig. p. 5.—(11a). Analysis of flange of lines in sketch of winnower from fig. 3 showing its relationship to perspective projection of picture space.—(11c). Vincent van Gogh, Peasant sieving grain. *Otterlo, Rijksmuseum Kröller-Müller.*



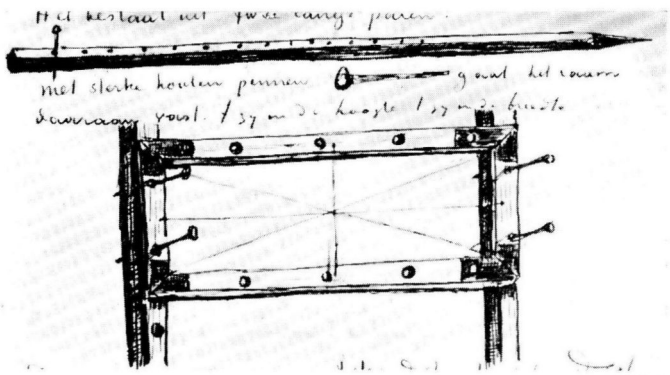
(12)



(13a)



(14a)

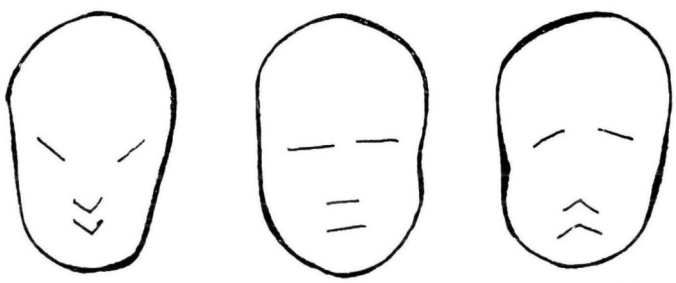


(14b)

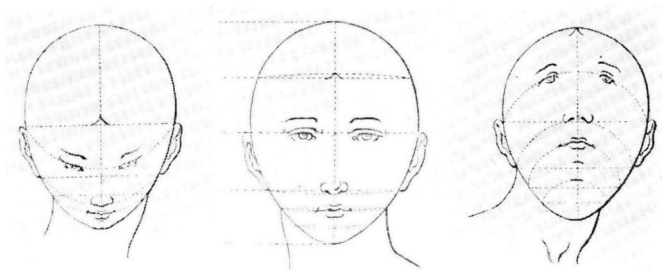
(12). Vincent van Gogh, Studies of the heads of two women; a peasant walking, *Otterlo, Rijksmuseum Kröller-Müller.* (13a). Vincent van Gogh, Sorrow, *London, Lady Epstein.* (14a). Vincent van Gogh, Illustration of a perspective frame from Letter 222.—(b). Vincent van Gogh, Illustration of a perspective frame from Letter 223.



