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ABSTRACT

While story grammar and cognitive science theories of stories state or imply that a story will be more interesting if the protagonist experiences difficulty in attaining his or her goal, neither theory considers that the importance of the goal may also affect how interesting the story is. The structural-affect theory, however, defines stories on the basis of the emotional responses they elicit in a reader, and, for that reason, considers goal importance to be a critical component of storyhood. A study used the structural-affect theory to predict that two story structures would affect the ratings of storyhood and story liking: the importance of the goal the protagonist pursued and the difficulty the protagonist experienced in attaining the goal. Subjects--32 first grade, 32 third grade, 38 fifth grade, and 41 college students--read specially created narratives that varied in terms of the importance of the goal to be attained by the protagonist and the difficulty encountered in attaining that goal. Data from all age groups confirmed the predictions. Results also showed that the subjects, particularly adults, expected the two structures to co-occur in stories, namely that important goals would be difficult to attain. The findings indicate that the story grammar and cognitive science descriptions of story "interestingness" are inadequate because they fail to consider readers' affective responses to stories. (Copies of stimulus materials are appended.) (FL)

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Story Interestingness

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Story Interestingness: Goal Importance,
or Goal Attainment Difficulty?

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Abstract

The present study uses the structural-affect theory of stories to predict that two story structures affect ratings of storyhood and story liking: the importance of the goal the protagonist pursues and the difficulty the protagonist experiences in attaining the goal. Data collected from grade school children and adults verified the predictions. Evidence was also obtained that subjects, particularly adults, expected the two structures to co-occur in stories, namely, that important goals would be difficult to attain and that uneasily attained goals would be important. The results indicate that the story grammar and cognitive science descriptions of story interestingness are inadequate because they fail to take into account readers' affective responses to stories.

Story Interestingness: Goal Importance
or Goal Attainment Difficulty?

Research on how children understand and respond to stories has been hampered by conflicting views of what a story is and what dimensions of a story make it interesting. The purpose of this paper is to review the several theoretical perspectives that disagree about the definition of a story, and then to proceed to present data pertinent to one area of disagreement. The present study was designed to examine the contribution of two story characteristics to ratings of story interestingness: the importance of the goal the protagonist pursues, and the difficulty the protagonist experiences in attempting to attain the goal.

The dominant theory of stories, currently, is the story grammar approach (Mahdler & Johnson, 1977; Rumelhart, 1975; Stein & Glenn, 1979). It defines a story as a narrative which describes the course and outcome of a character's plan to achieve a goal. Stein and Glenn's (1979) description of a story grammar is representative of this perspective. They define a story as a narrative composed of six story grammar elements presented in a causal sequence: setting information, initiating event, internal response of the protagonist, attempt by the protagonist to attain a goal, consequence or outcome of the protagonist's attempt, and finally the protagonist's reaction to the outcome. The initiating event serves as the stimulus for the event sequence: "Information in this category consists of events or actions which function to evoke a desire in the protagonist to achieve a goal or change of state in the protagonist's world (Trabasso, Stein & Johnson, 1981)." In the original definitions of the story grammars, the importance of the protagonist's goal and the difficulty in attaining the

goal are not stipulated. Thus, the following boring narrative would be classified as a story by the story grammarians.

"John was sitting in a coffee shop. The waitress brought him coffee. He tasted it and realized it needed sugar. He decided to add some sugar. John reached for the sugar dispenser and poured two teaspoons of sugar into the coffee. He stirred it up and tasted it again. He felt content."

Recent research by the story grammarians reflect a growing awareness (e.g., Stein & Policastro, in press) that one of these two dimensions may be a critical dimension of storyhood. Stein and Policastro find that children and adults give higher storyhood ratings if the goal path of the protagonist is blocked, i.e., attainment of the goal is difficult rather than easy.

