

PROBLEMS OF RELIABILITY IN EVALUATING
STORY COMPLETIONS ABOUT SOCIAL
CONFLICTS BY GERMAN ADOLESCENT
CHILDREN

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PROBLEMS OF RELIABILITY IN EVALUATING STORY COMPLETIONS
ABOUT SOCIAL CONFLICTS BY GERMAN ADOLESCENT CHILDREN

By

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ABSTRACT

This study investigates the problems of reliability in evaluating story completions about social conflicts by German adolescent children. Story # 2 of Series A of the Anderson Incomplete Stories was used. The incomplete stories were developed in order to get an expression by children as to their judgment of the processes and outcomes of social conflicts. Data were collected from 1,146 children in Karlsruhe, Germany. This study also makes use of small samplings from data collected in Mexico. All of the Karlsruhe stories were translated from German into English and problems of translations discussed by the writer.

The coding manual for Story # 2 which was refined throughout the course of this study comprises 80 process categories and six evaluative outcome categories. It was found that the major source for disagreements in coding lay with categories which required making inferences.

Reliabilities of coders in coding for outcome of 89.2%, 100%, and 87.1% were obtained. When coding process categories, reliability of 86.7% and after a four weeks' lapse, reliability of 88.0% were obtained. The time required for one person to become a reliable coder (86.7% for categories and 84.0% for coding outcomes) was found to be 22 hours of preparatory work.

The validity of the translation was investigated by coding independently German originals and English translations. Reliabilities of 92.6%, 95.0%, and 92.9% for coding categories, and reliabilities of 89.8%, 100%, and 87.2% for coding outcomes were obtained. The reliability of the translator was tested by coding two sets of translations which the writer made with one year intervening. The reliability obtained was 97.2%. Consistency of coder tested by coding - re-coding method was 97.2% for coding categories and 97.0% for outcome.

The high reliabilities obtained demonstrate that after a short, though intensive training period, reliable coding of Story # 2 can be done.

For purposes of obtaining the degree of reliability with which children used similar themes in writing their stories again after an interval of two weeks, two groups of 34 boys and 34 girls were given the form twice. Truth and Lie themes in both stories were used by 64.7% of the boys and by 67.6% of the girls. Categories of Mother's domination and of Michael's submission were used in both stories by 64.7% of the boys and 76.4% of the girls. Identical outcome categories were found in 70.5% of the boys and in 88.0% of the girls. Girls were more reliable than boys in writing stories yielding the same coded outcomes.

The writer coded Story # 2 for all children from Karlsruhe. He made sex comparisons as to several category groupings. More girls used themes of Truth, themes of Emotion and stories which yielded Domination-submission outcomes, than did boys. The boys wrote significantly more stories which were coded for Ambiguous, indecisive outcome.

Two groups of boys and girls were selected from schools which serve children from low and from high socio-economic homes. Comparisons were made between the low and the high groups. The high group of boys used significantly more themes of Truth, and fewer themes of Domination after truth, as well as fewer stories with Ambiguous, indecisive outcome than the boys in the low socio-economic group. The high group of boys had significantly more stories with outcome of Domination-submission, than did the boys in the low group. More girls of the high group used themes of Truth after lie and themes of Domination after truth, than did the low group of girls. Girls of the low group wrote significantly more stories with Ambiguous, indecisive outcome, than did the high group of girls.

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I. INTRODUCTION

1. Background and Hypotheses

This study is part of a larger research program which was designed by Harold H. Anderson to investigate children's judgments of processes and outcomes of conflict situations. H. H. Anderson and his students and colleagues (1, 5, 6), had previously developed several hypotheses on the circularity of certain kinds of social behavior and had tested these hypotheses in observational studies of classroom teachers and children. Some of the hypotheses were:

- (1) "Socially integrative behavior in one person tends to induce socially integrative behavior in others. Because like tends to induce like, this is a kind of circular behavior. A relationship of integration or working with another has been designated a growth circle.
- (2) "Dominative behavior in one person tends to incite dominative behavior in others. Because domination tends to prolong or intensify conflict, reduce communication, and lead to disintegration in human relations, this relationship of domination-resistance has been designated a vicious circle.
- (3) "A third hypothesis is that as domination increases in severity to a place where it is not clear whether it is safe to resist, the individual shows confused behavior, indecision, and vacillation between approach-withdrawal.
- (4) "A fourth hypothesis is that if environmental domination becomes too authoritarian, or too severe, it tends to induce submission or psychological atrophy. In this relationship there is little response, little interaction." (3)

There was evidence that certain teachers were unable to perceive that integrative behavior can be a problem-solving outcome to conflict. There

was also evidence that some teachers were meeting resistance with resistance, thereby intensifying the conflict situation in their schoolrooms. Some teachers used the circularity of integrative behavior to cut the vicious circle of domination-resistance. Other adults did not.

The question arose how early one could perceive these two kinds of circular behavior and what would be perceived by children as the outcome of conflict.

The immediate occasion for research into children's judgment of social conflict and social problem-solving was an International Workshop on "Modern Psychologies and Education," held in Frankfurt am Main, Germany, during July and August 1952. The German psychologists at the workshop discussed the authoritarian relationships between parents and children and teachers and children (7).

The writer was both an official interpreter and a delegate at this Workshop. Following the Workshop, H. H. Anderson and G. L. Anderson carried out a study which will be referred to as the "Karlsruhe Study" in which the writer participated as interpreter and research assistant.

2. The Karlsruhe Study

H. H. Anderson and G. L. Anderson devised six incomplete stories, (The Anderson Incomplete Stories reproduced in Appendix A). Each of these stories presented a conflict situation or the possibility of a conflict situation between one child and another child, between a child and a parent, and between a child and a teacher. In each of these stories a child in the story makes a "mistake"--or the story may be so construed.

The administration of the stories has been described in a preliminary report by H. H. Anderson and G. L. Anderson (3).

In Karlsruhe, a city of 210,000 inhabitants in southwestern Germany, data were collected from 1,258 children in the seventh school year of 15 out of 21 city schools. Although the sample is not statistically random,

an attempt was made to make it representative for Karlsruhe. Samplings were obtained from 36 entire classrooms. Most city districts, including outlying suburban areas, were sampled so that children from most socio-economic groups were represented. For purposes of coding, the children's stories have been translated from German into English.

3. Cross-cultural and Cross-national Research Program

The Karlsruhe Study has become the first unit in a series of cross-cultural and cross-national projects. It has since been repeated with children in Mexico and in Knoxville, Tennessee. A second set of stories has been prepared, Series B of the Anderson Incomplete Stories, and the research program has been expanded and the age range been extended. Data on both Series A and Series B have been obtained from children in other German cities, and in Norway, Sweden, Finland, and England.

4. Aims of the Present Study

The purpose of this study is to investigate:

- (a) Problems of translation
- (b) Problems of reliability of coders and translator
- (c) Reliability of children
- (d) Contents of children's story completions for Story #2 which has been selected as the basis for investigating a, b, and c above.

5. Subjects Used in this Study

Stories used in the present study have been written by Karlsruhe children except for a few small samplings from Mexican data.

6. Story #2

Michael's mother sends him to the store to get one pound of wieners. On the way home he puts the package of meat on the edge of the sidewalk and plays for a short time with his friends. A shepherd dog darts forward quickly, claws half of the wieners out of the package and rushes away with

them. Michael wraps up the remaining wieners and takes them home.

What does Michael say to his mother?

What does his mother do?

How does Michael then feel about it?

Think about these questions, then finish this story quickly with a few sentences."

II. TRANSLATING AND CODING

1. Bi-lingual Problems of the Present Study

The psychological instrument which is being examined in the present study has been used with children in seven different countries where six different languages are spoken. The stories, as well as the instructions for administration, have been translated into these several languages. The forms have been administered under standardized procedures by university students and staff of the respective countries. The author was the administrator in Karlsruhe, Germany. Each day following the administration, H. H. Anderson and G. L. Anderson, together with the writer, translated samples from different classrooms in Karlsruhe. The writer later continued alone and translated into English all stories written by the Karlsruhe children. An Audograph was used and the records were later transcribed by trained secretaries.

In spite of great familiarity with the languages in question, there always remain residuals of subtle shades of meaning, unique and culture-bound expressions, idiomatic usages which resist even the most scrupulous attempts at translation. This is not only true of translation of poetry or philosophy, but it is equally applicable in the case of children's oral or written expressions. In the course of translating the Karlsruhe stories, the writer encountered several problems.

Uncommon words are frequently heard by the children and are integrated into their continuously growing vocabularies. These terms may have different

meanings to them from those their adult teachers attach to them. This semantic difficulty has been found by the writer especially with more abstract terms. For example; at the end of the stories a few leading questions were added. In Story #2 one of these questions was, "What is going on in Michael afterwards?" The original English question read, "How does Michael then feel about it?" The meaning of the word "feel" in this sense has no German equivalent and the sentence has to be translated as "What is going on in Michael afterwards?" ("Was geht in Michael danach vor?"). Very frequently children had some idea of what this question meant, but they were not totally familiar with this expression and used it rather awkwardly in their stories.

Germany, where many local dialects make it almost impossible for a North German to understand a Bavarian, has developed a version of "Hochdeutsch" (High German), which is not only widely accepted as "correct" grammatically, but, also, is greatly different in enunciation, inflection, and usage of vocabulary. For most Germans it is hard to master completely. It is, however, the official German employed and taught in the schools at all levels. German children who grow up in families where dialect is spoken throughout, even among the educated people, are faced with the task of learning practically a new language upon entering first grade. On top of this unique learning experience, there are literally thousands of local usages which will creep into this newly learned High German, but which will be used and understood with all their implications only by natives of that area. These areas are often as small as a county. The writer found many of these purely local idioms and colloquialisms when translating the Karlsruhe stories. Being a native of that town, he had little difficulty in understanding them, and he could usually translate them into English. When, however, he attempted to translate stories written by children in Munich, he encountered some difficulties which, in several cases, could only be eliminated by consulting an available native of that area. The

above outlined difficulties in translating indicate the great desirability of employing--wherever possible--local persons as translators.

