Chapter 8
The *Why* of Systemic Thinking

Abstract The previous chapters in this section have addressed: (1) the who question through a discussion of problem stakeholders, their analysis, and management; and (2) the what question by decomposing our mess and constituent problems into its objectives and organizing them. In this chapter, we will address the why question through an analysis of motivation and how each problem has a unique model of motivation and feedback between and among the stakeholders. This chapter discusses motivation, its 20 major theories, and how we can incorporate motivation into our systemic thinking. A framework for assessing motivation is provided, and this framework is demonstrated on our example real estate problem.

8.1 Overview

The main focus of the *why* question of systemic thinking attempts to determine either (1) a premise, reason, or purpose for why something is the way it is, or (2) what the causal relationship is between an event and the actions that caused the event to occur. As a result, *why* can be treated as either a noun or an adverb:

adverb—for what reason or purpose,

noun—a reason or explanation.

Reason, purpose, and some explanation of causality are central elements expected in any answer to the question *Why?* The underlying premise for the *why* question is most often based upon the following assumption:

> "Why" questions presuppose that things happen for a reason and that those reasons are knowable. "Why" questions presume cause-effect relationships, an ordered world, and rationality. "Why" questions move beyond what has happened, what one has experienced, how one feels, what one opines, and what one knows to the making of analytical and deductive inferences. (Patton, 2002, p. 363)

The answer to the *why* question relates reason through explanation.

> Often such reasons are causes, but even when 'cause' is not the natural description, 'Because - - -' is the natural formula for answering why questions. 'Because - - -' answers,

usually becoming more informative in the process (the expansion will often indicate that the thing to be explained does some good, or—differently—aims at some good, these being two kinds of teleological explanation. (Honderich, 2005, p. 957)

The notion of a teleological explanation is important. A teleological explanation is one in which there is a belief in or the perception of purposeful development toward an end. This is contained within the *principle of purposive behavior* (Adams, Hester, Bradley, Meyers, & Keating, 2014) from the goal axiom of systems theory in Chap. 4 that states:

Purposeful behavior is meant to denote that the act or behavior may be interpreted as directed to the attainment of a goal - i.e., to a final condition in which the behaving object reaches a definite correlation in time or in space with respect to another object or event. (Rosenblueth, Wiener, & Bigelow, 1943, p. 18)

In *systemic thinking*, the attainment of specific, purposeful goals is the most desirable answer to *why*. The reason for attaining the goals has some underlying rationale which includes:

1. The basis or motive for the goals and supporting objectives.
2. A declaration made to explain or justify the goals and supporting objectives.
3. An underlying fact or cause that provides logical sense for achieving goals and objectives.

Items 1 and 2 were addressed in Chap. 7, *The What of Systemic Thinking*. The sections that follow will address item 3—the underlying fact or cause that provides logical sense for achieving goals and objectives as part of solving messes and their constituent problems.

8.2   Motivation

The underlying fact or cause that provides logical sense for achieving goals and objectives can be labeled motivation. Motivation is defined as (Runes, 1983, p. 218):

Motivation: Designation of the totality of motives operative in any given act of volition or of the mechanism of the operation of such motives. See *Motive*.

Motive: (Lat. *motus*, from *movere*, to move) An animal drive or desire which consciously or unconsciously operates as a determinant of an act of volition.

As defined, motivation is the property central in the explanation of intentional conduct. Specifically, a motivational explanation is "a type of explanation of goal-directed behavior where the explanans appeals to the motives of the agent" (Audi, 1999, p. 592). Understanding the motives for the behaviors associated with *why* is the central tenet of theories associated with motivation.

8.3   Categorizing Theories of Motivation

There are a number of implicit theories for motivation in the literature. However, before we discuss the elements of these theories, it is important to understand how the scientific community has categorized theories of motivation. There are also two accepted methods for categorizing these theories.

The first method for grouping motivation theories has three categories: (1) content-based theories of motivation; (2) process-based theories of motivation; and (3) environmentally based theories of motivation (Bowditch, Buono, & Stewart, 2008). Figure 8.1 is a depiction of this categorization.

The second method for grouping motivation theories also has three categories: (1) hedonic/pleasure-based theories of motivation; (2) cognitive/need-to-know-based theories of motivation; and (3) growth/actualization-based theories of motivation (Roeckelein, 2006). Figure 8.2 is a depiction of this categorization.

The two categorization schemas for motivation theories present twenty principal motivation theories, which are listed in Table 8.1. The theories are arranged and presented in chronological order to provide a contextual setting for how the theories were revealed over the last hundred or so years of research in this field. The sections that follow will review each of these principal theories of motivation.
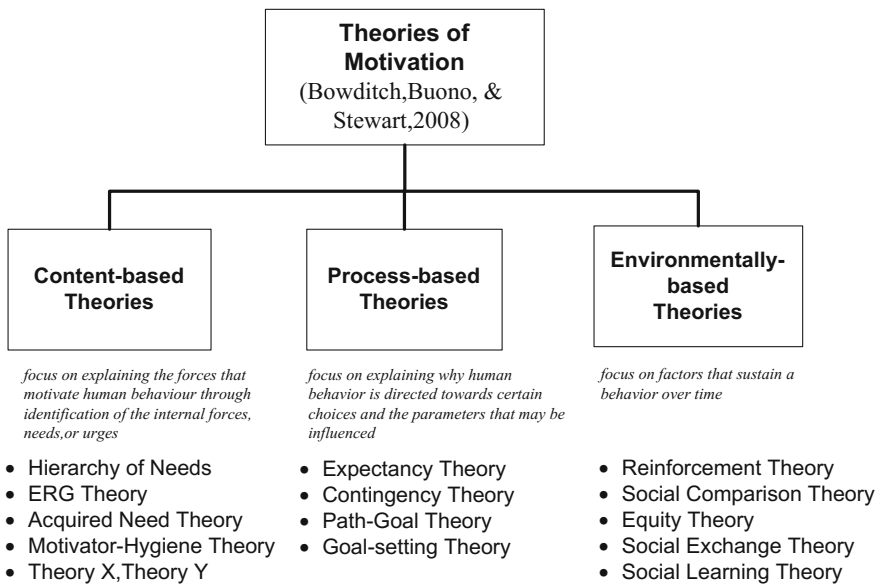

Fig. 8.1   Categorization of theories of motivation (Bowditch et al., 2008)
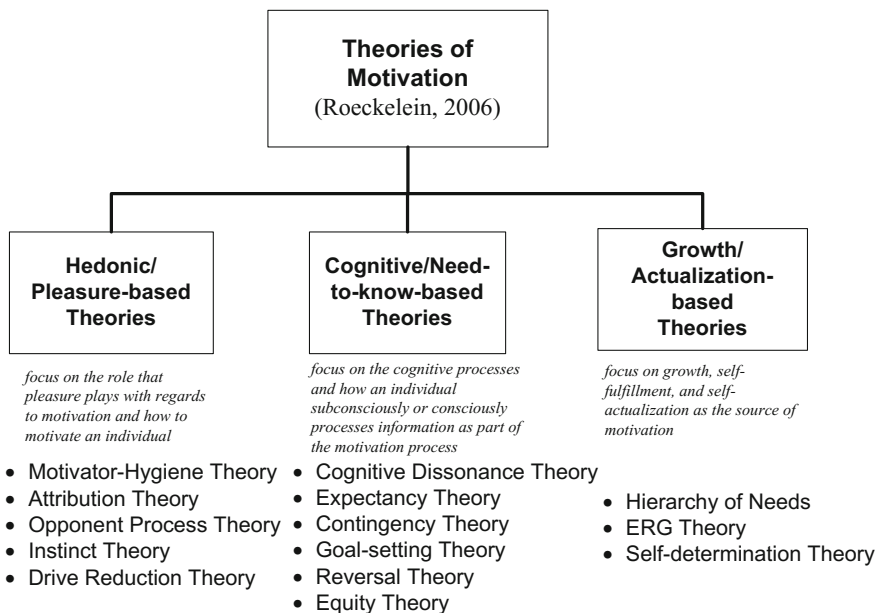
Theories of
Motivation
(Roeckelein, 2006)

**Hedonic/
Pleasure-based
Theories**

*focus on the role that
pleasure plays with regards
to motivation and how to
motivate an individual*

- Motivator-Hygiene Theory
- Attribution Theory
- Opponent Process Theory
- Instinct Theory
- Drive Reduction Theory

**Cognitive/Need-
to-know-based
Theories**

*focus on the cognitive processes
and how an individual
subconsciously or consciously
processes information as part of
the motivation process*

- Cognitive Dissonance Theory
- Expectancy Theory
- Contingency Theory
- Goal-setting Theory
- Reversal Theory
- Equity Theory

**Growth/
Actualization-
based
Theories**

*focus on growth, self-
fulfillment, and self-
actualization as the source of
motivation*

- Hierarchy of Needs
- ERG Theory
- Self-determination Theory

Fig. 8.2 Categorization of theories of motivation (Roeckelein, 2006)

8.4   Theories of Motivation

The sections that follow will present each of the major theories of motivation in a very broad fashion. The reader is encouraged to consult the cited references for more in-depth explanations of each of these theories. Note that the theories are presented chronologically in the same order they appear in Table 8.1.

