PARTIAL CHARACTERIZATION OF A GENETICALLY DETERMINED
"RUDIMENTARY GONAD" IN DROSOPHILA MELANOGASTER.

A SENIOR HONORS THESIS
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**Problem Statement**

In developmental biology, knowledge concerning the many interactions which result in a normal individual or organ are in most cases not well understood. These interactions include coordination of hereditary factors with one another and with extrinsic factors. A better understanding of how such factors and their interactions are related to developmental anomalies and congenital defects is essential to the alleviation of many medically important problems. One method of examining such complex interactions is to partition the effects of the many factors involved in formation of an individual or organ by examining the development of individuals with mutations which alter one or a small number of factors in the complex.

A mutant of this type affecting abnormal development of ovaries in female Drosophila melanogaster was examined. This particular organism was chosen for study for several reasons. The development of sex organs in all higher animals, including man, involves formation of at least two spatially separate and distinct cell populations very early in the embryonic stages. These populations consist of germ cells and somatic cells which combine, grow and differentiate into adult ovaries or testes. Little is known about how these populations are initially formed, or how their combination and interaction results in the normal adult gonad. Seeking answers to these questions in higher organisms is complicated by the following difficulties: 1) sex organ development is complicated by hormone controls, 2) little is known about the genetics behind developmental events, 3) life cycles are prohibitively long, and 4) embryos are difficult to obtain and maintain.
Thus experimental evidence obtained from study of an organism exhibiting analogous gonad development but that is easier to examine in the lab would be desirable. Hopefully from just such an organism, Drosophila melanogaster, much information is obtainable which may lead to insights or hypotheses concerning gonad development in higher animals.

Related Research

The normal embryonic development of reproductive organs in insects has been described (Anderson, 1972; Counce, 1973; Demerec, 1950). Briefly, the ovaries and testes of Drosophila embryonically develop from two cell populations. These two cell populations consist of a portion of the bilateral, mesodermal germ bands and a population of "pole" cells which precociously separates from the posterior end of the early embryo. Some of the pole cells later migrate bilaterally and are incorporated into the mesodermal cell masses. These heterogeneous cell masses form the larval gonads which grow throughout the larval period, and during the very late larval and the entire pupal periods differentiate into adult ovaries and testes. The former pole cells form the stem cells which later produce the sex cells, eggs or spermatozoa. The ovaries and the testes attach to the reproductive ducts. The reproductive ducts and accessory reproductive organs develop from a thire source, the genital imaginal disc. It is known that the attachment of the ducts is necessary for completing the normal differentiation and morphogenesis of larval testes into the adult testes (Bodenstein, 1950). In ovarian development this genital duct influence is not necessary for completion of normal morphogenesis and differentiation (Bucher, 1972).

Presently, a wild-type strain of Drosophila melanogaster is being
cultured in Dr. Engstrom's laboratory in which 20% of the adult individuals possess "rudimentary gonads" either laterally or unilaterally (Pappas and Engstrom, 1974). Preliminary studies (in preparation) of this strain have shown: 1) that this rudimentary gonad phenotype is due to temperature-sensitive genetic effects; 2) that the mutant effect is produced during the oogenesis period of an individual's life-span; and 3) that the mesodermal components of the adult "rudimentary" ovaries appear normally differentiated.

Dr. Engstrom carried out genetic manipulations of this strain which increased the mutant phenotype expression.

The mutant condition may result from genetic defects which cause

1) a reduced or inadequate number of pole cells being formed; thus, inadequate numbers of cells are available as stem cells in the differentiating ovary; 2) defective pole cells being incapable of forming functional stem cells in the differentiating ovaries; 3) inadequate or defective external influences being unable to promote normal formation or function of stem cells within the differentiating ovaries. Results 1) and 2) are due to genetic defects within the ovaries (autonomous defects); whereas, results of type 3) are due to defects outside of the ovaries (nonautonomous defects).

A technique was developed many years ago by Ephurssie and Feadle (1936), and recently refined by Kambysellis (1968), which permits distinguishing between autonomous and nonautonomous genetic defects. This technique involves reciprocal transplantation of larval gonads between normal and mutant individuals and examination of the gonads in the adult hosts. If the mutant phenotype is due to nonautonomous genetic defects, the mutant larval tissue (ovaries) transplanted to a normal host will form normal,
functional tissues possibly due to some factor (chemical?) present in the host which was not available to the mutant ovary in the mutant donor. Nonmutant tissue in a mutant host will develop into tissue of the mutant phenotype due to the lack of a factor necessary for normal ovarian development in the mutant host larvae. If, however, the mutant phenotype is due to autonomous defects within the mutant ovary, the mutant rudimentary phenotype will be expressed irregardless of its placement and development in a wild-type host.

Materials and Methods

The flies used as test organisms were cultured in Dr. Engstrom's laboratory in glass shell vials containing live yeast sprinked on modified David's medium (19). The original stocks were: 1) Oregon-R wild-type from Bowling Green and 2) St. Margarita Island Venezueala (mutant) from University of Chicago. Genetic manipulations were performed on the mutant stock to encorporate dominantly marked balancer chromosomes. The marker genes were from stocks obtained from Bowling Green. These manipulations included: addition of ClE chromosome (to reduce crossing over in the chromosome of the female; ClE carries Bar eye, is homosyous lethal and lethal in male ClE/Y); replacement of second chromosome with Cy/Pm (dominant marker; recessive lethal); and in addition, some of the flies possessed St/D, Sb/+ or +/D third chromosomal combinations.

Any ovary developing in a mutant larva would thus contain one of the following genotypes: Cl/x; Cy/Pm; or X/X; Cy/Pm. After emergence wild-type (X/X; +/+ ) hosts containing a transplanted mutant ovary of the above genotypes were mated to wild-type (X/Y; +/+ ) males. Thus, any offspring
resulting from eggs produced by the implanted mutant ovary would express at least one dominant marker (Cy or Pm), indicating that the ovary was functional in the host.

Transplantation Techniques

Reciprocal transplantations of larval "rudimentary" and normal ovaries were performed. The transplantation procedure involves removal of larval ovaries by dissection from mutant and normal (Oregon R+ type) larvae into isotonic saline. Each ovary is aspirated from the saline and injected into larval hosts using specially constructed micropipettes (resembling hypodermic needles) and a microinjection apparatus. The construction of micropipettes is central to the injection technique, as they must be both small and sharp enough to effectively penetrate the larval tissues with little damage to the tissue, yet of large enough bore to aspirate the larval ovaries. The critical dimensions of the pipettes were: Internal diameter 0.1-0.15 mm and walls of 0.03-0.05 mm thickness (Kambysellis 1968) for a total outside diameter of approximately 0.20 mm at the point. The pipettes must also contain a fine constriction near the opening to prevent the ovary from being aspirated up into and lost in the longer bore of the pipette. The method of construction described by Kambysellis (1968) involved building a microburner by inserting 2 hypodermic needles in a cork so that the protruding tips formed an angle. One needle was supplied with gas, while the other received air. By varying the amounts of gas (from gas jet) and air (from mouth via tube) a finely controlled and pointed flame was obtained. "Blank" capillary pipettes of 0.7 mm internal diameter and 0.1 mm wall thickness were attached to a support so that they hung in a vertical
position. A hook was bent at the bottom of the capillary (by applying heat from microburner) and a mass of approximately 0.5 g was hung from the hook. The flame was then applied at a point half-way up the capillary tubing which, due to attached mass caused the heated tubing to stretch and become smaller in diameter. When the diameter was judged small enough, heat and mass were removed. The pipette was transferred to a different apparatus under a dissecting microscope which allowed horizontal placement of the pipette in the microscope field. A finely pointed flame was applied to create the above mentioned constrictions.