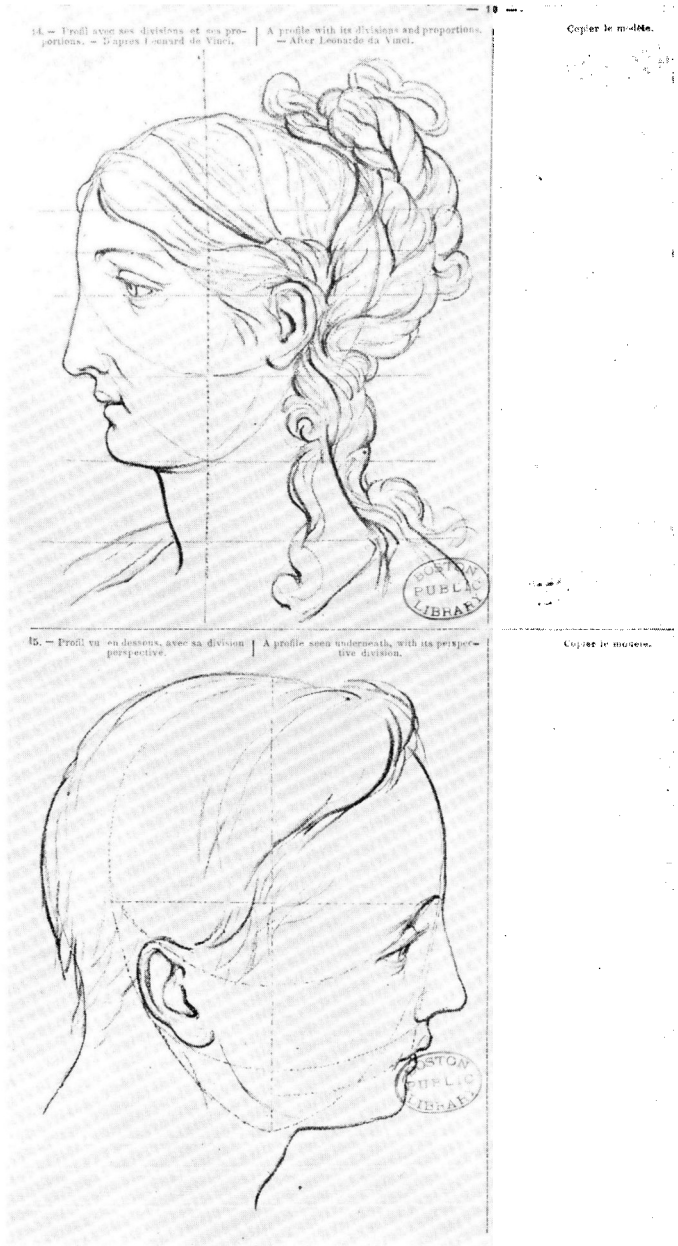
(15)



(16a)



(16b)



(17)

(15). Vincent van Gogh, Sketch of a man's head; sketch of a perspective frame (on recto: Montcel: Houses behind trees), *Amsterdam, Rijksmuseum Vincent van Gogh.*
(16a). Three Faces .Blanc, Grammaire des Arts du Dessin, 1870 p. 36 (Tracing by ASW).—(16b). Three Faces. Cassagne, Traité pratique de perspective, 1873, Fig. 214, 215, 216. —(17). Two Heads. Cassagne, Le dessin pour tous. Méthode Cassagne, 1862–1863. Troisiéme série: Etude de la Figure. Illustrations 14 and 15.



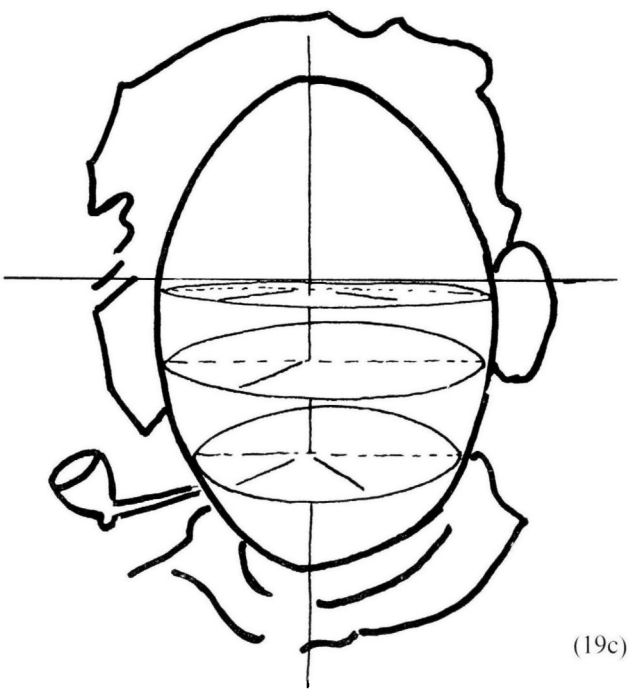
(18)



(19a)



(19b)

