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An Essay Concerning
the Creation of Interactions

by

Rita Denny
(December 6, 1977)

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An Essay Concerning the Creation of Interactions

Anthropology 577
Norman A. McQuown

A very central possibility is that someone's job
→ increased variability in occurrence - not a
simple loss type co-occurrence - not a
general hypothesis about the mechanisms
of human interactions
→ perfectly normal state of affairs

R. Denny
December 6, 1977

are considered to be accompanying variables

e.g. G's "sexed" [3218] [159] = D's "bottle"!

e.g. children [3065] [3] vs. adults [3143] [8]

e.g. G's "root" [3302] [240] = G's "unfocused"!

Theoretical Perspective

Gestures are hard to classify and it is difficult to make a conscious separation between that in gesture which is of merely individual origins and that which is referable to the habits of the group as a whole ... we respond to gestures with an extreme alertness and, one might also say, in accordance with an elaborate and secret code that is written nowhere, known by none, and understood by all.

Sapir (1927)

Kinesics is concerned with abstracting from the continuous muscular shifts which are characteristic of living physiological systems those particular groupings of movements which are of significance to the communicational process and thus to the interactional systems of particular social groups.

Birdwhistell (NHI:20)

We learn to behave systematically in becoming socialized and enculturated, and it is very hard to behave in any other way... all behavior is apparently patterned and capable of being recognized and comprehended ... each participant follows some customary blueprint...

Scheflen (1973:14)

Each of the above authors is postulating that a repertoire including verbal, vocal (nonverbal), olfactory, and tactile behaviors (at least) is critically necessary in maintaining human interactions. Thus, by sake of our interaction with another person we are responding appropriately to body motion (inclusive of gesture), speech, and vocalizations. While each author assumes a set of rules which defines behaviors as systematic, Sapir's secret code, or Scheflen's blueprint, there has not been an attempt to define what in fact these rules are.

Birdwhistell's kinesic system provides a methodology for defining the levels at which certain behaviors are communicative but he has not formalized an 'American kinesic system' or postulated on how the system is used in terms of initiating, mediating, or terminating interactions. His concern has primarily been with how kinesic behavior reflects the personality and socio-cultural identity of a participant,

or motivational states of the participants at any given time period during an interaction. A further step would be to define those behavioral complexes which are interpreted by the recipients as being a particular affective state. In addition, the above types of analyses are focused on individuals which have already entered an interaction. As such, they are focused on the problem of communicating a message(s), of interpreting them correctly, of reducing their ambiguity. Such a perspective is not the only alternative.

Given a system of nonverbal communication I am concerned with how this system is used to create interactions. In essence, what are the prerequisites, in terms of behaviors exhibited, for interactions between two individuals to exist?

There is a paucity of literature on this subject. Intuitively, one feels that gaze direction, verbal behavior, or some specialized gestures are necessary ingredients in the sequence of events which lead to an exclusive interaction.¹ Goffman (1963) poses that gaze direction is crucial in initiating and maintaining interactions, and Kendon (1967) demonstrates its importance in maintaining such encounters. Verbal behavior exhibited by an individual seems an overtly obvious means for initiating interactions, but I propose that this means of communication cannot be the sole one employed by an individual. The importance of gestures is greatly emphasized by animal behaviorists. Smith (1977) emphasizes the message content of behaviors which have been specialized solely for the function of communication; these

¹The term interaction by definition refers to any situation where an individual's behavior is modified and modifies another's. Thus behavior which leads to an interaction is an interaction in itself. When I say 'lead to an interaction' interaction refers to a situation that is acknowledged by an observer (without aid of microanalysis) to be such an encounter, i.e. not the period which precedes the acknowledgement.

behaviors being termed displays. Specifically, he defines the kinds of information which are being transmitted at the moment of displaying, information about what the communicator is likely to do: locomote, escape, attack, copulate, feed, interact (unspecified type) etc. This approach is unique in studies on communication as Smith proposes that in any species certain behaviors serve to initiate, mediate or terminate interactions, (and defines some of these behaviors for many species). In this context, consider the following quote:

I believe that people ... use their power to communicate at no more than about one-fifth capacity. We often just stand there, face expressionless, arms hanging slack, yes stationary, voice droning out language noises ... We are disembodied voices; our bodies are only somnolent casings of skin, hair, flesh and bone. C. Croneburg vis a vis Wylie, L. Beaux Gestes

It is ludicrous to believe that when we are exhibiting such behaviors we are not communicating. On the contrary, we are transmitting a plethora of information about what our next action is likely to be; we only must define the kinds of information.