The pipette was then broken at a point between the constriction and the sharpening process began. A smooth yet extremely sharp point (essential to efficient tissue penetration) may be obtained in the pipette only through an extreme expenditure of time and patience by the experimenter. Many pipettes were ruined during this final process. The multiple sources for error in pipette construction and resulting excessive consumption of time led the researchers to seek an improved method of transplantation using an alternative technique.

The pipette was constructed as before, but the sharpening step was deleted and the end of the micropipette was smoothed to a blunt tip. Several such pipettes were made and stored in 95% alcohol until used. Since the experimental procedure involved making incisions in the larvae, bacterial infections were possible. Thus instruments and surroundings were made as sterile as possible by autoclaving and disinfecting with wescodyne.

In performing the actual experiment, Dr. Engstrom and myself worked
as a team - one of us removing ovaries from donor larvae and the other injecting the hosts. The ovaries were removed from donor larvae in saline under a dissecting scope with watchmakers forceps. The clear, spherical, ovaries are surrounded by opaque lipid cells (fat body) and must be separated from as much of the fatty tissue as possible. The "clean" ovaries are then placed into blood depression slides and transferred to the 2nd experimenter. Host larvae were etherized in a petrie dish and then washed in saline solution and 95% alcohol to prepare them for injection. The larvae were then dried on a sterile chem wipe and affixed to a microscope slide via double stick tape so that ventral or lateral portions were presented. A previously constructed needle was placed into the micropipette holder and connected by capillary tubing to a hypodermic syringe which was clamped to a ringstand. An ovary was aspirated from the depression slide and left in the needle which was set aside. The larvae was rolled horizontally with forceps so that the skin was pulled out from the body and the corner of a razorblade was used to nick a small slit in the larvae in the vicinity of the 4th segment (from posterior). The needle was then inserted into the slit and the ovary expelled into the larvae by gentle pressure on the syringe. The larvae were removed from the tape with a drop of saline and placed into a sterile vial containing moist chem wipe tissue and incubated to maturity.

Results and Discussion

Approximately 40 transplants have been attempted to date, but the majority of hosts failed to reach maturity. Most failures of this type seem to be due to extrusion of the larval gut through the incision and
accompanying loss of fluid. Approximately 10 hosts have survived to the adult stage. The surviving host flies were allowed to reach sexual maturity (approximately 3 days after emergence) and were mated to wild type males. When the resulting offspring reached pupation, the host female was dissected to ascertain if the implanted ovary had connected to the oviducts or not. Evidence of successful transplantation had been found in three host larvae; i.e., each contained 3 ovaries connected to the oviduct.

While an insufficient number of successful transplants have been obtained to reach a valid conclusion concerning the autonomous or non-autonomous control of ovarian development, the data does indicate that the procedure does allow successful transplantation of ovaries. Two host flies were found to possess an implanted mutant ovary which was of the normal functional type (not all mutant ovaries are rudimentary). These two females produced offspring bearing either the Plum eye or Curly wing phenotype (dominant marker gene). This indicates that the transplanted ovary matured and connected to the oviducts allowing egg production and fertilization of the eggs it produced. Thus a transplanted ovary has been shown to connect to oviducts and function. These serve as controls for the experimental procedure. Rudimentary ovaries, which do not produce eggs must be functionless for another reason besides those incurred by the transplantation technique itself. The third host was found upon dissection, to have two normal ovaries and an implanted rudimentary ovary.

This ovary was phenotypically identical to the rudimentary ovaries found in unoperated, rudimentary gonad females. In addition, the host individual containing this ovary did not produce any Curly or Plum
offspring. Thus even though the rudimentary ovary underwent differentiation and metamorphosis with a wild-type environment, it remained mutant in phenotype. Although much more data is required, this one host would suggest that the mutant condition is autonomous.

At the present time, technical difficulties with the transplantation apparatus have been responsible for the limited number of successful ovarian transplants. A major problem has been that larval tissue or glass debris (from pipette construction) block the constriction of the micropipette bore, making aspiration and injection of ovaries impossible. This problem has been responsible for the vast majority of transplantation failures and for much wasted time during the operation sessions. Hopefully a solution may be found to overcome this difficulty and allow larger numbers of transplants and an increase in the number of surviving larvae.

For an experiment of this type, large numbers (50) of successfully operated hosts possessing connected implanted ovaries are essential to reach accurate conclusions as to the origin of control of ovarian development.

The experiment will be continued this summer to improve the techniques and obtain added data. It is hoped sufficient information will then be available for publication of the results.


Bucher, Nelly. 1957. Experimentelle Untersuchungen über die Beziehungen zwischen Keimsellen und somatischen Zellen im Ovar von Drosophila melanogaster. Revue Suisse De Zoologis, (Geneve), 64; 91-189


A STUDY OF THEODORE DREISER'S SISTER CARRIE

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In attempting to do a study of Theodore Dreiser's *Sister Carrie*, one must begin by pointing out the significance of the novel in American literary history. *Sister Carrie*, published in 1900, with its massive details of city life in Chicago and New York City, documents a period in the 1890's when rapidly growing industry was changing the lives of many Americans. James T. Farrell states that "*Sister Carrie* is saturated with the life of America during the eighteen-eighties and eighteen nineties. It truly re-creates the sense of an epoch; it is like a door which permits us entry into a consciousness of an America that is no more."\(^2\) Dreiser's account of Caroline Meeber and her arrival in Chicago where he describes her as "... a lone figure in a tossing, thoughtless sea" (p. 11) and later his description of George Hurstwood in New York as "... but an inconspicuous drop in an ocean..." (p. 321) emphasize the insignificance of the individual in the industrialized metropolises.

It is Dreiser's detailing of the helplessness of the individual against uncontrollable forces which leads literary critics to call his writing naturalistic. According to Lars Ahnebrink, "Scholars generally agree that naturalism in the United States came of age in the writings of Theodore Dreiser whose first novel, *Sister Carrie* (1900) is a fairly typical work of the movement."\(^3\) Even though Stephen Crane's *The Red Badge of Courage* (1895) and Frank Norris's *McTeague* (1899) preceded *Sister Carrie*, Charles Child Walcutt points out that "Historically Dreiser is not merely associated with the naturalistic movement; it is nearer the truth to say that his particular work, with its particular qualities, has more than the work of any other American writer served as the pattern of what naturalism concretely is. ... In *Sister Carrie* the most strictly naturalistic element is the sense of cosmic purposelessness."\(^4\)
Another important part that *Sister Carrie* was to have in American literary history was brought about by the fact that Carrie was among the first heroines in American literature to allow herself to be seduced (and by two men at that) and yet come through at the end of the novel unpunished. Dreiser does not judge Carrie harshly for her errors nor do others with whom she comes in contact in the novel. Her sexual submissions to Drouet and Hurstwood are a means for her to raise her material standard of living. She is at the mercy of her circumstances.