8.4.1   *Instinct Theory of Motivation*

The instinct theory of motivation suggests that all living beings are supplied with innate tendencies that enable them to remain viable. The theory suggests that motivational behaviors are driven by instincts, where instincts are goal-directed and which have intrinsic tendencies that are not the result of learning or prior experience.

Wilhelm Wundt [1832–1920], the father of experimental psychology, coined the term *instinct* as a psychological term in the 1870s. Fellow psychologist William James [1842–1910] defined an instinct as an action which will "produce certain ends, without foresight of the ends, and without previous education in the performance" (James, 1887c, p. 355). James believed that motivation through instinct was

Table 8.1 Motivation theories and categorization schemas

Motivation theory and principal proponent (in chronological order)	Bowditch, Buono, and Stewart (2008)			Roeckelein (2006)		
	C	P	E	H	CO	G
1. Instinct theory of motivation (James, 1887a, b, c; McDougall, 1901)				✓		
2. Drive reduction theory (Hull, 1943, 1950)				✓		
3. Hierarchy of needs (Maslow, 1943, 1967, 1987)	✓					✓
4. Attribution theory (Heider, 1944; Kelley, 1973; Weiner, 1972, 1985)				✓		
5. Reinforcement theory (Skinner, 1953, 1956)			✓			
6. Social comparison theory (Festinger, 1954)			✓			
7. Path–goal theory (Georgopoulos, Mahoney, & Jones, 1957; House, 1971)		✓				
8. Social exchange theory (Blau, 1964; Homans, 1958)			✓			
9. Theory X and Theory Y (McGregor, 2006 (1960))	✓					
10. Cognitive dissonance theory (Festinger, 1962)					✓	
11. Equity theory (Adams, 1963)			✓		✓	
12. Social learning theory (Bandura, 1971; Bandura & Walters, 1963)			✓			
13. Expectancy theory (Vroom, 1964) and contingency theory (Porter & Lawler, 1965, 1968)		✓			✓	
14. Motivator-hygiene theory (Herzberg, 1964)	✓			✓		
15. Acquired needs theory (McClelland, 1961, 1965, 1978)	✓					
16. ERG theory (Alderfer, 1969, 1972)	✓					✓
17. Self-determination theory (Deci, 1971, 1972a, b; Gagné & Deci, 2005)						✓
18. Opponent process theory (Solomon & Corbit, 1973, 1974)				✓		
19. Goal-setting theory (Latham & Locke, 1979; Locke & Latham, 2002)		✓			✓	
20. Reversal theory of motivation (Apter, 1984)					✓	

Note C Content, *P* Process, *E* Environmental, *H* Hedonic, *CO* Cognitive, *G* Growth

important for human behavior and expounded upon 22 of these instincts in the monthly journal *Popular Science* (James, 1887a, b).

This theory of motivation remained popular or generally accepted into the early twentieth century. William McDougall [1871–1938] subscribed to the theory and felt that individuals are motivated by a significant number of inherited instincts, many of which they may not consciously comprehend and which may lead to misunderstood and misinterpreted goals (McDougall, 1901).

The main problem with this theory is that it did not really explain behavior; it just described it. The theory then led to the search for additional theories of motivation.

8.4.2   Drive Reduction Theory of Motivation

The drive reduction theory of motivation (Hull, 1943, 1950) became popular during the 1940s and 1950s as a way to explain behavior, learning, and motivation. The theory was created by behaviorist Clark Hull [1884–1952] and was based upon the systems *principle of homeostasis* from the operational axiom of systems theory in Chap. 4. Hull extended Cannon's (1929, 1967, 1932) ideas on physiological homeostasis to human behavior, proposing that behavior was one of the ways that an organism maintains equilibrium.

Hull's drive reduction theory uses the term *drive* to explain the state of tension that is caused by physiological needs. For instance, thirst and hunger are examples of specific drives caused by a physiological condition. In order to maintain equilibrium (i.e., homeostasis), the tension created by the drive must be balanced by an equal and opposite action—*reduction*, which will act to reduce the tension and return the human to a state of equilibrium. In the examples of thirst and hunger presented here, the human will act to reduce thirst by drinking and will act to reduce hunger by eating.

Hull and his partner Kenneth Spence [1907–1967] believed that drive reduction was a major factor in learning and behavior (Spence, 1936, 1937). They classified primary drives as innate drives (e.g., thirst, hunger, and sex) and secondary drives as learned drives (e.g., wanting money). Hull understood that human beings are routinely subjected to multiple drives and must balance these drives in an effort to maintain equilibrium. He developed a mathematical formula to express how a human balances these behaviors. The formula accounts for this using a stimulus–response relationship where a stimulus (i.e., drive) is followed by a corresponding response (i.e., reduction), in an effort to maintain equilibrium. Hull theorized that satisfactory stimulus–response patterns would lead to learning. Hull's *Mathematico Deductive Theory of Behavior* (Hull et al., 1940) is presented in Eq. 7.1:

$$sEr = (sHr \times D \times K \times V) - (sIr + Ir) \pm sOr \qquad (7.1)$$

where sEr = Excitatory potential, or the likelihood that an organism will produce a response (r) to a stimulus (s),
sHr = Habit strength, established by the number of previous conditioning,
D = Drive strength, determined by the hours of deprivation of a need,
K = Incentive motivation, or value of a stimulus,
V = The measure of connectiveness,
sIr = Inhibitory strength or number of nonreinforcers,

Ir = Reactive inhibition, or fatigue based on work for a reward,
sOr = Random error.

The main problem with this theory is that it did not account for secondary or learned drives (i.e., wanting money) and how it reduces drives. An additional problem was that the theory does not account for why humans routinely increase tension by conducting exploratory ventures whether or not they were in a state of equilibrium. These shortcomings led researchers to search for more complete theories of motivation.

8.4.3   Hierarchy of Needs

The hierarchy of needs theory of motivation was proposed by Abraham Maslow [1908–1970] in the paper *A Theory of Human Motivation* (Maslow, 1943). In this paper, Maslow proposed that human needs are satisfied in an ordered hierarchy where critical lower-level needs would need to be satisfied before less critical higher-level needs. The five levels in the hierarchy, from bottom to top, are as follows: (1) physiological; (2) safety; (3) love; (4) self-esteem; and (5) self-actualization. In the 1943 paper, Maslow addresses the fixed order or *fixity* of the hierarchy and that "it is not nearly as rigid as we may have implied" (p. 386), and he goes on to list seven (7) exceptions to the general theory.

It is important to note that although this theory is often presented as a pyramid, none of Maslow's published works (1943, 1967, 1987) on the hierarchy of needs include a visual representation of the hierarchy. This section will avoid using the pyramid to support Maslow's notions that the hierarchy of needs is neither a fixed nor rigid sequence of progression, that human needs are relatively fluid, and that many needs are simultaneously present.

Finally, Maslow also coined the term *meta-motivation* to describe the motivation of people who go beyond the scope of the basic needs and strive for constant betterment (Maslow, 1967).

While Maslow's hierarchy of needs remains a very popular framework, it has largely been surpassed or replaced by newer theories of motivation.