Another major difficulty lay with the children's language usage in general. It was considerably difficult to translate the child-like German idiom into equivalent English. Faithfulness to the original mode of expression was important for reliable coding later on. It was often especially difficult to capture the projected moods, actions and feelings and transpose them into equally clear English. As is true of any translation, the original and the translation never completely agree as to length of phrases, number of words, and, occasionally, as to number of verbs. This raised a special problem for coding reliability with regard to units and multiple tallies, since the coding method generally required one tally for each verb.

2. Coding Categories

After the first data had been collected in Karlsruhe, H. H. Anderson and G. L. Anderson empirically developed categories for Story #2 classifying units or themas in the translations made by the writer. Two kinds of categories were devised to assess outcome of story and detailed processes of relating in the story. There emerged 4 categories of outcome or levels of relating, and 80 process categories of which 33 were for Michael and 47 for the mother. An attempt was made to define categories which would offer evidence for or against the hypotheses.

In Story #2, three primary "actors" are found:

- (a) Michael
- (b) The mother
- (c) The child author who finished the story

Underlying all projective techniques is an assumption that the subject projects himself into the experimental material. There was considerable evidence that the children tended to identify themselves with Michael and less frequently with the mother. Nevertheless, no categories for the child-author were retained. Identifications with Michael were coded in

the Michael categories. Examples are:

"I handed the sausages to my mother."

"I, in Michael's place, would not have done this, but taken the sausages home first."¹

Similarly, identifications with the mother were coded in the mother categories.

(a) Categories for the Outcomes of Stories

Each story is given an over-all classification for the outcome of the entire story. Each outcome is classified according to the level of human relating or the degree of domination or authoritarianism on the part of the environment or, conversely, the degree of spontaneity in Michael's behavior. The levels of relating have been previously discussed by H. H. Anderson and G. L. Anderson (2), and have been used by them in a preliminary report on the Karlsruhe Study (3), from which the following definitions are abstracted.

I, Integrative; Problem-solving Outcome

The solving of the problem. There must be evidence of high spontaneity in both the mother and her child; also of harmony and working together, active communication and evidence of mutual confidence. For harmonious cooperation there must be active communication in the place of mere thinking and fantasy.

D-R, Domination-Resistance Outcome

A process of hostility and aggressiveness. There must be evidence of mutual hostility, active tension, signs of working against each other; the mother's hostility can be expressed in the form of domination (punishment, scolding, exacting promises), that she uses, and the child's resistance need not be expressed orally or by action but simply on the thinking and feeling level.

1 All examples from children's stories cited in this study were selected from the Karlsruhe data unless indicated otherwise.

A, Ambiguous, Indecisive Outcome

"There is lack of closure, low level of communication, story is essentially unstructured. There is little or no interaction between the mother and the child. Problem has not been faced, and no attempt has been made at its positive or negative solution. Relation between parent and child little changed at end from that at beginning. The experience did not serve as a basis for social learning."

D-S, Domination-Submission Outcome

Authoritarian person makes the decisions, has the answers. Child merely submits, conforms, obeys. These stories show mother's domination and Michael's subsequent submission. Child accepts mother's verdict, submits to mother's ideas, punishment, and often expresses his submissive acceptance in the form of a promise, vow, or submissive action."

When coding for outcome with the four categories I, D-R, A, and D-S, unreliable results were obtained with stories that showed expressed domination but no expressed submission, or in stories where the child clearly indicated submissive tendencies in Michael with no overt domination by the mother.

In general, these stories which were originally coded as D-S, Dominative-Submission, but lacked evidence of either domination or of submission, respectively, were coded as A, Ambiguous-indecisive. It was realized, however, that these stories were rather well structured and did not show ambiguity, as defined. Upon the suggestion of the writer, it was therefore decided to divide category D-S, Domination-Submission,

into three subcategories which would be differentiated on the basis of evidence in the story provided by the child:

D, Domination, with no statement of resistance or submission

S, Submission, with no statement of domination

D-S, Domination-Submission (as originally defined)

Example of Domination, with no statement of resistance or submission:

Michael told his mother the truth (1-W, Tells whole truth spontaneously).

She scolded him (72, Scolding after telling truth)

and sent him to bed (68, Sent to bed after telling truth)

without dinner (56, Deprivation of food after telling truth).

Example of Submission, with no statement of domination by the mother:

Michael lied to his mother (10, Lies spontaneously)

by telling her that a dog had approached him from behind (10, Lies spontaneously)

and had torn the sausages out of his hand (10, Lies spontaneously).

The mother sent Michael to the butcher once more (73a, Michael sent to butcher).

Michael regretted to have lied to his mother (24a, Regrets telling lie),

promised himself (26, Promises himself, vows - non-communication)

never to stop on the street (26, reinforcement)

and to play (26, reinforcement)

and he never did it again (23, Submission: action, obeys).

(b) Categories of Process for Michael and the Mother

In developing categories for Michael and the mother, the following general principles were defined for the coding:

1. General repetition of the given facts (in the story) is not coded except where the statement bears on the problem of truth or falsehood.
2. Themases of fantasy are recorded separately from themases of action.
3. Themases of anxiety and emotional feelings before Michael met the mother are recorded separately from emotional feelings after he met her.
4. When Michael tells the truth, the record distinguishes between simple, summary statements that Michael told the truth and detailed statements of the separate items of truth.
5. Punishment which follows the telling of the truth is recorded separately from punishment which follows telling a lie.
6. Separate recording is made of restitution of sausages by Michael when made spontaneously upon Michael's initiative and when made by Michael under duress. (3)

The list of categories for Michael and for the mother is given on pages 11-14.

Series A, Story #2
"The Lost Meat"
Abbreviated Table of Categories

<u>Category Number</u>	<u>Category Title</u>	<u>Michael Categories</u>
1W	Michael tells truth spontaneously: whole truth	
1D	Michael tells truth spontaneously: in detail	
2W	Michael tells truth after conflict, anxiety, fantasy lie: whole truth	
2D	Michael tells truth after conflict, anxiety, fantasy lie: in detail	
3W	Michael tells truth delayed, after question: whole truth	
3D	Michael tells truth delayed, after question: in detail	
4W	Michael tells whole truth spontaneously after lie	
4D	Michael tells truth in detail spontaneously, after lie	
5W	Michael tells whole truth after lie: extorted or after pressure, punishment, scolding, questioning	
5D	Michael tells truth in detail after lie: extorted or after pressure, punishment, scolding, questioning	
6	Michael delays explanation, delays facing reality	
7	Michael tells <u>non-essential part-truth</u> only	
8	Michael plans, <u>fantasies lie</u> or <u>deception</u>	
9	Michael tells lie after weighing circumstances or question	
10	Michael tells lie <u>spontaneously</u>	
11	Constructive action by Michael	
12	Michael makes spontaneous restitution	
13	Constructive feeling or thinking by Michael	
14	Hostile, aggressive <u>action</u> or speaking by Michael	
15	Hostile, aggressive <u>thinking</u> or <u>feeling</u> by Michael	
16	Displaced emotion	
17	Michael regrets telling truth	
18	Anxiety, emotion <u>before</u> meeting the mother	
19	Anxiety, emotion <u>after</u> meeting the mother	
21	Tension reduction: escapes punishment	
22	Michael begs, requests leniency, begs pardon, forgiveness or sympathy	
23	Submission by Michael (Action)	
24	Submission by Michael (Thinking and feeling) (Non-communication)	
24a	Michael regrets lie	
25	Michael voluntarily promises mother (Communication)	

Michael Categories (Continued)

- 26 Michael promises himself, vows (Non-communication)
- 27 Michael promises after punishment, scolding, admonishing
or forgiving, (Communication)
- 28 Negative statement pertaining to Michael, concerning some
socially unacceptable act or characteristic

<u>Category Number</u>	<u>Category Title</u>	<u>Mother Categories</u>
41a	Mother perceives from Michael: Something is wrong; she suspects	
41b	Mother perceives from Non-Michael sources: Something is wrong; she suspects	
42	Mother questions: Fact finder (open mind), calls Michael for questioning	
43a	Mother scolds, uses verbal domination or abuse before truth or lie	
43b	Mother uses physical domination before truth or lie	
44	Mother communicates to Michael her distrust or disbelief; accuses him	
45	Seeks, or gets outside verification of the facts:	
45a	Communicating her intentions to Michael	
45b	Not communicating her intentions and actions to Michael	
45c	Without seeking, by outsider or outside event (Deus ex Machina)	
46	Mother behaves vaguely	
47	Feeling of disbelief (Non-communication)	
48	Mother becomes angry, excited	
49	Mother's miscellaneous, unhappy emotion	
50	Mother cries	
51	Mother's negative feeling, feels sad	
52	Mother accepts Michael (Action, communication)	
53	Mother's positive feeling, mother "understands"	
54	Mother believes truth	
55	Mother believes lie	
56	Deprivation of food (after Michael told truth)	
57	Deprivation of food (after Michael told lie)	
58	Deprivation of playtime (after Michael told truth)	
59	Deprivation of playtime (after Michael told lie)	
60	Restitution under duress (after Michael told truth)	
61	Restitution under duress (after Michael told lie)	
62	Physical punishment (after Michael told truth)	
63	Physical punishment (after Michael told lie)	
64	Mother tells father (after Michael told truth)	
65	Mother tells father (after Michael told lie)	
66	Punishment by father (after Michael told truth)	
67	Punishment by father (after Michael told lie)	
68	Michael send to bed (after Michael told truth)	
69	Michael sent to bed (after Michael told lie)	
70	Miscellaneous punishment (after Michael told truth)	
71	Miscellaneous punishment (after Michael told lie)	
72	Scolding (after Michael told truth)	
73	Scolding (after Michael told lie)	