In discussing the effect of the novel on genteel readers of the time, Malcolm Cowley says "They were repelled not only by the cheapness of the characters but even more by the fact that the author admired them." This lack of condemnation of Carrie by Dreiser led James Farrell to state that "No other writer in America during the present century has exerted so great a moral force on his successors. No other novelist has done more than Dreiser to free American letters." Carrie did receive her judgment, however, and her castigation led to the suppression of the novel.

Frank Norris had read Dreiser's novel and recommended it to the firm of Doubleday and Page for publication. Robert Elias relates that by June 11, 1900 "To all intents and purposes *Sister Carrie* had been accepted." Elias adds that this acceptance was based on assurances by men who had reckoned without Frank Doubleday—or, perhaps, without the influence of Frank Doubleday's wife. While Dreiser was out of town, the Doubledays returned from abroad, and Doubleday, hearing enthusiastic talk at the office concerning the forthcoming novel, took a set of proofs home to read over the weekend. There his wife also read them, and there their doom was pronounced. Neltje DeGraff Doubleday was a social worker and a strong-willed woman who sympathized with the unfortunate, but when it came to literature, she had no evident use for sociology or despair. She was not one to oppose the widely accepted theory that the purpose of a novel was to please or amuse, to represent reality as more agreeable than it was, and, devoting itself to love as
the most universally interesting passion, to be so sweet
and clean as would enable it to be read aloud in the family
circle without bringing a blush to the cheek of even the
most innocent schoolgirl. As a matter of fact, she endorsed
the theory to the extent that when she read *Sister Carrie*
she was horrified at the prospect of its bearing the Double-
day imprint. The book was not merely frank and vulgar, it
was immoral. It scorned the accepted idea of love and
implied that the wages of sin might easily be success. With
a strength of purpose that had been a support to the firm
in the past, she impressed her feelings upon her husband,
who, already convinced of its commercial impossibility,
agreed. The promise to publish could not be kept.6

Robert Penn Warren in *Homage to Dreiser* best sums up the negative
reaction to *Sister Carrie* saying that "What was shocking here was not
only Dreiser's unashamed willingness to identify himself with morally
undifferentiated experience or his failure to punish vice and reward
virtue in his fiction, but the implication that vice and virtue might,
in themselves, be mere accidents, mere irrelevances in the process of
human life, and that the world was a great machine, morally indifferent.
Ultimately, what shocked the world in Dreiser's work was not so much
the things he presented as the fact that he himself was not shocked by
them."9 Thus *Sister Carrie* through its description of the socio-
economic 1890's and its disregard for the moral codes of that period
remains a significant work in the history of American fiction.

While *Sister Carrie* is a story of its times, it is moreover the
personal story of Dreiser. In 1871, Dreiser was born the eleventh
of thirteen children to a German Catholic father and a Mennonite
mother, in Terre Haute, Indiana.10 Dreiser's father, John Paul, had
a business failure in a woolen mill and while trying to rebuild was
injured in an accident. He never was able to start up his business
again, not because of lack of opportunity, but because he lacked the
courage to do so.11 Some parts of Hurstwood's decline in the novel
can be traced to the attitude of John Paul. Hurstwood was a victim of
chance as was Dreiser's father and furthermore he gave up trying.
Hurstwood's attitude of self-defeat can be seen at the end of the novel when he says, "What's the use?" (p. 546 and p. 554) The character of Hurstwood also has similarities to L. A. Hopkins, a man with whom Dreiser's own sister Emma eloped. Emma is represented by Carrie.

Richard Lehan relates some of the parallels of Emma's and Hopkins' story to that of Carrie and Hurstwood:

In 1886, Hopkins, who was fifteen years older than Emma, deserted his wife and children, after stealing (contrary to the $15,000 figure Dreiser gives us in the manuscript of *Newspaper Days*) $3,500 from the safe of Chapin and Gore (most of which he later returned), taking Emma first to Montreal and then to New York where they ran a house of prostitution. While the details are different (Hurstwood is twenty years older than Carrie; he stole ten thousand dollars; Emma had no stage success; and Hopkins did not commit suicide), Dreiser was obviously using the essential elements of Emma's story in his novel. . .

Even though there are two possibilities given in the novel for the title of the book, (the first being Minnie's greeting to Carrie upon her arrival in Chicago "Why, Sister Carrie!" (p. 1) and the second being Drouet's setting her up in an apartment and passing her off as his sister p. 80) the more obvious reason for the title is that the story is one of Dreiser's own sister.

Lehan further points out that Dreiser identifies personally with both Carrie and Hurstwood. "Carrie is eighteen when she comes to Chicago in 1889 and thus was born in 1871, the same year as Dreiser himself." 13 So it is Dreiser's entry into Chicago that is so carefully detailed in the opening chapters of *Sister Carrie*. Lehan adds:

Hurstwood also embodied Dreiser's own experiences with poverty in Chicago, St. Louis, and especially in New York when he was free-lancing after he left *The World*. Over and over, Dreiser wrote in the late nineties free-lance essays about New York breadlines, about tramps walking the streets, about the loneliness of the city, about the psychological effects of poverty, about suicide, and about homeless dead who are buried in Potter's Field graves. . . When Dreiser was writing this novel at the end of the century, he was still having doubts about his ability to succeed, and his
future was uncertain, if not bleak. Hurstwood was the imaginative product of those doubts, of Dreiser's own fear of failure, and of his obsession with poverty, an obsession which lingered from childhood.14

The fact that so much of Sister Carrie is based on personal experience may be what finally creates such a feeling of empathy on the part of the reader so that the bad style of Dreiser is overshadowed by the greater emotional impact of the novel.

There is a consensus among critics of Dreiser that he was a bad writer. Warren points out that prior to writing Sister Carrie, Dreiser, "As a newspaperman... had certain glaring deficiencies. For one thing, he was barely literate. Furthermore, though his imagination fed on fact -- as he was in other connections all his life, being, to put it nakedly, a born liar. But these deficiencies did not prevent him from being effective at feature stories about the seamy side of life. He had the gift of observation when the facts observed had some fundamental relation to human feeling. That is, he had a novelistic and not a reportorial sense of fact."15

Alfred Kazin, in commenting on Dreiser's style notes that

Dreiser's craftsmanship has never been copied, as innumerable writers have copied from Stephen Crane or even from Jack London. There has been nothing one could copy. With his proverbial slovenliness, the barbarisms and incongruities whose notoriety has preceded him into history, the bad grammar, the breathless and painful clutching at words, the vocabulary dotted with 'trig' and 'artistic' that may sound like a salesman's effort to impress, the outrageous solecisms that give his novels the flavor of sand, he has seemed the unique example of a writer who remains great despite himself. It is by now an established part of our folklore that Theodore Dreiser lacks everything except genius.16