Other views as to how stories should be defined have arisen in response to the story grammar approach. One of them that has been expressly critical of the story grammar approach is the cognitive science view (Black & Bower, 1980; Black & Wilensky, 1979; Meehan, 1976; Wilensky, 1978, in press). Black and Wilensky have charged that most story grammars are inadequate grammars on formal grounds. They also claim that story grammars fail to generate many valid stories as well as incorrectly accept some nonstories (such as procedural expositions) as true stories. They consequently suggest that we should "characterize well-formed stories in terms of characters' plans for attaining goals rather than in terms of grammars (p. 221)." In the same vein, Meehan (1976) states that "a story is about a problem and how it gets solved (p. 117)." Both Meehan (1976) and Wilensky (1978) define a problem as the difficulty a character has in attaining his/her goal. Thus, the cognitive scientists are cognizant that difficulty in goal attainment

contributes to storyhood, but they do not accord similar value to whether the protagonist's goal is important or not. Consequently, they would believe that the preceding narrative of John seeking sugar for his unsweetened coffee would be improved if he had had a great deal of difficulty in obtaining sugar for his coffee.

"John was sitting in a coffee shop. The waitress brought him coffee. He tasted it and realized it needed sugar. John reached for the sugar dispenser and found that it was empty. He asked the waitress for some sugar. She looked everywhere but couldn't find any. Finally, after a long search a waiter found a sack of sugar in the back. John poured two teaspoons of sugar into the coffee. He stirred it up and tasted it again. He felt content."

It is the opinion of the second opposing view of stories that this narrative is still not an adequate story.

The structural-affect theory of stories (Brewer, 1980; Brewer & Lichtenstein, 1981, 1982, 1984; Jose & Brewer, in press) holds a different underlying assumption about what stories are from both the story grammarians and cognitive scientists. They take the position that stories constitute a subset of coherent narratives that are structured to elicit and resolve a particular affective response in the reader. The reason the theory emphasizes the reader's emotional response is that the primary discourse force of stories is to entertain the reader by arousing certain affective states and resolving them (Brewer, 1980)--not to simply transmit information about event sequences as the story grammar approach implies. The differences between this view and the story grammar approach is most clear in a discussion of the suspense discourse

structure, one of three claimed by Brewer and Lichtenstein to underlie storyhood in narratives.

The suspense discourse structure is an event sequence that begins with an initiating event implying a potentially significant outcome for the protagonist, intervening material that leads up to the outcome, and then the awaited outcome. There are several important differences between the suspense discourse structure and narratives considered by the story grammars to be stories. The most important difference is that storyhood is defined by readers' emotional reaction to texts, rather than by memory recall measures, which has been the story grammarians usual method of verification. Advocates of the structural-affect approach maintain that people read or listen to stories to be entertained, not to remember it so that they can retell it later. Thus, it is felt that measures of liking, affective reactions, and storyhood assess what a story is more directly than measures of memory.

Another critical difference, and this follows from the contention that affective responses by the reader fundamentally determine whether the narrative is a story or not, is that the protagonist must face a significant consequence. If the protagonist is trying to cope with a trivial problem, such as whether his coffee is sweetened or not, then the reader will not significantly care about his problem and, consequently, will not consider the narrative a story. If, however, the protagonist faces a serious problem, such as loss of life, then affective involvement in the story, which we call suspense, will cause the reader to view the narrative as a story. Jose and Brewer (in press), for example, have shown that greater affective involvement with the character in a suspense narrative leads to greater liking of the story.

The structural-affect perspective, then, disagrees with the claim that difficulty of goal attainment is the prime component of storyhood. Rather, storyhood in plan-based narratives¹ derives more directly from whether the protagonist's goal is significant or not, because if readers do not care about what the protagonist is trying to achieve, then they will not become affectively involved in the narrative. Advocates of the structural-affect perspective would acknowledge that goal attainment difficulty could contribute to ratings of storyhood if it increased existing concern about the outcome of the story, i.e., the suspense. Stories in the popular media (e.g., television shows, movies, and popular textual material) commonly confound the two structures in order to maximize suspense. For example, James Bond is not just required to save the earth from total destruction, but he also experiences great difficulties in attempting to do so.

The present study takes the structural-affect position on story structure and therefore predicts that people will consider narratives involving an important goal that is attained with considerable difficulty as stories and will like them more than narratives with trivial goals that are easily attained. In addition, the high goal importance/low goal attainment difficulty narrative should be considered a better story than the low goal importance/high goal attainment difficulty narrative because the former should elicit more concern from the reader than the latter.

An important consideration for the present study is also whether the abovementioned predictions will vary depending upon the age of the reader. A child may judge the importance of a character's goal differently than an adult. A child may consider driving to the grocery store to be very

importance and very difficult to do. A more interesting finding would be if there was a developmental change in combining these two factors in judgments of storyhood and story liking. The present study tested 1st, 3rd, and 5th grade children as well as college students with the same stimulus stories to see if developmental differences could be found.

