

# **Gestural Behavior and Social Setting.<sup>1)</sup>**

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*Introductory Note.* — The following essay is part of a somewhat extended investigation of the influence of race and environment upon bodily development and upon behavior, at the Department of Anthropology of Columbia University.

In the discussion of hereditary behavior the concept of race and of biological descent have been confused, giving rise to the idea of a predominant influence of race. Since every so-called race contains a great many individuals of distinct genetic characteristics and since, furthermore, analogous genetic characteristics occur in various „races“, more rigid methods are required. In every investigation of this kind the influence of environment and of genetic determination has to be clearly differentiated. From this point of view two methods of approach present themselves. On the one hand the behavior of genetically identical individuals living under different conditions may be studied. This has been attempted in the investigation of identical twins in which, however, not enough stress has been laid upon the detailed investigation of social environment. The newer investigations which indicate an increasing variability of identical twins during the period of growth, and the new Russian investigations which indicate a high variability in physiological and psychological behavior, indicate that the influence of environment should be taken into consideration much more carefully than has been done heretofore.

A second feasible method is to study the development and behavior of large groups of individuals and of their descendants in markedly different environments. This method has been pursued in the investigations on part of which the following report is based. The anatomical development and social behavior of the same group of people under different types of social and climatic environment have been studied. The tempo of motor habits, the frequency of various types of insanity, the distribution of types of crime have been subjects of our studies. The following essay deals with the problem of gesture habits from the point of view in how far these may be culturally or biologically determined. The trend of this investigation as well as that of the other subjects investigated indicate that, so far as physiological and psychological functioning of the body is concerned, the environment has such fundamental influence that in larger groups, parti-

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cularly in subdivisions of the White race, the genetic element may be ruled out entirely or almost entirely as a determining factor. This does not preclude that individually a biological element may be of importance in regard to many aspects of anatomical form and partly also of behavior, but the great variations of genetic characteristics in members of each group makes it, so far as these are concerned, an insignificant factor. So far as the individual is concerned it is a problem of individual anatomical and physiological make up, over which is superimposed the important influence of social and geographic environment in which he lives.

Franz Boas.

The following is a preliminary report of an objective study of the gestural behavior of Italian and Jewish immigrants and descendants of immigrants in New York City. The problem was (1) to determine whether there are any standardized „group“ differences in the gestural behavior of certain „racial“ groups, and if so, (2) to discover what becomes of these gestural patterns in members and descendants of the same groups under the impact of the different environmental stimulation or social setting. The present investigation is closely related to similar studies on posture, walking and other motor habits, which are being conducted by the same investigators.

The following groups were employed as subjects : (1) „traditional“<sup>1)</sup> Italians living in „Little Italy“, New York City ; (2) „traditional“ Jews living in the East Side Ghetto, New York City ; and (3) „assimilated“<sup>2)</sup> Italians and Jews, both living in similar „Americanized“ environments.

The methods used included : (1) direct observation of gestures in natural situations ; (2) sketches made by the American artist, Mr. Stuyvesant Van Veen<sup>3)</sup> of New York City, under the same conditions ; (3) motion pictures studied by (a) repeated observation and judgments of naive observers and (b) graphs and charts, together with measurements and tabulation of the same. The graphs were obtained in the following manner. The film, taken with a constant speed moving picture camera at speeds varying from 16 to 64 frames per second, was projected frame by frame upon coordinate paper. The position of motile parts, such as wrist, elbow, etc., was marked in successive frame projections, and when joined gave a precise representation of the fluent gestural behavior pattern. Figure 1 illustrates this graphic technique in the case of a traditional Italian. It will be noted that there are four distinct lines of motion portrayed, the continuous lines representing the paths of movement of the right and left wrists, and the

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<sup>1)</sup> By „traditional“ is meant both foreign- and Americanborn individuals who have retained the language and mores of the original group, remaining relatively impervious to the influence of the „Americanized“ New York environment.

<sup>2)</sup> By „assimilated“ is meant those individuals of the same descent who have more or less broken away from the customs of the respective original groups, identifying their general behavior with that of the American or „Americanized“ groups in New York City.

