# Psicologia dei Gruppi e delle Relazioni Sociali

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**Theoretical Lessons (Part 1):**

1- An *introduction to the group dynamics (1)*
2- An *introduction to the group dynamics (2)*
3- *Studying Groups*
4- *Inclusion and Identity*
5- *Formation*
6- *Cohesion and Development*
7- *Structure*
8- *Influence*
9- *Power*
10- *Leadership*
11- *Performance*
12- *Decision Making*
13- *Teams*
14- *Conflict*
15- *Intergroup Relations*
16- *Groups in Context*
17- *Groups and Change*

**Experimental activity (Part 2):**

18- *From cognition to social simulation*
19- *Research in group dynamics*
20- *Community detection*
21- *Epidemic Modeling*
22- *The virtual settings*
23- *Reputation dynamics*
24- *Collective Intelligence*
25- *Group reasoning*
26- *Crowd dynamics*
27- *Social influence: new perspectives*
28- *Personality, Self and Identity (I)*
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30- *Constructing the Self in a Digital World*
31- *Self Disclosure, Privacy and the Internet*
32- *Understanding the On-line behaviour*

# Lesson: 11 - (1/4)
# Title: Performance

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## *Lesson 11 Outline*

- ***Social Facilitation***
  - *Studies of Social Facilitation*
  - *Why Does Social Facilitation Occur?*
  - *Conclusions and Applications*

- ***Process Losses in Groups***
  - *The Ringelmann Effect*
  - *Motivation Loss: Social Loafing*
  - *Causes of and Cures for Social Loafing*
  - *Coordination Problems in Groups*

- ***Process Gains in Groups***
  - *Brainstorming*

*People join with others in groups to get things done. Groups are the world's workers, protectors, builders, decision makers, and problem solvers. When individuals combine their talents and energies in groups, they accomplish goals that would overwhelm individuals. People working collectively inevitably encounter problems coordinating their efforts and maximizing effort, but groups are the crucible for creativity.*

**T A B L E   10.1       Some of the Many Goals Accomplished by Groups**

| Purpose of the Group | Typical Groups |
| --- | --- |
| Accomplish heavy, arduous tasks | Construction crew, assembly line, expeditionary team |
| Administer a company or organization | Executive committee, trustees, regents, administrators |
| Advise others | Consulting group |
| Build and repair | Roofers, team of carpenters, auto shop |
| Discover new information | Research team, professional society |
| Effect social change | Citizens action group, political party |
| Entertainment–fine arts | Orchestra, dance company, drama troupe |
| Entertainment–informal | Parties, dinners, cook-outs |
| Entertainment–leisure | Hobby club, discussion group, book club |
| Entertainment–sports | Baseball team, soccer club, intramural team |
| Heal members and nonmembers | Surgery team, emergency room staff |
| Home life and care of relatives | Families, communes, kibbutzim |
| Maintain and enforce the law | Police, citizen security groups, judicial groups |
| Make resources available | Bank, rental agency |
| Observe and celebrate | Patriotic society, veterans' groups |
| Plan strategy, direct others, lead | Executives, board of directors |
| Production | Factory, production line |
| Protect members from harm | Neighborhood watch association, gangs, platoons, police units, army |
| Reduce costs for members | Buyers' cooperative, trade association |
| Reduce monotony | Quilting groups, cohesive work teams |
| Render decisions on guilt | Jury, hearing panel |
| Respond to problems | Firefighters, paramedic squad |
| Set standards for others to follow | Legislative body, ethics review board |
| Solve problems | Committee, commission, task force, research staff |
| Teach and learn | School, class, study group |
| Transport | Airplane crew, ship captain and crew |
| Worship | Religious body, congregation, cult, sangha, ashram |

SOURCE: Adapted from Arrow, McGrath, & Berdahl, 2000; Devine, 2002; Zander, 1985.

