



Health Behaviours: What Determines Behaviour?

The Psychology of Exercise and Physical Activity

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Measurement of motivation?

- ◆ How can we go about this?
- ◆ EMI-2 – examined last year...
- ◆ What else is out there?
- ◆ Different types of methods?
- ◆ Identify 4 different ways of measuring motivation to take part in PA / Exercise / Sport.
- ◆ Be prepared to discuss these
- ◆ Why older Australians participate in exercise and sport article...

Learning Outcomes

- ◆ By the end of today's lecture, you should:
 - ◆ Understand a range of models to predict health related behaviour
 - ◆ Health Belief Model
 - ◆ Theory of Planned Behaviour
 - ◆ Transtheoretical Model
 - ◆ Self Efficacy Theory
 - ◆ Self Determination Theory

Motivation:

- 💧 To start / maintain healthy behaviours...
- 💧 Where does this come from?
- 💧 Why do you exercise / eat healthily?
- 💧 Why don't you?...Barriers to healthy behaviours?

Summary of exercise determinants

- ◆ Determinants of Exercise Adherence – examined in detail the other week...
 - ◆ Available time
 - ◆ Behavioural coping skills
 - ◆ Equipment and facility accessibility
 - ◆ Exercise self efficacy
 - ◆ Group cohesion
 - ◆ High risk of heart disease
 - ◆ Intrinsic motivation
 - ◆ Personal perception of good health
 - ◆ Social support

Determinants of Exercise Non-adherence

- 💧 Working in manual occupations
- 💧 Being overweight or obese
- 💧 Physical discomfort during exercise
- 💧 Being a smoker
- 💧 Social physique anxiety

Interventions....Research findings...

Effects of prescribing moderate versus higher levels of intensity and frequency. **Adherence** to **exercise** prescriptions

- ◆ Perri, M. G. et al. (2002)
- ◆ Sedentary adults (N = 379) were randomly assigned in a 2 x 2 design to walk 30 min per day at a frequency of either 3-4 or 5-7 days per week, at an intensity of either 45%-55% or 65%-75% of maximum heart rate reserve.
- ◆ Analyses of **exercise** accumulated over 6 months showed greater amounts completed in the higher frequency ($p = .0001$) and moderate intensity ($p = .021$) conditions.
- ◆ Analyses of percentage of prescribed **exercise** completed showed greater **adherence** in the moderate intensity ($p = .02$) condition.
- ◆ Prescribing a higher frequency increased the accumulation of **exercise** without a decline in **adherence**, whereas prescribing a higher intensity decreased **adherence** and resulted in the completion of less **exercise**.

Key message?

The effect of life events and **exercise** program format on the adoption and maintenance of **exercise** behavior.

- ◆ Oman, R.F. (2000)
- ◆ Investigated the effects of major life events on subsequent **exercise adherence** rates of individuals (N = 173) participating in a 2-year, randomized, controlled clinical trial of 3 different **exercise** conditions (higher-intensity home-based; lower-intensity home-based; and higher-intensity class-based).
- ◆ Compared with participants reporting 0 or 1 major life event, **exercise adherence** in the maintenance phase was significantly lower for those reporting 3 or 4 major life events regardless of the **exercise** condition.
- ◆ No significant life-event-**exercise-adherence** relationship was found in the adoption phase of **exercise** participation (i.e., Months 1 to 6).
- ◆ The effect of life events emphasizes the importance of instruction regarding coping with high-risk situations that can lead to missed **exercise** sessions or to program attrition.
- ◆ Practical implications?

Groupness and **adherence** in structured **exercise** settings. Spink, K.S. (2010)

- ◆ This study examined the relationship between groupness and self-reported **exercise adherence**.
- ◆ **Exercise** participants (N = 86) recalled a structured setting where they had been active with others during the last six months.
- ◆ To capture groupness, five group variables (i.e., common fate, mutual benefit, social structure, group processes, and self-categorization) were assessed.
- ◆ Groupness was positively related to self-reported **adherence** explaining 20% of the variance in **adherence**.
- ◆ These findings provide preliminary support for the idea that perceiving a collection of **exercise** participants as being more like a group may be associated with **adherence** in a structured **exercise** setting.
- ◆ **Practical implications?**

Models of health behaviour...