<sup>3)</sup> The writers wish to make acknowledgments to Mr. Van Veen for his skillful pictorial contribution to this investigation.

broken lines depicting the accompanying motions of the respective elbows. The numbers indicate the direction of movement, representing the position of the given part in each successive frame projection.<sup>1)</sup>

A study of the curves gained by this method, as well as a consideration of the data obtained by means of the other more qualitative methods enu-

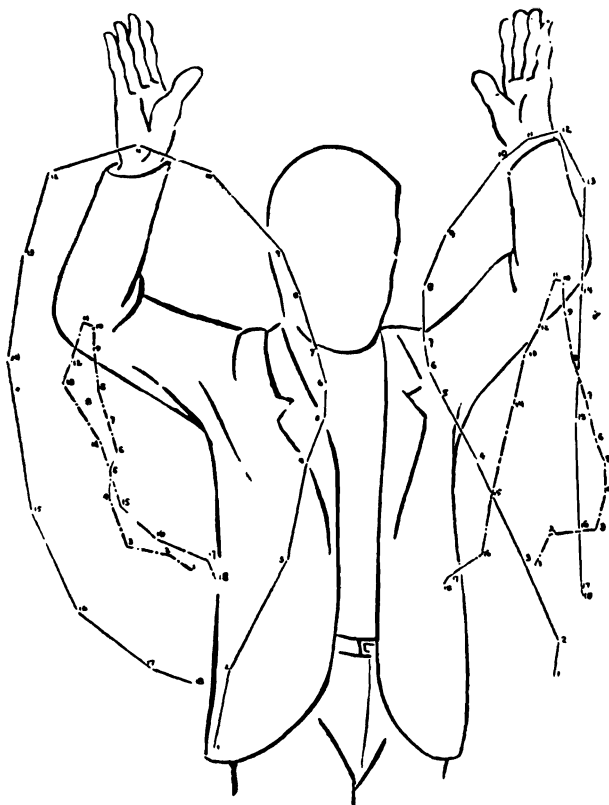


FIG. 1. — Sketch from a graphed unit-gesture (traditional Italian), illustrating graphing technique employed.

merated above, yields the following results to date. They are to be taken as preliminary and tentative, rather than as final and conclusive. We shall briefly summarize certain of the characteristics of the gesture patterns of the Italian, Jewish, and assimilated Italian and Jewish groups, respectively. The present results are based upon an analysis (cf. above methods) of approximately 5,000 feet of film, taken and studied over a period of two

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<sup>1)</sup> Since the original pictures, from whose graph the present sketch was made, were taken at a speed of 16 frames per second, the gestural motion shown in Figure 1 required 18/16 or approximately 1.13 seconds for its execution.

years, and about 2,000 sketches made from life. Since there is a wide diversification in the behavior patterns within the so-called Jewish as well as Italian groups, it must be kept in mind that when using the former term we refer to Jews chiefly of Lithuanian and Polish extraction, whereas by „Italian“ we refer to Southern Italians, chiefly from the vicinity of Naples and from Sicily. In each case, the specific ethnic origin of the individual was established by noting the particular dialect he used ; in doubtful cases, this was supplemented by direct interrogation after his gestural behavior had been recorded. It should be noted that both motion pictures and sketches were obtained in absolutely spontaneous situations in the everyday environments of the people concerned, who never knew they were subjects of an investigation.

We shall now attempt to give a tentative description of the „characteristics“<sup>1)</sup> found in the gestural patterns of traditional and assimilated groups. We shall begin with the TRADITIONAL ITALIANS AND JEWS, and shall first deal with the spatio-temporal characteristics of the gestural behavior, i. e., as „movement,“ and then proceed to a consideration of the strictly linguistic aspects of such behavior.

With regard to the parts of the body used in gesticulation, it may be said that whereas the Italian exhibits a tendency to use preferably his arms, in a more or less concerted manner, the Jew frequently employs his head, as well as his arms, hands and fingers, in a functionally differentiated way. The Italian exhibits a marked synergy in the use of the three parts of his arm, his upper-arm, fore-arm and hand moving from the shoulder in a concerted fashion. The head as well as the digital gestures are rather typical of the Jewish „expressive“ movement. In contrast, the head and fingers rarely participate in the Italian colloquial gesticulation, although the latter are involved in his pictorial and symbolic gestures (cf. below).