Method

Materials

Four different plan-based stories were created on roughly a third grade level of difficulty. Each story featured a main character who, as a result of an initiating event, decided to pursue a goal. The attempt of the character to attain the goal and the resulting outcome constituted the remainder of the narrative. In every case a positive resolution was attained. The four base stories were then modified to produce four versions of each to represent a 2 X 2 factorial design (Goal importance X Goal attainment difficulty). Thus, each base story had four versions: an important goal attained with difficulty, an important goal attained easily, an unimportant goal attained with difficulty, and an unimportant goal attained easily.² For example, one of the four base stories featured a forest ranger. He either has to warn the firefighters at a fire station that a fire is approaching a nearby town (high goal importance), or else he decides to go to town for a snack because he is hungry (low goal importance). Also, he either just drives quickly to his destination in his jeep (low difficulty) or else he has to walk for hours on the road to get to his destination (high difficulty). (See sample stories in the appendix.) Filler material was added to the low difficulty stories in order to prevent differential length of stories from affecting the story ratings. Neutral

landscape description, e.g., "The sun was shining and it was a beautiful day," was inserted between the internal response and the story outcome; in this way, versions of a given base story varied by no more than two sentences in length in narratives averaging about 14. Also, all four base stories featured characters of one gender (male) in order to avoid the biasing effect of differential identification with story characters by male and female readers (see Jose & Brewer, in press). Male characters were chosen because female readers dislike male characters less than male readers dislike female characters.

Subjects

Subjects were 32 each of 1st and 3rd graders, 38 5th graders and 41 college students. Grade school subjects were chosen randomly from their classes excluding a few who were described by their teacher as learning disabled or not fluent in the English language. The college students participated in order to fulfill a class requirement. The study was named "Cognitive processes and stories" and was explained as a study investigating the basis of story liking.

Procedure

Each subject received four stories--one each of the four base stories and one each of the four cells of the 2 X 2 factorial of goal importance and goal attainment difficulty. The four stories for a given subject were presented in a random order. The stimulus stories were read to the grade school children individually, but the stories were read by the college students. Some grade school children have difficulty reading so in order to maximize the subjects' understanding the stories were read to these subjects. College students were permitted to read the stories themselves

because it was felt that the "being-read-to" procedure at that age was more artificial than having them simply read the stories.

Dependent measures

Immediately after each story the subject was asked five questions. The subjects were asked to indicate their answers on a seven-point scale. The first question was, "Do you think this is a story (#7), not a story (#1), or somewhere in between (#4)?" Second, "How much did you like this story? Did you like it (#7), not like it (#1), or feel somewhere in between (#4)?" Third, "How worried were you that (name of character) would not succeed in (goal), worried (#7), not worried (#1), or somewhere in between (#4)?" Fourth, "In this story (name of character) was trying to (goal). How important was it that (name of character) succeed in (goal), important (#7), not important (#1), or somewhere in between (#4)?" And last, "How difficult was it for (name of character) to succeed in (goal), difficult (#7), easy (#1), or in between (#4)?"

Children were taught how to use the seven-point scale before the stories were read to them. They were shown a scale of increasingly larger squares with the numbers 1 to 7 typed inside the boxes. The experimenter asked, "How would you feel if you had an ice cream cone of your favorite flavor?" Children, with help in only a few cases, quickly realized that the largest box (#7) represented that feeling. Then the child was asked, "How would you feel if you accidentally dropped the ice cream cone on the ground?" to which they understood that the smallest box (#1) was a suitable answer. Similar studies with younger children--kindergarten children in Hay and Brewer (1984)

and Brewer and Jose (1983)--have successfully used this assessment method.

A sixth measure was taken after all four stories had been read. The subject was asked, "Now that you have heard all four stories, could you tell me which one you liked the most? (choice) Next most? (choice) And between the two that are left which did you like better? (choice)" In this way each story was ranked in comparison with the other three. Since it was felt that the grade school children might have difficulty remembering all four stories well enough to make a ranking, drawings of each base story were displayed during the telling of the story and were briefly reviewed before the ranking question was asked. Each drawing depicted the main character in the setting of the story and gave no hint as to goals or actions of the character.