The purpose of this paper is to demonstrate how complex the behavioral sequences which culminate in an interaction actually are. I propose that sequences of this nature are critically essential for an interaction to take place. Ultimately, though not in this paper, I would like to construct a theoretical set of rules which would explain sequences and describe the observed behaviors.

Specifically, the problem is defined as follows: In NHI interview 1 Billy (B) interacts with his mother, Doris (D), four times. In addition, there are times where B gazes at D but no interaction takes place (frames 1119, 1124-32, 1142, 4285). Gregory (G) is by no means a passive participant: he looks at B (frame 4100) but again no interaction takes place. Why not? One could speculate voluminously in terms of

emotional states. But testable hypotheses are also possible: Interaction did not occur because necessary ingredients were not present in the behaviors exhibited by the participants. In essence, the absence of these behaviors are reflecting motivational states, but my concern is with defining systematically what those behaviors are.

I have chosen two segments, approximately 10 seconds each in length, where the first (frames 2522-2755) sequence results in an interaction between B and D, and the second (frames 3062-3305) does not. In both sequences B is preoccupied with his airplane, in both he approaches D and G. In each sequence D and G 'seem' to be in similar contexts: Seated in the same positions on the couch, they are conversing. Obtaining data by a microanalysis of the body motion of each individual my aim is to propose testable hypotheses about the nature of interaction formation.

Concerning the Transcription

Two segments were chosen: Airplane I (2522-2753) and Airplane II (3062-3305).

Not all movements made by each of the three participants were transcribed: D and G remain seated during both segments hence only the following body parts were observed: head, eyes, mouth, shoulders, trunk, right and left arms. Since B was walking quite a bit it was essential to transcribe these movements, hence the following parts were transcribed: head, eyes, mouth, shoulders, trunk, right and left arms, right and left legs. Hand movements were not transcribed for any of the individuals. In addition, the quality of the film does not allow for extreme accuracy in some cases, e.g. G's eyes. Finally, when a particular area was not visible, this was noted on the tran-

scription.

Verbal behavior is recorded in the transcription, but is placed only in approximate positions, my source being the NHI transcription. It was included to give the reader an indication of overall communicative behavior. Since I cannot vouch for its accuracy (in terms of frame matching) it cannot be used as data for correlation to body motion, except in an approximate sense. Where words are underlined the exact frame (according to NHI) is known.

Notation for describing motions represents a derivation of Birdwhistell's and Zabor's systems, the most drastic difference being in describing arm movements (see below); I strived for efficiency, accuracy and readability; where I thought the present systems to be inadequate I created my own, (this may be unfortunate as I must subject my readers to my whims, be they brilliant or trivial). Notations are as follows:

head, \hat{h} ; positions: \rightarrow to subject's right, \downarrow tilted down, \nearrow cocked right (top of head to subjects right), opposite arrows for opposite directions. Movements denoted by $>$, ∇ , \uparrow , respectively.

eyes, $\bullet\bullet$, focused; positions and movements denoted by arrows \nwarrow down, \rightarrow right, \uparrow up, \leftarrow left; $\bullet\bullet$ closed. I did not differentiate degrees of openness as this was too difficult to observe.

mouth, $=$, normal-closed; positions: $\overline{\nabla}$ open mouth, \wedge smile; movements: $\overline{\nabla}$ opening, $\overline{\wedge}$ closing.

trunk, \parallel , spine straight; movements \updownarrow bending forward from hips, $\nabla\parallel$ moving back from hips, $\parallel>$ trunk bent to the subjects right, $\parallel<$ to subjects left, after initial movement, arrows \curvearrowright , \curvearrowleft , \rightarrow , \leftarrow , respectively, will be used to denote movement; $\parallel>$ hip and trunk rotation to the right,

rotation to the left.

shoulders, —, upright normal; positions: ↑ raised, squared, ↓ lowered, ↘ hunched, ↖ arched back; left and right arrows denote subjects left and right shoulders, respectively; movements denoted by arrows: ↘ ↖ ↗ translated as shoulders being lowered (unless describing initial position), left shoulder being raised (right maintains former position of being low), right shoulder raised (left maintains former raised position).

arms: both arms were divided into upper and fore, where each part could be described by two angles:

upper: The first angle gives position of upper arm relative to how far posterior or anterior it is to the body: an upper arm parallel to the body is 0° , straight out in front 90° frontal, over the head 180° , extensions behind the body given minus values, e.g. -45° , -90° , $(-180^\circ = 180^\circ)$.