The form of the movement also shows marked contrast in the two groups. Generally speaking, the gestural movements of the traditional Eastern Jew are more complex in design than those of any of the other groups observed. These motions often pass from one plane of movement to another. As a rule, they exhibit an angular change in direction, resulting in a series of zig-zag motions which, when graphed, present the appearance of an intricate and composite embroidery. The movement is frequently sinuous in character, one of the most common examples resembling a figure 8 in general form. In contrast to the Jew, the Italian is inclined to continue in the same direction until completion of the entire gesture segment. This fact, together with the usual restriction of the movements to the spherical „surface“ plane (cf. below), necessarily creates an effect of relative simplicity in the Italian movements. The motion itself is likely to be spiral or elliptical in form. In the course of the movement, moreover, the Italian usually holds his hand in a straight line with his arm, in contrast

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<sup>1)</sup> The term „characteristic“ is employed to refer to general trends or statistical probabilities in the data, rather than in the sense of „types,“ the latter, needless to say, being products of logical abstraction.

to the Jew, who is more inclined to keep it at an angle to the fore-arm. Furthermore, in the Italian the palm is usually curved and prone, whereas the Jew often holds it flat and in a supine position.

Likewise with regard to laterality (unilateral or bilateral) as well as symmetry of movement, pronounced differences are noted. In the Jew, gesticulation usually occurs with one hand and arm, and if two are used, they are likely to be employed in a sequential rather than simultaneous fashion. The movement is predominantly non-symmetrical. In addition to the trend toward unilaterality and assymetry, the Jewish gestures also exhibit a tendency toward sequential transference of motion from one arm to the other. This latter characteristic may be figuratively termed „ambulatory“ gesture or „gestural locomotion“ of discourse. In marked contrast, the Italian gestures are usually bilateral; the two arms are frequently used simultaneously; and the movements are likely to be highly symmetrical in character.

The radius of the movement also differs in the two groups, the Jew employing a relatively narrow or confined area, with the fulcrum at the elbow, which is held relatively close to the body, or at the wrist; while the Italian sweep is characteristically large, with movements involving the entire arms and with the fulcrum at the shoulder. In the case of the Italian, the gestural radius is likely to coincide with his arm's length; the Jew, on the contrary, whose upper-arm rarely participates in the movement but appears to be more or less rigid and attached to the side of the body, is very seldom to be seen reaching, in his gesture, an area above his head or below his hips. The transference or displacement of the axis of motion from shoulder (in the Italian) to elbow or wrist (in the Jew) explains this phenomenon.

The two groups also differ with regard to the area in which gesticulation usually occurs, the Jewish group seldom deviating from the medial plane of the body, i. e., the frontal area toward the auditor, whereas the Italian is more likely to perform his movements within a latero-transversal space-segment, i. e., at either side of the body. Within each of these general areas, a difference is found in the direction of the gestural movements themselves, the Italian most frequently gesticulating centrifugally in a spherical „surface“ plane at a given distance from the body; whereas the Jewish movements often involve the „depth“ plane, being more centripetal with relation to the body of the gesturer. The gesture of the traditional Jew might be rhetorically characterized as a gesture of „address,“ whereas that of the traditional Italian might be described as one of „display.“

Our data are at present inconclusive with regard to speed of movement. It seems that the Jew may in general be slightly faster, although no clear-cut differences are at present apparent.

Significant differences were noted, however, in the matter of rhythm or tempo, the Jewish movements being characteristically jerky and irregular, while those of the Italians are smoother and less variable. Even in cases involving change of speed, the transition or change in tempo in the Italian gesture is likely to take place gradually, in a „crescendo“ or „dimi-

nuendo". The characteristic Jewish tempo is marked by frequent abrupt, dischronic and emphatic transitions, giving an effect not unlike that produced by the artificial actions of a marionette.

The tendency of the traditional Jew to use the body of his conversational partner as a „point de repère“ for his gesture also deserves mention. The gestural movements of this group commonly involve touching the physical person of the auditor on repeated occasions, or, if the latter also gestures, of seizing his hand or arm so that he cannot „speak.“ On other occasions, the auditor may be literally „button-holed,“ the speaker may grasp the auditor's coat-lapel with one hand while the other describes all kinds of arabesques in the immediate vicinity of his face. A few extreme instances were noted in which this „familiarity“ with the body of the interlocutor was mutual, resulting in the hands and arms of both participants becoming clasped to each other's arms or coat-lapels, with the resulting reversion to head motions as a form of gestural expression.<sup>1)</sup> Such behavior patterns are not observed in the Italian. Despite the large sweep with which his gestural movements are usually performed (cf. above), the full extent of his physical familiarity with the auditor was found to be the rather gentle placing of a hand on the latter's arm or the tapping of his hand, fore-arm, or shoulder. This was never done as a means of interrupting the movement, but, in the few observed cases, seemed largely a matter of expressing confidence.