**Social Facilitation**
*Improvement in task performance that occurs when people work in the presence of other people.*
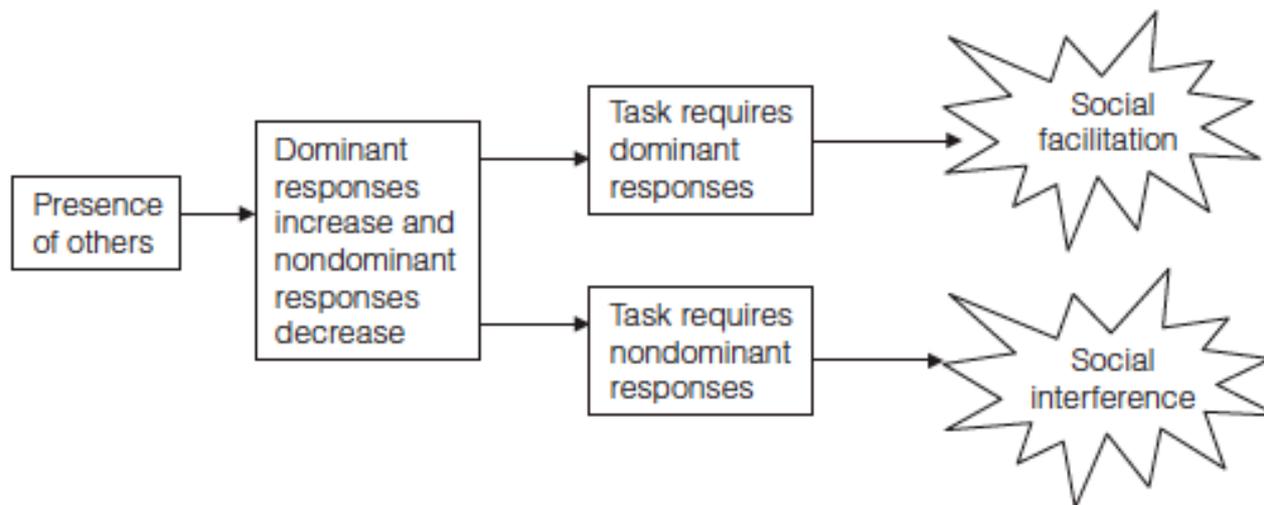


**F I G U R E  10.1**   Zajonc's theory of social facilitation. Zajonc (1965) integrated previous research by noting that people display more dominant responses, and perform such behaviors more rapidly, when others are present. If the dominant response is appropriate in the situation, the presence of others is facilitating. If, however, the situation calls for a nondominant response, the presence of others will interfere with performance.

## *Social Facilitation*
### *Why Does Social Facilitation Occur?*

- Zajonc's analysis explained when social facilitation occurs, but the why is less certain (see Aiello & Douthitt, 2001; Strauss, 2002; Uziel, 2007).

- ***Zajonc's drive theory*** uniquely predicts that ***social facilitation will occur even when all forms of social interaction, communication, and evaluation between the individual and the observer are blocked.*** Even though the observer could not interact with participants in any way, his ***mere presence still enhanced their performance when they worked on simple tasks and slowed their performance on complex ones*** (Schmitt et al., 1986).

- Researchers have found evidence of ***increased heart rate and blood pressure, with the impact of physiological effects dependent on the type of situation and on who is watching*** (James Blascovich, 1999)

- ***When women performed a difficult math test with a friend who was merely present —the friend could touch the participant's wrist but was preoccupied with another task and was wearing a headset that blocked all sound—the participant's cardiovascular responses were lowered*** (Kamarck, Manuck, & Jennings, 1990).

- ***fMRI*** studies shown how ***"Thinking about social relationships is apparently part of the brain's default state circuitry"*** (Iacoboni et al., 2004, p. 1171).