The second angle describes the distance between arm and body as the elbow is projected away from the body: again, where upper arm parallel to body this angle is 0° , as arm is raised angle increases (straight out to side is 90°), with a maximum of $\sim 200^\circ$.

fore arm: The first angle describes the degree the elbow is bent, extended all the way being 0° , increasing as fore arm is drawn in with a maximum of 170° .

The second angle describes the degree to which the fore arm crosses the body frontally, 0° paralleling the body, 90° being parallel to front of body, crossing it, -90° being parallel to body, away from body.

legs: B's leg movements were described in terms of taking steps

only, (otherwise they were motionless). The direction of the steps is given in the analyses of the transcription.

Analysis of Airplane I

For the first 173 frames B is stationary: Standing approximately 6 ft from D and G, at a 45° angle from couch his head is tilted down slightly, cocked left, eyes focused, mouth closed, back straight, upper arms projected 30° frontal, fore arms 90°, and crossed 30° frontally, wrists in constant rotation. Throughout the 173 frames B moves head occasionally (lowered 68,74, 79-96, right 101-117), blinks eyes (83-90), opens and closes mouth (87-89), shifts trunk (84-90), extends elbows away from his body and returns them (75-87), moves fore arms away from body (171-177). Overall impression created is one of concentration on his airplane.

At the same time D and G are on the couch conversing. D is sitting almost frontally to G (~30° off) head shifted left, eyes slightly down and right, trunk curved, upper arms extended 45° frontal, fore arms 60°, and crossed 45° frontally. At no time does she look at B. She maintains a fairly stable position: head shifted (left 37-38, 53-60, down 56-57, up 75-79, left 76-82, up, right, down, left consecutively 88-93, left 94-98, up 103-107, right 134-147, down 137-140). She blinks her eyes (33-38, 63-70), shifts them left (98), shifts right (150). She is talking during this period with verbal pauses ~75, ~93, 138. D (neither looks) at G nor B. Her circular head movement (88-93) immediately follows B's arm movements (75-87), but there seems to be no other correlation of behaviors.

G is sitting legs drawn up, weight shifted forward, head down cocked left, inhaling cigarette, arms drawn close to the body, fore

arms crossing chest. G exhibits one head nod (128-142) which coincides with D's verbal "uh" (138). His right fore arm rotated away from body (63-66) presumably after inhaling cigarette.

B starts to locomote at 174, towards D, right foot (Rf) forward. Simultaneously his head shifts right (174-175), his fore arms rotating away from body (177). The second step occurs at 184, the third at 195; upper arms at this point are close to paralleling trunk, fore arms at 90°, crossing 45° frontally once again. Coinciding with these movements, D starts to bend forward at 185, bending slightly left in so doing (188-196), continuing forward progress to 206. Her head is shifted slightly right, eyes down. B's fourth step starts at 205, fifth step at 213; D shifts to the right at 212-222 and back at 213, 216-225. B shifts his weight from L to R foot from 219-231, 7 frames after D starts moving trunk right/back. D continues turning right 226-228, slightly left 229-230. D's upper arms have been drawn back parallel to trunk, fore arms increasing angle λ to 100° by 219.

Throughout the above sequence G is relatively immobile. His head, however, does shift to the right coinciding with B's first step (186-187, 192) and with remaining steps (196-216), his eyes probably focused on B (or D).

There has been no verbal exchange between D and B, that occurs at 246 with 'what honey'. It is interesting to note however, that the camera zooms in on D and B at 233; an acknowledgement of an interaction ^{231 232?} ₌₂₃₁₅₅

I would propose that possible criteria for achieving an interaction [?] is a coordination of behaviors by the individuals involved.

