Constructive Criticism and Social Lies: A Developmental Sequence for Understanding Honesty and Kindness in Social Interactions

Susie D. Lamborn, Kurt W. Fischer, and Sandra Pipp

Social relationships are highly complex, and children work for years to understand their complexities (Labouvie-Vief, DeVoe, & Bulka, 1989; Noam, Recklitis, & Paget, in press; Selman & Schultz, 1990). One component central to the complexity of relationships is the intersection of different social or moral values, such as honesty and kindness. In real-life social relationships, both adults and children perceive honesty and kindness as central to close personal relationships as well as to self-perceptions (Austin & Thomas, 1948; Bigelow & La Gaipa, 1980; Kon & Losenkov, 1978; LaFollette & Graham, 1986; Rosenberg, 1979; Whitbourne, 1986; Youniss, 1980).

Honesty, kindness, and other important values intersect in many different ways in interactions among people in close relationships. They can be in conflict, as in a social lie—for example, when a girl lies to a friend to avoid hurting her feelings. They can be in simple consonance, as in supportive friendship, when one friend tells another how much she values her. Or they can be in complex connection, as in constructive criticism, when one person honestly criticizes another in a way designed to promote growth or improvement, thus being overtly unkind with the underlying intention of being kind. In jealous truth, another example of a complex connection between these two values, a person’s hurtful honesty is really motivated by jealousy. Although prior research demonstrates amply that there is substantial developmental change in the understanding of honesty and kindness and related concepts, it does not describe the development of complex intersections between these two values.

In addition, most prior developmental research does not capture the range of people’s developing understanding of interactions and relationships but instead examines understanding in only one assessment context. Research in other domains has demonstrated powerfully that people show very different levels of understanding of equivalent material in different contexts (Brown & Reeve, 1987; Fischer, Bullock, Rotenberg, & Raya, 1993; Kitchener, Lynch, Fischer, & Wood, 1993). Complex intersections of values in interactions would seem to be prime candidates to show such variation.

Development of Understanding of Relations Between Honesty and Kindness

The development of understanding honesty and kindness and related concepts has been studied in research on the development of person perception (Barenboim, 1981; Berndt & Berndt, 1975), perspective taking (Selman, 1980), moral reasoning (Kohlberg, 1976; Piaget, 1932/1965), and interpersonal understanding (Baldwin & Baldwin, 1970; Bussey, 1992; Youniss, 1980). This research provides a general portrait of how each value develops independently, although not of how they intersect.

During early childhood, children’s definitions of honesty or kindness are situation-specific, focus on concrete qualities or overt actions, tend to be egocentric, and provide only prelimi-
ary elaboration of the context surrounding the action. As children mature, they develop a more differentiated view of what honesty and kindness entail and become more aware of the significance of intentions underlying overt actions in addition to the actual behavior that occurs. Interpersonal context becomes a much more integral part of the concepts.

During adolescence, young people become able to integrate and organize understandings of complex interactions that include underlying intentions, varying perspectives, and conflicting motives and needs. The moral and interpersonal reasoning underlying sociomoral understanding becomes more advanced, as does the ability to interrelate perspectives. At the same time, adolescents become increasingly capable of integrating relations between two or more concepts (Feldman & Ruble, 1981; Hill & Palmquist, 1978; Kurdek, 1978; Livesley & Bromley, 1973; Serafica, 1982; Shantz, 1975; Taft, 1955).

The understanding of concepts such as honesty and kindness encompasses a variety of dimensions. For example, Piaget (1932/1965), Baldwin and Baldwin (1970), and others have suggested that the understanding of these concepts is influenced by the individual's understanding and consideration of intentions. Selman (1980) and others indicated that the understanding of honesty and kindness is likely to be affected by the degree of perspective taking of which the individual is capable. Youniss (1980) documented the critical role of the relationship between two individuals, especially the contrast between unilateral and symmetrical relationships, in judgments of kindness. In the present study, we expand this area of study to examine skill developments in the areas of honesty and kindness as they shift from abstract constructs to abstract relations and finally to complex abstract relations. We suggest ways in which the intersection of understanding of honesty and kindness occurs at multiple levels of complexity and across different types of concepts such as constructive criticism, social lying, and jealous truth. In addition, in this study, we emphasize the powerful role played by environmental context and support in influencing performance shifts in the understanding that is shown by youths of varying ages. Finally, we suggest ways in which interpersonal understanding relates to interpersonal problem solving.

The first purpose of this study was to examine development of the joint understanding of honesty and kindness, as evidenced in concepts such as social lying, constructive criticism, and jealous truth. To examine the understanding of honesty and kindness at different ages, we devised a sequence of story tasks in which honesty, kindness, and the relations between them were portrayed in increasingly complex ways that built to joint concepts relating to these concepts. To predict the developmental ordering of these stories, we used the task-analysis methods of dynamic-skills theory, which specify how (a) to analyze complex patterns of tasks to produce a skill structure for each task and (b) to predict the developmental sequencing of the tasks within a domain based on the skill structures (as described by Fischer, 1980; Fischer & Farrar, 1987; Rose & Fischer, 1992). In a large number of studies in diverse domains, these rules have proved successful at predicting developmental orderings (e.g., Bertenthal & Fischer, 1978; Elmdendorf, 1992; Fischer, Hand, Watson, Van Parys, & Tucker, 1984; Kitchener et al., 1993; Pipp, Fischer, & Jennings, 1987).

As the sequence for honesty and kindness progresses, the stories change systematically in two ways. First, they shift from concrete concepts, to abstract concepts, to simple abstract relations, and then to complex abstract relations between concepts. Second, the stories shift from separate stories about honesty and kindness to integrated combinations of the two concepts. Therefore, early steps in the sequence concern concrete understandings of these concepts separately, whereas later steps involve abstract combinations of honesty and kindness, including social lying, constructive criticism, and unkind or jealous truth.