# *Social Facilitation*

**T A B L E  10.2**  **A Sampling of Empirical Demonstrations of Social Facilitation and Inhibition**

| Situation | Findings |
| --- | --- |
| Making speeches | When asked to write out as many words as they could in response to a word, most people (93%) produced more words when another person was present than when they were alone (Allport, 1920). When this study was replicated with individuals who stuttered when they spoke, 80% of the subjects produced more words when alone rather than with another person (Travis, 1928). |
| Handwriting | College students were told to copy a list of words as quickly as they could. For one list they wrote with their dominant hand (easy task), but for the other list they used their nondominant hand (hard task). They completed the task in the presence of an image of their favorite television personality (displayed on a computer screen) or an image of another character from the same program. When the task was easy they wrote more words in the presence of their favorite character; when the task was difficult, the favorite character inhibited their performance (Gardner & Knowles, 2008). |
| Getting dressed | People were asked to perform a familiar task (taking off their own shoes and socks) and a less familiar task (putting on a robe that tied in the back) when alone and when with another person. People removed their shoes and socks three seconds faster if another person was in the room. They were even faster—by two seconds on average—when the observer watched as they removed their footwear. In contrast, they donned the unfamiliar clothes more slowly when the observer was present and watchful (Markus, 1978). |
| Shooting pool | People playing pool were surreptitiously watched to identify skilled and unskilled players. Skilled players made at least two-thirds of their shots, and unskilled players missed at least two-thirds. The observer then moved near the pool table and watched their play. Skilled players' performance improved 14% when they were observed, but unskilled players' performance dropped by more than 30% (Michaels et al., 1982) |
| Driver's test | Individuals seeking their license to drive an automobile took their driving test with only the tester in the car or with another test-taker in the car, seated in the rear seat. Forty-nine percent of the applicants passed the test when alone, but only 34% passed when an audience was present (Rosenbloom et al., 2007). |
| Jogging | Solitary women jogging along a footpath encountered, when they rounded a bend, a woman who either watched them as they ran or sat facing away from them. Joggers accelerated when they encountered the watchful observer (Worringham & Messick, 1983). |

## Social Facilitation

### Evaluation Apprehension Theory

*An analysis of performance gains in groups arguing that individuals working in the presence of others experience a general concern for how these others are evaluating them, and that this apprehension facilitates their performance on simple, well-learned tasks (Cottrell, 1972).*

### Self-Presentation Theory

*An analysis of performance gains in groups assuming that social facilitation is caused by individuals striving to make a good impression when they work in the presence of others (Goffman, 1959).*

## *Social Facilitation*

- ***When people find themselves in evaluative situations, they tend to perform dominant*** rather than nondominant responses (Seta et al., 1989).

- ***When individuals who were watched by an observer were told that the observer was evaluating them, their performance improved***, but only when they were working on a simple task (Bartis, Szymanski, & Harkins, 1988).

- ***When people who had already failed once tried the task a second time, they performed worse when others were present*** (Seta & Seta, 1995).

- ***Situational factors that decrease evaluation apprehension, such as allowing for private responses, unevaluative audiences, and the absence of a definable task that can be evaluated, often eliminate social facilitation effects*** (Henchy & Glass, 1968).

- Finally, ***individuals who are highly confident perform better when evaluated by others, whereas those who doubt their ability perform better when alone*** (Sanna, 1992).

# *Social Facilitation*

**Distraction-Conflict Theory**

*An analysis of performance gains in groups assuming that when others are present, attention is divided between the other people and the task; this attentional conflict increases motivation, and so it facilitates performance on simple, well-learned tasks.*

## *Social Facilitation*

**Cognitive Theories have suggested that the presence of others changes people's capacity to process information adequately.**

- When people work in the presence of other people, they must **split their attention** between the task they are completing and the other person (Guerin & Innes, 1982).
- The presence of an audience may also **increase individuals' self-awareness**, and as a result, they may **focus their attention on themselves and fail to pay sufficient attention to the task** (Mullen & Baumeister, 1987).

**Distractions, however, do not inevitably undermine performance. Distraction-conflict theory suggests that distraction interferes with the attention given to the task, but that these distractions can be overcome with effort.**

- **On complex tasks, the increase in drive is insufficient to offset the effects of distraction, and performance is therefore impaired** (Baron, 1986; Sanders, Baron, & Moore, 1978).
- But, oddly enough, **if people are working in the presence of other people and those people are not at all distracting, then social facilitation does not occur even when tasks are simple ones** (Bond et al., 1996; Sanders et al., 1978).