Stanton Coblentz bemoans Dreiser's writing stating that the "style of this novelist indicates no more than an elementary effort to avoid a general murkiness of effect; it exhibits a thorough devotion to the creed of Confusion and Chaos."17
An example of Dreiser's awkwardness can be seen in the sentence "Some time she spent in wandering up and down, thinking to encounter the buildings by chance, so readily is the mind, bent upon prosecuting a hard but needful errand, eased by that self-deception which the semblance of search, without the reality, gives." (p. 23) Another typical Dreiser sentence reads "What would not Minnie say!" (p. 30) Dreiser also starts many of his sentences with remarks such as "behold" (p. 30) and "oh, blessed are" (p. 188 and p. 423). His repeated use of phrases such as "truly swell" and of words like "gastronomy" irk critics and readers as well. Dreiser gets to the point of being ridiculous when he has a pair of shoes and a lace collar speaking dialogue to Carrie. "My dear," said the lace collar she secured from Partridge's, 'I fit you beautifully; don't give me up.' 'Oh, such little feet,' said the leather of the soft new shoes; 'how effectively I cover them. What a pity they should ever want my aid.'" (p. 111)

However, Larzer Ziff in The American 1890's blames his diction and style on his Midwest and German school teachers in Catholic schools. He states "... words aplenty he came to know, but nothing in his background or his training taught a respect for them. One word was as good as another, if the two meant approximately the same thing, and they were put together into sentences with indifference to the way a thing got said." 13

Nevertheless, even though most critics agree that Dreiser's style is awkward they view his writing with ambivalence. A statement often quoted on Dreiser's work comes from Sherwood Anderson. "Heavy, heavy, the feet of Theodore. How easy to pick some of his books to pieces, to laugh at him for so much of his heavy prose. The feet of Theodore are making a path. Presently the path will be a street with great arches overhead and delicately carved spirals piercing the sky. Along the street will run children, shouting, 'Look at me. See what I and my fellows of new
day have done' -- forgetting the heavy feet of Dreiser." 19

Another frequently quoted comment pointing to the poor yet enduring quality of Dreiser's writing is that of Carl Van Doren who states the following: "Not the incurable awkwardness of style nor his occasional verbosity nor his too frequent interposition of crude argument can destroy the effect which he produces at this best -- that of a noble spirit brooding over a world which in spite of many condemnations he deeply, sonberly loves." 20

Dreiser's awkwardness and intrusion are seen by some critics as the very reason for his success. For example, in On Native Grounds, Kazin states that "It is because he has spoken for Americans with an emotion equivalent to their own emotion, in a speech as broken and blindly searching as common speech, that we have responded to him with the dawning realization that he is stronger than all the others of his time, and at the same time more poignant. ..." 21

Consequently, the combination of Dreiser's personal experience in his writing and an awkward style lead to the "truth", "honesty", and "pity" which make Dreiser's work appealing.

I agree with Granville Hicks that

One feels his effort, as he elaborately amasses detail, as he clumsily probes into motives, as he ponderously gropes for words. And one feels his honesty, his determination to present life exactly as he sees it. ... One cries out against the author's clumsiness, his sheer stupidity, and yet one surrenders to his honesty and acknowledges in the end that he is a master. In Sister Carrie Dreiser not only shattered in a single aimless gesture, a score of sacred conventions, he created living men and women in a world we recognize as ours. It is a passion for truth, lodged in the deepest stratum of Dreiser's mind, operating in spite of conflicting interests, that gives his work its importance. ... Despite innumerable faults, his six massive novels, built on the rocks of honesty and pity, stand while the works of shrewder architects crumble. 22
Since most critics would agree that Dreiser does succeed in spite of himself, a close study of Sister Carrie will show that its characterizations, structure, themes and motifs contribute to that success.

The main characters of the novel are Caroline Meeber (Carrie), George Hurstwood, and Charles Drouet. When the novel begins, Carrie is just eighteen years old and on her way to Chicago. Dreiser describes her as "full of the illusions of ignorance and youth." (p. 1) We first get an insight into Carrie's character and what she will be when Dreiser relates that "Self-interest with her was high, but not strong. It was, nevertheless, her guiding characteristic." (p. 2) This self-interest can be seen when Carrie is observing Drouet's apparel. "She became conscious of an inequality. Her own plain blue dress, with its black cotton tape trimmings, now seemed to her shabby. She felt the worn state of her shoes. (p. 5) Her interest in Drouet is precipitated by "the material wealth he set forth" (p. 6) His purse filled with greenbacks "impressed her deeply." (p. 7) Dreiser, by pointing to those things which have an impact on Carrie and by stating that "when a girl leaves her home at eighteen, she does one of two things. Either she falls into saving hands and becomes better, or she rapidly assumes the cosmopolitan standard of virtue and becomes worse" (p. 2) sets up what will happen to Carrie and what will influence her throughout the novel. Then at the end of the first chapter Dreiser successfully puts the reader in sympathy with Carrie when upon her arrival in Chicago she meets her sister and is described as "a lone figure in a tossing, thoughtless sea." (p. 11) Throughout the novel Dreiser keeps the reader sympathetic toward Carrie.

Minnie Hanson serves as a foil to Carrie, and when Dreiser shows "the lean and narrow life" (p. 13) the Hansons live, it is merely another circumstance of adversity which Carrie faces. Through his detailed
description of Carrie's search for employment, Dreiser conveys the anguish Carrie is suffering. He also makes one feel Carrie's weariness when she is working at the shoe factory. This sympathy toward Carrie leads the reader to condone Carrie's becoming Drouet's mistress. Carrie has lost her job because of sickness and Drouet offers her an alternative. Through these early events "...Dreiser is primarily concerned with her [Carrie's] natural instincts. She is passive rather than active, pushed rather than pushing. As these events indicate, her course of action is largely determined by the elements of chance and subconscious direction."23 John McAlister agrees that Carrie "... does not create opportunities for herself; she merely is drawn into them as they present themselves."24 Carrie does not solicit the attention of either Drouet or Hurstwood. She simply accepts it. Later, in her rise as a successful actress, she is chosen from the chorus and given a speaking part through no aggressiveness but through a simple reply to a comment from one of the actors.

Kenneth Lynn argues that Carrie is not at all deserving of the sympathy which critics and readers have given her. He points out that the critics "... should have listened to Mrs. Doubleday and saved their grief, for Carrie herself never wastes any tears on anyone. The sorrow she expresses for the poor is highly abstract and is constantly betrayed by her ruthless social selection, motivated by her desire to get ahead. As for her seductions, they have faced the critics more than they ever did Carrie -- never once in the novel does sex have any emotional effect upon her, except insofar as it leads to an augmentation of her living standard."25 Lynn sees Carrie as a gold-digger and a cold hearted one at that. "The gift of money [from Drouet] leads Carrie to formulate the guiding principle of her life: 'Money -- something everybody has and I must get.' Sizing up Drouet across the restaurant table
Carrie 'felt that she like him -- that she could continue to like him ever so much. There was something even richer than that, running as a hidden strain, in her mind.' The 'hidden strain' is Carrie's unconscious realization that she can trade this man's desires for her own, her body for a life of fashion and ease.26

Supporting this argument of Lynn's are Dreiser's comments that there was no "great love" between Carrie and Drouet or Carrie and Hurstwood. Also, upon first meeting Hurstwood, Carrie compares him to Drouet. Even though Drouet's clothes that evening were "rich in appearance" (p. 107) Dreiser says that "What he Hurstwood wore didn't strike the eye so forcibly as that which Drouet had on, but Carrie could see the elegance of the material." (p. 107)