Developmental Range in Sociomoral Understanding

A second purpose of this study was to explore developmental range of sociomoral understanding. The large variability in the developmental level of behavior makes a unitary concept of stage or level difficult to sustain (Fischer, 1980; Flavell, 1982; van Geert, 1991). At the same time, there do seem to be real limits in level beyond which an individual could not go within a given context (Fischer et al., 1993; van der Maas & Molenar, 1992). Developmental range is intended to capture the dynamic variation in these limits for a given child. It is measured by the difference between the optimal level, which is the upper limit of performance in a domain when the context provides optimal support for high-level functioning by the child, and the functional level, which is the upper limit when there is minimal contextual support (Fischer & Pipp, 1984; Lamborn & Fischer, 1988). The concept of developmental range is related to the notions of zone of proximal development (Vygotsky, 1978), scaffolding (Bruner, 1982; Wood, 1980), and bandwidth of competence (Brown & Reeve, 1987). However, in contrast to developmental range, these other concepts include abilities that an individual can perform only with intervention from others, as when an adult does part of a task for a child in scaffolding. A developmental range is confined to those skills that the child can do on his or her own, without direct intervention in the performance of the task.

People do not automatically function at their optimal level. Optimal-level performance usually occurs in situations that provide strong contextual support for high-level functioning, including clear task definitions, familiar content, examples of correct performance, and the priming of key components of the task. In assessments of optimal level, the person must be able to do the task on his or her own, using the contextual supports himself or herself rather than having anyone else do part of the task. Without such supports, individuals typically perform at a limit that is at a lower developmental level, showing a skill of less complexity, that is, the functional level.

To provide information on the variability in level expressed in terms of developmental ranges, we introduced two types of standard variations in the assessment conditions for the understanding of honesty and kindness: practice and contextual support (clarity of task definition, including priming of key components). In line with numerous studies, we anticipated that performance would improve with practice and contextual support (Gelman, 1978; Rogoff & Lave, 1984). We also predicted that, as in previous research in other domains, both optimal and
functional levels would increase with practice, so that the size of the developmental range would remain the same even after practice (Fischer et al., 1993; Hand, 1981).

In addition, we predicted that, under high-support conditions for eliciting optimal-level functioning, developmental level would show sudden growth, which seems to be typical of specific skills in tightly defined domains (van der Maas & Molenaar, 1992; van Geert, 1991). On the basis of dynamic-skills theory and prior research, we predicted that there would be jumps in performance at approximately 10, 15, and 20 years (Fischer, Kenny, & Pipp, 1990; Kitchener et al., 1993; Moshman & Franks, 1986; O'Brien & Overton, 1982).

Social Understanding and Problem-Solving Skills in Specific Domains

A final purpose of our study was to relate children's and adolescents' understanding of sociomoral situations with their skills at problem solving in specific domains. Associations between social understanding and interpersonal problem-solving skills are not well understood, partly because the two capacities are frequently assessed together. Much research on social—cognitive development has used methodologies that intertwine understanding with problem solving, such as dilemma resolution (Eisenberg-Berg, 1979; Eisenberg-Berg & Mussen, 1978; Gilligan, 1980; Hoffman, 1970; Kohlberg, 1976; Kurdek, 1978; Piaget, 1932/1965; Selman, 1980). In these tasks, the person needs not only to understand a complex sociomoral situation but also to solve difficult interpersonal problems involving moral, legal, and social sanctions.

Several studies have examined associations between interpersonal understanding and problem solving (Ford, 1982; Pellegrini, 1985). These studies suggest that interpersonal problem-solving skills may be a central component of cognitive resourcefulness, an ability that enables individuals to direct interpersonal understanding toward devising strategies for achieving interpersonal objectives. Cognitive resourcefulness is likely to be at least partially dependent on general interpersonal understanding. However, Pellegrini's measure of interpersonal understanding uses a dilemma resolution methodology that assesses interpersonal understanding within the context of a problem-solving task.

Our measure of understanding honesty and kindness assessed understanding without any need for problem solving. We used a separate measure to assess interpersonal problem-solving skills, the Means–Ends Problem-Solving Measure (Spivack & Shure, 1985). This measure also allowed a test of domain specificity, in that there were separate tasks for different problem-solving situations or domains.

We anticipated that understanding honesty and kindness would relate to means–ends problem solving primarily in interpersonal domains, especially those that were prosocial like most of the honesty and kindness tasks. The design of our study makes detection of any such relation especially likely because of the sensitivity and breadth of the measures. The developmental scale for understanding was fine-grained, there were several different assessment conditions for understanding, and there were several domains assessed for problem solving.

In conclusion, this study tested a developmental sequence for understanding honesty and kindness, explored developmental ranges in performance across different testing conditions in this domain, and examined the association between this social understanding and interpersonal problem-solving skills.

Method

Subjects

Participants were 113 White, middle-class students ranging in age from 9 to 20 years. Older participants were undergraduates at the University of Denver, and younger subjects attended Denver metropolitan area schools from which most students went to college. Students in these schools and at the University of Denver were generally upper-middle-class and of above-average intelligence. Eight to 12 students were included for each age from 9 to 20 years, so that there would be an even age distribution to facilitate testing of the scalability of the honesty and kindness sequence. Approximately half of the sample was female (n = 52), with gender equally distributed across ages.

Measures

Honesty and kindness story tasks. A 10-step sequence of story tasks was constructed to examine the children's and youths' ability to understand and explain stories about honesty and kindness. The stories were developed to assess development of understanding of honesty and kindness and relations between them during preadolescence and adolescence in American culture. During this age period, according to dynamic-skills theory, people develop through four successive levels of representational and abstract thinking (Fischer, 1980; Fischer & Farrar, 1987). A task analysis was done of each story, resulting in a skill-structure description summarized in a diagram. Story procedures were checked to make sure that the story dialogue and questions afterward included the essential elements needed for identifying each skill structure.

Table 1 gives the summary for each story, its step in the predicted developmental sequence, its developmental level in skills theory, and its skill-structure diagram. The summaries presented are the actual ones that participants heard before they watched the video of each story. (See Appendix A for an example illustrating the social lie story.)