Analysis of Airplane II

The analysis of this segment is considerably more difficult. B is

What is it?
 can it be...?
 so what is it?

intentionalizing??

locomoting much of the time, and G is more mobile. As such the analysis is segmented according to B's locomoting behavior.

For the first 59 frames B is locomoting towards D approximately 30° left of her. His head is down, cocked left but turning right at 27. His arms are moving down, paralleling trunk by 27; coinciding with this, L step occurs starting at 16 causing him to rotate to the right, at this point 3 ft from D and G, facing G; step ends at 30. His right upper arm extended 45° frontal, fore arm at 90°, rotated away from trunk -45° by 30 (flying his airplane). B's fourth step occurs at 30, fifth at 42 where the L leg is brought parallel to R. Below is a sketch of relative positions:

Frame: 11



22



31



42

133



where > is direction of head, ... walking in that direction.

During this time D has not changed initial position: head slightly down and left, upper arms extended 45° frontal, fore arms 65°, crossed 45° frontally, presumably eyes focused.

While G is relatively immobile he does shift his head from the initial position cocked right, turned left; he shifts to the right (31) after B's rotation to the right (48-51) coinciding with B's last step. That is, G is shifting his head away from B to D.

B is stationary from 57-115

[311-327]

B moves his head down, left, cocked left (68-70). Simultaneously his trunk rotated to the left 68-78, raising his shoulders as his arms are raised 70° frontal, fore arms 45°, crossed 45° frontally by 73. D shifts head right (62), up and right 73. Her trunk bends forward (73-74) laughing (70-77). G's eyes shift up and right (68-69). There is no eye contact between any individuals.

B's upper arms extended to 105° by 84, trunk rotating right (85-89), head shifting right (89), eyes still focused on airplane. D's head has shifted down (84-87) and left (88), trunk moved back (86-87). G's head shifts down (81).

B's R arm lowered slightly to 100° , elbow moving away from body slightly (99); head shifts to the right (101, 112, 114,) trunk rotating right (113-116). D's head is raised (103-104), shifted right (106-109) but her eyes shift left (107). Her trunk shifted right (110-111), left shoulder lowered (111-112). Thus, her movements may be synchronous with B's, she does shift to the right immediately preceding and during B's shift to the right. Her eyes, however, belie any intention of interaction. G has shifted his head right (96), though his eyes are shifted left (94,95) still following B's movements. His head shifts left and down at 110, though eyes presumably still focused on B. Finally, G smiles (110-129). At this point, G is exhibiting behavior which could lead to an interaction, but B's eyes focused on airplane, and body shifting to the right, away from G.

B locomotes again from 115-174. [177-223]

B's head turning right (112-128), trunk rotating right (115-116). His arms are in constant movement: His left upper arm lowered to 40° frontal, fore arm crossing 60° frontally (123), then upper raised to 90° , fore arm rotating away from trunk to 45° (129). His right upper arm is being raised to 100° , fore arm 45° and crossed 45° frontally (126), upper raised to 130° , other angles maintained (129). That is, by 132 both arms extending above his head, though the right fore arm crosses frontally more than left. B's L leg has stepped back (115-125) starting right step 125, pivoting so that his back is to D.

During these movements D raises right shoulder (118-119) and starts to bend trunk forward at 124. Her left upper arm is extended frontally from 45° to 75° , fore arm extending from 65° to 30° , by 123. Verbal pause in speech 'uhuh' occurs at 119-122. D starts leaning forward only 1 frame before B starts pivoting away from D. G, on the other hand, is still smiling, presumably to B, until 129. In addition, his head has shifted left (125-128) coinciding with B's arm movements, and B's pivot step, which for those frames, would bring B closer to facing G than at any other time.

As B takes his pivot step (125-142) it is apparent that his mouth is at this point closing (134-135), eyes are focused on plane, head raised (140-141). His next step (142-159) is directly away from D. At this time, both arms are lowered: L upper arm now 60° frontal, but elbow is being rotated away from trunk at 90° (144), R upper arm now 60° frontal, elbow rotated out 90° (144), elbow drawn back in and upper arm lowered to 45° frontal (147). During this step there is a head shift left (149-154). His last step occurs from 159-174; a head shift left (170-174), trunk shift left (170-173); left arm: upper lowered to 45° frontal, fore arm straightened to 45° (174).