## Social Facilitation
## *Personalities Processes*

### Social Orientation Theory
**Suggests that people differ in their overall orientation towards social situations, and these individual differences in social orientation predict who will show facilitation in the presence of others and who will show impairment.**

*Social orientation theory suggests that people differ in their overall orientation towards social situations, and these individual differences in social orientation predict who will show facilitation in the presence of others and who will show impairment.*
*According to this theory, individuals who display a positive orientation are so self-confident that they react positively to the challenge the group may throw their way; for them, there is "safety in numbers."*
*Others, in contrast, can display a negative orientation.*

- Individuals with qualities that suggested their social orientation was positive usually showed social facilitation effects, whereas those with a negative orientation showed a social interference effect (Uziel, 2007).

# Social Facilitation
## *Personalities Processes*

**T A B L E  10.3     Four General Explanations of Social Facilitation**

| Theory | Mediating Process | Evidence |
|---|---|---|
| Drive theory (Zajonc, 1965) | *Unlearned drive*: The mere presence of others elevates drive levels; this drive triggers social facilitation when tasks are so easy that only dominant responses are needed to perform them. | ▪ People show signs of physiological arousal when others are present<br>▪ Many species perform basic tasks more efficiently in the presence of other species members<br>▪ Facilitative arousal occurs primarily for simple tasks |
| Evaluation apprehension theory (Cottrell, 1972) | *Motivational process*: Through experience, people learn to associate the presence of others with evaluation; this concern for evaluation facilitates performance on well-learned tasks. | ▪ The presence of others is facilitative only when the observers can evaluate the quality of the performance<br>▪ Facilitative effects are strongest when individuals are striving to make a good impression |
| Distraction-conflict theory (Baron, 1986; Sanders, 1981) | *Cognitive process*: When others are present, attention is divided between the other people and the task; attentional conflict increases motivation, which facilitates performance so long as the task is a simple one. | ▪ Recall is poorer when stimulus is presented in presence of others, suggesting others are distracting<br>▪ Facilitation is reduced if the others in the situation are not noticed<br>▪ Presence of others improves performance on interference tasks (e.g., the *Stroop Task*) |
| Social orientation theory (Uziel, 2007) | *Personality process*: Individuals who display a positive interpersonal orientation are more likely to display social facilitation effects. | ▪ Presence of others improves performance among individuals with high self-esteem and low anxiety<br>▪ Those with an attention-seeking tendency (exhibitionism) perform better than self-conscious individuals in coaction settings |

# Lesson: 11 – (2/4)
# Title: Performance

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## *Process Losses in Groups*

*Process Loss Reduction*
*In performance effectiveness or efficiency caused by actions, operations, or dynamics that prevent the group from reaching its full potential, including reduced effort, faulty group processes, coordination problems, and ineffective leadership.*

*Why might people working on group tasks fail to be as productive as they could be? Ivan Steiner*
*(1972), in his classic work Group Process and Productivity, drew on the concept of process losses to provide an answer.*

*His "law" of group productivity predicts that*

*Actual productivity = Potential productivity– Losses owing to faulty processes*

*Thus, even when a group includes skilled members who possess all the resources they need to accomplish their tasks, faulty group processes may prevent them from succeeding. When process losses proliferate, the group's chance to become greater than the sum of its parts dwindles.*

## *Process Losses in Groups*

> ### *Ringelmann Effect*
> *The tendency, first documented by Max Ringelmann, faor people to become less productive when they work with others; this loss of efficiency increases as group size increases, but at a gradually decreasing rate.*

*Ringelmann's most startling discovery was that workers—and that includes horses, oxen, and men—all become less productive in groups. Even though a group outperforms an individual, the group does not usually work at maximum efficiency.*

*Groups certainly outperformed individuals—but as more and more people were added, the group became increasingly inefficient The tendency for groups to become less productive as group size increases is now known as the Ringelmann effect (Kravitz & Martin, 1986)*

*Ringelmann identified two key sources of process losses when people worked together.*