The skill-structure diagrams outline the central components in each story and the key relations between them, that is, the structure that is embedded in each story. The structure is intended to capture the organizing framework for each story, and it is used to determine the complexity of the story and therefore its place in the developmental sequence.

Steps 1 through 3 present concrete concepts about honesty or kindness in a specific situation, involving a social interaction between two to four characters who react to each other according to two dimensions defined by the task. For example, in Step 1H, honesty is defined concretely as telling the truth about a math grade. In the story, Rick and Kim both get bad test grades, but Rick tells the truth about it while Kim lies about her grade. At this level, definitions that repeat a character's actions in the story are expected, as in "Honesty is when Rick told Kim he got a bad grade." The participant recounts the essential components of the story in a way that acknowledges a comparison or interaction between the characters and provides a concrete definition of honesty or kindness that matches the actions of one of the characters in the story. Skill structures involve coordinations of two component actions for specific agents (people carrying out actions) who interact—in this case, Rick and Kim both taking a test and lying or telling the truth about their grades on it.

Steps 4 through 6 present single abstract concepts in simple general terms identifying a theme common to two concrete situations. The par-
### Table 1

**Development of Concepts of Honesty and Kindness: Skill Structures and Story Summaries**

<table>
<thead>
<tr>
<th>Step</th>
<th>Summary</th>
<th>Skill structure</th>
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<tr>
<td>1H (1K)</td>
<td>Concrete honesty, single instance: In this story Rick learns that honesty is telling someone the truth about your test grade, even if you don’t do well. Rick and Kim both get four wrong on their math test but Rick lies to Kim about his grade while Kim tells Rick the truth about her test grade, even when she doesn’t do well on the test.</td>
<td><img src="image" alt="Representational systems diagram" /></td>
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<tr>
<td>2K (2H)</td>
<td>Concrete kindness, shift between two instances: Rick shares his paints with Sara because she doesn’t have any. But Sara can’t help Rick back since he doesn’t need anything. Sara decides that kindness is sharing your paints with someone who doesn’t have any, even when they can’t share in return. Later, at recess, Kim helps Mark play checkers since he doesn’t know how. Mark can’t help Kim because she doesn’t need anything. Mark decides that kindness is helping someone play a game they don’t know, even if he can’t help in return.</td>
<td><img src="image" alt="Representational systems diagram" /></td>
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<tr>
<td>3H (3K)</td>
<td>Concrete honesty, two instances integrated: This story shows that honesty is telling the truth about your English grade and telling the truth about getting in trouble during class, even when it seems easier to lie. Kim didn’t do very well on her test and also got in trouble during class. But she tells the truth to Sara and Mark, while Sara lies about her test grade, and Mark lies about getting in trouble during class. Kim shows that honesty is telling the truth about your English grade and telling the truth about getting in trouble at recess, even when it seems easier to lie.</td>
<td><img src="image" alt="Representational systems diagram" /></td>
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<tr>
<td>4K (4H)</td>
<td>Abstract kindness: This story shows that kindness is caring by helping someone in need, even if they can’t help in return. Tom helps Beth with English and shares his lunch with Mark when they need help. Beth and Mark can’t help Tom in return because he doesn’t need help. Tom is kind by caring enough to help Beth with her homework and share lunch with Mark when they need help. Tom shows that kindness is caring by helping someone in need, even if they can’t help in return.</td>
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<tr>
<td>5</td>
<td>Shift between abstract honesty and abstract kindness: Mark has to stay home over the weekend for getting in trouble and also does poorly on his test. He tells Kim and Tom the truth about what happened while they lie to him. Kim lies about getting in trouble, and Tom lies about his math grade. Mark shows that honesty is being truthful to someone about your actions, even when it seems easier to be untruthful. The next day, Rick shares lunch with Beth and helps Sara fix a puzzle when they need help. Beth and Sara don’t help Rick back since he doesn’t need help. Sara decides that kindness is caring by helping someone in need, even when they can’t help in return.</td>
<td><img src="image" alt="Representational systems diagram" /></td>
</tr>
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6 Abstract concept of constructive criticism as mixture of honesty and kindness:
This story shows that in constructive criticism, honesty is being truthful to others and kindness is caring by helping someone in need, even when it seems easier to be untruthful and unkind. Rick asks Mark (and Kim) what he thinks of his paper. Mark tells Rick that his book report isn’t very good and also offers to help him work on it (while Kim lies and tells him the paper is good). Rick learns that in constructive criticism honesty is being truthful to others and kindness is caring by helping others in need, even when it seems easier to be untruthful and uncaring.

7 Abstract relational concept: Social lie as opposition of honesty and kindness:
This story shows one way that honesty and kindness can be related. In a social lie, honesty and kindness are related as opposites in that you give up honesty in order to be kind. By telling a social lie, a person gives up honesty, which is being truthful to others, in order to be kind by caring for others. Kim doesn’t think that Sara draws very well. When Sara asked Mark and Kim what they think of her drawing, Kim decides to be dishonest and to be kind. She lies to Sara so she won’t hurt her feelings. Kim finds out that sometimes, honesty and kindness are related as opposites. By telling a social lie, she gives up honesty, which is being truthful to others, in order to be kind by caring for another person.

8 Abstract relational concepts: Shift from social lie as opposition of honesty and kindness to constructive criticism as integration of honesty and kindness:
The first part of this story is the same as Step 7 above. The second part of the story shows another way that honesty and kindness can be related. Honesty and kindness can be related as similar in that they are both used in constructive criticism. Beth decides to point out some faults in Tom’s paper so that Tom can make his paper even better. Rick and Tom both think Beth is being too unkind by being so critical after Tom worked so hard on the paper. Beth explains that she is being both honest and kind. Honesty and kindness can be related as similar because they are both used in constructive criticism. In constructive criticism, being truthful about someone’s fault can be a way of showing caring by helping to improve.