Perhaps Carrie's self-interest is one of her saving graces. Otherwise, she would be just another sentimental heroine with all the situations of poverty, helplessness, seductions, avaricious family (Hansons) and finally the bogus wedding.27

However, the main thing that Lynn forgets is that Drouet does not marry Carrie as he repeatedly promises to do. Also, Carrie is tricked by Hurstwood into the elopement and subsequent marriage because of her belief that Drouet has been hurt in an accident. So while Carrie is always looking for the next best thing, I believe it is not so much because she is a gold-digger but because she is a dreamer. It is her quality of naiveté, combined with her sense of wonder and longing that makes Carrie a character with whom one can sympathize. Donald Pizer sums up Carrie's appeal by stating that "She will always be the dreamer, Dreiser says, and though her dreams take an earthly shape controlled by her world, and though she is judged immoral by the world because she violates its conventions in pursuit of her dreams, she has for Dreiser
— and for us, I believe — meaning and significance and stature because of her capacity to rock and dream, to question life and to pursue it."

It must not be overlooked either that Carrie remains with Hurstwood through his two years of unemployment because she has sympathy for him.

The characterization of Hurstwood is said by many critics to be one of Dreiser's finest. According to H. Wayne Morgan, "Hurstwood ideally symbolized both Chicago and America and dominated the book's last half. The chronicle of his rise and fall is one of the great works in American naturalistic writing. He craved and had attained a large measure of material wealth and prestige. He seemed hopeful and vigorous, but his tinsel world feel at the touch of events." Hurstwood, when we first meet him, is a successful manager of a Chicago saloon Fitzgerald and Moys. He has "... his own sense of importance." (p. 49) Hurstwood's family serves much the same purpose as do the Hansons. Julia Hurstwood is cold and calculating. His children are spoiled and independent. The indifference of Hurstwood's family makes Carrie seem all the more warm and desirable to him. When Hurstwood does steal the money he does so only by chance. Thus Hurstwood's first steps toward a decline come about through circumstances beyond his control just as Carrie's first steps toward her moral fall and material rise come about. While Hurstwood is looking at the money from the safe the lock snaps shut and the decision to steal the money is made for him. (p. 288-89) From that point in the novel Hurstwood loses control over his life. Hurstwood's arrival in New York can be compared to Carrie's entry into Chicago. Dreiser portrays the insignificance of the individual. "Whatever a man like Hurstwood could be in Chicago it is very evident that he would be but an inconspicuous drop in an ocean like New York... In other words, Hurstwood was nothing." (p. 321) Hurstwood assumes the name Wheeler,
and Hakutani points out that "... deprived of a position and of business influence in his home city, he is much like a wheel which has lost its controlling mechanism."\textsuperscript{30}

Although Hurstwood acquires a position in a saloon, he is already on the way down. His job is terminated after a year by circumstances over which he has no control. The complete disintegration of Hurstwood is detailed in the remainder of the novel so carefully that one can feel the hopelessness Hurstwood must feel. The deterioration is both psychological and physical. When Carrie finally gets employment in a chorus line, Hurstwood's pride rallies and causes him to take the first action he has taken in over a year.

The strike (p. 454-79) environment serves as a final blow to Hurstwood's self-respect. What little pride he had is reduced further when he reduces himself to the level of a "scab." (p. 470) He returns to the flat and finds Carrie gone. Dreiser repeatedly points up how far Hurstwood has fallen when he continually calls him the "ex-manager" when he is begging and scraping. The cold, desolate winter scenes when Hurstwood begs for bread and a bed make the deterioration of Hurstwood complete.

Although Dreiser succeeds in making us shudder at the decline of Hurstwood, he never gets as much sympathy from us as does Carrie. His inaction in seeking employment can be paralleled to that of Carrie in Chicago. However, when Hurstwood looks back he is always bitter while Carrie is thankful. Of course this is because Hurstwood is worse off than he was and Carrie is better off than she was. However, when Carrie learns of Hurstwood's theft of the money Dreiser relates that "Instead of hatred springing up there was a kind of sorrow generated. Poor fellow! What a thing to have hanging over his head all the time." (p. 530)
Hurstwood no longer has the promise of youth and becomes paralyzed in his rocking and reading his newspapers. The rocking chair, the newspapers and talk of tomorrow serve as a form of escape for George. He becomes dishonest with Carrie, with his creditors, but most of all with himself. Another reason we are not quite sympathetic to Hurstwood as we are to Carrie is that he is identified by Dreiser as the most intelligent and clever of the three main characters. One feels that he could improve his circumstances.

While Carrie rises and Hurstwood falls, Drouet maintains a straight line throughout the novel. Drouet is controlled by his desires and early in the story Dreiser tells us that in the seduction of Carrie "He could not help what he was going to do. He could not see clearly enough to wish to do differently. He was drawn by his innate desire to act the old pursuing part. He would need to delight himself with Carrie as surely as he would need to eat his heavy breakfast." (p. 85) At the end of the novel when Carrie has rejected him, the last view we have of Drouet is when he runs into a friend and proposes that they get a couple of girls and "have a dandy time." (p. 550) Dreiser says of Drouet, "The old butterfly was a light on the wing as ever." (p. 550)

Dreiser compares his characters to one another constantly. Hurstwood is more intelligent and refined than Drouet. (p. 106) However, Drouet does not fare so badly in this comparison. In a scene where the three are coming out of the theatre, Dreiser orders our sympathies. "They had come out of the lobby and made their way through the showy crush about the entrance way. 'Say, mister,' said a voice at Hurstwood's side, 'would you mind giving me the price of a bed?' Hurstwood was interestedly remarking to Carrie. 'Honest to God, mister, I'm without
a place to sleep.' The plea was that of a gaunt-faced man of about thirty, who looked the picture of privation and wretchedness. Drouet was the first one to see. He handed over a dime with an upwelling feeling of pity in his heart. Hurstwood scarcely noticed the incident. Carrie quickly forgot." (p. 153) The irony in this scene is that Hurstwood will later have to beg for a bed, Carrie will "quickly forget" him, and Drouet, who shows the most feeling here will be the most content of the three characters at the end of the novel.

Armit serves as a contrast to Drouet, Hurstwood, and Carrie herself. He represents a higher level of intellect than any other of the characters and thus becomes the next step to which Carrie looks. She is interested in the ideal he represents. The Vances serve as an example of material wealth to Carrie and play a part in her dissatisfaction with her situation with Hurstwood. They serve as a focal point for Carrie who is always comparing her state to something better.

While the balance and comparison of one character against another plays a positive part in Dreiser's success, so does his structure of Sister Carrie. The structure is interlaced with the plot and characterizations. Maxwell Geismar indicates that "The novel was structured on a triangle of forces. Drouet remains relatively static while Carrie goes up in the world and Hurstwood goes down." 31 Claude Simpson in Southwest Review points out the same structure but with slightly different terminology. He states that "Sister Carrie is well unified structurally, with a simple plot which can be diagramed \([sic]\) by the letter X: one fortune goes up while another goes down, and the crucial episode of Hurstwood's stealing the money -- at the very center of the novel -- represents the point at which the two plot lines cross." 32
Another example of this structure is discussed by Philip Gerber. "Three human lives are caught in the winds of chance and circumstance: one tossed upward (but never reaching) to fulfillment, another dragged downward to ruin, a third swept along briskly but at a dead level."  