8.4.4   Attribution Theory of Motivation

Psychological research into attribution theory as a source of motivation began with the work of Fritz Heider [1896–1988], who is often described as the *father* of attribution theory. Heider was interested in how people explain their behaviors. He found that people explain themselves by *attributing* a particular behavior as being

caused by either internal or external forces. Internal forces are labeled *dispositions* and include personality, motives, attitudes, and feelings. External forces are labeled *situations* and include societal norms, acts of nature, and random chance.

Heider's concepts were advanced by Kelley (1973, 1978) who published a *co-variation model* that includes three main types of information from which to make attribution decisions about individual behavior: (1) *Consensus information* includes data about how other people, faced with the same situation, behave. (2) *Distinctive information* includes data about how an individual will respond based upon different stimuli. (3) *Consistency information* includes data related to the frequency of the individual's behavior in a variety of situations. An observer may use this information when assessing the individual's behavior as either internally or externally attributable.

Weiner (1972, 1985) expanded upon the work of both Heider and Kelley by proposing that individuals search for attributions and analyze casual relations based on the behaviors they experience. This is the *achievement attribution model*. When the attributions they assign to causes are positive (i.e., lead to successful outcomes), these attributions should lead to additional attempts in this area. However, when the attributions they assign to causes are negative (i.e., lead to unsuccessful outcomes), these attributions result in a reluctance toward future attempts.

In summary, attribution theory attempts to explain the motivation of individuals by evaluating the processes in which individuals explain the causes of behavior. The term attribution theory is an umbrella term for a variety of models in which individuals look for explanations or causes that can be attributed to their own success or failure.

8.4.5   Reinforcement Theory of Motivation

The reinforcement theory of motivation was first proposed by B.F. Skinner [1904–1990] during the 1950s. The theory links behavior and consequence. It is based upon Edward Thorndike's [1874–1949] *law of effect* that was the result of his work on animal intelligence. Thorndike's *law of effect* proposed that responses that produce a satisfying effect in a particular situation are more likely to be repeated than responses that produce an uncomfortable effect in the same situation (Thorndike, 1898, 1911).

Skinner applied the concept of *reinforcement* to the law of effect by rewarding desired behaviors in an effort to motivate individuals (Skinner, 1953, 1956). This was a notable departure from theories of motivation which were concerned with the internal state of the individual (i.e., feelings, desires, and instincts) and focused on the outcomes of the individual's actions. Reinforcement theory includes four aspects.

1. *Positive reinforcement*: When desired behaviors occur, a reward is provided as motivation for continued behavior.

2. *Negative reinforcement*: When desired behaviors are problematic, assistance is provided in order to modify the behavior.
3. *Punishment*: When desired behaviors are not achieved and harm arises, a punishment is given.
4. *Extinction*: When desired behaviors are not achieved on a continual basis and harm is present, the individual will be disregarded and extinct.

Reinforcement theory also includes schedules for reinforcement that included both fixed and variable time intervals and fixed and variable ratios (based on the ratio of responses to reinforcements).

Reinforcement theory is important because it was relatively easy to understand and implement because the goal was to provide control through the manipulation of the consequences of behavior.

8.4.6 Social Comparison Theory of Motivation

The social comparison theory of motivation was first proposed by Leon Festinger [1919–1989]. Festinger's theory of social comparison is centered on the belief that "there exists, in the human organism, a drive to evaluate his opinions and abilities" (Festinger, 1954, p. 117). The theory also posits that "to the extent that objective, non-social means are not available, people evaluate their opinions and abilities by comparison respectively with the opinions and abilities of others" (Festinger, 1954, p. 118).

Festinger's initial 1954 framework has been advanced to include:

1. Understanding of the motivations that underlie social comparisons and the particular types of social comparisons that are made (Gruder, 1971).
2. The concept of downward comparison. Downward social comparison is a defensive tendency where the social comparison will be made with individuals who are considered to be worse off in order to make themselves feel better (Wills, 1981).
3. The concept of upward comparison. Research has suggested that comparisons with individuals that are considered to be better off can lower self-regard, whereas downward comparisons can elevate self-regard (Tesser, Millar, & Moore, 1988).

Social comparison theory is important because it introduced the notion that an individual is capable of self-evaluation and that the drive to understand strengths and weaknesses exists in order to provide a more accurate view of the self.

8.4.7   *Path-Goal Theory of Motivation*

The path-goal theory of motivation was first proposed by House (1971) and was based upon pioneering work conducted by Georgopoulos, Mahoney, and Jones (1957) and Evans (1970).

House's original theory proposed that behavior in leaders is contingent upon the satisfaction, motivation, and performance of subordinates in the organizational hierarchy (House, 1971). His revised version of the theory proposes that leaders exhibit behaviors that complement the abilities of subordinates and often compensate for skill deficiencies in the organizational hierarchy (House, 1996).

> The essence of the theory is the meta proposition that leaders, to be effective, engage in behaviors that complement subordinates' environments and abilities in a manner that compensates for deficiencies and is instrumental to subordinate satisfaction and individual and work unit performance. (House, 1996, p. 323)

The theory maintains that leaders are required to modify their behavior by implementing leadership behaviors dictated by the situation they face. The leader is required to adjust the leadership style to support the unique needs presented by the dynamic nature of the mission, goals, and objectives of the organization. As such, leader behaviors are the independent variables in the theory and consist of the following:

- **Directive path-goal clarifying leader behavior** is behavior directed toward providing psychological structure for subordinates: letting subordinates know what they are expected to do, scheduling and coordinating work, giving specific guidance, and clarifying policies, rules, and procedures.
- **Supportive leader behavior** is behavior directed toward the satisfaction of subordinates' needs and preferences, such as displaying concern for subordinates' welfare and creating a friendly and psychologically supportive work environment. Supportive leader behavior was asserted to be a source of self-confidence and social satisfaction and a source of stress reduction and alleviation of frustration for subordinates. (House & Mitchell, 1974)
- **Participative leader behavior** is behavior directed toward encouragement of subordinate influence on decision making and work unit operations: consulting with subordinates and taking their opinions and suggestions into account when making decisions. (House, 1996, pp. 326, 327)

In summary, the independent variable in the path-goal theory is the leaders' behavior. As such, the theory relies heavily upon the notion that individuals in leadership positions are flexible enough and have the cognizant ability to modify their behavior based upon the situation they face.

8.4.8 Social Exchange Theory of Motivation

Social exchange theory was first proposed by sociologist George Homans [1910–1989] and was codified by sociologist Peter Blau [1918–2002]. Emerson (1976) explains:

> …social exchange theory… is not a theory at all. It is a frame of reference within which many theories-some micro and some more macro-can speak to one another, whether in argument or in mutual support. (p. 336)

Blau (1964) explained that the frame of reference was "Social exchange as here conceived is limited to actions that are contingent on rewarding reactions from others" (p. 6). Social exchange proposes that as individuals interact over time, they develop the need to reciprocate favors. This need is termed the norm of reciprocity (Gouldner, 1960).

Homan's concept of social exchange theory relies upon three basic propositions of social behavior:

1. *The Success Proposition*. "For all actions taken by persons, the more often a particular action of a person is rewarded, the more likely the person is to perform that action" (Homans, 1974, p. 16).
2. *The Stimulus Proposition*. "If in the past the occurrence of a particular stimulus, or set of stimuli, has been the occasion on which a person's action has been rewarded, then the more similar the present stimuli are to the past ones, the more likely the person is to perform the action, or some similar action, now" (Homans, 1974, pp. 22, 23).
3. *The Deprivation-Satiation Proposition*. "The more often in the recent past a person has received a particular reward, the less valuable any further unit of that reward becomes for him" (Homans, 1974, p. 29).

Despite the apparently clear nature of the theory, there are a number of complications that can arise and compromise the exchange relationships. Equivalent reciprocity requires that each returned favor has some value at least equal to the initial favor. Failure to ensure the favor is equivalent or of comparable benefit is subjective and can be the source of conflict and resentment. Placing value on favors is difficult and often involves qualities that are hard to measure (i.e., convenience, time, and scarce resources).

8.4.9 Theory X and Theory Y

Theory X and Theory Y are contrasting theories of motivation proposed by Douglas McGregor [1906–1964] in the 1960s. Theory X and Theory Y describe two models of workforce motivation from the view of management. Management feels that

employees are motivated by either (1) authoritative direction and control or (2) integration and self-control.