9 Three-part abstract relational concept: Jealous truth as combination of kindness, honesty, and jealousy (opposition of kindness to honesty through jealousy):
This story shows that honesty is the opposite of kindness and similar to jealousy when honesty is used hurtfully as a way of acting jealous. (A concrete story illustrating this concept follows but is not included here.)

10 Complex abstract relation: Constructive criticism as integration of two kinds of honesty (praising and criticizing) with two kinds of kindness (building confidence and helping to improve):
This story shows one way that honesty and kindness are related. It is possible to be both honest and kind at the same time. By helping others with their needs for confidence and improvement, two ways of being kind, you can decide how much emphasis to put on praising and finding fault, which are both ways of being honest. (A concrete story illustrating this concept follows but is not included here.)

Note. The designations for skill level follow the standard notation in dynamic-skills theory (Fischer & Farrar, 1987). In skill structures, each word denotes a skill component, with words completely in capital letters designating a main component (set) and each subscript designating a quality of that set or a subset belonging to that set. Regular roman typeface designates representations, and boldface letters designate abstractions. Lines connecting sets designate relations forming a mapping, single-line arrows designate relations forming a system, and double-line arrows designate relations forming a system of systems. Words above a line or arrow describe the relation designated. For Steps 1 through 4, the sequence includes two separate tasks. The letters following the number for a step indicate different versions of the task: H for honesty and K for kindness. For the sake of brevity, only one of the story tasks at each step is presented to illustrate that step in the sequence. Abstractions are built on representational systems and emerge from them. This relation is shown for Steps 4 to 6. For higher steps, the representational structures are omitted for simplicity.
Participants recount the details of two social interactions that both demonstrate the same theme. An abstract (generalized and intangible) definition of honesty or kindness is taken from the story and is applied to two concrete examples that appear in the story. For example, in Step 4H, honesty is defined as being truthful to others, shown by telling the truth about getting in trouble at recess and about losing a notebook. The story includes both concrete agents interacting and an abstract integration giving a specific meaning to those interactions, as shown in the two skill structures in Table 1, one composed of representations and the other of an abstraction. Definitions that are limited to referring to the concrete details of the story are insufficient, as are definitions that merely repeat the abstract meaning without application to the actual interactions.

Steps 7 and 8 present simple abstract relations in general terms. The participant states the relation presented in the story and explains what it means at a general level, provides abstract definitions of honesty and kindness, and shows how the relation between honesty and kindness is demonstrated in the actual behavior of the characters. For example, in Step 7, honesty and kindness are related as opposites in the relational concept of social lying, when being truthful is given up in order to spare others the damage of one's lying. The specific instance in the story involves someone lying by telling a friend that her painting is good so as to be kind by not hurting her feelings. This concrete interaction needs to be interpreted in terms of the abstract relational concept of social lying. For simplicity of presentation, Table 1 shows only the abstract mapping of honesty and kindness, not the representational structures on which the abstractions are built. Each abstraction involves a representational structure similar to those shown for Steps 4 to 6.

Steps 9 and 10 present more complex abstract relations in general terms. Complexity is defined in terms of number of general components (differentiated) that are still connected by a single general idea (integrated). The student is able to state the general, abstract relation between honesty and kindness as presented in the story and explain how this relation is demonstrated by the interactions of the characters in the story. For example, in Step 10, constructive criticism involves similarity between honesty and kindness: A person is truthful by praising and criticizing in order to be kind by helping another to build confidence and improve. As with the other abstract levels, this explanation is applied to a specific example.

As shown in Table 1, the correspondence between levels and steps is as follows: representational systems (Steps 1 to 3), simple abstract mappings (Steps 4 to 6), abstract mappings (Steps 7 to 9), and abstract systems (Step 10). Levels define major developmental reorganizations, and within each level skills develop to more complex forms through specific skill transformations specified in dynamic-skills theory (Fischer, 1980; Fischer & Elmendorf, 1986). Two types of within-level transformations specified by skill theory are represented in the sequence: shifting and compounding. Shifting involves completing a task and shifting focus to another comparable task without any integration of the elements of the two tasks. Compounding involves merging two tasks that have a common aspect so that a more complex set of elements is integrated and considered together as a unit.

Compounding is more sophisticated than shifting because it requires genuine integration of components. In Step 6, honesty and kindness are put together in a simple version of constructive criticism in which a person is simultaneously honest by telling another person the truth and kind by helping him to improve himself. Honesty and kindness are thus combined in the same story, but the combination does not involve a clear differentiation of them and specification of an articulated relation. In the more advanced versions of constructive criticism in Steps 8 and 10, the relation is defined more precisely. In the honesty and kindness sequence, Steps 2, 5, and 8 are shifting skills and Steps 3, 6, and 9 are compounding skills for the levels of representational systems (Rp3), simple abstract mappings (A1), and abstract mappings (A2), respectively. Consequently, every level involves a number of intermediate developmental steps. More in-depth descriptions of these developmental processes are available in other articles (Fischer, 1980; Fischer & Elmendorf, 1986; Fischer & Farrar, 1987; Fischer & Lamborn, 1989). The administration and coding manuals, including the story tasks, are available from Susie D. Lamborn (Lamborn, 1986).

Appendix A provides an example of the material from the scoring manual for one of the stories, the Step 7 story about social lying (an abstract mapping between honesty and kindness). It includes the complete text of the story (including both initial summary and dialogue), the probes that were asked of each subject, the essential elements needed to pass the story, and an example of a passing response. The passing response was transcribed from an audiotaped session with a student participant in the study.

The story text included an initial summary that introduced the main characters and the plot of the story and explained briefly the key elements or gist. The summary always included a concise verbal presentation of the key elements required to pass the story, so that an accurate paraphrasing of the summary would be sufficient to pass. After the story summary, the dialogue presented the actual conversation in the story, which elaborated the key elements from the summary. Toward the end of each story, one of the characters stated a concise, integrated overview of the important elements of the story, that is, another summary.

The story for each developmental step represented a prototype for understanding at that step, which was of course only one of a number of ways that honesty or kindness or both could be understood at that step. The essential elements defined the prototype and were the criteria used to determine passing or failing responses. The most essential component was always the final one listed (Appendix A), which involved integrating the earlier responses into a single story.