Simultaneous gesturing of two or more individuals involved in the conversation is also frequently observed among traditional Jews, and is absent among traditional Italians. In one of our extreme cases representing the vocal and gestural conversation of four Jewish subjects, there are four arms, one for each person, participating simultaneously in the argument, with a resulting intertwining of sinuous movements on the graph. In connection with the matter of simultaneous gesturing among traditional Jews and their frequent contact with the physical person of the auditor, it is interesting to point out a rather curious variety of gesture which appears to be characteristic of this group, and which does not seem to fall under any of the present categories of gestural motion. It represents a kind of lunging forward with the arm, „pseudopodically“ one might say, in the direction of the interlocutor. This characteristic, as in the case of those relating to the speaker-auditor relationships mentioned above, appears to serve chiefly as a means of interrupting the discourse of the interlocutor or of getting his attention. Such behavior patterns were not observed in the traditional Italians.

Closely allied to all these phenomena, perhaps, are the ways of colloquial grouping among traditional Jews. These seem to be conditioned by more than the mere physical topology of the place of meeting. Thus traditional Jews, regardless of the extent of the space at their disposal,

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<sup>1)</sup> The most interesting example of this gestural „promiscuity“ in conversation was illustrated by a case in which the speaker not only grasped the arm of the interlocutor, but actually gesticulated with it!

tend to stand close together in compact groups, so close, in fact, that it is often difficult to observe and photograph their gestures.<sup>1)</sup> This peculiar „geography“ of conversation was not found in the other groups studied. The Italians, for example, stand farther apart, their bodies never being in actual contact.

The influence of momentary setting is, of course, apparent in all gestural situations with both groups, such factors as place of meeting, topic of conversation, and person or persons with whom conversation is being held conditioning more or less the frequency and character of the movement.

All of the above categories apply only to the spatio-temporal characteristics of the gestural movements themselves, without regard to their actual linguistic significance. We can here but point out the major differences observed to date with regard to the meaningful or referential function of such gestures. The Jewish gestures are predominantly of the discursive or „ideographic“ type, seeming to be, as it were, a kind of gestural portrayal, not of the object of reference or thought, but of the course or „curve“ of the ideational process itself. This general tendency to re-enact each turn or detail of the logical process with a sort of inflection in the accompanying movement<sup>2)</sup> results in the complex „embroidery“ movements described above. There is also a tendency to „underline“ or „punctuate“ the rather frequent climactic points of his discourse with a kind of „accent“ in the gesture. As a rule, this gestural „italicizing“ involves a change in the speed and direction of the movement, and seems to represent a kind of gestural „catapulting“ of the corresponding idea.<sup>3)</sup> The Jewish gestures are seldom pictorial or „physiographic“ and rarely symbolic (of objects).<sup>4)</sup>

The „ideographic“ type is rarely observed among the traditional Italians, whose gestures are most frequently pictorial, or „physiographic,“ and symbolic (of objects). The latter types represent an imitation or re-enactment with the body of the attributes or actions being verbally described. The physiographically symbolic gestures of the traditional Italian are very common, and imply definite meaningful associations. These may be used to accompany verbal intercourse or may even function as the exclusive means of communication (pantomime). We have been able to trace the historical continuity of many of these pictorial and symbolic gestures from ancient Rome to contemporary Italy. Some of the movements are strikingly similar both in their form and in their content. In general, there is very little difference between the gestural „vocabulary“

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<sup>1)</sup> This difficulty frequently necessitated that the pictures be taken from the top of an adjacent building with a telephoto lens.

<sup>2)</sup> Needless to say, the subtle function of this pantomime of the thought process can hardly be grasped by the spectator unless he knows the meaning of the accompanying words.

<sup>3)</sup> This, of course, is not to deny the possibility that such gestural behavior may be an intrinsic part of the „idea“ or „thought process“ itself.

<sup>4)</sup> The „symbolism“ actually involved is of a „logical“ character, i. e., more of a „significatio“ than a „demonstratio,“ in Cicero's terminology, depicting less the „objects“ of thought („referents“) than the pattern and „direction“ of the referential activity itself („reference“).