In Theory X, management assumes that employees are inherently lazy and dislike work. As a result, employees require close supervision and a system of controls must be developed to ensure compliance with work goals. In addition, a hierarchical structure of management and supervision is required.

In Theory Y, management assumes that employees are ambitious and self-motivated and enjoy work. As a result, employees will seek out and accept responsibility. Due to these conditions, employees are able to meet goals and objectives based on self-direction and their personal commitment to work.

> At the heart of McGregor's argument is the notion that managers' assumptions/attitudes represent, potentially, self-fulfilling prophecies. The manager who believes that people are inherently lazy and untrustworthy will treat employees in a manner that reflects these attitudes. Employees, sensing that there is little in the job to spur their involvement, will exhibit little interest and motivation. Consequently, and ironically, the manager with low expectations will lament that 'you can't get good help nowadays', oblivious as to the actual nature of cause and effect. Closing the self-reinforcing cycle, the manager feels vindicated; that is, his/her low expectations were warranted. Conversely, the manager who believes that employees are generally trustworthy and desirous of growth will facilitate their achievement. (Kopelman, Prottas, & Davis, 2008, pp. 256, 257)

The contrasting characteristics of Theory X and Theory Y are presented in Table 8.2.

Although McGregor's theories of motivation are seldom used explicitly, they have strongly influenced several generations of managers. A 2003 review of 73 established organizational behavior theories found that Theory X and Theory Y were tied for second in terms of recognition and in 33rd place with respect to importance (Miner, 2003).

8.4.10   Cognitive Dissonance Theory of Motivation

The cognitive dissonance theory of motivation was first proposed by Leon Festinger [1919–1989]. Festinger's theory of cognitive dissonance focuses on how individuals strive for internal consistency. When an inconsistent behavior (i.e., a dissonance) is experienced, individuals largely become psychologically distressed

Table 8.2 Characteristics of Theory X and Theory Y

Characteristic	Theory X	Theory Y
Attitude	Dislike work, find it boring, to be avoided	Want to work, find it interesting, can be enjoyed
Direction	Must be coerced into effort	Self-directed toward effort
Responsibility	Avoid responsibility	Seek and accept responsibility
Motivation	Money and fear	Desire to realize personal potential

and have a desire to return to a state of equilibrium (i.e., homeostasis). Festinger (1957) stated two basic hypotheses:

1. The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance.
2. When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance (p. 3).

In the presence of dissonance, an individual may return to equilibrium by adjusting their cognitions or actions. Adjustment results in one of three relationships between cognition and action:

- *Consonant relationship* This occurs when two cognitions or actions are consistent with one another (e.g., not wanting to go swimming while at the beach and then going for a walk in the sand instead of swimming).
- *Irrelevant relationship* This occurs when two cognitions or actions are unrelated to one another (e.g., not wanting to go swimming while hiking in the Mojave Desert).
- *Dissonant relationship* This occurs when two cognitions or actions are inconsistent with one another (e.g., not wanting to go swimming while surfing).

Cognitive dissonance theory posits that individuals desire consistency between expectations and the real world. As a result, individuals invoke *dissonance reduction* to balance their cognitions and actions. Dissonance reduction provides a means for homeostasis, where there is a reduction in psychological tension and a return to equilibrium. Festinger (1957, 1962) stated that dissonance reduction can be achieved in one of three ways: (1) changing the behavior or cognition; (2) justifying the behavior or cognition by changing the conflict; or (3) justifying the behavior or cognition by adding a new cognition.

Early experiments showed that

> 1. If a person is induced to do or say something which is contrary to his private opinion, there will be a tendency for him to change his opinion so as to bring it into correspondence with what he has done or said. 2. The larger the pressure used to elicit the overt behavior (beyond the minimum needed to elicit it) the weaker will be the abovementioned tendency. (Festinger & Carlsmith, 1959, pp. 209, 210)

In later experiments, researchers demonstrated cognitive dissonance in a learning environment. For instance, school children who completed activities with the promise of a reward were less interested in the activity later than those children who were offered no reward in the first place (Lepper & Greene, 1975).

In summary:

> Since it was presented by Festinger over 40 years ago, cognitive dissonance theory has continued to generate research, revision, and controversy. Part of the reason it has been so generative is that the theory was stated in very general, highly abstract terms. As a consequence, it can be applied to a wide variety of psychological topics involving the interplay of cognition, motivation, and emotion. (Harmon-Jones & Mills, 1999, p. 5)

8.4.11   *Equity Theory of Motivation*

The equity theory of motivation was first proposed by Adams (1963). In this theory of motivation, Adams proposed satisfaction and motivation in terms of an individuals' perception of the distribution of resources within an organizational or interpersonal setting. Adams (1965) asserted that individuals maintain equity by comparing the inputs that they provide against the outcomes they receive against the perceived inputs and outcomes of others. The theory proposed that individuals highly value equitable treatment which in turn causes them to remain motivated in order to maintain the equitable conditions established between individuals or within an organization.

Equity theory posits that when individuals perceive themselves in an inequitable relationship, they will experience stress, placing them in a state where equilibrium is disturbed. In order to restore the equilibrium state, the individual must restore the equity in the relationship (either personal or organizational). True equality is not required by the theory. That is, equity is determined by analysis of fairness in the distribution of resources. Two parties do not have to have equality; however, the perceived ratio of contributions and benefits to each individual is what matters. Adams (1965) proposed that anger is an outcome caused by underpayment inequity and guilt is caused by overpayment equity.

Criticism of equity theory has been focused on both the assumptions of the theory and application in the real world. The simplicity of the elements of the theory has been questioned, with arguments that additional variables are important to an individual's perceptions of equity. One such argument calls for a new construct that includes equity sensitivity, stating:

> The equity sensitivity construct suggests that individuals do not conform consistently to the norm of equity. Instead, individuals react consistently to specific, but different, preferences they have for the balance between their outcome/input ratios and that of a comparison other. Benevolents prefer that their outcome/input ratios be less than the comparison other's; Equity Sensitives, who adhere to the norm of equity, prefer balanced outcome/input ratios; and Entitleds prefer that their outcome/input ratios exceed the comparison other's. Furthermore, these general preferences for equity can be traced to internal standards that characterize the Benevolent as emphasizing own inputs exceeding own outcomes; the Entitled, own outcomes exceeding own inputs; and the Equity Sensitive, own outcomes equaling own inputs. (Huseman, Hatfield, & Miles, 1987, p. 231)

In summary, a generalized equity theory supports the notion that individuals value fair treatment, which causes them to remain motivated to maintain an equilibrium of fairness in the individual and organizational relationships. The structure of generalized equity is based on the ratio of contributions to benefits.

8.4.12   Social Learning Theory of Motivation

The social learning theory of motivation was proposed by Albert Bandura in the early 1960s. In social learning theory, Bandura proposes that behavior is learned from the environment through the process of observational learning.

> In the social learning view, man is neither driven by internal forces nor buffeted helplessly by environmental influences. Rather, psychological functioning is best understood in terms of a continuous reciprocal interaction between behavior and its controlling conditions. (Bandura, 1971, p. 2)

Bandura's theory postulates that new behavioral patterns can be learned either (1) through direct experience or (2) by observing the behavior of others. The theory supports the notion of reinforcement and that individual learning is largely governed by the reward-punishment consequences that follow the actions. Reinforcement is proposed as having the following incentive functions:

- *Informative function*. Individuals observe the range of consequences that accompany their actions.
- *Motivational function*. Individuals use the results of prior experience to expect that certain actions will result in outcomes that either: (1) have outcomes they value; (2) have no appreciable effect; or (3) have outcomes that are undesirable.
- *Cognitive function*. The onset of awareness in an individual is a function of the reward value of the actions' consequence.
- *Reinforcing function*. Individual responses can be strengthened through selective reinforcement imposed below the level of awareness.

Bandura summarizes reinforcement as:

> The overall evidence reveals that response consequences can be informative, motivating, and reinforcing. Therefore, in any given instance, contingent reinforcement may produce changes in behavior through any one or more of the three processes. People can learn some patterns of behavior by experiencing rewarding and punishing consequences, but if they know what they are supposed to do to secure desired outcomes they profit much more form such experiences. (Bandura, 1971, p. 5)

Most importantly, Bandura challenged the notion that behavior (*B*) was a function of (1) internal personal incentive (*I*) and (2) external or environmental pressure (*E*), where all behavior was a function of the joint effects of personal incentives and environmental pressures such that $B = f (I, E)$. Bandura noted that external, environmental pressure is not a fixed entity. In fact, it is only a *potentiality* and can itself be subject to behavior and vice versa, in a two-way causal process. In social learning theory, internal personal incentives (e.g., pride, satisfaction, and a sense of accomplishment) reinforce the cognitive element of the theory to cognitive developmental theories.