The probes were standardized questions that were used to gain information from participants and helped to focus them on key components of the task. The probes closely paralleled the essential elements so that they would assess whether participants could provide the essential elements. The most critical probe was the final one, which asked for the integration of all the important components of the story.

Means-end problem solving. The Means–End Problem-Solving Measure assesses one’s ability to conceive of a step-by-step plan to solve problems, especially interpersonal ones. One key measure of a well-defined plan is the number of means identified to solve a problem (Butler & Meichenbaum, 1981; Platt & Spivack, 1975; Spivack & Shure, 1976, 1985). Means–end problem solving has been studied in children, adolescents, and adults and appears to differentiate between well-functioning and poorly functioning individuals (Barone, Aguirre-Deanreis, & Trickett, 1991; Ford, 1982; Mitchell, 1982; Pellegrini, 1985; Platt, Spivack, Altman, Altman, & Peizer, 1974; Siegal, Platt, & Peizer, 1976; Spivack & Shure, 1976).

The six stories from the child and adolescent versions that were used in this study fell into three categories. Prosocial stories dealt with making friends in a new neighborhood, making up with a girlfriend or boyfriend, making up with friends who are avoiding you, and giving advice to a friend. An antisocial story dealt with getting even, and a nonsocial instrumental story dealt with finding a watch. The participant was presented with a series of story beginnings and endings. Each story began with a problem and ended with the problem solved but with no statement of how it was solved. The person was asked to fill in the part of the story connecting the initial problem with the final problem solution. Each story was scored for number of means described to solve the problem.

Verbal intelligence. Participants under the age of 18 were given the vocabulary test from the Wechsler Intelligence Scale for Children—Revised, and the older students were given the vocabulary test from the
Wechsler Adult Intelligence Scale. Scaled scores that adjust for age were used. Scaled scores can range from 0 to 19 with 10 representing the average score.

Procedure

Each person was interviewed individually in two sessions, each lasting approximately 90 min, that were recorded on audiotape. At the beginning of the first session, he or she was given a brief introduction to the study as follows: “I’m interested in how people of different ages think about honesty and kindness. We’ll look at some stories and see what the people in the stories say that honesty and kindness are. But I’m also interested in what you think honesty and kindness are. Everyone has their own ideas about what honesty and kindness are. At the end of our meeting, I’ll ask you what you think honesty and kindness are.” Then the student engaged in an easy warm-up task.

The understanding of honesty and kindness was assessed in four conditions: high and low support, and with and without practice. We manipulated practice by giving each person two sessions. In the first session, each participant completed the high-support condition followed by the low-support condition without practice. Two weeks later each participant returned to perform first the high- and then the low-support condition with practice. Previous research found that the order of conditions had little or no effect on developmental level (Fischer et al., 1993; Fischer, Hand, & Russell, 1984; Hand, 1981; Keitner et al., 1993; Watson & Fischer, 1980).

The high-support condition involved separate presentation of each story in the series about honesty and kindness (Appendix A). The stories were presented with a videotape in which they were enacted with handheld realistic cardboard figures that had the character's name printed on their fronts. Each person received the following introduction to this part of the study: “We’ll look at some stories and see what the people in the stories say. I’ll show you the stories one at a time. Remember as much of the stories as you can. Try to remember the main ideas from each story. After you watch the story, I’ll ask you some questions about the story. Each story is totally separate even though they may seem similar. Even though some of the characters will be the same and similar things happen, there is no carry over. Think of each story as a new thing. We’ll start with a short practice story so you get the idea. I have posters showing the people just like you’ll see them on the TV. You can use the posters to help you remember what happened in the story.”

The person watched the videotape of the stories one at a time and then immediately retold the story by answering a set of standardized probes that focused on the story’s main points. The stories in the high-support condition were administered in two orders. Half of the subjects at each age received them in order from easy to difficult, and the other half received them in the reverse order.

In the low-support condition, the participant was instructed to make up his or her own best story about honesty and kindness: “Now I would like you to make up your own story about honesty and kindness. Make up the best story that you can about how honesty and kindness are related. Here are the people that you can use (the doll figures). You can use the names that are already on them or you can make up your own names. Here is paper and pencil so you can keep notes if you want to. You’ll have about 5 minutes to make up a story so take your time and come up with a really good one. (No actual time limit was placed on the participants. They were left to complete the story on their own. Most finished very quickly.) If you finish before your time is up, just let me know. I’ll be over here working on something else while you’re figuring out your story. When you’re ready, I’ll put the tape recorder on and have you act out the story for me.” After presenting his or her story, the student was asked a set of standardized probes focusing on the main points. The probes for the low-support condition are presented in Appendix B.

Results

Preliminary analyses indicated that the story-task scores were not influenced by the order of presentation of the tasks or the participant’s gender, and therefore these variables were not included in subsequent analyses. In general, the sequence scaled well and showed high test–retest reliability. Developmental step was much higher with high-support conditions than with low-support conditions, and it increased somewhat with practice. Understanding honesty and kindness related to means-end problem solving for prosocial interpersonal problems but not for nonsocial or antisocial problems.
Table 2
Predicted Profiles for Understanding Honesty and Kindness

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<tr>
<th>Step</th>
<th>Developmental sequences of profiles</th>
<th>Session 1</th>
<th>Session 2</th>
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<td>10</td>
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<td>20.71</td>
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Nonscalable profiles
Total

Scaling of the Sequence

To test for the scaling of the predicted developmental sequence in Table 1, we analyzed each subject's pattern of passes and fails for the high-support condition in each session with Green’s (1956) procedure for scalogram analysis. Values ranged from 0 to 1, with 1 indicating perfect scalability. An index of consistency of .60 or greater was considered support for scalability (Stipek, Graalinski, & Kopp, 1990). To attain a significant index of consistency, most of the subjects must display a limited set of acceptable patterns in which they pass all stories up to a certain point in the sequence and fail all subsequent tasks. For the first three steps in the sequence, which included two tasks per step representing two separate branches in the developmental sequence, a passing score was assigned if the subject passed either or both of the tasks.