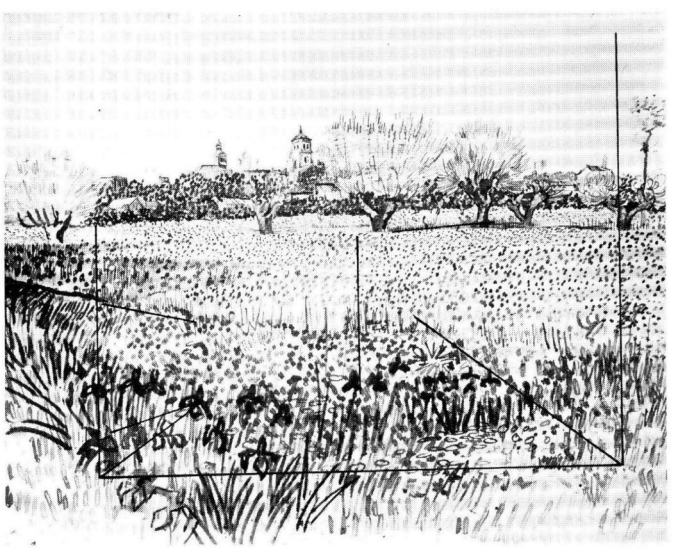


(19c)

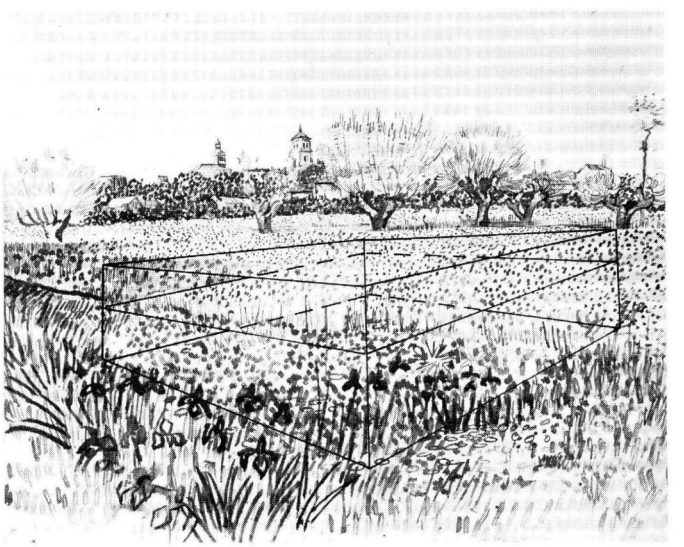
(18). Vincent van Gogh, Illustration from letter 392 showing traces of underlying oval.—(19a). Vincent van Gogh, Head of a young peasant: full face, smoking a pipe, *Amsterdam, Rijksmuseum Vincent van Gogh.*—(19b). Diagram of 19a showing underlying oval and projection of lines of left ear. —(19c). Diagram interpreting Fig.19a in context of Cassagne faces, Fig. 16b.



(20a)



(20b)