8.4.13   Expectancy Theory of Motivation

The Expectancy theory of motivation was first proposed in the 1960s by Vroom (1964) and expanded upon in the work of Porter and Lawler (1965, 1968).

The theory proposes that an individual will decide to behave or act in a certain way because they are motivated to select a specific behavior over other behaviors due to what they expect the result of that selected behavior will be. The motivation for how they will act is determined by the desirability of the outcome of the behavior or *expectancy*. Individual motivation is a product of the individual's expectancy that a certain effort will lead to the desired outcome. The theory has three variables that affect motivation:

- *Valence (V)* the attractiveness or desirability of various rewards or outcomes.
- *Expectancy (E)* the desirability of the result for the individual which the perceived relationship between effort and performance.
- *Instrumentality (I)* is the perceived relationship between performance and rewards.

Motivation in expectancy theory is labeled motivation force (M_f) and is the product of these three components, as shown in Eq. 7.2.

$$M_f = V \times E \times I \qquad (7.2)$$

Each of the variables in the expectancy theory of motivation requires additional explanation.

Valence (V). Vroom defines valence as "… the affective orientation toward particular outcomes" (Vroom, 1964, p. 15). It is the attractiveness or desirability of various rewards or outcomes based on the value individuals place on the rewards of an outcome. The value is based on the unique needs, goals, values, and preferences of each unique individual. As such, valance is characterized by the extent to which a person values a given outcome or reward and is not an objective measure of satisfaction, but a subjective measure of the expected satisfaction of a particular outcome, for a particular individual.

> Outcomes desired by an individual are considered positively valent and those he wishes to avoid negatively valent; therefore valences are scaled over a virtually unbounded range of positive and negative values. Vroom emphasizes, as do most other expectancy theorists, the idea that the objective utilities associated with outcomes of working at a particular level are not of primary concern; rather, the crucial factor is the individual's perception of the satisfaction or dissatisfaction to be derived from working at a particular level. (Behling & Starke, 1973, p. 374)

Expectancy (E). "Expectancy is defined as a momentary belief on the part of an individual that acting in a particular way will actually be followed by a given outcome. The expectancy value associated with any action-outcome link may range from 0.0 (no relationship perceived) to 1.0 (complete certainty that acting in a

particular way will result in the outcome)" (Behling & Starke, 1973, p. 374). There are three components associated with the individual's expectancy perception:

1. *Self-efficacy* the individual's belief about their ability to successfully perform a particular behavior.
2. *Goal difficulty* the individual's belief about the ability to achieve the goal or performance expectation.
3. *Perceived control* the individual's belief in their ability to control their performance.

Instrumentality (I). "Instrumentality theory hypothesizes that a person's attitude toward an outcome (state of nature) depends on his perceptions of relationships (instrumentalities) between that outcome and the attainment of other consequences toward which he feels differing degrees of liking or disliking (preferences)" (Graen, 1969, p. 1). In the perceived relationship between performance and rewards, rewards in organizational settings may be an increase in pay or responsibility, special recognition or award, or a personal sense of accomplishment.

Factors associated with the individual's instrumentality for outcomes are trust, control, and policies. If individuals trust their superiors, they are more likely to believe their leaders' promises. When there is a lack of trust in leadership, people often attempt to control the reward system. When individuals believe they have some kind of control over how, when, and why rewards are distributed, instrumentality tends to increase. Formalized written policies impact the individuals' instrumentality perceptions. Instrumentality is increased when formalized policies associate rewards with performance.

8.4.14 Motivator-Hygiene Theory of Motivation

The motivator-hygiene theory of motivation was first proposed in the 1960s by Frederick Herzberg [1923–2000]. The theory, which is also referred to as the *two-factor theory* and *dual-factor theory*, proposes that there are two sets of factors in the workplace that affect workers' satisfaction.

The motivator-hygiene theory (Herzberg, 1968; Herzberg, Mausner, & Snyderman, 1959) has built upon Maslow's hierarchy of needs theory by proposing the presence of one set of factors or incentives that lead to satisfaction and a separate and unique set of factors or detractors that leads to dissatisfaction. Herzberg abandons the idea of a continuum of satisfaction (ranging from highly satisfied to high dissatisfied) and proposes two independent phenomena. The motivator-hygiene theory requires management to consider each factor when addressing worker motivation. Herzberg's (1964) original list of motivators (lead to satisfaction) and hygiene (lead to dissatisfaction) factors was as follows:

- *Motivators*: "achievement, recognition for achievement, intrinsic interest in the work, responsibility, and advancement" (p. 487).
- *Hygiene factors*: "company policy and administrative practices, supervision, interpersonal relationships, working conditions, and salary" (p. 487).

In summary, motivating factors are needed to shift an employee to higher performance and hygiene factors are needed to ensure an employee is not dissatisfied.

8.4.15 Acquired Needs Theory of Motivation

The acquired needs theory of motivation was first proposed by David McClelland [1917–1998] in 1965. In this theory, which is also referred to as the *three needs theory* and the *learned needs theory*, McClelland (1961, 1965, 1978) proposed that individuals have three needs: (1) achievement; (2) affiliation; and (3) power. These motivations exist independent of age, sex, race, or culture. Furthermore, the dominant type of motivation that drives an individual is a function of the life experiences and the opinions of the culture in which the individual was immersed. The three needs are classified as:

1. *Achievement*: Individuals with this need desire to excel and seek timely recognition for their efforts. Their efforts do not involve risks and require some gain for themselves. The possibility of failure is strictly avoided.
2. *Affiliation*: Individuals with this need seek peaceful relationships and refrain from actions which would attract attention to themselves. They seek sufficient recognition and do not require overjustification for their work.
3. *Power*: Individuals with this need require power in order to exercise control over other individuals. The power is acquired to serve their needs and to achieve objectives. These individuals do not seek recognition or approval, consider themselves superior, require direct compliance, and expect agreement with their decisions.

In summary, McClelland believed that every individual has one of three main driving motivators and that these motivators are not inherent, but developed based upon life experiences and the culture in which the individual was immersed.

8.4.16 ERG Theory of Motivation

The existence, relatedness, growth (ERG) theory of motivation was first proposed by Clayton Alderfer [1940–2015] in 1969. In this theory, Alderfer redefines Maslow's hierarchy of needs theory in new terms. Alderfer (1969) does this by recategorizing Maslow's hierarchy of needs into three simpler and broader classes of needs.

1. *Existence needs*: "include all of the basic forms of material and physiological desires" (p. 145).
2. *Relatedness needs:* "include all of the needs which involves relationships with significant other people" (p. 146).
3. *Growth needs*: "include all of the needs which involves a person making creating or productive effects on himself and the environment" (p. 146).

The ERG theory of motivation differs significantly from Maslow's hierarchy of needs. Unlike Maslow's theory, Alderfer's ERG theory does not require the fulfillment of a lower level of need prior to moving to a higher level. In ERG theory, if a higher-level need causes aggravation and cannot be fulfilled, then an individual may revert to increase the satisfaction of a lower-level need. This is labeled the *frustration-regression* aspect of ERG theory. In this manner, ERG theory (Alderfer, 1972) explicitly states that any given point in time, more than one need may be operational.

8.4.17   Self-determination Theory of Motivation

The self-determination theory of motivation (SDT) was first proposed by Edward Deci and Richard Ryan in 1971 (Deci & Ryan, 1985). SDT proposes that individuals tend to be motivated by a need to grow and gain fulfillment. The first assumption of SDT is that individuals are activity-directed toward growth. While many theories propose that individuals are most often motivated extrinsically (i.e., external rewards such as money, prizes, and acclaim), SDT is focused on intrinsic motivation (i.e., need to gain knowledge or independence).