Green’s (1956) index of consistency indicated that both the first and second sessions of the sequence scaled well, $I = .81$ and $.93$, respectively. The percentages of acceptable patterns for the first and second sessions were 87% and 95%, respectively, as shown in Table 2. The high scalability of the sequence permits use of the highest step passed as a variable for statistical analyses.

Although the age means tended to increase from the early to later steps in the sequence, age increases were not completely systematic for each successive step in the sequence. This pattern of data is due in part to the low number of subjects at several steps in the sequence. For two steps at Session 1 and three steps at Session 2, there was only 1 subject representing the completion of that step as the final passing response. In addition, age is only a general marker for when a particular task is generally passed. This aspect of development is consistent with skill theory, which suggests greater variability in age norms with increasing age.

Test-retest reliability was determined from the correlations between the highest steps passed for the first and second sessions. It was $.89 (p < .01)$ for the high-support condition and $.77 (p < .01)$ for the low-support condition.

Figure 1. Average highest step passed for four assessment conditions for ages 9 through 20.

Age, Support, and Practice Effects on Highest Step Passed

Participants were expected to perform better on the honesty and kindness tasks as a function of age, practice, and amount of support. A repeated-measures analysis of covariance for highest step passed was performed with age as the between-subjects variable, session (1 or 2) and condition (low support or high support) as the within-subjects variables, and verbal IQ as the covariate. The growth functions are shown in Figure 1 for each condition in each session.

A significant main effect of age indicated that older participants passed higher steps in the sequence than younger ones, $F(11, 101) = 14.02, p < .0001$. Duncan multiple-range post hoc tests ($p < .05$) showed that the mean scores fell into three groups: Students from 9 to 12 years old ($M = 4.73$) scored sig-
nificantly lower than older participants, and students from ages 13 to 15 ($M = 6.82$) scored lower than those age 16 to 20 ($M = 8.14$). These findings thus supported the hypothesis that there would be jumps in performance. However, the jump between 9 and 10 years that seems to be present for high-support conditions in Figure 1 was not statistically reliable. Also, abstract relations emerged a little earlier than anticipated. Abstractions were present under high support in most 9-year-olds, and abstract relations in most 13-year-olds. Although spurs were only predicted in the high-support conditions, an examination of Figure 1 suggests that spurs were evident in the low-support conditions as well. In this study, the low-support conditions were low in support in relation to the high-support conditions conducted in this study. However, they are somewhat high in support compared with low-support conditions in other studies. For example, the use of probes following the telling of the subject's own story is more structured than the free-play condition that served as a low-support condition in many previous studies. Because skill theory's predictions about spurs range from maximal likelihood of shifts in very highly supported conditions continuously through to zero likelihood of spurs with no support, spurs are expected to occur sometimes with intermediate degrees of support.

As expected, subjects passed significantly higher steps in the high-support conditions ($M = 7.30$) than in the low-support conditions ($M = 6.15$), $F(1, 101) = 128.63, p < .0001$. Subjects also passed significantly higher steps in the second session ($M = 6.99$) than in the first session ($M = 6.47$), $F(1, 101) = 35.70, p < .0001$. Interactions were not statistically reliable.

Relations Between Social Understanding and Problem Solving

We were interested in two issues concerning relations between social understanding and problem solving: (a) whether understanding related to problem-solving abilities beyond effects of verbal IQ and age and (b) whether the different procedures for assessing understanding showed different associations with problem solving. Partial correlations that controlled for age and verbal IQ were computed between the four measures of understanding and the scores for each of the six problem-solving tasks.

The correlational analyses indicated that after age and verbal IQ were controlled, all four measures of understanding were significantly associated with problem solving for the four prosocial problems (Table 3). From the total number of correlations that were completed, one or two would be expected to be significant by chance. Indeed, all but 2 of the 16 correlations were significant, albeit at a modest level of association. For the nonsocial story about finding a watch, all correlations were near zero and were not significant. For the antisocial story of getting even, three of four correlations were near zero, and only one was significant, that for the low-support, low-practice condition.

Discussion

These results demonstrate that understanding of complex sociomoral interactions involving honesty and kindness developed systematically from 9 to 20 years. At the same time, the results show how level of understanding varies strongly across assessment contexts. The study thus takes a step toward systematically integrating developmental change with contextual variation to provide an appropriately complex portrait of social-cognitive development. In addition, the results suggest that the associations between social understanding and problem-solving abilities are domain specific.

Development of Sociomoral Understanding

The 10-step developmental sequence of story tasks revealed three main changes in understanding complex sociomoral concepts, with jumps in performance between periods. Each period showed a range of performance, varying from lower developmental levels similar to those found in much previous research to higher levels like those found in only a few previous studies. In high-support conditions, understanding shifted from abstract concepts during middle childhood and early adolescence, to simple abstract relations during middle adolescence, to complex abstract relations during late adolescence. Under low-support conditions, the limit on understanding for these age periods shifted down to concrete concepts, abstract concepts, and simple abstract relations, respectively.

In the first age period, 9 to 12 years, under high-support conditions, children understood how a single abstract concept or value (the level of single abstractions) functioned in social interaction stories (Fischer & Lamborn, 1989). That is, they could provide a general definition that went beyond specific actions of characters in the story and then use that definition to explain the specific actions. During this period, they extended their abstract understanding from the concepts of honesty and kindness to an abstract concept of constructive criticism as being truthful and caring for someone who needs help. What they had difficulty understanding was an abstract relation between two such concepts, such as a more general definition of constructive criticism as relating the general values of honesty and kindness.

In the same age period, children's stories were substantially lower in the scale when they had no contextual support or practice. At age 9, most of them gave no evidence of understanding any of the abstractions, despite the fact that 15 min earlier in the high-support condition they had explained honesty or kindness or both in abstract terms. Thus the developmental range for this age period is generally two or three steps between the low-support, low-practice condition and the high-support, high-practice condition.