Rubin Halleck, however, disagrees that the book is well structured. He feels that "The novel suffers from a broken back in the transfer of interest from Carrie to George Hurstwood."  

While characterization and structure contribute to the overall effect of the novel, more important are Dreiser's uses of themes and motifs.  

One theme which important in the novel and to American literary history is Dreiser's analysis of success and the American dream, both of which are based on material wealth. The strongest forces at work on all the characters are displays of clothing, fine homes, carriages, and of course, money. All the characters are estimated by Dreiser and by each other in accordance with their appearance.  

Charles Shapiro emphasizes that "In Sister Carrie, the characters, the symbols, the action, and even the details are attuned to a basic theme, an elaboration of Emerson's complain that 'things' dominate the American scene." Shapiro comments that the novel "... takes several protagonists from varied economic strata of American life and shows how they are harmed and corrupted by the fraudulent [sic] claims of a spurious American dream."  

Philip Gerber states that Dreiser describes in Sister Carrie "... American values for what he had found them to be -- materialistic to the core. The money ideal would be exposed as the great motivating purpose of life in the United States: one's relative affluence at any level of society determining the degree of creature comfort one might
enjoy, the measure of prestige one might own, the extent of social power one might command. In all of *Sister Carrie* there is not one character whose status is not determined economically; there are few whom possession does not stimulate into ravenous pursuit of even more fulsome wealth."37

James Farrell supports the idea that money plays a central role in *Sister Carrie*. "Without money -- money as we know it in our society -- the story is meaningless and the tragedy is forced. In order to understand the book clearly it is essential that we understand the all-important role that money plays in it. To the characters, money is a mystery, as it remains to many up to the present. The good-natured salesman, Drouet, discovers that money comes easily. He sells goods. An order is signed. In time, he is paid a commission. It comes almost effortlessly -- and is spent accordingly. To Carrie, a poor and yearning country girl going to Chicago, money is the means for getting everything in life for which she aspires. To Hurstwood, in his pleasant and established life, money at first is not even a problem; later it is the instrument that will permit him to satisfy his passion for Carrie; in the end, it is the means to keep his body and soul together -- and he must beg for it on the street."38

Beginning with the physical descriptions of Carrie and Drouet we are told that Carrie has "four dollars in money" (p. 1) and that Drouet's wallet was filled "with a roll of greenbacks." (p. 7) Money is important to the Hansons. The only reason they want Carrie to stay with them in Chicago is to have the money from her room and board. When Carrie becomes ill and loses her income of $4.50 per week, they advise her that she would be wise to go back to Columbia City. Therefore, when she is faced with the prospect of returning home, she runs into Drouet who offers her money. "The money she had accepted was two soft, green, handsome ten-dollar bills." (p. 69) Dreiser points out on the following
page that "As for Carrie, her understanding of the moral significance of money was the popular understanding, nothing more. The old definition: 'Money: something everybody else has and I must get,' would have expressed her understanding of it thoroughly. Some of it she now held in her hand--two soft, green ten-dollar bills--and she felt that she was immensely better off for the having of them. It was something that was power in itself." (p. 70)

Money comes up later at a crucial point in the book: It is when Hurstwood discovers the safe unlocked and looks in that "a layer of bills, in parcels of a thousand, such as banks issue, caught his eye." (p. 284) Hurstwood thinks to himself "Why don't I shut the safe? ... What makes me pause here?" (p. 285) And a voice replies "Did you ever have ten thousand dollars in ready money?" (p. 285) He takes the money out of the safe and returns it three times before the lock springs shut on the fourth time. This one incident triggers his elopement with Carrie, his loss of business connections and finally his complete decline to where he is completely broke and has to beg for money. Later, it is the lack of money which leads Carrie to pursue her acting career and to rise to her success.

The important thing that Dreiser seems to be saying is that money and all it can buy represents the American dream of success. But he shows us in the end of the novel that "It does not take money long to make plain its impotence, providing the desires are in the realm of affection. With her one hundred and fifty in hand, Carrie could think of nothing particularly to do. In itself, as a tangible, apparent thing which she could touch and look upon, it was a diverting thing for a few days, but this soon passed." (p. 505-06) So we learn from Carrie that while money is attractive, powerful, and necessary when we are without
it, nevertheless, it can not bring us happiness.

Of all the ways in which material wealth is represented in the novel, the most frequently used image is clothing. One can hardly open the book without coming upon some description of clothing. As does money, clothing being the representation of material wealth plays a significant role in the development of Carrie's story.

When Carrie first meets Drouet, she is attracted by his clothing. Dreiser says of Drouet "Good clothes, of course, were the first essential, the things without which he was nothing." (p. 4) Dreiser sets up the importance of clothing in the novel saying "A woman should some day write the complete philosophy of clothes. No matter how young, it is one of the things she wholly comprehends. There is an indescribably faint line in the matter of man's apparel which somehow divides for her those who are worth glancing at and those who are not. Once an individual has passed this faint line on the way downward he will get no glance from her." (p. 15)

Then Dreiser goes on to show Carrie comparing herself to Drouet by means of clothing which is to become her yardstick for comparing herself to others and other characters to one another throughout the book. She notes an "inequality" in her clothing when she looks at Drouet. She compares her clothes to those of the shop girls in Chicago and "felt ashamed in the face of better dressed girls who went by." (p. 46)

Carrie later compares her clothing to that of Mrs. Vance. Dreiser states that when Carrie and Mrs. Vance go out to see the play Nat Goodwin, Carrie saw "that she was not well-dressed -- not nearly as well-dressed as Mrs. Vance." (p. 338) "Carrie felt that she needed more and better clothes to compare with this woman, and that any one looking at the two would pick Mrs. Vance for her raiment alone." (p. 340) Dreiser says that
"Fine clothes to her were a vast persuasion; they spoke tenderly and Jesuitically for themselves." (p. 111)

When Carrie is contemplating returning the twenty dollars to Drouet, it is the need for an article of clothing, a jacket, which just happens to fit her when she tries it on, which leads her to accept the money. Once she has accepted the money, her decision to allow Drouet to set her up in an apartment is not so complicated.