SDT proposes that in order to become self-determined, individuals need to feel the following:

- *Competence*: Individuals need to gain mastery of tasks and control outcomes.
- *Relatedness*: Individuals need to experience a sense of belonging and attachment to other people.
- *Autonomy*: Individuals need to feel in control of their own behaviors and goals.

Once individuals achieve self-determination, they are able to be intrinsically motivated. Deci's (1972b) findings show that:

> The general findings of this study and the Deci (1971) studies suggest that one who is interested in developing and enhancing intrinsic motivation in children, employees, students, etc., should not concentrate on external control systems such as monetary rewards, which are linked directly to performance, but, rather, he should concentrate on structuring situations that are intrinsically interesting and then be interpersonally supportive and rewarding toward the persons in the situation. While large payments can lead to increased performance due to feelings of inequity, these payments will, however, be making the people dependent on the money, thereby decreasing their intrinsic motivation. (pp. 119, 120)

In summary, Deci's and Ryan's SDT (2002) proposes that three basic psychological needs motivate individuals. SDT states that these needs are said to be universal, innate, and psychological and include the need for (1) competence; (2) autonomy; and (3) psychological relatedness.

8.4.18 Opponent Process Theory of Motivation

The opponent process theory of motivation was first proposed by Richard Solomon [1918–1995] in 1965. In this theory, Solomon proposed that every process has a primary element called an *affective valence* (i.e., is it pleasant or unpleasant) and is followed by a secondary or *opponent process*. The secondary opponent process begins to take effect after the primary affective valence is quieted. As this sequence is repeated, the primary process tends to become weaker, while the opponent process becomes stronger.

> The theory assumes that for some reason the brains of all mammals are organized to oppose or suppress many types of emotional arousals or hedonic processes, whether they are pleasurable or aversive, whether they have been generated by positive or by negative reinforcers. (Solomon, 1980, p. 698)

Solomon and his collaborator Corbit (1973, 1974) conducted experiments on work motivation and addictive behavior, showing (1) how the opponent process theory applies to drug addiction and is the result of a pairing of pleasure (affective) and the symptoms associated with withdrawal (opponent) and (2) how, over time, the level of pleasure from using addictive substances decreases, while the levels of withdrawal symptoms increase, providing motivation to continue using the addictive substance despite a decreasing lack of pleasure.

In summary, the opponent process theory of motivation may be generalized beyond addictions to understand why situations that are distasteful or unpleasant may still be treated as rewarding.

8.4.19 Goal-Setting Theory of Motivation

The goal-setting theory of motivation was first proposed in the late 1970s by Latham and Locke (1979). The theory proposes that individuals will be motivated to the extent that they accept specific, challenging goals and receive feedback that indicates their progress toward goal achievement. Their goal-setting theory is fully consistent with social cognitive theory in that both acknowledge the importance of conscious goals and self-efficacy. The goal-setting theory focuses primarily on motivation in work settings. The core components of goal-setting theory include the following:

- *Goal specificity* the extent to which goals are detailed, exact, and unambiguous.
- *Goal difficulty* the extent to which a goal is hard or challenging to accomplish.
- *Goal acceptance* the extent to which people consciously understand and agree to goals.

The theory includes four mechanisms that directly affect performance:

1. Goals serve a directive function where they direct attention and effort toward goal-relevant activities and away from goal-irrelevant activities.
2. Goals have an energizing function such that high goals lead to greater effort than low goals.
3. Goals affect persistence when participants are allowed to control the time they spend on a task, hard goals prolong effort.
4. Goals affect action indirectly by leading to the arousal, discovery, or use of task-relevant knowledge and strategies.

The theory states that goal moderators are factors that facilitate goal effects and include the following: (1) *Commitment*, whereby public recognition of the goal is enhanced by leaders communicating an inspiring vision and behaving supportively; (2) *Importance*, where leadership commits resources based upon the goals relative importance; (3) *Self-efficacy* or the extent or strength of leadership's belief in its ability to complete tasks and reach goals by providing adequate training, positive role models, and persuasive communication; (4) *Feedback*, as an element stating that "for goals to be effective, people need summary feedback that reveals progress in relation to their goals" (Locke & Latham, 2002, p. 708); and (5) *Task complexity*, as the complexity of tasks increases and higher-level skills and strategies are required, goal effects are dependent on the ability to provide proper resources and strategies for accomplishment.

Figure 8.3 depicts the integration of the essential elements of goal-setting theory.

8.4.20 Reversal Theory of Motivation

The reversal theory of motivation was first proposed in 1975 by Michael Apter and Ken Smith and fully detailed in Apter's book *The Experience of Motivation* (1982). Reversal theory describes how individuals regularly reverse between psychological states, reflecting their motivational style and the meaning they attach to a specific situation at a unique point in time.

Because the theory is focused on mental life, it is termed phenomenological (Apter, 1981), where the behavior of an individual can only be fully understood within the subjective meaning assigned to it by the individual. An example of a reversal is shown by the response to a simple cat's meow. Sometimes, the meow evokes a warm memory and a smile; other times, the meow can evoke a frown and a sense of annoyance.
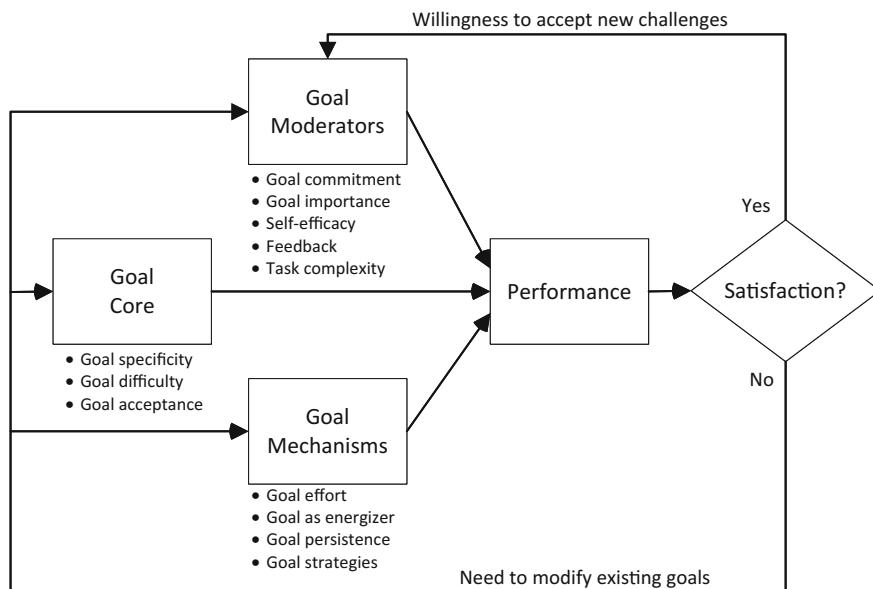
Fig. 8.3 Essential elements of goal-setting theory and the high-performance cycle (Locke and Latham, 2002, p. 714)

The theory proposes that individual experience is structurally organized into meta-motivational states which are opposing pairs labeled as *domains,* where only one of each pair can be active or experienced at a time. The states include the following:

- *Means-Ends State*: *Telic* (serious) and *Paratelic* (playful) which refer to whether an individual is motivated by achievement and future goals or the enjoyment of the moment.
- *Rules State*: Conforming and Rebellious which refer to whether an individual enjoys operating within rules and expectations or whether the individual desires to be free and rebels against rigid rules and structure.
- *Interaction State*: Mastery and Sympathy relate to whether an individual is motivated by transacting power and control or by sympathetic reaction demonstrated by care and compassion.
- *Orientation State*: *Autic* (self) and *Alloic* (other) which refer to whether an individual is motivated by self-interests or by the interests of others.

In summary, reversal theory proposes that individuals are changeable and move between different motivational states in the course of daily life. The theory serves as a means to understand why individual seems to contradict themselves in pursuit of satisfaction and provides a framework for improved understanding.

8.5 Applying Theories of Motivation

The twenty principal theories of motivation provide a variety of theoretical explanations for what motivates both individuals and groups. Many of the theories have similar notions and often augment one another. Because both of the authors primarily think systemically, the idea that a single, holistic, meta-theory that could synthesize the ideas presented in the twenty theories has great merit with each of us (and as it turns out, with others as well).