During the second age period, 13 to 15 years, the adolescents readily understood simple abstract relations between two abstract concepts or values (developmental level of abstract mappings) under high-support conditions. They could explain how honesty and kindness are separate values that are related to each other in social lying or constructive criticism, and they could provide an abstract explanation of the specific actions in a story. They had difficulty, however, with stories involving relations among three or four abstract concepts.

Without contextual support or practice, adolescents' stories in this age period dropped to single abstractions, one or two steps lower. At age 13 most of the adolescents gave no evidence
of understanding abstract relations, even though they had shown this understanding a few minutes earlier in the high-support condition. Not until 3 or 4 years later did they demonstrate understanding of these relations under low-support conditions.

During the third age period, 16 to 20 years, participants understood complex abstract relations as evident in the integration of three abstract concepts under high-support conditions. The adolescents could explain how honesty, kindness, and jealousy all relate in jealous truth, when a person gives up caring for another in order to be truthful in a hurtful way because of resentment over competition. Without contextual support or practice, on the other hand, stories dropped one or two steps to simple relations between two abstract values.

Only a few students in this third age range could explain the most elaborated concept of constructive criticism, in which two types of honesty are related to two types of kindness (skill level of abstract systems). That is, they could not adequately explain how an individual can simultaneously praise a friend’s strengths and criticize his or her weaknesses (two types of honesty) in order to help the friend to both gain confidence and improve (two types of kindness). Other research indicates that this skill, involving an abstract system, will show a developmental jump in the next year or two after the ages in this study (Fischer, 1932/1965). Although intentions are involved in the stories in this study as characters explain why they acted in certain ways, they are not the focal point. Rather, this study extends the analysis of the development of understanding of concepts such as honesty and kindness to include a portrait of skill development as it shifts from abstract concepts to simple abstract relations and finally to complex abstract relations from middle childhood through late adolescence. The skill development emphasized in this study focuses on the integration of the separate concepts of honesty and kindness in blended concepts involving both constructs. An interesting direction for future research would explicitly emphasize the role of intentions to examine their influence in understanding honesty and kindness from a dynamic-skills theory framework (see the study by Hand and Fischer, 1981, for work in this direction).

This study’s portrait of the dynamics of development and variation in sociomoral understanding is generally consonant with other studies for this period, but it is more differentiated. Children show real growth through a sequence of sociomoral understanding encompassing three distinct periods, and at the same time they demonstrate a developmental range of several steps in that sequence as a function of contextual support and practice. The variations described by the range cannot be treated as mere methodological artifacts because they appear reliably across different measures and they are robust for individuals over repeated assessments (Fischer et al., 1993; Fischer & Pipp, 1984; Kitchener et al., 1993; Lamborn & Fischer, 1988). These findings highlight the need for theories of social-cognitive development to build their central constructs around the joint functioning of individual and context (Fischer & Farrar, 1987; Rogoff & Lave, 1984; Viney, 1992).

With this portrait of development and variation, many apparent contradictions in the literature concerning age of acquisition of sociomoral concepts are resolved: The wide variations in age of development of a given social concept arise in large part from differences in assessment conditions. Indeed, researchers should be able to use this portrait to predict the level that a given technique will produce in a specific age group. Some assessment techniques promote optimal performance, and like the high-support, high-practice condition in this study, they will show early development of a given level of understanding. Other techniques provide no contextual support or practice, and like the
low-support, low-practice technique they will show the same de-
velopmental level emerging 3 or 4 years later. The delay in de-
velopment will be even more with techniques that are less sup-
portive than our low-support condition or that require not only understanding but also problem solving.

Relation With Sociomoral Problem Solving

Many previous studies have used methods that intertwine problem solving with understanding, as when people have been asked to resolve interpersonal dilemmas (Eisenberg-Berg, 1979; Gilligan, 1982; Hoffman, 1970; Kohlberg, 1976; Piaget, 1932/1965; Selman, 1980). In the present study, we separated problem solving from understanding, providing independent assessments of each and examining relations between them. The elimination of problem solving from the assessment of understanding probably contributed to our finding early development of abstract concepts under high-support conditions.

The separate assessments of understanding and problem solving provided an opportunity to test the relation between the two skills. That test also allowed assessment of several different domains—prosocial, antisocial, and nonsocial problem solving. The results showed that understanding and problem solving were indeed related, and the relation was highly specific, not general. Understanding honesty and kindness related to problem solving for four different prosocial interpersonal situations, all involving positive solutions of problems with friends. In con-
trast, it did not relate to problem solving for a nonsocial situation, even though the measure of nonsocial problem solving showed strong development and therefore a high association with age. Antisocial problem solving was correlated in only one out of four measures of understanding. The clarity and consistency of these findings, even though the magnitude of the associations is modest, is surprising given that the measure of problem solving involved a small sample of behavior—a few brief responses in one methodological format. Apparently, the relation between prosocial problem solving and the understanding of honesty and kindness is substantial enough to occur consistently even with this somewhat limited measure of problem solving. These results support the argument that associations between nonsocial and social cognition and between social cognition and social competence are likely to be highly specific to particular domains (Fischer, 1980; Ford, 1982; Kurdek, 1978; Pellegrini, 1985). We suggest that even associations between different forms of social cognition are likely to be highly spe-
cific. Case’s work (Case & Griffin, 1989) on general conceptual structures suggests that there may be such a structure for understanding prosocial understandings, which would produce this sort of correlational pattern.

In conclusion, the results of this study of development of sociomoral understanding in relationships demonstrate the usefulness of a dynamic analysis (Fischer et al., 1993; van der Maas & Molenaar, 1992; van Geert, 1991). People’s actions vary nat-
urally across contexts at the same time that they develop sys-
tematically. Only by including these variations in assessment does it become possible to devise powerful tools for explaining how people construct sociomoral understanding and how their understandings relate to their actions.