Results

As a manipulation check, ratings of goal importance and goal attainment difficulty were examined. An additional twelve subjects per grade were individually tested on story fragments featuring either the initiating event and internal response (goal importance information) or the attempt to achieve the goal (goal attainment difficulty information). Each fragment contained information concerning only one of the two manipulated variables and used the surface structure used in the actual stories. Subjects were asked to judge goal importance on the seven-point scale for the goal importance fragments and goal attainment difficulty for the goal attempt fragments. The data support the claim that the two levels of the manipulated variables were unambiguously perceived as intended: goal importance, high = 6.83, low = 4.16, $t = 9.06$, $df = 46$, $p < .0001$, and goal attainment difficulty, high = 6.21, low = 2.20, $t = 17.33$, $df = 46$, $p < .0001$.

A three-way analysis of variance (Grade of subject X Goal importance X Goal attainment difficulty) was performed on each of the six dependent measures. The clearest result was the pervasive and strong impact of manipulated goal importance. Narratives involving important goals were more likely to be called stories ($F(1, 556) = 36.73, p < .0001$), were liked more on the seven-point scale ratings ($F(1, 556) = 9.18, p < .005$), were liked more on the comparative rankings ($F(1, 484) = 85.41, p < .0001$), and caused the subject to worry more about the outcome ($F(1, 193) = 13.06, p < .0001$). The impact of manipulated goal attainment difficulty was less strong but in the predicted direction. Narratives in which it was difficult for the protagonist to attain his goal were more likely to be called stories ($F(1, 556) = 12.83, p < .0001$), were marginally liked more on the seven-point scale ratings ($F(1, 556) = 3.81, p = .052$), were liked more on the comparative rankings ($F(1, 484) = 14.09, p < .0001$), but did not cause the subjects to worry about the outcome ($p = .14$). The means of these comparisons are presented in Table 1.

Insert Table 1 about here

The subjects were also asked to rate the importance of the goal and the difficulty experienced in attaining it. Not surprisingly, subjects again confirmed that the manipulated variables were perceived as intended. The main effects for both were very significant; goal importance on rated goal importance ($F(1, 556) = 307.49, p < .0001$) and goal attainment difficulty on rated goal attainment difficulty ($F(1, 556) = 516.47, p < .0001$). More

interesting, the two manipulated variables seemed to be perceived by the subjects as confounded. Rated goal importance and rated goal attainment difficulty were significantly correlated, $r(572) = .19, p < .001$, despite the fact that goal importance and goal attainment difficulty were orthogonally manipulated in the stimulus stories. This result suggests that subjects believed that if a goal is important then it should be more difficult to attain it, and that if it is difficult to attain a goal then it is probably an important goal. The ANOVA results confirm this speculation. Rated goal importance was higher for narratives that described goals that were difficult to attain ($F(1, 556) = 6.55, p < .01$). This result indicates that subjects thought that if a goal had been attained with difficulty then it must be an important goal. Also, rated goal attainment difficulty was higher for narratives that described important goals ($F(1, 556) = 27.36, p < .0001$), which indicates that subjects thought that if the protagonist was striving to attain an important goal then it must be more difficult to attain it.

The prediction that the high goal importance/ low goal attainment difficulty narrative would be considered a better story than the low goal importance/ high goal attainment difficulty narrative received some support. Narratives of important goals easily attained were more likely to be considered stories ($t(284) = 1.816, p < .05$) and they were liked more in the comparative rankings ($t(248) = 3.938, p < .0001$); nonsignificant trends in the predicted directions were found for rated liking on the seven-point scale and the suspense measure ("How worried were you about the outcome?").

A clear developmental finding was that the adults found the stimulus stories, written at a 3rd grade level, to be less affecting than the grade

school children. A strong main effect for grade was found for storyhood, liking of story on the seven-point scale, liking of story on the comparative ranking, rated goal importance, and rated goal attainment difficulty. In each case post-hoc analyses showed that the three grade school ages did not differ between themselves, but were all significantly greater than the adult means. A more interesting developmental finding is a two-way interaction between grade and goal importance for rated story liking on the seven-point scale, $F(3, 556) = 3.49, p < .025$, which is illustrated in Table 2. The

Insert Table 2 about here

interaction indicates that adults relied on goal importance information to determine story liking more than the grade school children. Another developmental finding is a two-way interaction between grade and goal importance for rated goal attainment difficulty, $F(3, 556) = 3.56, p < .025$. The means

Insert Table 3 about here

are presented in Table 3. The finding's significance is that adults show a greater bias than children in expecting that if a narrative involves an important goal then it must be more difficult to attain that goal.