The idea of a meta-theory, or framework, for linking existing theories of motivation has been proposed by both Landy and Becker (1987) and Klein (1989). Klein's approach is to use control theory as an integrating framework for the theories of motivation. This has a great deal of appeal for systemic thinkers and will be presented as a functional framework for implementing a variety of useful aspects from the wide array of motivation theories.

8.5.1 Cybernetics and Control Theory

Tamotsu Shibutani [1920–2004] argues that two University of Chicago professors were responsible for introducing cybernetic features as important in explaining individual action long before Wiener (1965) coined the term *cybernetics*.

Philosopher-educator John Dewey [1859–1952] and psychologist George Mead [1863–1931], close colleagues at the University of Chicago, were heavily invested in the evolutionary view of individual action and interaction. Both Dewey and Mead felt that the individual and the environment were intimately interdependent, in disagreement with the prevailing stimulus–response theory of psychology in vogue at the time (Buckley, 1967). During the late nineteenth century, Dewey (1896) commented that the existing stimulus–response model was inadequate to explain human behavior or action, stating:

> It is the motor response of attention which constitutes that, which finally becomes the stimulus to another act. (p. 363)

Dewey also introduced the notions of communication and control (Dewey, 1916), which are two of the central principles of cybernetics and our notion of systems theory presented in Chap. 4. Similarly, Mead (1967) commented about both the individual:

> An act is an impulse that maintains the life-process by the selection of certain sorts of stimuli it needs. Thus, the organism creates its environment … Stimuli are means, tendency is the real thing. Intelligence is the selection of stimuli that will set free and maintain life and aid in rebuilding it. (p. 6)

and the social act:

> The social act is not explained by building it up out of stimulus plus response; it must be taken as a dynamic whole – as something going on – no part of which can be considered or understood by itself – a complex organic process implied by each individual stimulus and response involved in it. (p. 7)

Both Dewey (1896, 1916) and Mead (1967; Morris, 1972) were pioneers in applying some fundamental features of a cybernetics to models of individual action. Cybernetics is the precursor to control theory and as such contains the foundation principles used to explain purposive action required in self-governing (i.e., cybernetic) models of human motivation.

8.5.2   Klein's Integrated Control Theory Model of Work Motivation

Howard Klein, of the Fisher College of Business at the Ohio State University, has constructed a framework, which is based on control theory that houses the salient features of a number of motivation theories (Klein, 1989, 1991, 1996). The control theory model integrates the works of a number of researchers who have developed control theory approaches in human behavior (Campion & Lord, 1982; Carver, 1979; Carver, Blaney, & Scheier, 1979; Carver & Scheier, 1981, 1982; Hollenbeck, 1989; Hollenbeck & Brief, 1988; Hollenbeck & Williams, 1987; Lord & Hanges, 1987; Taylor, Fisher, & Ilgen, 1984). The special features of Klein's model are as follows:

- *Parsimony*: The proposed model contains definitive elements of a limited number of motivation theories. As new theories are proposed, and older ones are supplanted, they can be incorporated into the model with relative ease. This is because the model is a framework, and even as other theories are included, "it can remain a simple heuristic" (Klein, 1989, pp. 150–151). This feature is noteworthy because it is invoking the goal axiom's *principle of requisite parsimony* (Miller, 1956).
- *Goal-setting*: The framework includes the ability to establish specific goals and objectives. The feature is invoking the goal axiom's *principle of purposive behavior* where the behavior is directed toward the attainment of a specific goal (Rosenblueth et al., 1943).
- *Feedback*: The framework contains feedback loops where sensors and comparators are used to provide signals based on an established standard or benchmark. This feature is invoking the viability axiom's *principle of feedback*. "Feedback control shows how a systems can work toward goals and adapt to a changing environment, thereby removing the mystery from teleology" (Simon, 1996, p. 172).
- *Motivation Theories*: The framework includes expectancy and attribution theories and can be extended to include social learning theory.

Klein's model is based upon the simple feedback model from cybernetics, which includes the following: (1) a *reference standard or benchmark;* (2) a *comparator* that differentiates between the signal and the standard or benchmark; (3) *feedback* which is the actual performance signal detected by the sensors and its transmission signal; and (4) an *effector* that implements corrective action based on the values generated in the comparator. The unique element in Klein's model is the inclusion of formal processes between the comparator and the effector that are based on four motivation theories included in the model. Figure 8.4 is a generic control theory model of work motivation based upon Klein's model that may be used as a process model for motivation in understanding the underlying *why* question when determining either (1) a premise, reason, or purpose for why something is the way it is, or (2) what the causal relationship is between the event and the actions that caused the event to occur.
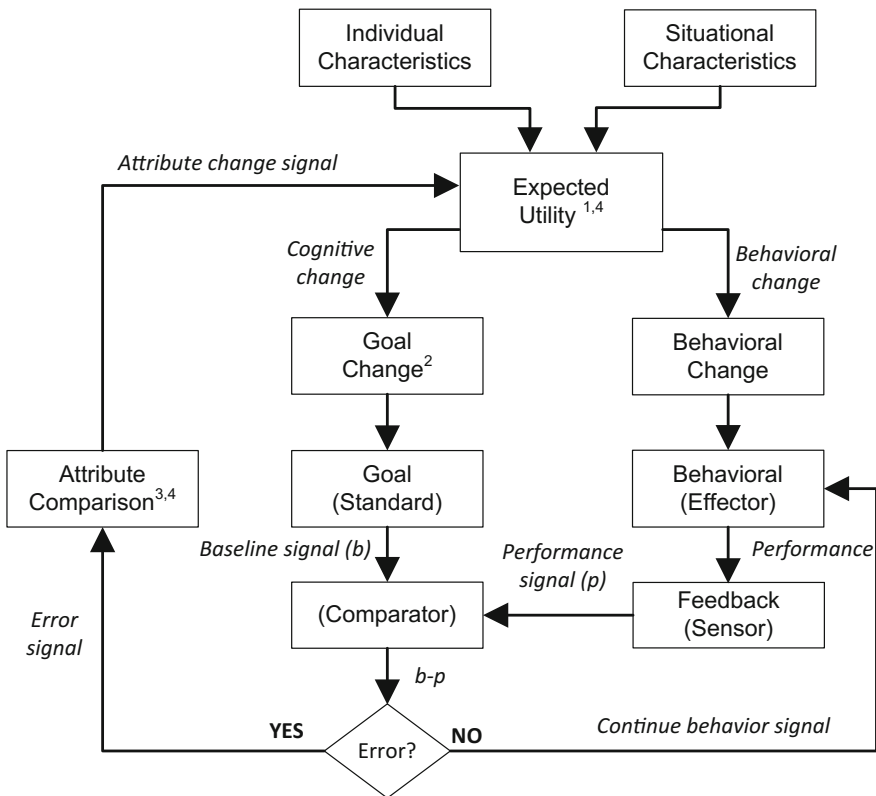
1. Expectancy theory (Porter & Lawler, 1965, 1968)
2. Goal-setting theory (Latham & Locke, 1974; Locke & Latham, 2002)
3. Attribution theory (Weiner, 1972, 1985)
4. Social learning theory (Bandura, 1971; Bandura & Walters, 1963)

Fig. 8.4 Generic Control Theory of Motivation (based on Figure 2 in Klein, 1989, p. 153)
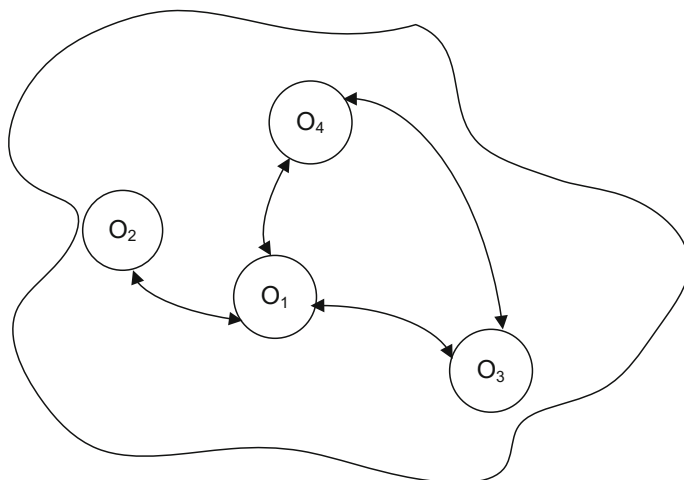
Fig. 8.5   Stakeholder objective relationships

The generalized control theory model of motivation depicted in Fig. 8.4 can be used to understand the unique relationship between stakeholders and their objectives in a problem. Each stakeholder has its own motivations for involvement in a mess. This motivation is formalized through its objectives. These objectives often involve relationships that extend to other stakeholders. If executed correctly, these motivational relationships are two-way in order to create a feedback loop. Figure 8.5 shows a set of relationships between four stakeholder objectives (O_1, O_2, O_3, and O_4).