- First, Ringelmann believed some of the decline in productivity was caused by motivation losses: people may not work so hard when they are in groups.
- Second, coordination losses, caused by "the lack of simultaneity of their efforts" (Ringelmann, 1913),
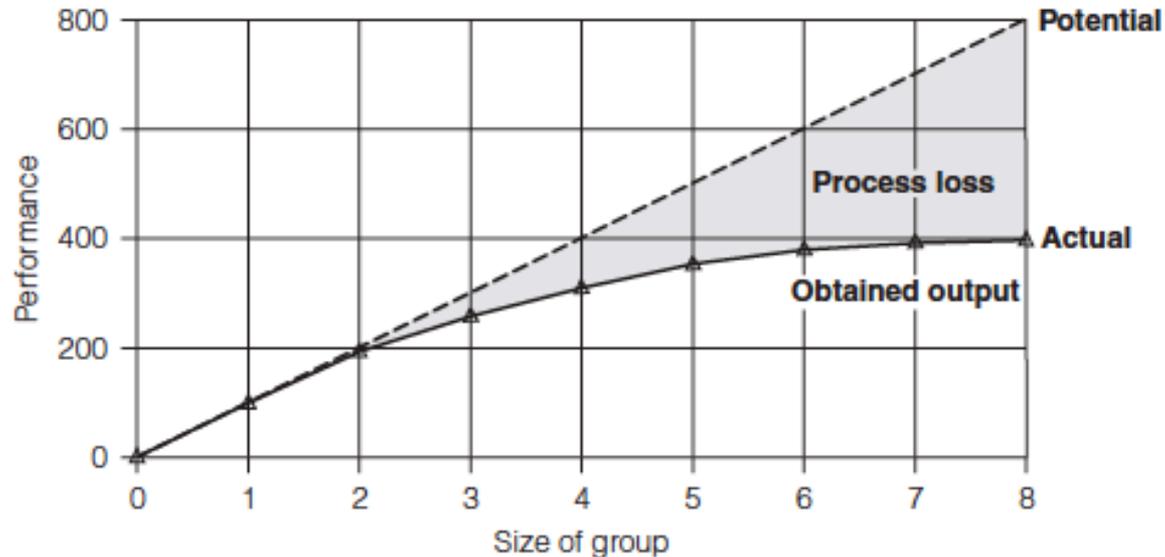
# *Process Losses in Groups*



**FIGURE 10.2** The Ringelmann effect. Ringelmann (1913) recorded how much work single individuals did as well as the output of groups ranging in size from two to eight members. If a group's performance was based strictly on members' individual efforts, then a two-person group could produce 200 units, a three-person group could produce 300 units, and so on. Ringelmann found much less productivity. The means for his groups were 186, 255, 308, 350, 378, 392, and 392.

SOURCE: Based on data presented in Group Processes and Productivity by I.D. Steiner. © 1972 by Academic Press

# Process Losses in Groups

> ## Social Loafing
> **The reduction of individual effort exerted when people work in groups compared to when they work alone.**



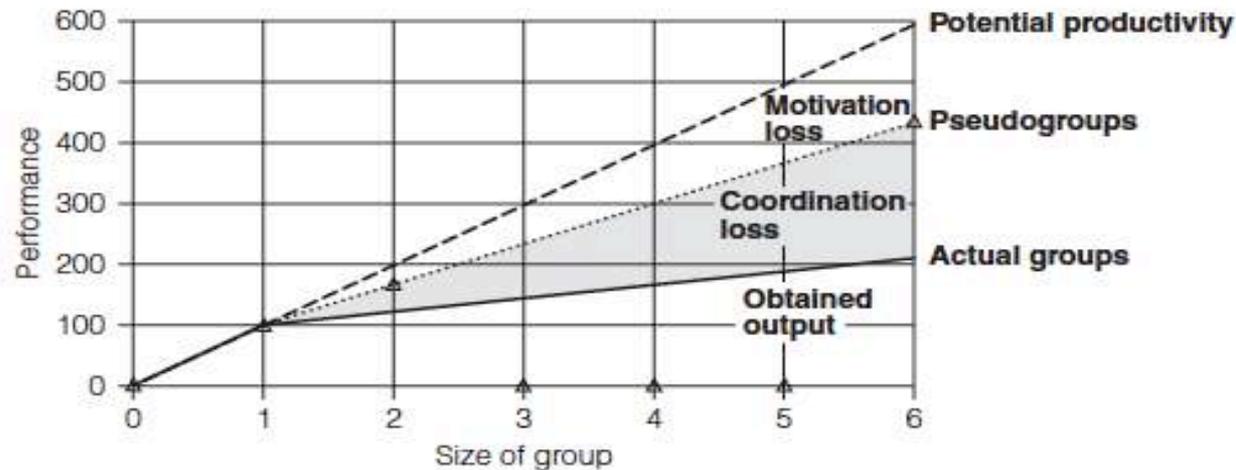**F I G U R E  10.3**  Social loafing and coordination losses in groups. Latané and his colleagues disentangled the two major causes of productivity losses in groups working on additive tasks by leading people to think they were working in groups when they actually were not. The people in these "groups" (labeled the "pseudogroups") suffered from motivation loss, but not from coordination loss since they were actually working alone. The unshaded portion represents motivation loss (social loafing), and the lightly shaded portion represents coordination loss. They combine to create the Ringelmann effect.