During this time D has moved trunk forward (124-144) and back (157-182). She is withdrawing her left upper arm from $60^\circ \rightarrow 45^\circ \rightarrow 30^\circ \rightarrow 15^\circ$, increasing the fore arm angle $45^\circ \rightarrow 60^\circ \rightarrow 135^\circ \rightarrow 170^\circ$, increasing the frontal crossing $45^\circ \rightarrow 60^\circ \rightarrow 75^\circ$, starting at 171, continued to 186. (She has tapped her cigarette and about to inhale.) G starts talking ~135-177, shifting his head up and right (161-165), and up (166-170), eyes raised at 173.

At this point B has effectively dismissed G and D by turning his

back to them; G and D^{arc} interacting with each other. Yet B stops forward progress, a possible indication that a shift in behavior may occur, hence further analysis.

B exhibits several shifts to the left from 174-203, none which bring him facing D or G. From 170 his trunk has shifted left, with head, and movement of left arm. His head continues the shift to 181, mouth opens and closes (179-185). His left elbow is brought closer to his body, upper arm raised to 160 frontal, fore arm extended in a straight line (0°) by 180. A trunk shift left continues (180-189), his head lowered (180,183,186), shifted left (187-189), both elbows drawn to body (45 R arm, 20 L arm) by 189. His head continues left shift (190-196), then shifts right (199-201) following a trunk shift right (194-195,199). D shifts her head right (194-200), though she never looks at B. G's head lowered (183-186, 189-190) during B's shift left. Though B never shifted far enough left to face G, it is interesting to note that if he had, G would not be looking at him.

Finally, B starts locomoting away from G and D at 203. His head is lowered (203-207), left elbow rotating away from trunk (213), His head shifts right (217-218), left (237-240) but eyes shift right (239). While stepping (213-233), he is rotating to the right, two additional steps and B is not visible.

During these final movements D does shift her head right (204-205) but never looks at B. She shifts head left, up (219), left (228-236), down (230-231), verbalizes at 237. D exhibits no attention to B. G, on the other hand does: though eyes are lowered (230-234) he shifts his head left (234-243) and raises eyes (236-237) following B's movements.

Ruminations, speculations and hypotheses

The first airplane scene acts as a basis for speculation about the mechanisms which create interactions. I propose that certain criteria must be met for interaction to occur:

1. An individual must exhibit some behavior signaling his willingness to interact:

- a. an individual must locomote in the direction of a potential interactant, or
- b. an individual must gaze at a potential interactant, or
- c. an individual must verbally address a potential interactant, or
- d. head nod, or other movement directed towards a potential interactant, or
- e. smile, or
- f. any combination of the above

2. The behavior must be acknowledged by the recipient by:

- a. a body movement, specialized (i.e. recognized) to signal willingness for interaction, or
- b. a verbal acknowledgement, or
- c. a combination of the above, or
- d. body movements not of themselves specialized for signalling a willingness to interact, but in conjunction with other behaviors can result in an interaction, i.e. they signal a willingness for interaction.

The process for creating an interaction is a feedback system. In its simplest form it can consist of two behaviors, one by the communicator, one by the recipient. This is obviously not the case in Airplane I, where the process consists of a more complex sequence, but a sequence nonetheless. It is as though, the initiator, given a response, has two alternatives, to continue or to terminate the process. Given a response, the recipient too, has this same choice:

B is the initiator, moving towards D at 174, raising head slightly before locomoting. D starts to move forward at 184, ostensibly to tap her cigarette, but also bending left as she does so, away from B to 206; her eyes down, making no contact. B's fifth step occurs at 213; while D has started to shift right towards B at 212, and back at 213-225 (never tapping her cigarette) and coming even closer to B. At this point B has not shifted his weight from left to right leg; he can still take another step, pivoting, and leaving. At 219 B starts the weight shift, being directly in front of D, but does not do so until D had been turning towards

him for 6 frames.