Each of the two-way lines in Fig. 8.5 is unique and based on the control theory model in Fig. 8.4. As a result, there are both motivational goal signals ($M_{i,j}$) driving achievement of stakeholder objectives and feedback response signals ($F_{i,j}$) occurring between stakeholder objectives. Figure 8.6 shows how each stakeholder objective relationship contains a mini-model of motivation and feedback that influences each relationship.

Models of motivation based on stakeholder objective relationships need not be quantified or formalized, but the fact that each objective pair has unique motivating factors (and affiliated feedback) is the important point for practitioners invoking a systemic thinking perspective. When creating feedback mechanisms, care should be taken to avoid vicious circles and promote virtuous circles, as described by the *principle of circular causality* (Korzybski, 1994). As such, it may be necessary to use a hierarchy of regulation as described by the *principle of requisite hierarchy* (Aulin-Ahmavaara, 1979), in order to achieve ample regulatory control and motivational feedback.
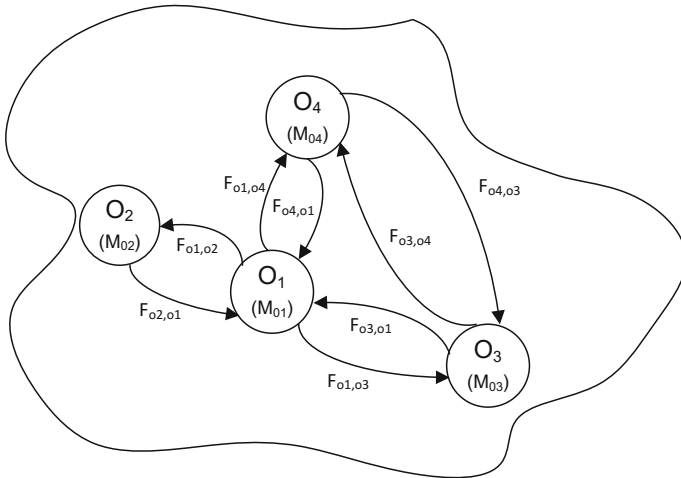
Fig. 8.6 Stakeholder objective relationship with motivation (*M*) and feedback (*F*) signals

8.6   Framework for Addressing *Why* in Messes and Problems

Addressing the *why* perspective requires that we complete the following steps for an identified problem:

1. Examine our FCM and its stakeholder objective relationships. Pay specific attention to the motivation/feedback cycles exhibited by each stakeholder's objective(s).
2. If necessary, modify the FCM by adding additional concepts and/or connections as appropriate to ensure feedback is provided for stakeholder objectives.
3. If these connections do not exist in the real system but they should, make note of them as changes to propose during the *Act* stage.

The following section demonstrates each step on our real estate problem.

8.7   Example Problem

We return to our real estate example pictured in Fig. 8.7.
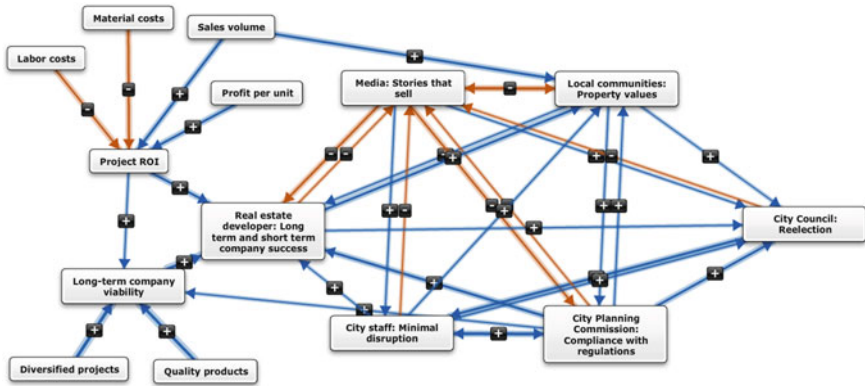
Fig. 8.7 Real estate example FCM

8.7.1 Motivation/Feedback Analysis

If we are interested primarily in *long-term and short-term company success (abbreviated company success)*, then we can make a few observations regarding its feedback loops:

- *Stories that sell* and *company success* are involved in a virtuous circle (assuming we believe that less media is a positive). As *company success* goes up, *stories that sell* go down. As *stories that sell* go down, the *company success* goes up, and so on. Motivationally, this causes the media (whose objective is maximizing stories that sell) to become less interested in the story. As the developer, this is a positive for us.
- The only other direct feedback loop exists between *company success* and *property values*. As *company success* goes up, *property values* go up. As *property values* goes up, *company success* goes up, and so on. This is another virtuous circle. If property owners see their property values go up as a result of the development, they will be supportive and maintain interest in the project.
- No direct feedback loops exist between *company success* and *minimal disruption*, *compliance with regulations*, and *reelection*. However, each provides feedback indirectly:

  - An increase in *company success* causes an increase in *reelection*, which causes *minimal disruption* to increase. This in turn causes a rise in *company success*.
  - An increase in *company success* also causes a decrease in *stories that sell*, which causes a decrease in *compliance with regulations*. This does not make sense. So, we have found an inconsistency. The FCM can be modified by removing this connection. Under the revised scenario, an increase in *company success* causes an increase in *property values*, which causes an increase in *compliance with regulations*. This in turn causes an increase in *company success*.
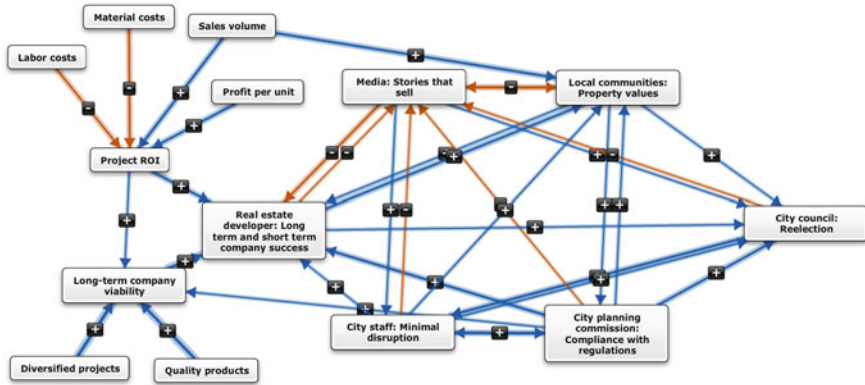
Fig. 8.8 Updated FCM with feedback analysis incorporated

8.7.2 FCM Update

Our feedback analysis in the previous subsection indicates the need to remove the causal link from *stories that sell* to *compliance with regulations*. This change is reflected in Fig. 8.8.

8.7.3 Proposed Changes During Act Stage

No proposed changes to the FCM are required during the Act stage; however, if we feel it is necessary, we could investigate the creation of a direct feedback loop between *company success* and *minimal disruption*, *compliance with regulations*, and *reelection*. In terms of feedback, this would expedite communication between the relevant stakeholders. However, it may also unnecessarily complicate the interactions between these entities.

8.8 Summary

Utilization of a formal model for motivation, based on the generic processes depicted in Fig. 8.4, may prove useful when attempting to understanding messes and their constituent problems. The initial and continued motivation serves as the incentive, the stimulus, and the inspiration for continued involvement. Using a cybernetic model with clear feedback loops ensures continued performance by ensuring goals remain synchronized with the individual and situational characteristics that form the context of the messes and constituent problems. This provides a

congruent, current, and logical framework for achieving goals and objectives developed to address the elements of the messes and associated problems.

After reading this chapter, the reader should

1. Be aware of the wide variety of motivational theories.
2. Be able to describe the generalized control theory of motivation.
3. Be able to describe the principles from systems theory that are satisfied by a generalized control theory of motivation.

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