(approximately 125 „gesture-words“) of the traditional Neapolitan in New York City and that of his ancestor in Europe one century ago, as recorded by Andrea di Jorio in his „*La mimica degli antichi investigata nel gestire napoletano*,“ published in 1832. This also holds true for the dictionary of Sicilian gestures published in the latter half of the 19th century by Pitrié, in his „*Biblioteca delle tradizioni popolari siciliane*.“ No such formalized gestural „vocabulary,“ covering a wide range of linguistic possibilities, is found among the traditional Jews (only 6 pictorially symbolic movements have been observed by us in this group).

In our study of the pantomimic gesture, we were fortunate in securing the assistance of certain prominent Italian and Jewish actors in New York City.<sup>1)</sup> The former had no difficulty in enacting for us a series of „dumb-shows,“ the meaning of which is entirely clear to any person who is familiar with the system of gestural symbols used by their group. The latter, on the contrary, though they were as proficient in their dramatic ability, and despite the large amount of gestural movements displayed in their performance, were unable to create any specifically meaningful pantomime *per se*, based on „Jewish“ symbolic gestures.

All of the previous material has dealt with traditional Jewish and Italian groups. We come now to a consideration of the GESTURAL BEHAVIOR OF THE ASSIMILATED GROUPS. The assimilated Jewish subjects were obtained from several different sources : (a) upper- and middle-class Americanized New York Jews found at summer resorts in the Adirondacks and at the Saratoga race-track ; (b) upper- and middle-class groups found at various meetings and social and religious gatherings in New York City ; (c) Jewish students at Columbia University, etc. The assimilated Italians, also coming from the upper- and middle-class groups, included : (a) members and participants in Italian clubs and fraternities (e. g., Casa Italiana at Columbia University) ; (b) those found at various meetings and social gatherings in New York City ; (c) Italian students at Columbia University.

The data obtained on the assimilated groups indicate very clearly that the above gestural characteristics, typical of the traditional Jew or traditional Italian, disappear with the social assimilation of the individual, Jew or Italian, into the so-called Americanized community. On the whole, gesticulation is much less frequent in such assimilated groups, there being a diminution of movement as compared with the traditional groups. The more assimilated the individual, the less Jewish or Italian gestural traits he was found to possess. The fully assimilated Jews and Italians do not show the wide differences found in the traditional groupings (cf. above), and both resemble gesturally the specific American group to which they have become assimilated. With regard to the gestural behavior of the American, our data suggest that, as in the case of the traditional Italian and Jewish groups, there is a pronounced heterogeneity both in amount and in type. In general, the gestural assimilation of the Italians

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<sup>1)</sup> Signorina Baldi, Signor Sterni, and Signor Milliacio (Italian) ; Mr. Buloff and Mr. Ben-Ami (Jewish).



and Jews appears to be conditioned by the particular social and economic stratum to which they have become adapted. Thus, certain Jewish groups of the upper social and economic strata show great restraint in their motions, when movement is present at all, even when engaged in heated argument<sup>1)</sup>, and resemble gesturally the so-called Anglo-Saxons of the same social and economic environments. On the other hand, assimilated Jewish groups belonging to a different social milieu exhibit relatively frequent and vigorous gesticulation, although very unlike that of the traditional Jewish groups.

Nor could the differences in gestural behavior between traditional groups and the lack of such differences between assimilated groups be explained on the basis of „generation.“ It was found, for example, that the American-born students at Yeshiva College, a traditional Jewish school in New York City, exhibited traditional gestural behavior similar to that found in the Ghetto, while the American-born Jewish subjects obtained at an exclusive Fifth Avenue club were gesturally assimilated, showing no „orthodox-Jewish“ gestural characteristics.

It is also interesting to note that, conversely, many Americans who had had intimate acquaintance with the traditional groups were observed to display the traditional Jewish or Italian gestural habits. Furthermore, several cases of Jews who had been exposed over a period of time to Italian gestural (and other) stimulation, as well as cases of Italians who had become assimilated to Jewish culture, showed that in such cases the gestural behavior conformed to that institutionalized by the social group to which the individual had become assimilated, rather than to the gestural behavior of the so-called „racial“ group to which the individual belonged. Lastly, mention might be made of certain observations on more specific cases of what might be termed „hybrid“ gesture, which served to indicate that the same individual may, if simultaneously exposed over a period of time to two or more gesturally different groups, adopt and combine certain gestural traits of both groups. In some cases, for example, it was found that the gestures accompanying the same topic of conversation may be different, depending upon other elements in the stimulus situation, as is illustrated by the case of an Italian who gesticulates like a traditional Italian when addressing an Italian group in their own language, and in an assimilated fashion when speaking in English to an American audience.