Mother Categories (Continued)

73a	Michael sent to butcher
74	Mother makes restitution
75	Mother admonishes, regarding past behavior
76	Mother admonishes, threatens, regarding <u>future</u> behavior
77	Mother shows tension-reduction
78	Mother forgives Michael (Power relationship)
80	Proverbs by anyone
81	Negative statement of mother's unhappy feeling or act

The 80 categories which were developed are purposely refined. This detailed differentiation was adopted with the idea in mind that each new thought should be coded separately so as to allow the coder to obtain as many different psychological themes as could be distinguished. Nevertheless, upon inspection of the list of categories, it can be seen that a number of categories form clusters of closely related themes. For example, the three categories 25, Michael voluntarily promises mother; 26, Michael promises himself, vows (non-communication); 27, Michael promises after punishment, scolding, admonishing or forgiving (communication), comprise different types of promises. They are considered submissive behavior and are conceptually closely related to categories 23, Submission by Michael (Action) and 24, Submission by Michael (Thinking and feeling) (Non-communication). Other examples are the punishment categories 56 through 73 which represent dominative behavior by the mother or the father, dichotomized as to whether this domination follows upon truth or lie. Similarly, Michael's statements of truth are arranged from 1W through 5D in descending order of their spontaneity (1W is "telling truth spontaneously, the whole truth"; 5D is "telling truth in detail extorted after lie").

Using categories refined in this way, high reliability when obtained seems to indicate a high degree of understanding and differentiation ability within the framework of the given hypotheses on the part of the coders.

In general, there can be distinguished two types of process-categories:

- (1) Process-categories which assess the facts as given by the author.

examples:

"The mother scolds Michael (72, Mother scolds after Michael told the truth)
and admonishes him not to lay down the sausages in the future"
(76, Mother admonishes Michael regarding future behavior).

"Michael says the truth to his mother" (17, Michael tells truth spontaneously, whole truth)

- (2) Categories which require inferences on the part of the coder.

examples:

"His mother is right (24, submission, thinking and feeling)
(non-communication)
in giving him a thrashing" (63, physical punishment after lie).

"Michael started to cry (19, anxiety, emotion after meeting the mother) for he wanted to buy a nice plant for his mother's birthday (13, constructive thought)". (The above sentence was preceded by mother's demand for Michael's restitution for the sausages.)

It was found that there is little difficulty in coding reliably straightforward statements of facts. Major problems arise, however, with the second type of category which the writer has called "inference category." In extreme cases quite different inferences can be made by different coders.

Example:

"The mother was very angry (48, mother becomes angry) and hit Michael very hard (62, Physical punishment after truth). Michael left the room and went out into the street to get rid of some of his feelings."

Coder I could conceivably code last sentence as (21, tension reduction) whereas Coder II could interpret this as (15, hostile, aggressive feeling and thinking). The outcomes would be Domination and Domination-Resistance, respectively.

In the subsequent discussion of reliability of coders, examples will be cited which further illuminate the difficulties encountered with "inference categories."

3. Problem of the Unit of Coding

One major difficulty for reliable coding lay with the definition of the unit for which a tally was to be given.

Several general rules were adopted:

- (a) Generally, each verb was to be given one tally.

Example:

"Michael told the truth to his mother (1W). The mother scolded Michael (72)."

- (b) When the child repeated the given facts of the story, no

tallies were to be given to these repetitions:

"Michael's mother sent him to the butcher (no tally). On the way home he lay the sausages on the edge of the sidewalk (no tally) in order to play with his friends (no tally). A shepherd dog stole the sausages (no tally). Michael took the remaining sausages home to his mother (no tally). 'Mother, a shepherd dog has stolen two of my sausages (1D) while I played with my friends.' (1D, Michael tells detailed truth spontaneously)."

- (c) Verbs like "say", "tell", "ask", "answer" were not coded if they served merely to introduce direct or indirect discourse.

"Michael says to his mother (no tally) a shepherd dog has torn the sausages out of my hands (10, Michael lies spontaneously). She asks him (no tally) whether he had not paid any attention to them (42, Question by mother, fact finder)."

In sentences, however, where these verbs appear alone, they are coded:

"Michael says the truth (1W)."

- (d) Since special interest in this study is, among others, centered on themes of lies, punishment and the child's subsequent reactions, the appearance of the words "punish", "lie", were coded each time separately as well as the word "promise".

"The mother punished Michael (58) by giving him no sausages for lunch (58)."

Category (58) is defined as "Mother deprives Michael of food." The author's elaborate telling of the mother's punishment for Michael is the reason for the two tallies of (58).

This type of multiple tally is called reinforcement, in the above example, reinforcement of the punishment idea. The same rationale underlies the coding of the following examples:

"Michael said a lie to his mother (10, Michael lies spontaneously) 'Mother, a shepherd dog has jumped up on me (10) and torn the sausages away' (10)."

"Michael promises himself (26, Michael promises himself, vows) not to play anymore (26) when he is sent on an errand (26)."

- (e) In general, subordinate clauses are coded as reinforcements as long as they give more details of the same theme or immediate cause and effect relationships.

"The mother tells Michael (no tally) that it is better to tell the truth (76, Mother admonishes, threatens Michael regarding future behavior) because sooner or later it is discovered (76)."

If the subordinate clause, however, introduces a new psychological thema which had previously not been mentioned, the subordinate clause is then coded for the new thema.

"Michael was very sad (19, Michael shows anxiety, emotion, after meeting the mother) that the mother had whipped him (62, Physical punishment after truth).\" The thema of mother's punishment for Michael was not previously mentioned.

"He is happy (21, Tension reduction) that his mother had believed him (a lie) (55, Mother believes lie)."

"His mother is very angry with him (48, Mother becomes angry) for laying them (the sausages) down (1D).\" No direct statement by Michael telling the truth. This is an inference that he told the truth and is therefore coded as 1D, Michael tells truth in detail spontaneously.

Compare however the above examples with the following:

"Mother, I did not think much (1D) and put down the sausages (1D) and played with my friends (1D). His mother whips Michael (62, Physical punishment after truth) because he is careless (62) and because he stayed with his friends (62)."

"Because he was careless" and "because he played with his friends" were coded as reinforcements because Michael in telling the truth had already mentioned his carelessness ("I did not think much") and the fact that he had stayed with his friends.

4. Problem of Multiple Tallies

In the first analyses of data from Story #2 (3), as well as in the present study, multiple tallies, though recorded, were disregarded.

In developing the coding manual, it was thought to be important for later closer analysis not to assess simply the occurrence of a psychological thema but also to make records of the quantity and frequency with which it occurs. It will be the task for later investigations to establish the validity of this assumption. But it is already understood that there could conceivably be a difference between the first example below, from the Karlsruhe data, and the second example, which represents an abstracted composite and not the story from one child.

"Michael lied to his mother (10; the word "lie" is coded) that a dog had torn them out of his hand (10)."

"When Michael came home (no tally: connecting sentence between "givens" in story and author's part of story) he said to his mother (no tally for "say" if followed by direct or indirect discourse), 'Imagine (10), mother, when I came out of the butcher shop (10) a gang of 5 boys approached me (10) challenged me to a fight (10) and without waiting (10) attacked me (10). I tried to protect the sausages (10) but they pulled them out from under my arm (10) and ran away (10).'"

The difference in emphasis and concession of guilt is equally obvious in the following two examples:

"Michael felt repentant (24, submissive feeling, thinking)."

"... and to receive (24) without replying (24) the well merited (24) punishment (no tally for "punishment" since it is the object of "to receive" which already has been coded) for such bad conduct (24)."

5. Evaluative and Emotional Expressions other than Finite Verbs:
Adjectives, Participles, Adverbs, Interjections

Adjectives, participles, adverbs and interjections which are strongly evaluative and emotionally charged are coded when they

convey psychological themes, primarily those connected with expressions of emotions and anxiety. (Categories 6, 14, 15, 16, 18, 19, 22, 24)

Examples:

Category 6, Delays explanation, delays facing reality:

"Slowly (6) he went home" (no tally; connecting link between givens and author's story).

Category 15, Hostile, aggressive thinking, feeling:

"Michael ran off (21, Tension reduction) crying (19, Anxiety, emotion after meeting the mother) feeling very angry (15)."

Category 16, Displaced emotion:

"When he got home running (18, Anxiety, emotion before meeting the mother) very angry (16, reinforced by following sentence) because the dog had eaten almost a quarter of a kilo of meat (16)." (Mexican child).

Category 18, Anxiety, emotion, before meeting the mother:

"Michael went home (no tally, connecting sentence) very sad (18)."

Category 19, Anxiety, emotion after meeting the mother:

"Fearful (19) and repentant (24, Submission feeling, thinking) embraces his mother (22, Begs, requests leniency) and says to her (no tally), 'Please (22), mother, forgive me (22).'"

Category 22, Begs, requests leniency, begs pardon, forgiveness, sympathy:

"Dear (22) mummy, please (22), please (22), be not angry with me (22)."

"Dear mummy" is not the usual address but rather interpreted as repetition for emphasis. This is equally true for the repeated "please".