Given the weight shift, it would be extremely difficult for B to extricate himself gracefully; I propose that this was his last choice, and that he opted for interaction. If D, when leaning back, still moved left in so doing, I would predict that B would not have taken the next step towards D. I also propose that given a break in the sequence, i.e. a nonresponse by one of the actors, this does not dictate a noninteraction, only that the communciator must initiate another behavior signaling a willingness for interaction, and the cycle will continue. The amount of breaks allowable in the process before the probability for interaction becomes extremely low is dependent upon the individual states of the actors. For example, D is conversing; she must make decisions about her own future behavior and weigh the relative importance of each alternative. This may result in a break of the sequence (what might be interpreted as hesitation) with B: a possible example being when D bent forward she bent left simultaneously, maybe expressing ambivalence?

I would go even further and make the hypothesis that any interaction between two people consists of a sequence of behaviors, such as the one by D and B; that verbal behavior is the culmination of a series of nonverbal behaviors, and as such, is partly redundant. I propose that an individual will not initiate an interaction unless the probability of interaction occurring is fairly high. Given a feedback system it is possible for the initiator to minimize energy and time loss by modifying his behavior according to the recipient's. In this way the probability of interaction will increase as a function of time.

Given such speculation, can I support this hypothesis from

Airplane II data? I would make the following predictions:

1. That there will be several attempts by B to initiate an interaction,
2. That coordination of behaviors may exist between B and D or B and G, but they will be broken, and of varying lengths.
3. Given that B does exhibit a willingness to interact the recipient can not only not respond, but ^{may even} give a response signaling an unwillingness to interact.

1. B exhibits several behaviors which can be interpreted as a willingness to interact: walking towards D and G (1-59); within that series, shift of head to right (27), rotating body to the right (30), pausing by making legs parallel to each other in the last step (59); when stationary, a body shift (including head, trunk, arms) to the left towards D (by 72), rotating trunk and head to the right nearer to G (by 89); the same movement (113-116); by stepping back before pivoting to the right (which results in turning his back on G and D 115-125; by ceasing locomotion behavior and turning left once again 174-203; by turning eyes right 213-233 looking into the camera.

2. Responses of potential recipients: As B walks toward D and G (1-59) D exhibits no movement from initial position. G, as B turns toward him, shifts his head to the right, away from B (31, 48-51). As B shifts left (by 72) D's head shifts right (62), head up and right (73), in addition trunk bends forward (73-74). B however does not acknowledge this movement, instead rotates to the right (by 89). D, maybe in response, shifts head down and to the left (by 88). G's head is lowered (81) as B turns toward him. When B continues right (113-116) D's head does shift to the right but her eyes do not. On the other hand, G smiles, facing B, starting at 110. This is not acknowledged by B, who continues shift to right, away from G. It should be noted that D leans forward as in Airplane I to tap cigarette, but does so starting at 125, only one frame before B pivots away from D. During

As B shifts to the non-interaction?!

B's?
 the shifts to the left (174-203) D does shift her head to the right
 (194-200) but a movement which B cannot see. G, however, lowers his head
 (183-186, 189-190); raising his eyes and looking at B only after B
 has started to locomote (236-237).
to face B out?
was?

Throughout this segment of time, B exhibits behaviors that may be interpreted as signaling a willingness to interact. Responses were made to some of them (e.g. G's smile). Never did B respond in turn; sequences were terminated.

3. Potential signals of unwillingness to interact: G's head shift away from B (31, 48-51), the same movement again (183-186, 189-190).
So... function to keep every one off
but also towards D!!

What does one conclude? One could speculate about why B did not return any responses exhibited by recipients of his signals in terms of his emotional state. These hypotheses would be untestable. It would be more constructive to offer hypotheses which, given enough data, may be supported or refuted: (1) That there must be some amount of time before which a response does not influence subsequent behavior, and beyond which the probability of a response decreases as a function of time. (2) That some behaviors exhibited during a sequence must be overt, in the sense that a behavior is specialized solely for the purpose of communicating specified information (an ethologist would term this a display). In Airplane I I observed no such behavior, however B's face ^{was} not visible while facing D. (3) That single behaviors exhibited by one of the interactants cannot of themselves communicate a willingness to interact, but when exhibited together, do. In Airplane I is it several behaviors exhibited by B that D responds to: Are these behaviors not exhibited in Airplane II? (4) That, given more than one potential interactant, behaviors exhibited by recipients must be less
in this context, perhaps, but not generalizable!
such as?
(like) 2 = 2

ambiguous, since now there is the added possibility that a behavior exhibited is in response to someone else. (5) That the continuation of a sequence is dependent on the verbal behavior (or lack of) exhibited by the potential recipients. I have no control over this, since I did not microanalyze phonetics. (6) That B's behavior was directed only towards D, not G, more generally (7) that given 3 individuals, the initiator may be directing messages to only one of them.

unlike's

how do you determine this?!