SOURCE: Adapted from "Many hands make light the work: The causes and consequences of social loafing: by B. Latané, K. Williams, & S. Harkins, Journal of Personality and Social Psychology, 37, 1979.

# *Process Losses in Groups*

***Increase Identifiability Studies of social loafing suggest that people are less productive when they work with others. But studies of social facilitation, discussed earlier in this chapter, find that people are more productive when others are present (at least when the task is easy). Which is it?***

Both. When people feel as though their level of effort cannot be ascertained because the task is a collective one, then social loafing becomes likely. But when people feel that they are being evaluated, they tend to exert more effort, and their productivity increases. If the task is an individualistic one, and is easy, the presence of other people increases evaluation apprehension, so social facilitation occurs.

- ***When group members are anonymous, and their contributions are unidentifiable, the presence of others reduces evaluation apprehension, and social loafing becomes more likely*** (Arterberry, Cain, & Chopko, 2007; Harkins & Szymanski, 1987, 1988; Jackson & Latané, 1981).

- In many studies ***loafing occurred not only when ideas were pooled, but also when the participants believed that their individual outputs were not comparable*** or could not be evaluated (Harkins & Jackson, 1985).

- ***When each individual member's output was identifiable, on the other hand, loafing was virtually eliminated*** (Hardy & Latané, 1986; Kerr & Bruun, 1981; Sanna, 1992; Williams et al., 1981).

# *Process Losses in Groups*

*Free Riding*
*Contributing less to a collective task when one believes that other group members will compensate for this lack of effort.*

*Sucker Effect*
*The tendency for individuals to contribute less to a group endeavor when they expect that others will think negatively of someone who works too hard or contributes too much (considering them to be a "sucker").*

## *Process Losses in Groups*

- ***Many students avoid group projects where the entire group receives the same grade***, because inevitably one or more members of the group will not do their share of the work (Hoffman & Rogelberg, 2001).

- ***When group members think that they are an indispensable part of the group***— perhaps because their contribution is unique or essential for the group's ***success—they work harder*** (Kerr & Bruun, 1983).

- ***They also free-ride less in smaller groups***, because each person plays a larger role in determining the group's outcomes (Kameda et al., 1992).

- But ***free riding sometimes increases when members become suspicious of the level of effort being invested by the other group members***. Rather than looking like a "sucker" by working harder than the others, group members reduce their efforts to match the level that they think other group members are expending. ***This sucker effect is strongest when they feel that their fellow group members are competent but lazy*** (Hart, Bridgett, & Karau, 2001).

# Lesson: 11 – (3/4)
# Title: Performance

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# *Process Losses in Groups*

### *Set Goals*

- ***Groups that set clear, challenging goals outperform groups whose members have lost sight of their objectives.*** (Latham & Baldes, 1975).

- In a study of groups generating ideas, ***members were more productive when they had a clear standard by which to evaluate the quality of their own work and the group's work*** (Harkins & Szymanski, 1989).

- Other research has suggested that ***clear goals stimulate a number of production-enhancing processes, including increases in effort, better planning, more accurate monitoring of the quality of the group's work, and increased commitment to the group*** (Weldon, Jehn, & Pradhan, 1991).