Category 24, Submission, feeling, thinking, non-communication:

"After what had happened (no tally, connecting phrase) Michael tells his mother (no tally) very repentantly (24), 'I am sorry (23, Submission, action, speaking), I put down the sausages (2D, Tells truth after conflict, anxiety) ...'"

The same principle for coding evaluative words such as adjectives, adverbs, participles, and interjections, holds true for categories of the mother.

Examples:

"The mother asks him (no tally) very angrily (48, Mother becomes angry), 'Where have you been so long?' (43a, Mother scolds, uses verbal domination before Michael tells truth or lie)."

"The mother says (no tally) relieved (77, Tension reduction of mother), 'Oh my dear boy (77), I am glad (77) that the shepherd did not bite off your finger' (55, Mother believes lie after Michael told mother that the shepherd dog snapped for his hand but only succeeded in getting the sausages)."

6. The Law of Parsimony:

In coding the stories, very often inferences have to be made. In order not to adopt a habit of careless inference-making as the prevalent mode of coding, the coder has to keep in mind that he should choose the categories on the basis of the law of parsimony. There is a danger that the coder might indulge, otherwise, in almost exclusively making inferences rather than to take the sentence as written by the child and code it according to one of the "factual categories." An already cited example shall serve to demonstrate this.

"Michael slowly walked towards his home".

This sentence would not be coded without the word "slowly". Two categories immediately come to mind:

Category 6, Delays explanation, delays facing reality,
Category 18, Anxiety before meeting the mother.

It is coded as "Delays facing reality" in preference to "Anxiety before meeting the mother". The child explicitly stated that he walked slowly, whereas coding as anxiety could only be done by inference. Where there is a descriptive statement and a plausible inference, the descriptive statement is preferred.

A more subtle example of parsimony is the following excerpt of a story:

"Michael lies to his mother (10), his mother gave him more money (55, Mother believes lie)."

According to the law of parsimony, the latter sentence should be coded as 74, Mother makes restitution. In the framework of this study, the recording of themes of truth and lie and their consequences are within the specific objectives of the research. Consistently, 55, Mother believes lie is given preference to 74, Mother makes restitution.

Categories 24, Submission, feeling, thinking, which includes regrets, repentance and bad conscience and 24a, Michael regrets telling lie, must be treated similarly. Michael's regret to have lied and Michael's repentant feelings about "misbehavior" or "disobedience" are both interpreted as submissive thinking and feeling as long as they are not communicated directly to the mother. Since,

however, in this study, themes of truth and lie, respectively, are kept separate, category 24a, Michael regrets telling lie, was set up to be used for specific regrets about lies.

The subsequent report on coder reliability will show some of the improvements in the degree of reliability mainly due to continuous refinement of the categories as well as clarification of category definitions.

III. RELIABILITY OF CODERS AND TRANSLATOR

L. Reliability in Coding Outcomes of Story # 2.

In the course of revising the coding manual, H.H. Anderson, G.L. Anderson and the writer coded various classrooms for outcomes to Story # 2. This was done with two purposes in mind:

- (a) Clarification of outcome categories,
- (b) Clarification of interdependency of individual categories and outcomes.

Reliability of independent coders for outcome of stories is reported in terms of percentages of agreement computed according to the following formula:

Two times the number of agreements divided by the total number of tallies given by both coders.

TABLE 1

Agreements and Disagreements of Two Independent Coders
in Coding Outcomes of Story #2

N = 39 Mexican Children

Outcome of Story	Agreements	Disagreements	
		Coder I	Coder II
I, Integration	-	2	-
D-R, Domination-Resistance	-	-	-
A, Ambiguous, indecisive	4	1	1
D, Domination	4	3	2
S, Submission	1	3	-
D-S, Domination-submission	20	1	7
Total:	29	10	
Percentage of Agreement: 74.3%			

Coder I was F. G. Geierhaas
Coder II was G. L. Anderson

Table 1 reports the first computation of percentage of agreement between two independent coders. This table is presented to show the initial difficulty in coding for outcome and to show a distribution of disagreements over five of the six categories. The outcomes were classified without specifically coding for detailed categories. It was rather an assessment of total Gestalten. Later, coding for outcome was always done at the end of coding the entire story for individual categories.

Seventeen days later after further practice and considerable discussion, these same coders achieved a percentage of agreement of 85.7 in connection with an analysis of errors in coding process categories reported below in Table 5.

TABLE 2

Distribution of Outcomes, Agreements and Disagreements
of Independent Coders on Outcomes of Stories
for Group of 7 Boys and 10 Girls from Karlsruhe

Outcome of Story	Agreements			Disagreements			
	Boys	Girls	Total	Coder I		Coder III*	
				Boys	Girls	Boys	Girls
Integr.							
Dom.-Res.		1	1		1		1
Ambig.	3	3	6	1	1		
Dom.							
Subm.	1	1	2			1	
Dom.-Subm.	2	3	5				1
Totals	6	8	14	1	2	1	2
Percentage of Agreement: 82.3%							

* Coder III was Richard Heber

Table 2 reports on outcome for coder reliability with a group of 17 Karlsruhe children. Coder I and Coder III achieved a percentage of agreement of 82.3. The analysis in table 2 was made in connection with the training of Coder III who at the beginning of his training was completely unfamiliar with the study. Further details on training will be given below.

One of the objectives of this investigation of reliability of coders is to compare the coding of German originals with the coding of English translations of the same stories. A report of the coding of process categories for Michael and the mother is made below. Table 3 shows the distribution of agreements and disagreements and percentages of agreement for coding of outcomes.

TABLE 3

Distribution of Outcomes of Stories and Percentages of Agreement
of Independent Coders for Three Groups of Karlsruhe Children

Coder I Coded Translations; Coder III Coded Original German Stories

Outcome of Story	Classroom I N = 31 Girls		Classroom II N = 27 Girls		Classroom III N = 37 Boys		Totals N = 95	
	Agree- ments	Dis- agree- ments	Agree- ments	Dis- agree- ments	Agree- ments	Dis- agree- ments	Agree- ments	Dis- agree- ments
	Coder I III		Coder I III		Coder I III			
Integr.								
Dom.-Res.		1			3	2	3	3
Ambig.	1	2	8		11	1 1	20	4
Dom.	2	1 1	6			1 1	8	4
Subm.	5		1		1	1	7	1
Dom-Subm.	19	2 1	12		18	1	39	4
Totals	27	4	27		33	4	87	8
Percentages of Agreement	87.1%		100%		89.2%		91.6%	

When two coders independently coded German originals and English translations, respectively, the percentages of agreement for coding of outcomes for three classrooms of children were:

87.1 100 89.2

In one classroom of 27 girls there was no disagreement whatsoever in coding the outcome. In each of the other rooms there were only four cases of disagreement.

The agreement for the three classrooms combined was 91.6%. These percentages are regarded as very high and indicate that there is no fundamental loss in translating children's stories from German into English as far as the outcomes are concerned.

An inspection of the stories with disagreements between the coders in coding outcomes showed that in the great majority the different outcomes of the two coders were dependent on their different inferences.

A few examples will illustrate this source of error:

"... the mother scolds with Michael. He should not have played and sat it (the meat) down on the street but come home immediately."

Coder I interpreted the last sentence as 24, Michael's submissive feeling and thinking, whereas coder II construed this to be the Mother scolding Michael (72).

The outcomes were Domination-submission and Domination, respectively

"Mother, a dog has taken away the sausages (7, Michael tells non-essential part-truth). I have only these left (7). Franz who had played with him on the street (45c, Mother gets verification of facts without seeking) betrayed to his mother (45c) that he (Michael) had not gone home immediately (45c) after having bought the sausages(45c). Then he (Michael) gets a whipping from his father (67, Punishment by father after lie). The other comrades of Michael's thrash the traitor Franz ()."

Coder I interpreted the last sentence as 14, Hostile, aggressive action whereas Coder II understood this to be 16, Displaced emotion.

The outcomes were Domination-resistance and Domination, respectively.

"... The butcher did not have two pairs yet (10, Michael tells lie spontaneously). The mother notices that he has lied (47, Mother's feeling of disbelief, knowledge of truth). She scolds him (73, Scolding after lie). Michael becomes nervous (19, Anxiety, emotion after meeting the mother) and sad in his face (19) and runs away ()."

Coder I construed last part of last sentence to be an expression of 15, Michael's hostile, aggressive feeling, whereas Coder II took this to mean 21, Tension reduction and escape from punishment.

The outcomes were accordingly Domination-resistance for Coder I and Ambiguous, indecisive for Coder II

The last two examples seem to indicate that coders tend to be consistent in their inference-making. It would be very hard to assess what influences and past experiences induce them to make one or the other inference.

Another indication for this consistency of one coder in his approach towards the stories can be found in the case of the coding - re-coding reliability of one coder as reported in table 4.

TABLE 4

Distribution of Agreements and Disagreements,
in Repeated Coding of Outcomes of Stories
by the Same Coder after a Two Weeks' Interval

N = 34

Outcome of Story	Agreement	Disagreement	
	First and Second Coding	First Coding	Second Coding
Integr.			
Dom.-Res.			
Ambig.	6		1
Dom.	6		
Subm.	2		
Dom.-Subm.	19	1	
Total	33		1
Percentage of Agreement: 97.0%			

The writer coded the same stories twice with an interval of two weeks between the first coding and the second coding. In between the two coding sessions, the writer worked intensively on other similar material. Table 4 shows only one disagreement in the outcomes of 34 stories which yields 97.0% of agreement.

2. Reliability in Coding Categories.

Two coders scored the stories independently. Percentages of agreement were computed by the same formula used above for the coding of outcomes. Table 5 is given as an example to demonstrate for seven children the details of coding categories unit by unit and also outcomes.