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Appendix A

Story Dialogue, Essential Elements, Probes, and Example of a Passing Response for the Story on Social Lying as an Abstract Relation

**Story Dialogue for Step 7, Abstract Relation: Social Lie as Opposition of Honesty and Kindness**

<table>
<thead>
<tr>
<th>SOCIAL LIE</th>
<th>[HONESTY — KINDNESS]</th>
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<tr>
<td>— Truth</td>
<td>+ Help</td>
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This story shows one way that honesty and kindness can be related. In a social lie, honesty and kindness are related as opposites in that you give up honesty in order to be kind. By telling a social lie, a person gives up honesty, which is being truthful to others, in order to be kind by caring for others. Kim doesn’t think that Sara draws very well. When Sara asks Mark and Kim what they think of her drawing, Kim decides to be dishonest and to be kind. She lies to Sara so that she won’t hurt her feelings. Kim finds out that sometimes, honesty and kindness are related as opposites. By telling a social lie, she gives up honesty, which is being truthful to others, in order to be kind by caring for another person.

**Kim:** Mark, do you think I’m an honest person?

**Mark:** Yeah, I do. You’re truthful to me and to other people. Why do you ask?

**Kim:** Well, I don’t know what I’m going to do. Sara really wants me to tell her what I think about her artwork.

**Mark:** She’s not very good, is she? I mean, she really can’t draw at all.

**Kim:** That’s the whole problem. I think it’s very important to be an honest person, to be truthful to others. But I also think it’s important to be a kind person, someone who cares about others. If I tell her what I really think about her art, I’ll hurt her feelings. How can I be honest to her and tell her that she draws poorly and also be kind to her and not hurt her feelings?

**Mark:** Well, you do have a problem. Uh oh, here she comes.

**Sara:** Hi, Mark, hi, Kim. I’ve been looking all over for you. You have to look at my paintings and tell me what you think. (Sara shows art that isn’t very good.)

**Sara:** Well, what do you think?

**Kim:** Uh, that’s very good. You really draw well.

**Sara:** I’m pleased that you think so, Kim. Let me show you some other ones that I just finished. Oh, I left them in the other room. I better go get them. (exits)

**Mark:** Well, Kim, you weren’t very honest to her. You gave up honesty in order to be kind by telling a social lie.

**Kim:** I didn’t know how to be honest to Sara and tell her that she draws poorly and also be kind and not hurt her feelings. So I told a lie so I wouldn’t hurt her feelings. When I told the social lie, honesty and kindness were opposites since I gave up one to do the other. In telling a social lie, a person gives up honesty, or being truthful to others, in order to be kind by caring for others.

**Probes**

1. How are honesty and kindness related in this story?
2. How is the relation shown by what happens in the story?
3. What is a social lie?
4. What are honesty and kindness in this story?
5. Tell me altogether how honesty and kindness are related and what that means, and how the relation is shown in the story. Include definitions of honesty and kindness in what you say.

**Essential Elements**

1. In a social lie, honesty and kindness are opposites because you give up truthfulness to show caring for others.
2. For example, Kim was dishonest to Sara in order to be kind. She lied to her so she wouldn’t hurt Sara’s feelings.
3. Honesty is being truthful to others, and kindness is caring for others.
4. Integration of 1 through 3 above: Identify and explain the relation of opposites between honesty and kindness and provide a concrete example from the story that demonstrates the opposite relation. Abstract definitions of honesty and kindness must also be provided.

**Example of Passing Response**

(The numbers below correspond to the probes that are presented above.)

1. Honesty and kindness are related as opposites. (At a general level, what does that mean?) Generally, it means that there are situations in which you can be either honest or kind but not both.
2. In that situation it meant that Kim could either tell Sara that her drawings were bad and hurt her feelings, or she could lie and not tell her
the truth and not hurt her feelings. (What did she actually do?) She actually told her that the paintings were good and didn't hurt her. (And in telling her the paintings were good, she...?) She told her a social lie. (At a general level, tell me what a relation of opposites between honesty and kindness means.) It means that you sometimes have to decide whether you want to be honest or kind. You have to give up one for the other. (And in this case, which one was given up?) Honesty was given up in favor of kindness.

3. At a general level, something you say that's not truthful but is, you say it so you don't hurt someone's feelings.

4. Honesty is telling the truth and kindness is not hurting somebody's feelings.

5. In the story, honesty and kindness are related as opposites, which means that you have to, in some situations, either sacrifice honesty or kindness for the other. Generally, honesty means telling the truth and kindness is not hurting somebody's feelings. Specifically in the story, Kim gave up being honest to not hurt Sara's feelings about her painting.

**Reason for Pass**

The participant identified the relation of opposites and explained what that means at a general level. He or she then provided abstract definitions of kindness and honesty and presented a concrete example from the story that demonstrates the opposite relation between honesty and kindness. This information was all provided following Probe 4, without any interruptions from the experimenter.

**Appendix B**

**Probes for the Low-Support Condition**

1. What was the main point of your story?

2. How are honesty and kindness related in your story? Can you tell me how they are related in the general case and then how that's shown in your story?

3. What are honesty and kindness from your story? Can you tell me what they are in the general case and how that's shown in your story?

4. Tell me all at once, how are honesty and kindness related in your story and what that means at a general level, and how was the relation shown in your story, and what are general definitions of honesty and kindness?

5. If any ideas are mentioned, such as jealousy, friendship, trust, caring, love, etcetera, have the student explain what that means.

If a student tells a story only about honesty or kindness, ask: What is your story about? Does it say anything about honesty (kindness)? Are honesty and kindness related in your story? (Once it is confirmed that the story is only about honesty or kindness, ask the probes accordingly):

1. What is the main point of your story? Why did they act that way?

2. What is honesty (kindness) from your story? Can you tell me what honesty (kindness) is in the general case and how that's shown in your story?

3. Tell me all at once, what is a general definition of honesty (kindness) from your story and how was it shown by the people in your story?

4. If any ideas like jealousy, etcetera, are mentioned, probe to find out exactly what are meant by them.

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