- ***The group's goals should also be challenging rather than too easily attained.*** The advantages of working in a group are lost if the task is so easy that it can be accomplished even if the group loafs, so care should be taken to set the standards high—but not so high that they are unattainable (Hinsz, 1995; Latham & Locke, 2007; Weldon & Weingart, 1993).

## *Process Losses in Groups*

### *Increase Involvement*

- *Loafing is less likely when people are involved in their work*. (Stark, Shaw, & Duffy, 2007).

- *So long as the competition remains "friendly," group members may persevere with much greater intensity when they are vying with others in the group for the best score* (Hinsz, 2005).

- *Challenging, difficult tasks reduce loafing*, but so do ones that will determine group members' personal outcomes—either by reward or by punishment (Brickner, Harkins, & Ostrom, 1986; Shepperd, 1993, 1995; Shepperd & Wright, 1989).

- *Social loafing is also reduced when rewards for successful performance are group-based rather than individually based*—so long as the group is not too large in size (DeMatteo, Eby, & Sundstrom, 1998) and the reward is divided nearly equally among all the group members (Honeywell-Johnson & Dickinson, 1999; Liden et al., 2004).

- *Involvement may even prompt group members to compensate for the expected failures or incompetencies* of their fellow group members by expending extra effort. (Williams, Karau, 1991)

# *Process Losses in Groups*

### *Social Compensation*
**The tendency for group members to expend greater effort on important collective tasks to offset the anticipated insufficiencies in the efforts and abilities of their co-members.**

### *Collective Effort Model (CEM)*
**A theoretical explanation of group productivity developed by Steven Karau and Kipling Williams that traces losses of productivity in groups to diminished expectations about successful goal attainment and the diminished value of group goals.**

### *Increase Identification with the Group*
**Social identity theory also suggests a way to reduce loafing: increase the extent to which group members identify with their group (Haslam, 2004).**

## *Process Losses in Groups*

*How well do groups perform on more complex tasks that require high levels of member coordination and collaboration?*

Steiner (1972) traced problems in coordination back to one key source: the type of task the group is performing.

- *Some tasks, require high levels of coordinated activity* on the part of groups and can only be completed when each group member provides his or her part of the puzzle.
- *Other tasks, in contrast, do not require very much in the way of coordinated action* on the part of the group members.

Steiner called the combination processes dictated by the problem or group activity *the task demands* and suggested that they vary depending on the divisibility of the task, the type of output desired, and the combination rules required to complete the task

*Task Demands*
*The effect that a problem or task's features, including its divisibility and difficulty, have on the procedures the group can use to complete the task.*

# *Process Losses in Groups*

**T A B L E   10.4      A Summary of Steiner's Taxonomy of Tasks**

| Question | Task Type | Qualities | Examples |
|---|---|---|---|
| **Component**: Can the task be broken down into sub-tasks? | Divisible | The task has subcomponents that can be identified and assigned to specific members | Playing a football game Preparing a six-course meal |
| | Unitary | The task does not have sub-components | Pulling on a rope Reading a book |
| **Quantity versus quality**: Is quantity produced more important than quality of performance? | Maximizing | *Quantity*: The more produced the better the performance | Generating many ideas Lifting a great weight Scoring the most goals |
| | Optimizing | *Quality*: A correct or optimal solution is needed | Developing the best answer Solving a math problem |
| **Interdependence**: How are individual inputs combined to yield a group product? | Additive | Individual inputs are added together | Pulling a rope Shoveling snow |
| | Compensatory | A decision is made by averaging together individual decisions | Estimating a pig's weight by asking three people to guess and averaging their guesses Averaging ratings of job applicants |
| | Disjunctive | The group selects one solution or product from a pool of members' solutions or products | Picking one person's answer to a math problem to be the group's answer Letting one art project represent the entire school |
| | Conjunctive | All group members must contribute to the product for it to be completed | Climbing a mountain Eating a meal as a group |
| | Discretionary | The group decides how individual inputs relate to group product | Deciding to shovel snow together Choosing to vote on the best answer to a problem |

SOURCE: Adapted from *Group Processes and Productivity* by I. D. Steiner. Copyright © 1972 by Academic Press.