TABLE 5

Example of Coding Procedure
and Computation of Percentages of Agreement

N = 7 Mexican Children

Child (Mexican Numbers)														
923		924		925		926		927		928		929		
Coder														
I	II	I	II	I	II	I	II	I	II	I	II	I	II	
Categories														Totals
7	10	18	18	18	18	1D	1D	10	10	10	10	43a	43a	
45b	45b	18*		2W	2W	1D	1D	10	10	10	10	14	9	
45b	45b	9	9	25	25	1D	1D	10	10	10	10	44	44	
43b	43b	9	9	23	23	62	62	63	63	73	73	9	9	
24	19	9	9	78	78	62	62	63	63	63	63	9	9	
24	19	9	9	27	27	62	62	24	24	24	24	9	9	
24	19	47	47			24	24	24	24	24	24	9	9	
		63	63			24	24	21	13	24	24			
		63	63			27	27	24	23					
		23	23			27	27	24	24					
		23	19			27	27	24	24					
		27	27					24*						
Two times														
Agreement		6		20		12		22		18		16		106
Total														
Tallies		14		23		12		22		23		16		124
Percentage of														
Agreement		42.9%		87.0%		100%		100%		78.3%		100%		85.5%
Outcomes**														
DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DS	DR	D	85.7%

**Percentage of agreement for outcomes of stories, by the formula,
equals $12/14 = 85.7\%$

Total number of disagreements: 11

*Disagreement resulted from difficulty in defining unit.

There were:

Three cases of disagreement between categories (24) and (19)
 One case " " " " (23) and (19)
 One " " " " (24) and (23)
 One " " " " (21) and (13)
 One " " " " (14) and (9)
 One " " " " (18) and (0)
 One " " " " (24) and (0)

It can be seen in Table 5 that there existed difficulties in coding reliably especially for categories 19, Anxiety, emotion after meeting the mother, 23, Submission, action, speaking, and 24, Submission, thinking, feeling. These categories were subsequently re-examined and the definitions clarified.

Percentages of agreement of 82.3 for one group of 21 children, and 84.9 for another group of 20 children, both from Mexico, were obtained by Coders I and II. In the group of 21 children there were 29 disagreements, out of ~~which~~ 15 were due to difficulties in defining the coding units without losing a psychological theme, and 14 were due to disagreement on categories.

Percentages of agreement of outcome coding for the group of 21 children was 95.0 and for the group of 20 children 95.0.

Four weeks after having established reliability of 82.3% and 84.9% on Mexican data, Coders I and II re-established their coding reliability with an agreement of 88.0%. Agreement on Outcomes of stories was 100%. The distribution of disagreements included the categories shown in Table 6.

TABLE 6

Disagreement in Categories in Reestablishing Reliability
after Lapse of Four Weeks

Number of Children = 12

Categories		
Coder I	Coder II	Frequency
18	6	1
19	24	3
24	19	1
62	75	2
72	75	2
76	-	1
-	76	1
Total number of disagreements:		10

Although the reliability attained after the four weeks' interval was higher than before, a distribution of disagreements still showed that there seemed to be some difficulty in the making of inferences especially for categories 19 and 24. The problem of the definition of the scorable unit resulted in disagreements in only two cases. In both of these cases, the thema was coded, but there was disagreement as to number of reinforcements.

This renewed appearance of disagreements with reference to categories 19 and 24 led to further discussion and the following clarification:

Category 19 now includes only expressions of anxiety feelings and fears. It comprises the more physiologically determined expressions of emotion such as speech difficulty, stutter, stammer, cannot speak, red face, cries, sobs, restless, uneasy, feeling of fear of specified punishment.

Category 24, on the other hand, includes the more culturally determined expressions which more clearly indicate submissive feelings such as regrets, reflections, feels sorry, repentant, guilty, ashamed, contrition, bad conscience, also many expressions using "should", "would" and other statements in the subjunctive mood; also statements about specific and detailed errors such as "I should not have played" (as a thought, not communicated, otherwise category 23). Expressions of submission in the form of "mother knows best" and justifiable inferences as to the fact that the mother does the thinking and deciding; also expressions of dependence on the mother. (4)

3. Training a Coder to Become Reliable.

Since there is a great deal of data in the cross-cultural and cross-national research program to be coded, an attempt was made to find out how long a training period it would take until a person completely unacquainted with the study would become highly reliable in coding the stories.

The different steps in this training were:

- (a) Reading of Literature pertaining to type of study presented here.
- (b) Discussion with authors H.H. Anderson and G.L. Anderson and with the writer concerning the coding manual, specific categories and difficulties encountered.
- (c) Practice coding of stories for outcome and categories previously coded by reliable coder; discussion and clarification of disagreements between the two coders.
- (d) Establishment of reliability with already reliable coder.

The total time required to attain satisfactory reliability of coding by this person, Coder III, was about 22 hours spent as follows:

4 hours of preparatory reading,
6 hours of studying coding manual,
6 hours of discussion and clarification of difficulties, and
6 hours of practice coding.

The first attempt at establishing reliability in coding independently Story # 2 using data from 13 children in Karlsruhe, resulted in agreements of 86.7% for categories and 84.0% for categories and outcomes combined.¹

1) In general, outcome reliability and category reliability were computed separately. If not indicated otherwise, reliability figures for categories do not include outcomes.

TABLE 7

Distribution of Disagreement in Establishing Reliability
between Reliable Coder and Newly Trained Coder

N = 16

Categories		
Coder I (reliable coder)	Coder III (new coder)	Frequency of Disagreement
16	20	2
6	42	1
10	-	1
24	70	2
24a	-	1
42	-	1
outcomes	outcomes	
A	S	
DR	DS	

In another trial Coder III established a reliability of 93.2% with Coder I by coding Story # 2 of 7 boys and 9 girls of Karlsruhe children. The categories in disagreement are shown in table 7.

From table 7 it can be seen that there were three disagreements due to difficulty in defining units. These three cases represented disagreements in coding reinforcements. Both coders in each of the three cases in question had coded the thema. The disagreements between categories 16 and 20 have led to the elimination of category 20 altogether as too vague and thematically not important. Again, two cases of disagreement involved category 24.

4. Validity of Translation.

In this bi-lingual study, it was necessary to investigate how valid the translations were. The writer previously pointed out some of the difficulties encountered in translating the German stories into English. Two approaches to determine translator reliability and validity were used:

- (a) coding independently by highly reliable coders German originals and English translations, respectively.
(Validity of translation)
- (b) retranslation of group of stories and coding these two translations independently with intervening lapse of two weeks so as to exclude influence of memory.
(Reliability of translator)

Coding the English translations and German originals of Story # 2 of 36 boys and 57 girls resulted in the percentages of agreement shown in table 8.

TABLE 8

Reliability of Independent Coders
Coding German Originals and English Translations

N = 93

Groups	Number and Sex	Reliability for Categories	Reliability for Outcomes of Stories
I	36 boys	92.6%	89.8%
II	26 girls	95.0%	100%
III	31 girls	92.9%	87.2%

An investigation of the disagreements in coding brought to light that the great majority of differences was due to discrepancies between the translation and the original. Table 9 shows points of disagreement due to translation difficulties as compared with disagreements due to differences in interpreting for category placement. In Table 10 reliabilities are given which were computed by eliminating disagreements found in the translation.

TABLE 9

Disagreements in Coding Independently German Original Stories and English Translations, Dichotomized as to Difficulties with Translation and Difficulties in Defining Applicable Categories

Groups	Number and Sex	Difficulty in Translation Frequency	Definition of Category Frequency
I	36 boys	8	12
II	26 girls	4	8
III	31 girls	4	10
Totals	93 children	16	30

TABLE 10

Distribution of Points of Disagreement
as to Source of Disagreement, Reliabilities,
Computed for Three Groups Excluding Disagreements
Due to Translation Difficulties

Groups	Number and Sex	Points of dis- agreement due to category placement	Points of dis- agreement due to translation difficulties	Reliabilities disregarding translation difficulties
I	36 boys	21	22	96.2%
II	26 girls	7	14	98.1%
III	31 girls	5	29	98.2%

Upon closer inspection, it was found that over 50% of the points of disagreement due to differences in the German originals and the English translations, respectively, were due to different numbers of units in the original and translation. This lends support to the above statement that it is impossible always to translate one verb in German into one verb in English. Necessarily when the number of coding tallies is primarily based on number of verb units, there will then be some disagreement between the coding of the originals and that of the translations as found in table 10.

It was furthermore found that all other cases of disagreement due to translation difficulties involved categories which the writer has previously labeled "inference categories." The distribution of disagreements in

coding German originals and English translations due to inference-making is reported in table 11. The heavy concentration of disagreements is centered in or near categories of submission.

TABLE 11

Disagreements in Coding German Originals and Translations
Due to Translation Difficulties. Distribution as to Differences
in Coding for Inference Categories

Group Number, Sex	Coder of Translations	Coder of Originals	Frequency of disagreements
	Categories	Categories	
I (36 boys)	16	19	1
	25	26	1
	24	26	1
	70	48	2
II (26 girls)	72	49	1
	75	24	3
III (31 girls)	15	24	1
	19	24a	1
	24a	19	4
	24a	24	1
	46	52	2
	49	24	1

In several of the cases, the different position of a word in the translation and the original, respectively, the insertion of a "but", or the more submissive meaning of a translated sentence when compared with the original German, were the source for the resulting disagreements.