Discussion

The story grammar (e.g., Mandler & Johnson, 1977; Stein & Glenn, 1979) and cognitive science (e.g., Black & Wilensky, 1979; Wilensky, in press) approaches

either state or imply that a story will be more interesting if the protagonist experiences difficulty in attaining his/her goal. They have not considered that importance of the goal may also affect story interestingness. The structural affect theory of stories, on the other hand, defines stories on the basis of the emotional response they elicit in a reader, and for that reason goal importance is claimed as a critical component of storyhood.

In order for the reader to be emotionally affected by a story, they must care about the story character and what happens to him/her (Jose & Brewer, in press). In this study reader identification with the story character was not manipulated or assessed, as in the study by Jose and Brewer; however, manipulated goal importance affected reader involvement. Subjects reported feeling more worried or concerned about the story outcome after reading narratives with important goals. Clearly, we feel more suspense in a story if the protagonist is trying to save his life than if he is trying to light a cigarette for a smoke. Successfully resolved suspense discourse structures, as predicted by Brewer and Lichtenstein (1981, 1982), are perceived as stories and are liked more. The data of the present study confirm these predictions.

The prediction of the story grammarians and cognitive scientists that goal attainment difficulty would contribute to story interestingness was also generally supported. It did not exert as pervasive an effect as did goal importance--no main effect for story liking on the seven-point scale or for the suspense measure--although it was clearly a dimension that was considered in storyhood and story liking judgments. Structural-affect theory also predicts that goal attainment difficulty contributes to story interestingness but would consider goal importance a more important factor. A comparison of

narratives featuring important goals attained easily and narratives featuring unimportant goals attained with difficulty should indicate which of the two factors is primary. The data show that the important goal story was rated higher on the storyhood and story liking scales than the uneasily attained goal story. Hence, it would seem that a writer contemplating writing a story focuses first upon the significance of the main character's goal, not upon how easily the character will attain it.

Interestingly, subjects in this study showed a bias in their judgments of goal importance and goal attainment difficulty; they indicated an expectation that the two factors occur together in stories. This error in judgment was found to be stronger for the adult subjects. This result may indicate that a person's story schema shows a developmental progression from grade school to college toward involving both goal importance and goal attainment difficulty in judgments of storyhood and story enjoyment. Another developmental finding showed that adults used goal importance information more than children in judging story liking. Together with the other results, this indicates that adults probably attend to goal importance first, but fully expect that the important goal will be difficult to attain. Young children may treat goal importance and goal attainment difficulty as more separable factors contributing to storyhood and story liking.

The results of the present study suggest that the story grammar approach to studying how children (and adults) understand and appreciate stories is inadequate. They have neglected to take into account the discourse force of stories--the primary function of stories is to entertain (Brewer, 1980)--and have thus misunderstood the role of affect in story structure. The claim by

Stein (Stein, 1982; Stein & Policastro, in press) that story grammars adequately account for affect in story structure by including the protagonist's emotional response in their grammars is specious. As Jose and Brewer (in press) have shown, what the protagonist feels in the story may or may not be related to what the reader feels. If an evil protagonist is happy at his good fortune, the reader will feel sadness or indifference, not happiness as Stein would imply. The structural-affect theory of stories places the focus on the reader's emotional response, not the story character's. From this perspective it is easier to understand that a writer trying to compose an interesting story would more likely consider the importance of the protagonist's goal than how difficult it will be to attain it. The present data show that goal attainment difficulty contributes to story liking but it is not the only, or the primary, source of interestingness. Story grammars constitute a good description of plan-based narratives but are inadequate in describing the subset of those narratives that are perceived as stories. The structural-affect position claims that this subset is defined by the reader's affective response--what is interesting is more likely to be considered a story. Importance of the protagonist's goal and the difficulty that he/she experiences in attaining it have been shown here to be two story structures that are successful in eliciting this response.