# Lesson: 11 - (4/4)
# Title: Performance

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# *Process Losses in Groups*

### *Divisible Task*
*A task that can be broken down into subcomponents that can then be assigned to individuals or to subgroups within the group.*

### *Unitary Task*
*A task that cannot be performed piecemeal because it does not break down into any subcomponents.*

### *Maximizing Task*
*A task or project that calls for a high rate of production.*

### *Optimizing Task*
*A task or project that has a best solution and outcome, thus the quality of the group's performance can be judged by comparing the product to a quality-defining standard.*

### *Additive Task*
*A task or project that a group can complete by cumulatively combining individual members' inputs.*

### *Compensatory Task*
*A task or project that a group can complete by literally averaging together (mathematically combining) individual members' solutions or recommendations.*

# *Process Losses in Groups*

### *Disjunctive Task*
**A task or project that is completed when a single solution, decision, or recommendation is adopted by the group.**

### *Intellective Task*
**A project, problem, or other type of task with results that can be evaluated objectively using some normative criterion, such as a mathematics problem with a known solution or the spelling of a word.**

### *Judgmental Task*
**A project, problem, or other type of task with results that cannot be evaluated objectively because there are no clear criteria to judge them against conjunctive task A task that can be completed successfully only if all group members contribute.**

### *Discretionary Task*
**A relatively unstructured task that can be completed by using a variety of social combination procedures, thus leaving the methods used in its completion to the discretion of the group or group leader.**

## *Process Losses in Groups*

### *Synergy*
*The combining of two or more independent systems that yields an effect that is greater than the sum of the individual effects.*

### *Assembly Bonus Effect*
*Producing an outcome as a group that is superior to the results that could have been achieved by a simple aggregation or accumulation of group members' individual efforts; a gain in performance that is caused by the way the members fit together to form the work group.*

### *Köhler Effect*
*An increase in performance by groups working on conjunctive tasks that require persistence but little coordination of effort and is likely due to the increased effort expended by the less capable members.*

# *Process Gains in Groups*

**T A B L E  10.5    A Summary of the Potential Productivity of Groups Working on Various Tasks**

| Type of Task | Productivity Effect |
|---|---|
| Additive | *Better than the best*: The group exceeds the performance of even the best individual member. |
| Compensatory | *Better than most*: The group exceeds the performance of a substantial number of the individual members. |
| Disjunctive | *Better than average and sometimes equal to the best*:  The group performs best if it accepts the most capable member's input as the group solution; groups rarely perform *better than the best* member (synergy, or assembly bonus effect). |
| Conjunctive: Unitary | *Equal to the worst*: The group equals the performance of its least capable member. |
| Conjunctive: Divisible | *Better than the worst*: Performance will be superior if subtasks are matched to members' capabilities. |
| Discretionary | *Variable*: Performance depends on the combination rules adopted by the group. |

## *Process Gains in Groups*

*When people work in groups, they sometimes gain new solutions, energy, and insights*
*into old problems that they would never have achieved as individuals. If good group processes can yield benefits for groups, then the revised law of productivity states*

A =  Actual productivity
P = Potential productivity
L =  Losses owing to faulty processes
G = Gains owing to good processes

$$A = P - L + G$$

# Process Gains in Groups

### Brainstorming
*A method for enhancing creativity in groups that calls for heightened expressiveness, postponed evaluation, quantity rather than quality, and deliberate attempts to build on earlier ideas.*

# *Process Gains in Groups*

*The method was developed by Alex Osborn (1957), an advertising executive, to help his colleagues identify novel, unusual, and imaginative solutions. The technique requires an open discussion of ideas, and is guided by the four basic rules:*

*Be expressive. Express any idea that comes to mind, no matter how strange, wild, or fanciful. Do not be constrained or timid; freewheel whenever possible.*

*Postpone evaluation. Do not evaluate any of the ideas in any way during the idea-generation phase. All ideas are valuable.*

*Seek quantity. The more ideas, the better. Quantity is desired, for it increases the possibility of finding an excellent solution.*

*Piggyback ideas. Because all ideas belong to the group, members should try to modify and extend others' ideas whenever possible.*

*Brainstorming is conducted in a group, so that participants can draw from one another.*