5. Reliability of Translator.

The writer was interested in finding out how reliable a translator he has been. Taking a sample of Karlsruhe children whose stories had been translated by him in October 1952 in Germany, he retranslated them in October 1953 while in residence at Michigan State College. He coded both sets of translations with a two weeks' interval and obtained reliability of 97.2% for categories coded in 34 stories.

Among the 34 stories four cases of disagreement were found of which three were due to differences in the two translations, and one due to different category placement.

The three cases of differences in the translations are:

Case I

Translation 1

"The mother gives him some money in his hand (74, Mother makes restitution) and says (no tally) 'So now you get two more sausages' (73a, Mother sends Michael to butcher)."

Translation 2

"The mother gave him a coin in his hand (74) and said, 'now go (73a) and get me another two sausages' (73a)."

Original German:

"Die Mutter gab ihm ein Geldstueck in die Hand und sagte: 'So jetzt holst du mir noch mal zwei Wuerste.'"

Case II

Translation 1

"The mother put on her coat (45b, Mother seeks outside verification of facts without telling Michael) and went to the butcher (45b). The butcher told her (no tally) that he had wrapped up two pairs of sausages for her son half an hour ago (45b)."

Translation 2

"The mother put on her coat (45b) and went to the butcher (45b). The butcher said to her that he had wrapped up two pairs of sausages for her son (45b) and that happened about half an hour ago (45b)."

Original German:

"Die Mutter zog den Mantel an und ging zum Metzger. Der Metzger sagte ihr, dass er ihrem Sohn zwei Paar Wuerste eingepackt haette und das vor einer halben Stunde."

Case III

Translation 1

"Here you have another 40 pfennig (74, Mother makes restitution) get another pair of sausages (73a, Mother sends Michael to butcher)."

Translation 2

"Here you have 40 pfennig (74), go (73a) and get another pair of sausages (73a)."

Original German:

"Hier hast du 40 Pfennig, hole noch ein paar Wuerste fuer mich."

In all three cases it is evident that the use of two verbs in the second translation provided for the disagreement in the number of reinforcements. In neither of the two translations as coded, did the translator lose a psychological thema. Realizing this decided tendency to be unreliable in translating with regard to codable units (primarily verbs), the writer in recent translations of stories from other German samplings paid particular attention to adding or cutting off no codable units in translating the stories. He often used parenthetical explanations to clarify stilted sounding or awkward terms while keeping the codable units exactly alike in the German and English. This seems to indicate that whenever a translator is used, familiarity with the objectives and methods of this cross-cultural and cross-national research program provides for greater reliability of translation.

6. Consistency of One Coder in Coding - Re-Coding.

During the refinement of the coding manual for Story # 2, it was evident that thinking about different hypotheses underlying the categories and outcomes, and about the categories themselves, brought about clarification of several heretofore unsolved problems. This process can be considered one of learning, and the development in thinking might conceivably be called a change in interpretation and inference-making. In order to test this possibility of fluctuation and to find the sources for potential variability in coding connected with it, the writer re-coded one group of stories (34 girls from Karlsruhe) two weeks after the first coding. In between the first and the second coding sessions, the writer worked intensively on other stories, on translations, tabulations, and above all, on clarification of coding problems. By the time of the second coding, he did not have any specific recollections about the first coding. The possibility of influence by memory was thus minimized.

Reliability was 97.2% for categories, and 97.0% for outcomes. There were four cases of disagreement. This high reliability for one coder over a period of time, inspite of learning processes presumably going on in the lapse between the two codings, is considered by the writer as an indication of attainable consistency of interpretation in coding.

]

IV. RELIABILITY OF CHILDREN

1. Method of Obtaining Data

Two classrooms (36 boys; 34 girls) in one school were given the six stories of Series A twice with two weeks between the two administrations. At the first administration of the stories, neither the children nor their teachers were told that they had been selected as the reliability groups.

The second administration of the stories was preceded by instructions which read about like this:

"Mr. and Mrs. Anderson would like to ask you to be so kind as to help them write the stories once more. You need not try to remember what you have written the last time, but simply finish the stories as you see fit."¹

The writer was again the administrator. The children were very cooperative also the second time. They did not take as much time to write the second six stories, and more children finished all stories during the second administration than during the first administration as shown in Table 12. For Story #2 there were only 34 pairs of codable stories from the 36 boys.

1) The exact text of the instructions was lost and therefore had to be reconstructed from memory.

TABLE 12

Number of Stories Completed by Boys and Girls
out of the Six Stories in Series A
During First and Second Administration

Numbers: Boys 36, Girls 34

Number of Stories Finished	Number of Boys		Number of Girls	
	First Admin.	Second Admin.	First Admin.	Second Admin.
3	2		7	
4	14	1	9	1
5	13	2	2	3
6	7	33	16	30

Several inferences can be drawn from the findings in Table 12:

- (a) During the second administration, the children did not need so much time to read the story beginnings. They remembered at least the gist of them from the first administration.
- (b) They did not spend as much time on writing the first few stories as they did during the first administration.
- (c) They remembered part or all of the conclusions which they had written the first time. This hypothesis is based on the finding of several children's stories which were almost identical, word for word.

2. Some Numerical Comparisons as to Number of Tallies and Themas Coded in Both Stories

(a) Means of tallies and themas coded in both stories

Upon first inspection of the tabulation of tallies it seemed that there were true differences between the length of the first story (as determined by number of tallies given in the coding process) and the

second story of most children. Means for number of tallies and number of themas were computed for each of the two administrations for boys and girls and are reproduced in Table 13.

TABLE 13

Mean Frequency of Tallies and Themas Coded
for Boys' and Girls' Stories in Two Administrations

Administration		Mean N	
		Boys	Girls
First	Tallies	8.3	9.2
	Themas	5.4	5.8
Second	Tallies	6.7	8.2
	Themas	4.4	5.2

Standard deviations were computed and t-tests applied which did not yield significance of the differences found. Although there seems to be a slight tendency for the second stories to be shorter, as to variety of themas and as to number of tallies, the differences did not prove statistically significant.

(b) Agreement in children's two sets of stories in using
themas of truth and lie

Truth and lie themas in this study are considered important as indicators of children's levels of spontaneity and submissiveness or aggressiveness, respectively. The consistency with which the children use these themas has therefore been determined and are shown in Table 14.

TABLE 14

Consistencies and Inconsistencies of Children
in Using Themas of Truth and Lie
in First and Second Administrations

	Truth in both adminis- trations	Lie in both	Total	Truth in first	Lie in first	Neither truth nor lie in either	Total
Boys N = 34	8	14	22	6	4	2	12
Girls N = 34	10	13	23	6	2	3	11

In 64.7% of all cases the boys used truth or lie themas in both stories; 67.6% of the girls used truth or lie themas in both stories. There seems to be no sex differences in these comparisons. Table 13 shows a virtual identity between boys and girls which runs consistently through the table.

(c) Agreement in using themas of domination and submission in both stories

Categories 22 through 27 indicate submission on the part of Michael. Categories 43a, 43b, 44, 48, 56 through 73, 75, 76, 78 indicate domination on the part of the mother.

Categories of domination and submission in both stories were used by 64.7% of the boys and 76.4% of the girls. For both boys and girls, the majority showed a high consistency in presenting these themas in both first and second stories.

3. Reliability of children in writing stories with same outcome

It was shown above that there existed considerable consistency in children's usage of themes of truth, lie, domination and submission. Probably the best indicator of an all-inclusive reliability of children is the consistency with which both stories show the same overall approach as proven by the same codes for outcomes. The outcomes are primarily classifications of the level of children's expressed spontaneity or lack of spontaneity. Since both truth and lie may be spontaneous expressions, and since both truth and lie may be expressions of submissiveness or aggressiveness, respectively, the coding for outcomes must be considered the best indicator of the level of integration and spontaneity that a given child shows.

Outcome reliability was computed for all six outcome categories (I, D-R, A, D, S, D-S) and for the four major categories (I, D-R, A, D-S). Since domination and submission are very closely related in a cause and effect relationship, the procedure of subsuming categories D, S, and D-S was considered justifiable.

TABLE 15

Consistency of Outcomes for Reliability Group
Computed for Six and Four Outcome Categories

Reliability, 6 categories: I, D-R, A, D, S, D-S		Reliability, 4 categories: I, D-R, A, D-S (D,S,D-S)
Boys N = 34	50.0%	70.5%
Girls N = 34	67.6%	88.0%

It can be seen from Table 15 that girls were more reliable than boys in writing stories which yielded the same outcome codes. The main disagreements lay with Domination-submission categories vs. the Ambiguous, indecisive outcome.

There were no disagreements between the Domination-submission categories and the Integrative outcome. Only one girl wrote two stories which yielded outcomes of Domination and Domination-resistance, respectively. This seems to indicate that the children were very reliable as to writing stories on the same level of spontaneity and integrative behavior or lack of it.

Since the reliability groups were very small, more conclusive and statistically valid interpretations were not justified. Another, possibly more conclusive test of children's reliability and consistency, will have to be carried out when all six stories have been coded. The degree of internal consistency, from story to story, will give more conclusive evidence as to the reliability of children in their responses to social conflict situations.

V CONTENT ANALYSIS FOR STORY # 2 OF ENTIRE KARLSRUHE SAMPLE

1. Method of obtaining data

The author, after establishing reliability of coders on Mexican data and on German originals, coded all Stories # 2 written by Karlsruhe children. Data from a total of 594 boys and 664 girls had been collected; 560 boys and 586 girls had written Story # 2. Of that number, 34 boys and 74 girls either had not written or had not finished Story # 2, or had simply repeated the givens. All subsequent computations and sex comparisons were therefore based on a total of 1,146 children (560 boys and 586 girls). Most of the stories were coded from the translations. The stories of 127 boys and 68 girls were coded from the original German since the transcriptions of the translations for these children's stories had not at that time been completed. This method was considered justifiable since previously, reliabilities of 98.2% had been obtained by independently coding English translations and German originals.