Finally, I am confident that it is possible to ascertain the rules which control the emergence of interactions. The above hypotheses must be tested quantitatively: In all probability several hypotheses will be supported. It is ludicrous to believe that two ten second segments can provide any definitive data, but the analysis had a definite function: to provide a basis for hypothesizing about the parameters which govern the existence of interaction between people. As such, this study may be unique.

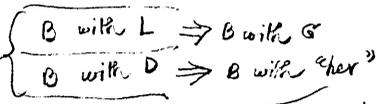
and where does that get you?

so... statistical probability?

and where does

that get you?!!

They would - if you knew enough about the names, e.g.



These sets would help to decide direction of interaction, B to D or B to G

to female phy, male

You have a whole series of irreducible

hypothesis-generating data - and the first-stage job is not done, until you have, for the moment, understood the process - the second stage is to check out each one, and then hierarchize them with respect to probability - without discovering anything!

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December 6 1977 Peter Deeny

	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93	
B																																
h ₁ ↓																																
o o																																
=																																
—																																
Left upper:	30						30																		25	10	10	0	0			
2.	0						15																		45	60	45	30	0			
fore 1.	90						90																		90	90	90	90	90			
2.	30						30																		45	45	45	45	85			
Right upper:	NOT visible																															
2.																																
fore 1.	90																															
2.	30																															
R leg																																
L leg																																
B																																
h ₁ ↓																																
o o																																
=																																
—																																
Left upper:																																
2.																																
fore 1.																																
2.																																
Right upper:	NOT visible																															
2.																																
fore 1.																																
2.																																
Left upper:																																
2.																																
fore 1.																																
2.																																
Verbal behavior:																																
B																																
h ₁ ↓																																
o o																																
=																																
—																																
Left upper:	30																															
2.	0																															
fore 1.	135																															
2.	90																															
Right upper:																																
2.																																
fore 1.																																
2.																																

Constant rotation of wrists.

mirror image

L mirrors leg

obvious problems or are all

g's eye movements are impossible to define; no other movements of the body were observed in g; left arm pos. took: 20, 0, 150, 90.

December 6 1977 R. Deeny

	96	99	102	105	108	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162	165	168	171	174	177	180	183	186	
[B]	vv		>>	>>>	>>>	>>>	>>>	>>																								

> > v n n n n n
 [Not visible
 Not visible
 H> > >
 0 0 0
 0 0 0
 90 90 90
 40 40 20

mirrored image of left arm

step

[D]	<<<	<<		AAA	AA																											
	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=	=

mechanical things such as feeding and eating uh I think because of

vv vvv v n n n n n n

NHI Int 1, Runway II (ramps 3082-3305- [0-246] [0-93])

December 6, 1977 P. Deery

	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	66	69	72	75	78	81	84	87	90	93			
g																																		
←R→																																		
oo																																		
=																																		
↔																																		
Ram upper 1.	20																																	
2.	0																																	
fire 1.	135°																																	
2.	90																																	

No change in left arm, legs, or feet throughout the time period.
 (Included positions for left arm being 30°, 0°, 160°, 90°)

Dec 6 1977 P. Deary

	96	99	102	105	108	111	114	117	120	123	126	129	132	135	138	141	144	147	150	153	156	159	162	165	168	171	174	177	180	183	186		
B			>				>	>	>>>	>>>	>>>	>>>	>>			^^			LL	LL	L					LL	<LL	<<L	<<L	<V	V	V	
														100																			

NHT Duplex II 3062-3305- [0-246] [189-246]

Dec 6 1977 P. Dewey

g

189	192	195	198	201	204	207	210	213	216	219	222	225	228	231	234	237	240	243	
	v	v												<<	<	<	<<<	<<<	<<<
														vv	vv	vv	MMM	(unfocused?)	

20	20
0	0
170°	135°
90	90

(inhales cigarette)

END
of film
"Please Rewind"

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