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Footnotes

¹The structural-affect theory also includes within the category of stories non-plan-based narratives, or at least narratives that fail to include a plan as described by the story grammars. For example, Brewer and Lichtenstein (1984) found that a narrative featuring a man walking along a beach unaware of an incoming tidal wave was considered a story. The man was not attempting to accomplish any particular goal, but readers experienced concern for the character, i.e., felt suspense, and they called it a story. For purposes of comparison, this study will only consider plan-based stories, not stories in general.

²The full set of stimulus stories can be obtained by writing to the author.

Table 1

Means of Main Effects of Goal Importance and Goal Attainment Difficulty for Storyhood, Story Liking and Suspense Ratings

Level	Dependent Variable			
	Storyhood	Story Liking (7 point scale)	Story Liking (ranking)	Worry about Outcome
		Goal Importance		
High	5.86	5.07	2.91	4.65
Low	4.95	4.61	2.09	3.50
		Goal Attainment Difficulty		
High	5.68	4.99	2.65	4.33
Low	5.13	4.68	2.35	3.80

Table 2

Rated Story Liking (on the Seven-Point Scale) as a Function of Grade and Goal Importance

Goal Importance	Grade			
	1st	3rd	5th	Adult
High	5.89	6.09	5.16	3.55
Low	5.86	5.63	5.06	2.40

Table 3

Rated Goal Attainment Difficulty as a Function of Grade and Goal Importance

Goal Importance	Grade			
	1st	3rd	5th	Adult
High	4.91	5.30	4.55	4.62
Low	4.39	4.25	4.39	3.26

Appendix

The four base stories were named after their main character: Fred, Mike, Billy, and Bob. The narratives featuring Fred showed him either trying to take medicine to a hospital in the next city because someone was dying (high importance) or driving to the next city to visit a friend (low importance). Fred either encountered a heavy thunderstorm (high difficulty) or it was a beautiful day with little traffic on the roads (low difficulty). Mike either tried to start a campfire in the woods because he was lost and cold (high importance) or because he thought it would be nice to sing around a campfire after the picnic with his family (low importance). Mike either had a match and lit the fire easily (low difficulty) or had to rub sticks together for a long time (high difficulty). Billy either swam out into a lake to try and rescue a drowning girl (high importance) or swam out to a raft in the middle of the lake because he wanted to get some sun (low importance). Billy was either a poor swimmer (high difficulty) or an excellent swimmer (low difficulty). Samples of two of the Ranger Bob narratives are given below to illustrate how the narratives were constructed from the two manipulated variables.

High goal importance and high goal attainment difficulty narrative

(Goal importance information) "One day Forest Ranger Bob was standing in his lookout tower. He was looking over the forest for any signs of trouble. Then he spotted it--a fire!! He needed to tell the firefighters quickly. He picked up the phone and found that the fire had burned the phone lines. The phone was dead. (Goal attainment difficulty information) So then Ranger Bob set out on foot to go to (destination). It was at least a three hour walk to the nearest (destination) so he needed to run as fast as he

could. After a lot of running he was very tired, but he still had a long way to go. He ran on as fast as he could go. Much later, as the sun was going down, Ranger Bob could see the (destination) off in the distance. He felt as if he couldn't take another step. (Goal specific resolution) He ran into the fire station and told the firefighters about the fire. Soon they found the fire and put it out. The forest was safe again."

Low goal importance and low goal attainment difficulty narrative

(Goal importance information) "One day Forest Ranger Bob was standing in his lookout tower. He was looking over the forest for any signs of trouble. Being a bit hungry, he decided to go into town to pick up a snack. He got someone to take him place at the tower, and started to leave. (Goal attainment difficulty information) So then Ranger Bob got in his jeep and set out for (destination). It was a short 5-minute drive to (destination). Bob drove on the dirt road that would bring him to (destination). It was a beautiful day and he could see the sun through the tree tops. Soon Ranger Bob could see the buildings on the top of the hill so he knew that it would be a short trip. More quickly than Bob had expected, he arrived in (destination). (Goal specific resolution) He got out of his jeep and walked into a store. Then he bought some food for a snack, ate it, and drove back to the lookout tower before the sun went down."

The other two versions (high/low and low/high) are simply constructed by switching the goal frame sections (1st and 3rd parts) with the goal attainment section (2nd part).