The data were tabulated for boys and girls separately and percentages computed for several major category groups and outcomes.

2. Sex differences

(a) Themas of Truth telling

The frequencies and percentages of themas of Truth telling (categories 1W through 3D) and of themas of Truth after lie (4W through 5D) are compared for boys and girls and presented in Table 16.

TABLE 16

Frequencies of Stories by Boys and Girls with Tells Truth Thema as Generalized, Whole Statement W and as Detailed Statement D

Percentages of Boys' and Girls' Stories in which Truth and Truth After Lie were Told

Tells Truth	Boys N = 560			Girls N = 586			Total N = 1,146					
	% of Total			% of Total			% of Total					
	W	D	W + D	Boys	W	D	W + D	Girls	W	D	W + D	N
1. Spontaneously	49	79	128	22.9	60	81	141	24.1	109	160	269	23.5
2. After conflict	14	13	27	4.8	18	22	40	6.8	32	35	67	5.8
3. Delayed, after question or punishment	21	25	46	8.2	26	25	51	8.2	47	50	97	8.5
Subtotals:	84	117	201	35.9	104	128	232	39.5	188	245	433	37.8
Truth only												
4. Spontaneously after lie	11	4	15	2.7	31	2	33	5.6	42	6	48	4.2
5. Extorted after lie	30	8	38	6.8	50	12	62	10.5	80	20	100	8.7
Subtotals:	41	12	53	9.5	81	14	95	16.2	122	26	148	12.9
Truth after lie												
Grand Total: Tells Truth (1W to 5D inclusive)	125	129	254	44.3	185	142	327	55.8	310	271	581	50.1

Table 16 shows that for categories of Tells truth only 35.9% of the total number of boys and 39.5% of the girls were coded. This higher frequency for the girls does not represent a statistically significant difference.

In 9.5% of the stories written by boys and in 16.2% of the girls the-
mas of Truth after lie were coded. This difference was not statistically significant.

Combining all the tallies for Truth only and Truth after lie yielded totals representing 44.3% for the boys and 55.8% for the girls. This difference was tested and a t of 4.10 showed the difference to be statistically significant beyond the .05% level.

(b) Themas of lies

Frequencies and percentages for boys and girls using the-
mas of Lies (categories 8, 9, and 10) are compared in Table 17. Although the percentages of children showing Action lie the-
mas appear fairly high: 51.2% of the boys, 48.1% of the girls, the difference between boys and girls was not great; the t-test showed the difference not to be statistically significant.

TABLE 17

Frequencies and Percentages for Boys and Girls
in Stories in which Lie Thema Occured

	Boys	Girls	Total
Tells Lie	N = 560	N = 586	N = 1,146
<u>Action</u>			
Lies spontaneously (Category 10)	226	185	411
Lies after weighing circumstances or question (Category 9)	93	116	209
Total of children using action lie thema*	287	282	569
Percentages of children using action lie thema	51.2%	48.1%	49.7%
<u>Fantasy</u>			
Plans lie, fantasies lie (Category 8)	36	57	93

* A child can use both categories 9 and 10 in one story. For computing the total of children using Action lie themas no child was counted twice in the sum of categories 9 and 10.

(c) Themas of Emotion

Frequencies and percentages for boys and girls using themas of Emotion (categories 18 and 19) were compared.

TABLE 18

Frequencies for Boys and Girls in which Thema Reveals Anxiety Before and Anxiety After Michael Meets Mother

	Boys N = 560	Girls N = 586	Total N = 1,146
<u>Emotion before</u>	44	63	107
<u>Emotion after</u>	104	159	263
Totals	148	222	370
Percentages	26.4%	38.3%	32.5%

The difference of frequencies with which boys and girls used themas of Emotion was found to be significant statistically beyond the .05% level.

Emotions (18, 19) Boys: 26.4% Girls: 38.3% $t = 4.34$

Girls used significantly more themas of Emotion than did boys. This does not necessarily mean that more girls used themas of Emotion since in these percentages two categories, 18, Emotion before meeting the mother, and 19, Emotion after meeting the mother were considered. These categories are not mutually exclusive and therefore do not provide the number of boys and girls using them.

(d) Themas of Mother's domination

Frequencies for boys and girls using the principal types of Mother's domination were compared and percentages computed for boys and girls using Domination after truth-themas, after lie themas and the total frequency of Domination themas. They are reproduced in Table 19.

TABLE 19

Frequency of Types of Punishment and Domination
in Stories by Boys and Girls

Percentages of Boys and Girls Having Michael Dominated
After Telling Truth and After Telling Lie

Punishment and Domination	Following Truth			Following Lie			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Deprivation of food	12	25	37	12	10	22	24	35	59
Deprivation of playtime	13	17	30	7	13	20	20	30	50
Restitution under duress	16	22	38	8	5	13	24	27	51
Physical: slaps, whips	42	35	77	48	44	92	90	79	169
Mother tells father	2	4	6	3	2	5	5	6	11
Father punishes	3	5	8	7	6	13	10	11	21
Sent to bed	1	6	7	1	2	3	2	8	10
Miscellaneous punishment	9	9	18	6	4	10	15	13	28
Mother scolds	58	98	156	49	45	94	107	143	250
Totals and Percentages	152	218	370	139	133	272	291	351	642
	27.1%	37.2%	32.3%	24.8%	22.7%	23.7%	51.9%	59.9%	56.0%

From the data in Table 19, tests were computed for six differences in the totals. The statistically significant differences are given in Table 20.

TABLE 20

Percentages for Boys and Girls in Using Themas of Mother's Domination
Significant Differences between Boys and Girls

	Percentages		t	Level of Significance
	Boys	Girls		
Themas of Domination after Truth	27.1%	37.2%	3.69	beyond .05% level
Themas of Domination after Truth and after Lie	51.9%	59.9%	2.72	beyond 1% level

Girls used significantly more themas of Mother's domination after Michael told the truth and showed a significantly greater total number of themas of Mother's domination after Michael told truth and after Michael told lie, than did the boys. Since one child may have used more than one thema of Punishment or Domination, this significant difference between boys and girls does not indicate whether significantly more girls used themas of Domination than did boys. It only shows that girls used more themas of Domination in writing their stories.

(e) Outcomes of Story #2

Frequencies and percentages for the six outcomes and a combination of the outcomes D, S, D-S for boys and girls were compared and are reported in Table 21.

TABLE 21

Outcome of Story #2. Frequencies and Percentages
for Boys and Girls in the Outcome of Their Stories
Classified According to the Six Outcomes
and to the Sum of D, S, D-S

Boys: N = 560

Girls: N = 536

Total N = 1,146

	Boys		Girls		Total	
	Freq.	%	Freq.	%	Freq.	%
I. Integrative; problem solving	10	1.8%	15	2.6%	25	2.2%
D-R.Domination-Resistance	26	4.6%	18	3.1%	44	3.8%
A. Ambiguous, Indecisive	133	23.7%*	111	18.9%	244	21.3%
D. Domination	80	13.8%	86	14.8%	166	14.5%
S. Submission	45	8.0%	38	6.5%	83	7.2%
D-S.Domination-Submission	266	47.5%	318	54.2%*	584	50.9%
D, S, and D-S combined	391	69.8%	442	75.4%*	833	72.7%
Total	560		536		1,146	100%

* By t-test, sex differences were significant at the 5% level.

Significantly more boys wrote stories having Ambiguous, indecisive outcomes than did girls.

Significantly more girls wrote stories which were coded for Dominative-submissive outcomes. This was already indicated by their significantly more frequent use of themas of Domination as reported in Table 19. Girls were also significantly higher in frequencies of stories having outcomes, classified in the combination D,S, and D-S.

3. Summary of sex differences.

More girls used themas of Truth (Truth only, and Truth after lie) than did boys. They also used significantly more themas of Domination, accompanied by significantly greater use of themas of Emotion, and Domination-submission outcomes. There was no significant difference between frequencies of use of Lie themas for boys and girls. Table 17 seemed to indicate a tendency for fewer girls to use Lie themas of spontaneous action than for boys. They used themas of Lie after weighing the circumstances or after questioning more frequently than boys, as well as themas of Planning lie or fantasy lie (category 8). The latter seems to agree with their more frequent use of themas of Emotion, both before and after meeting the mother, as reported in Table 18. The explanation for this seems to lie in the general assumption that children who are anxious or fearful show tendencies of attempting to forestall an increase in this anxiety. In their anxiety, the girls apparently used more fantasy of lie which did not, however, break through to the spontaneous action level in many cases.

The only comparison of percentages of boys and girls which yielded significantly higher frequencies for boys is that of the Ambiguous, inde-

cisive outcome. This seems to indicate - and is supported by the comparison of length of stories for boys and girls (Table 13) - that girls were more precise and detailed in their expressions in writing these stories.

VI. CONTENT ANALYSIS FOR SELECTED GROUPS OF BOYS AND GIRLS FROM HIGH AND FROM LOW SOCIO-ECONOMIC HOMES

1. Selection of Groups

The author selected three schools located in districts of the city with low socio-economic structure and four high schools which generally serve boys and girls from high socio-economic homes.

Since high school training in Germany starts at the age of 10 to 11 (after four years of elementary schooling), a rigid selection as to intelligence is made for these purely university preparatory schools. Parents have to pay tuition for the high school training of their children unless poor parents have an unusually brilliant child who then receives a partial or total scholarship. The low socio-economic schools which the author selected send the fewest children to high school, and these schools are attended by children who are in general about average in intelligence.