Carrie, on first meeting Hurstwood is impressed by the fact that his clothing is more elegant than that of Drouet. Hurstwood's gradual physical and psychological deterioration is detailed in his wearing apparel. When his business venture in New York fails, he begins to wear old clothes around the flat. "Sitting around the house, he decided to wear some old clothes he had. This came first in the bad days. Only once he apologized in the very beginning: 'It's so bad today, I'll just wear these around.' Eventually these became the permanent thing." (p. 392-93)

One day Mrs. Vance stops to visit and Carrie is out. When Carrie returns she is chagrined to think that Mrs. Vance should see George "looking like that" (p. 402) She adds, "I've ask you a dozen times to wear your other clothes. Oh, I think this is just terrible." (p. 402)

Finally, it is Carrie's desire to spend her money she has earned on clothing which precipitates her leaving Hurstwood. "Her need of clothes—to say nothing of her desire for ornaments—grew rapidly as the fact developed that for all her work she was not to have them. The sympathy she felt for Hurstwood, at the time he asked her to tide him over, vanished with these newer urgings of decency. He was not always renewing his request, but this love of good appearance was. It insisted, and Carrie wished to satisfy it." (p. 430) When she subsequently leaves him, part of her letter reads, "I'm going away. I'm not coming back anymore. It's no use trying to keep up the flat; I can't do it. I wouldn't mind helping
you, if I could, but I can't support us both, and pay the rent. I need what little I make to pay for my clothes." (p. 484)

Since clothing and money and material wealth represent success to the characters at the beginning of the novel, why isn't Carrie happy at the end? Charles Shapiro presents the idea that the whole novel is concerned with the theme of success and failure. This idea ties in also with the previously discussed theme of the American dream for success. "The three chief protagonists, Hurstwood, Drouet, and Carrie, have, of course, their own special areas of movement, within which are their own patterns of success and failure. Both Drouet and Carrie are the essential part of the Hurstwood story, echoing and reinforcing the theme of a man's dream and his failure. Running underneath the Hurstwood chronicle is the ironic rise of Carrie, the chief protagonist of the novel. Ironic because, while she achieved success, she is never happy by her own standards."39

He points out that "In Sister Carrie the theme is the effect, on the individual consciousness, of the misdirection of the American success dream."40

This interwoven money-clothing-material wealth-success story is discussed by John McAleer. He notes that Dreiser's "predilection for protagonists who are pursuing the American Dream, and the compassion which he extends to them in their failure to find happiness, often are mistaken for a vote of confidence in materialism. Quite otherwise, he sought consistently, through his tragic protagonists, to condemn the American dream as a destructive illusion."41 He asserts that Dreiser "saw it as his first duty to bring under assault the false standards upon which American society was reared. Sister Carrie is not a defense of the compromises which country girls make to win their way in the big city, but a bitter indictment of the success goals Carrie Meeber pursues under the spell of the American Dream."42
Not only do themes of success, failure, money, and clothing serve to unify the novel, but also Dreiser uses the recurring motifs of the rocking chair, the theatre, music, water and circularity.

Twenty-seven times in the novel Dreiser places someone in a rocking chair. In an article in *American Literature* Christopher Katopis covers the rocking chair motif quite thoroughly as a growth symbol:

The motif first appears in Carrie's lowest phase before her ascent -- her bedroom at Hanson's -- after her letter to Drouet: she sits in "the one small rocking-chair" and looks out into the "streets in silent wonder" (p. 15). The context includes the shabby environment of her initial phase, Drouet -- the next stage in her evolution -- and a brief reverie of hopes for a more rewarding future. The motif next appears after she obtains her first job and she indulges "in the most high-flown speculations" as she sits "in her rocking-chair" and dreams of "every joy and every bauble" (p. 32). Later, the apartment to which Drouet takes Carrie is described as containing "several rocking-chairs" (p. 102). After she meets Hurstwood and is impressed by his wealth and manners, she begins to contrast her meager furnished room with "what she had so recently seen" and "rocking to and fro she thinks "What, after all, was Drouet?" "She longed and longed and longed" (p. 128). The motif next appears as Carrie imagines herself, after Drouet suggests she try out for a part, as a famous actress. "As she rocked to and fro . . . every fancy, every illusion which she had concerning the stage . . . now came back . . ." (p. 174). Dreiser describes this feeling of Carrie's as "the first subtle outcropping of an artistic nature" (p. 133). The symbol receives emphasis in the scene in which Carrie quarrels with Drouet over Hurstwood and which ends in their separation (pp. 252, 267), clearing the way for the Carrie-Hurstwood relationship, the next stage in Carrie's material climb. In the Montreal hotel room with Hurstwood, she sits down "in one of the rocking-chairs" while Hurstwood waits for room service (p. 306). Later, in New York, after seeing a play, the "great attraction" of the stage reminds her of "her one histrionic achievement in Chicago . . . ." It dwelt in her mind and occupied her consciousness during many long afternoons in which her rocking-chair and her latest novel contributed the only pleasure of her state" (p. 343). . .

The meeting with Ames awakens in her greater longings and heightened sensibilities (pp. 358-359); in her apartment, having decided not to go into the bedroom where Hurstwood was sleeping -- "it was disagreeable to her" (p. 359) -- she sits in her rocking-chair: "Through a fog of longing and conflicting desires she was beginning to see. . . . She was rocking and beginning to see" (p. 359). There follows the separation from Hurstwood; and after her triumph as an actress, Carrie moves into a hotel suite luxuriously furnished and with "several huge easy rockers" (p. 500). The
motif recurs later when Ames encourages her to turn from comedy to "serious" drama: "The effect was like roiling helpless waters. Carrie troubled over it in her rocking-chair for days" (p. 538). Finally, in the last paragraph, at the peak of her material success, Carrie is described in her "rocking-chair, by her window dreaming... of such happiness as she may never feel" (p. 557).

William Freedman sees the rocking chair as a motif of circularity "underscoring the pendular motion of life and fortune in the novel and, in the periodic return of its characters, notably Carrie and Hurstwood, to a variety of rocking chairs, the tedium of human existence and the repetitiveness of human action." 44

Another view of the rocking chair is taken by Hugh Witemeyer. He sees the chair as a static symbol.

The rocking chair in which Carrie sits and dreams as the novel closes aptly symbolizes how little she and her fellows grow or change. Dreiser places a rocking chair in each of Carrie's principal domestic settings: the Hanson's and Ogden Place in Chicago, Seventy-eighth and Thirteenth Streets and finally the Waldorf in New York. It is the seat of mental activity, occasionally insight (pp. 219, 359, 485) but far more consistently fantasy, reverie, and escape (pp. 15, 32, 242, 343, 380, 381, 419, 445). In the final chapter the chair harbors the latter processes once again... The rocking chair is a static symbol in the novel. It points up the sad irony that although Dreiser's mobile American questers cover great physical distances in trains and trolleys and use pseudonyms like "Wheeler," they do not come a greater mental distance than is represented by the hobbyhorsical fixture in which Carrie is last seen. 45

Finally, Donald Pizer sees the rocking as part of the "dream" quality which I discussed early in dealing with the characterization of Carrie. He states that

It is suggested that Dreiser means to imply that nothing really has happened to Carrie, that although her outer circumstances have changed, she is essentially the same both morally and spiritually. The symbol does indeed function partly in this way, but its primary emphasis is not the negative one of nothing changed and therefore nothing gained or learned. Its stress is rather the positive idea that Carrie continues to have the ability to wonder about herself and her future, that her imaginative response to life has not been dulled by experience. Although she has not achieved the happiness that she though accompanied the life she desired and
which she now has, she will continue to search. Perhaps Ames represents the next, higher step in this quest, Dreiser implies, but in any case, she possesses this inner force, a force which is essentially bold and free. Although it brings her worry and loneliness -- the rocking chair symbolizes these as well -- it is an element in her which Dreiser finds estimable and moving.