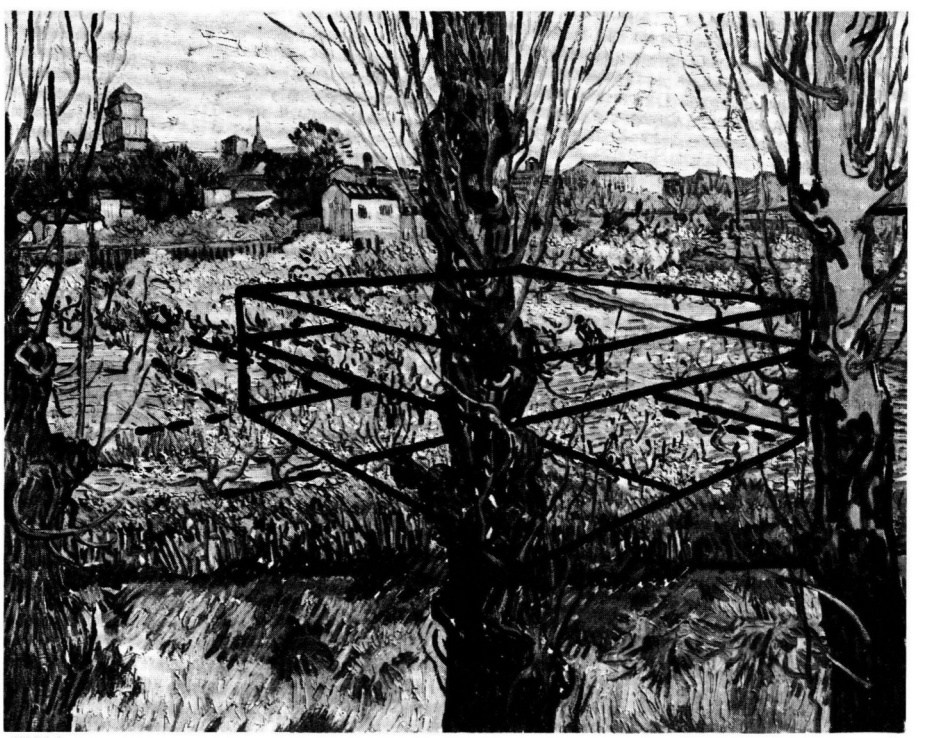


(20c)

(20a). Vincent van Gogh, View of Arles with Irises in the foreground, *Providence, Rhode Island, Museum of Art, Rhode Island School of Design.*—(20b). Illustration showing location of pencilled lines still visible on original of 20a. —(20c). Perspective projection based on pencilled lines, Fig. 20b, and zig-zag patterning of the field.



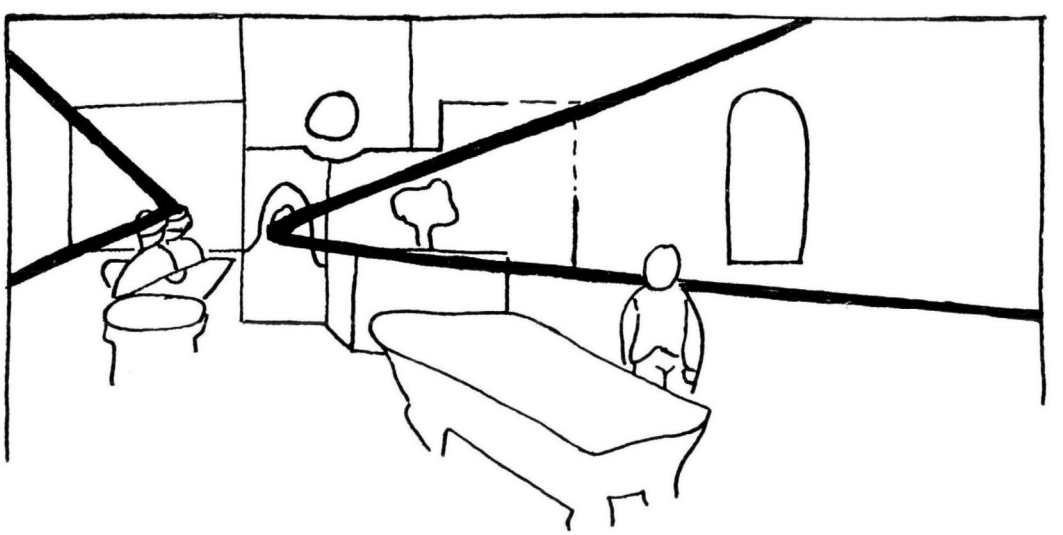
(21a)



(21b)

(21a). Vincent van Gogh, A view of Arles. München, Bayerische Staatsgemäldesammlungen, with still visible original sketch lines indicated.—(21b). Perspective projection based on lines shown in 21a and other strong diagonals.

(22a)



(22b)

(22a). Vincent van Gogh, Interior of the night café in Arles, *Bern, H. R. Hahnloser.*—(22b). An analysis of perspective 22a.