A total of 95 girls and 127 boys from the low socio-economic schools was used. A total of 122 boys and 137 girls was selected from the four high schools.

2. Results

For these groups, frequencies and percentages for the same category groupings and outcomes were computed as for the total sample from Karlsruhe. Comparisons as to socio-economic differences were made between the high group of boys and the low group of boys, and between the high group of girls and the low group of girls and t-tests

were computed for all such comparisons. Table 22 gives the frequencies and percentages which served as the basis for the socio-economic comparisons. Table 23 reproduces those percentages in which comparisons showed statistically significant differences. It should be pointed out that in Tables 22 and 23 sex differences at the respective socio-economic levels have not been examined.

TABLE 22

Frequencies and Percentages of Selected Themes and Outcomes Used
by Boys and Girls of Two Groups of Children from Seven Schools

Three Schools were Attended by Children from Low Socio-Economic Homes
and Four Schools by Children from High Socio-Economic Homes

Themas and Outcomes	Categories	Low Socio-Economic Group				High Socio-Economic Group			
		Boys		Girls		Boys		Girls	
		N = 127	N = 95	N = 122	N = 137	Freq.	%	Freq.	%
Truth	14 - 3D	38	29.9%	36	37.8%	52	42.6%	56	40.9%
Truth after lie	44 - 5D	11	8.7%	11	11.6%	19	15.5%	37	27.0%
Lie	9, 10	72	56.6%	50	42.6%	63	51.6%	68	49.6%
Domination after truth	56, 58, 60, 62, 64, 66, 68, 70, 72	35	27.6%	27	28.4%	39	31.9%	53	37.9%
Domination after lie	57, 59, 61, 63, 65, 67, 69, 71, 73	39	30.7%	25	26.3%	19	15.5%	53	38.7%
Outcomes	Integrative	1	.8%	1	1.1%	5	4.1%	12	8.8%
	D-R	6	4.7%	4	4.2%	4	3.3%	9	6.6%
	A	38	29.9%	29	30.5%	15	12.3%	19	13.9%
	D, S, D-S	85	66.9%	61	64.2%	98	80.3%	100	72.9%

TABLE 23

Percentages and Significant Differences for Boys and Girls
from Two Different Socio-Economic Groups
for Various Category Groupings and Outcomes*

Category Group and Outcome	Percentages		t	Level of Significance
	High Group	Low Group		
	<u>Boys</u>			
Truth	42.6%	29.9%	2.09	5% level
Domination after truth	15.5%	30.7%	2.90	beyond .05% level
Outcome: Ambiguous	12.3%	29.9%	3.49	beyond .05% level
D, S, D-S	80.3%	66.9%	2.43	2% level
	<u>Girls</u>			
Truth after lie	27.0%	11.6%	3.06	beyond .05% level
Domination after truth	38.7%	26.3%	2.13	5% level
Outcome: Ambiguous	13.9%	30.5%	2.98	beyond .05% level

* The other differences were not found to be significant statistically.

3. Summary of findings for boys and for girls

(a) Boys

The high group of boys used significantly more themas of Truth than did the low group. The low group, on the other hand, used significantly more themas of Domination after Truth and more boys of the low group wrote stories that were Ambiguous, indecisive in outcome.

The high group of boys had significantly more stories of Dominative-submissive character than did the low group. This is in part explained by the small percentage of boys in the high group who wrote stories with Ambiguous, indecisive outcomes.

(b) Girls

More girls of the high group used themas of Truth after lie than did the low group. Also in the high group, there was a significantly greater percentage of usage of Domination after truth themas.

Girls of the low group wrote significantly more stories with Ambiguous, indecisive outcome than did the high group. A hypothesis which is forthcoming is that the significantly lower frequencies of Ambiguous, indecisive outcome in the boys as well as in the girls of the high group is partly due to their greater facility in writing, their higher level of intelligence, and thus of understanding and acuity of expression.

VII SUMMARY

This study on the problems of reliability in evaluating story completions about social conflicts by German adolescent children is part of a larger cross-cultural and cross-national research program. The present study is concerned with Story # 2 of Series A of the Anderson Incomplete Stories. These incomplete stories were developed in order to get an expression by children as to their judgment of the processes and outcomes of social conflicts.

The writer used for his study children's stories collected from 560 boys and 586 girls in Karlsruhe, Germany, as well as small samples from data collected in Mexico.

The writer translated all stories of the Karlsruhe group. Translation problems are discussed.

The coding manual for Story # 2 comprises 80 process-categories for Michael and the Mother, as well as six interpretive-evaluative outcomes. The stories were coded as to these 80 process-categories and six outcomes by three independent coders. In the course of establishing coder reliability, the categories were refined so as to eliminate various sources of errors in coding. It was found that disagreements between coders arose mainly with regard to categories where interpretive inferences had to be made.

Reliabilities of coders in coding for outcomes of 89.2%, 100%, and 87.1% for three groups of children were obtained. When coding process-categories, two independent coders obtained reliability of 86.7%. Reliability after a four weeks' interval was 88.0%.

Since in the larger cross-cultural and cross-national study great amounts of data have to be coded, an investigation was made as to time required for a person to become a reliable coder. It took one person 22 hours of preparatory work to achieve reliability of 86.7% for categories and 84.0% for coding outcomes.

The validity of the translations was investigated since most coding was based on translations of the stories from German into English. For this purpose, German originals and English translations were coded by independent coders and reliabilities of 92.6%, 95.0%, and 92.9% for coding categories, and percentages of agreement of 89.8, 100, and 87.2 for coding outcomes were obtained.

The reliability of the translator was investigated by coding the same stories from two translations which had been made with one year intervening. Reliability of 97.2% was obtained.

Since the coding was done during the process of continuous refinement of the coding manual, it was thought important to know how consistent a coder was over a period of time during which there was discussion and work on the coding manual. By coding - re-coding method reliabilities of 97.2% for coding categories and 97.0% for coding outcomes were obtained.

The high reliabilities obtained demonstrate that after a short, though intensive training period, reliable coding of Story # 2 can be done.

For purposes of obtaining the degree of reliability with which children used similar themes in writing their stories again after an interval of two weeks, two groups of 34 boys and 34 girls were given the form twice. Truth and Lie themes in both stories were used by 64.7% of the boys and by 67.6% of the girls. Categories of Mother's domination and of Michael's

submission were used in both stories by 64.7% of the boys and 76.4% of the girls. Identical outcome categories were found in 70.5% of the boys, and in 88.0% of the girls. Girls were more reliable than boys in writing stories yielding the same coded outcomes.

The writer coded Story # 2 for all children from the Karlsruhe sample. He made sex comparisons as to several category groupings. It was found that more girls used themas of Truth, themas of Emotion and stories which yielded Domination-submission outcomes, than did boys. The boys wrote significantly more stories which were coded for Ambiguous, indecisive outcome.

Two groups of boys and girls were selected from schools which serve children from low and from high socio-economic homes. Comparisons were made between the low and the high groups. The high group of boys used significantly more themas of Truth, and fewer themas of Domination after truth, as well as fewer stories with Ambiguous, indecisive outcome than the boys in the low socio-economic group. The high group of boys had significantly more stories with outcome of Domination-submission, than did the boys in the low group. More girls of the high group used themas of Truth after lie and themas of Domination after truth, than did the low group of girls. Girls of the low group wrote significantly more stories with Ambiguous, indecisive outcome, than did the high group of girls.

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APPENDIX A

Text of Anderson Incomplete Stories, Series A

1. Frank and Peter were walking to school. Suddenly Frank grabs Peter's cap and throws it high up into the nearest tree so that Peter could not reach it with his hand. Frank had never done anything like this before. Neither had Frank and Peter quarreled with each other the day before.

Why did Frank do this?

What does Peter do?

What does Frank think?

How does Peter feel about it?

Think about these questions and then finish the story quickly with a few sentences.

2. Michael's mother sends him to the store to get one pound of wieners. On the way home he puts the package of meat on the edge of the sidewalk and plays for a short time with his friends. A shepherd dog darts forward quickly, claws half of the wieners out of the package and rushes away with them. Michael wraps up the remaining wieners and takes them home.

What does Michael say to his mother?

What does his mother do?

How does Michael then feel about it?

Think about these questions, then finish this story quickly with a few sentences.

3. The teacher suddenly discovers that fifty cents has disappeared from her desk. She looks up and sees that all the class are working on their arithmetic assignment. She wonders what happened to the money and what she should do.

What does the teacher do?

Finish this story also with a few sentences. Tell what happened to the money and also exactly how the teacher feels and what she does.

4. Elizabeth is sitting in the living room working on her homework. Suddenly she remembers her mother's new coat. She wonders how she would look in it. When taking the coat off she notices that she had got some ink spots on her mother's new coat. Just as Elizabeth is trying to wipe out the ink spots her mother enters the room.

What does her mother say?

How do they both feel about it?

What does Elizabeth say?

What does each one do?

Think about these questions and finish this story quickly with a few sentences.

5. George and Karl are playing with a football. They know that they should not play football on the narrow space in front of the house. George gives a strong kick and the ball hits a window and makes a big crack in it. Karl thought that someone had appeared behind the window. No one could have seen who had kicked the ball against the window.

Finish this story with a few sentences. Tell how the two boys felt about it and what they did.

6. Elsa often handed in her home composition late to the teacher. This time it was an especially important composition and she had, moreover, written it on time. On the way to school she lost her composition notebook and could not find it anywhere.

What does Elsa say to her teacher?

What does the teacher say?

Think about these questions and finish this story with a few sentences.

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Jul 27

Oct 24 '56

Jul 30 '57

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