The results indicate that in the case of the assimilated groups, it is not so much a matter of uniform „assimilation“ to gestural patterns typical of the so-called American or Anglo-Saxon culture as a whole, but rather an assimilation to the particular gestural customs characteristic of the specific social stratum of the American group with which such individuals have become associated.

In summary, a marked disparity was found between the patterns characteristic of most of the gestures of the traditional Jewish and Italian

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<sup>1)</sup> The race-track betting and ensuing discussions yield data which are conclusive in this respect.

groups investigated, and a lack of such contrasting patterns in the corresponding assimilated groups. The latter gesturally resembled each other and the Anglo-Saxons. Thus, social stimulation rather than so-called „racial“ descent seems to have been operative.

#### Die Beziehungen zwischen Gebärdenspiel und sozialer Lage.

Es handelt sich um eine sozialpsychologische Untersuchung, die unter der Leitung von Franz Boas, dem Vorstand des Department of Anthropology an der Columbia University, New York, unternommen worden ist.

Die Hauptmerkmale des Gebärdenspiels zweier verschiedener sogenannter rassischer Gruppen (Italiener und Juden) sind unter verschiedenen und ähnlichen Umgebungsbedingungen mit Hilfe von Filmaufnahmen untersucht worden. Das Ziel der Untersuchung war, festzustellen :

a) ob es hinsichtlich des Gebärdenspiels irgendwelche durchgängigen Gruppenunterschiede zwischen noch nicht amerikanisierten jüdischen und italienischen Schichten gibt, und, falls ja,

b) welches Schicksal solche Merkmale unter dem Einfluss der sozialen Anpassung erfahren. — Die Ergebnisse geben auf die erste Frage eine bejahende Antwort : Das Gebärdenspiel beim Gespräch der nicht-assimilierten Italiener und Juden ist recht verschieden, und zwar sowohl hinsichtlich der räumlichen und zeitlichen als auch der sprachtechnischen Gestaltung ihrer Gebärden. Für die zweite Frage zeigen die Ergebnisse, dass die Unterschiede, die bei den noch traditionell gebundenen Gruppen angetroffen wurden, bei ihren amerikanisierten Nachkommen zu verschwinden trachten, deren Gesten untereinander und den angelsächsischen Gruppen angenähert werden. Ferner hat sich herausgestellt, dass der Prozess der Angleichung des Gebärdenspiels entsprechend der sozialen Situation verläuft, in welcher sich der Nachkomme der noch nicht assimilierten Familie befindet.

#### Mimique et situation sociale.

L'article traite d'une enquête de psychologie sociale, entreprise sous la direction de M. Franz Boas, président du Department of Anthropology à l'université de Columbia, New York.

Les caractères propres à la mimique de deux groupes, considérés vulgairement comme racialement différents, juifs et italiens, ont été étudiés par le procédé de prises de vue cinématographiques, dans des milieux tantôt semblables, tantôt différents. Le but de l'enquête était :

1° d'établir s'il existait, dans la mimique, des différences spécifiques entre italiens et juifs non encore américanisés ; et, dans le cas d'une réponse affirmative :

2° d'étudier ce que devenaient ces différences sous l'action de l'adaptation sociale. Les résultats donnent à la première question une réponse affirmative : la mimique des juifs et des italiens non encore américanisés, dans la conversation, est très différente — différences qui s'expriment aussi bien dans la figuration spatiale et temporelle des gestes que dans la technique du langage. Pour la deuxième question, les résultats montrent que les différences observées sur des groupes cohérents, encore soumis à la tradition, tendent à disparaître dans les générations américanisées ; les gestes s'uniformisent et se rapprochent de ceux des anglo-saxons. D'autre part, il s'est révélé que l'adaptation de la mimique se déroule d'une manière qui varie avec la situation sociale dans laquelle se trouve le descendant d'une famille non encore américanisée.