The theatre is seen as a place for entertainment but also as the place where Carrie achieves her fame. Carrie's ability to imitate makes her a capable actress and thus the theatre world of make-believe and glitter symbolizes Carrie's pursuit of her materially based dream. An actress always is looking for a better part as is Carrie throughout the novel. Sally Tippetts has researched the plays mention in the novel and summarizes that "Dreiser's selections the plays mentioned in Sister Carrie then, give a representative picture of the melodramatic theatre fare of the day, and provide realistic detail as well as a suitable background for Carrie's career. . . . And although Dreiser had been impressed by the glamour of the theatre in his youth, it is to a considerable extent, this fictional world of 'sentiment or mush' that he chose to represent in his selection of plays for Sister Carrie. Only two of the eight plays mentioned by title in the book seem not to have been actual productions of the time -- and fabrication of these two plays was necessary: Dreiser found an ironic plot situation in The Covenant, and he gave the fictitious Carrie a role in The Wives of Abdul."

Music as a motif is thoroughly discussed by Robert J. Griffin. In Sister Carrie music is the surest gauge of the emotional-aesthetic proclivities of the characters. We have seen how deeply Carrie can be affected by music: in Chicago "the strain from the parlour below stole upward. With it her thoughts became coloured and enmeshed" (84). When Drouet finds her so moved and unfeelingly suggests that the "waltz a little to that music," she naturally begins to sense a deficiency in him. She begins to turn to Hurstwood, who, pleased at the turning, romantically whistles "an old melody that he had not recalled for fifteen years" (98). Carrie gets her first taste of the state and finds she has a gift for it; she can put herself "in harmon with the plaintive melody" of the orchestra accompanying the
melodrama. And for a while she draws out this aspect of Hurstwood's personality, raising his spirits "until he was in the frame of mind of one who sings joyously" (171). . . . "music, then, provides an ample, pervasive motif in Sister Carrie; the charms and powers of music, musical instruments, persons' receptivity to music -- all serve important metaphoric functions. . . . Terms from the vocabulary of music appear quite often -- "tone," "chord," "strain," "discord," and the like -- so as to constitute a definite pattern of allusions. In the light of these obvious recurrences, it is hard to avoid suspecting an intended metaphor or punning when we encounter such terms as "interval," "overture," "score," or even "drummer" (Drouet's toneless profession). A person will be said to have struck "the key-note," or a "deep chord." Carrie sees some aspects of life as "humdrum," but the thought of a career on the stage "hummed in her ears as the melody of an old song" (141). Sometimes the metaphors are worked out to the extent of an elaborate metaphysical conceit, as when Hurstwood presses his courtship of Carrie: first, he maintains a "church-like silence"; when this has created the proper mood, he speaks and "his voice trembled with that peculiar vibration which is the result of tension. . . . ringing home to his companion's heart"; he continues, "his voice dropping to a soft minor," and prevails by "striking a chord now which found sympathetic response" (104-5).

Carrie's musical nature is too obvious to bear much further comment; her voice is apt to be "low and musical," and when she remembers Drouet, it is typically as "a sad note out of an old song." 

The water imagery used by Dreiser begins when he describes Chicago as a "thoughtless sea." (p. 11) Later when Carrie is being visited by Hurstwood, when Drouet is out of town, she looks into his eyes and Dreiser interjects "The little shop-girl was getting into deep water. She was letting her few supports float away from her." (p. 131) Both Hurstwood and his wife are described as being "all at sea" (p. 157 and 233) as far as their marriage is concerned. Later, Hurstwood is described as "but an inconspicuous drop in an ocean like New York." (p. 321)

William Freedman points out how many times circular words such as "round", "circle", and "sphere" are used in the novel and emphasizes that the novel is based on circular movement. He points to the name Drouet as coming from the French word "rouet" for spinningwheel and to the fact that Hurstwood's alias is Wheeler. He asserts that the
name Vance could mean advance and goes on to say "Thus Ames, who at the first of their encounters was assigned by Mrs. Vance to 'look after her' has aimed Carrie's wheel in a new direction."49

In an article in American Literature, Philip Williams tells the story of the chapter titles of Sister Carrie. He says that "The titles were not written until after Doubleday and Page had returned Dreiser's long typescript, which had been reduced from a very much longer original draft written in pencil. There are some signs that the titles were added as device to strengthen the appeal of the story-- perhaps, even, as a last-ditch attempt to insure the acceptance of a book whose early plight and subsequent history are now legendary."50 Williams shows that the titles were written by Dreiser and his friend Arthur Henry according to meter and the "best symbol for each chapter."51 An interesting part of Williams article deals with the two chapters which have the same title:

The basic symbolic contrast, fixed right at the core of the book, is the biblical struggle of "Spirit" and "Flesh" (Chapters 20, 21, 22, 23, 28, and 37). Of the duplication of the title "The Lure of the Spirit: The Flesh in Pursuit" in Chapters XX and XXI (the point at which I was first prompted examine the manuscript), we must conclude that Dreiser wished the repetition. Both titles are in his hand, and he allowed them to stand, though the editor's blue pencil put a question mark beside both. The conflict of these forces had earlier led the published to entitle the book The Flesh and the Spirit in the first contract (August 20, 1900). Dreiser has said that the novel began when he wrote only the two words over the publisher's title in the contract. Nevertheless, he turned to the tension of "Flesh" and "Spirit" when he wrote the chapter titles (inspired by the "contract"?) and identified Carrie with the power of "Spirit."52

In focusing on the motifs of Sister Carrie, one can see, as Freedman points out that "Dreiser has been too long considered only for his historic and socio-philosophic import. It is time that more attention was paid to his art."53
In conclusion, I believe it is a combination of the subject matter of the book, the naturalistic style, the recurring motifs, and finally the intrusion of Dreiser that make *Sister Carrie* worthy of a close study. By looking closely at the novel, one begins to understand the mysterious power, sympathy, and passion of Dreiser which is often mentioned but rarely explained.
Footnotes

1 Theodore Dreiser, *Sister Carrie*, (New York: Doubleday, 1900). All subsequent references to this work will be incorporated within the text of the paper.


6 Farrell, p. 12.


8 Elias, p. 112-13.


13 Lehan, p. 58.

14 Lehan, p. 58.

15 Warren, p. 17.
21 Kazin, p. 89.
26 Lynn, p. 29.
27 Daryl C. Dance, "Sentimentalism in Dreiser's Heroines, Carrie and Jennie," CLA Journal, XIV (December 1940), 127-35.

Agreeing with Morgan on the excellence of Dreiser's characterization of Hurstwood are:

Max Lerner in Actions and Passions, p. 45.
Herbert J. Muller in Modern Fiction: A Study of Values, p. 213.
David W. Noble in The Eternal Adam and the New World Garden, p. 126.

Carl Van Doren in Contemporary American Novelists, 1900-1920, p. 82.

30 Hakutani, p. 8.


36 Shapiro, XIII (introduction).

37 Gerber, pp. 52-53.

38 Farrell, p. 16.

39 Shapiro, p. 13.

40 Shapiro, p. 14.

41 McAleer, p. 29.

42 McAleer, p. 30.


46 Pizer, p. 11-12.


49 Freedman, p. 390.


51 Williams, p. 361.

52 Williams, p. 362-63.

53 Freedman, p. 392.
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