- ◆ Health and Exercise Psychology Textbooks – Chapter 14 (Moodle)
- ◆ Articles.

Models of behaviour....



HEALTH BELIEF MODEL – (Becker, 1979; Becker et al., 1977; Becker & Rosenstock, 1984; Rosenstock, 1966)

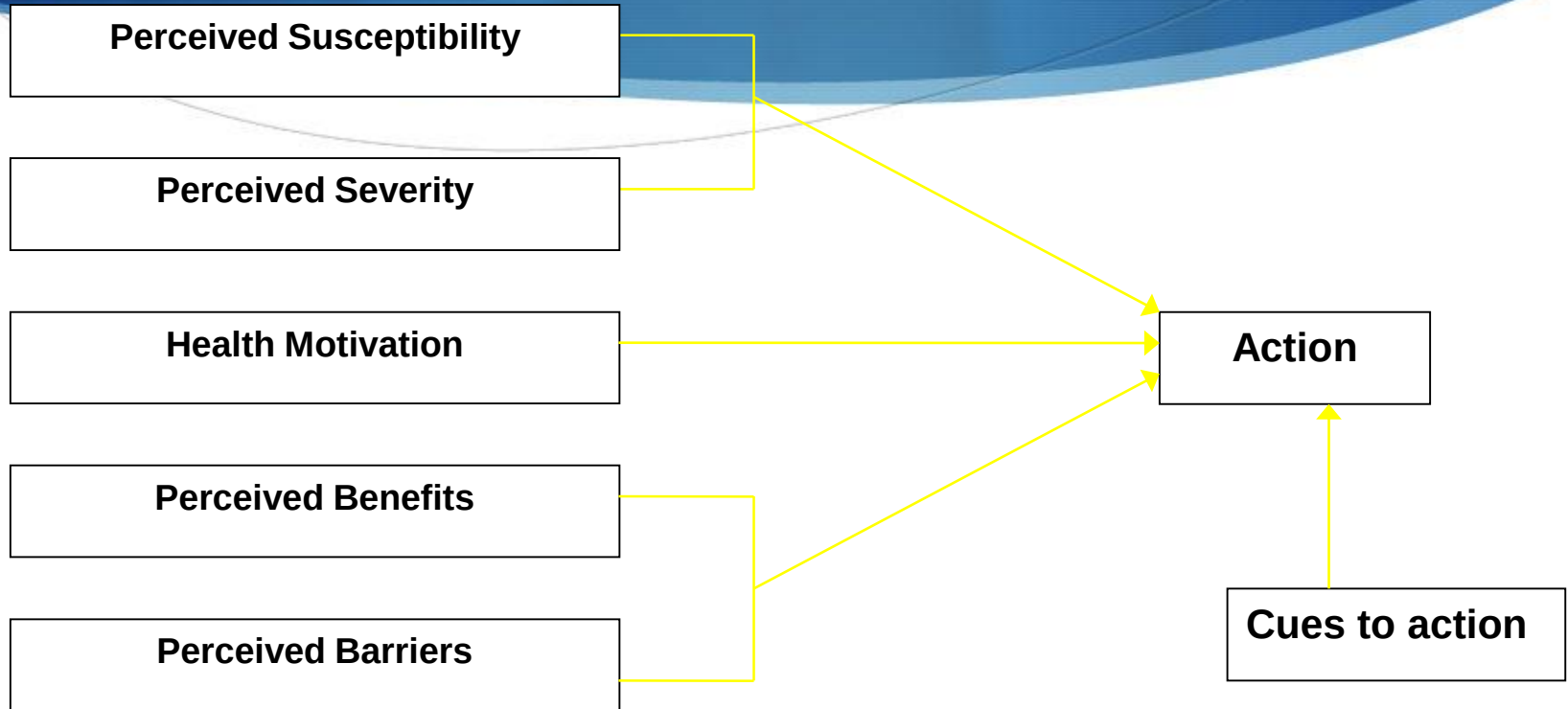
Proposes that people will not seek preventive health behaviours unless:

- 💧 a) they possess at least minimal levels of motivation and knowledge
- 💧 b) view themselves as potentially vulnerable
- 💧 c) view their condition as threatening

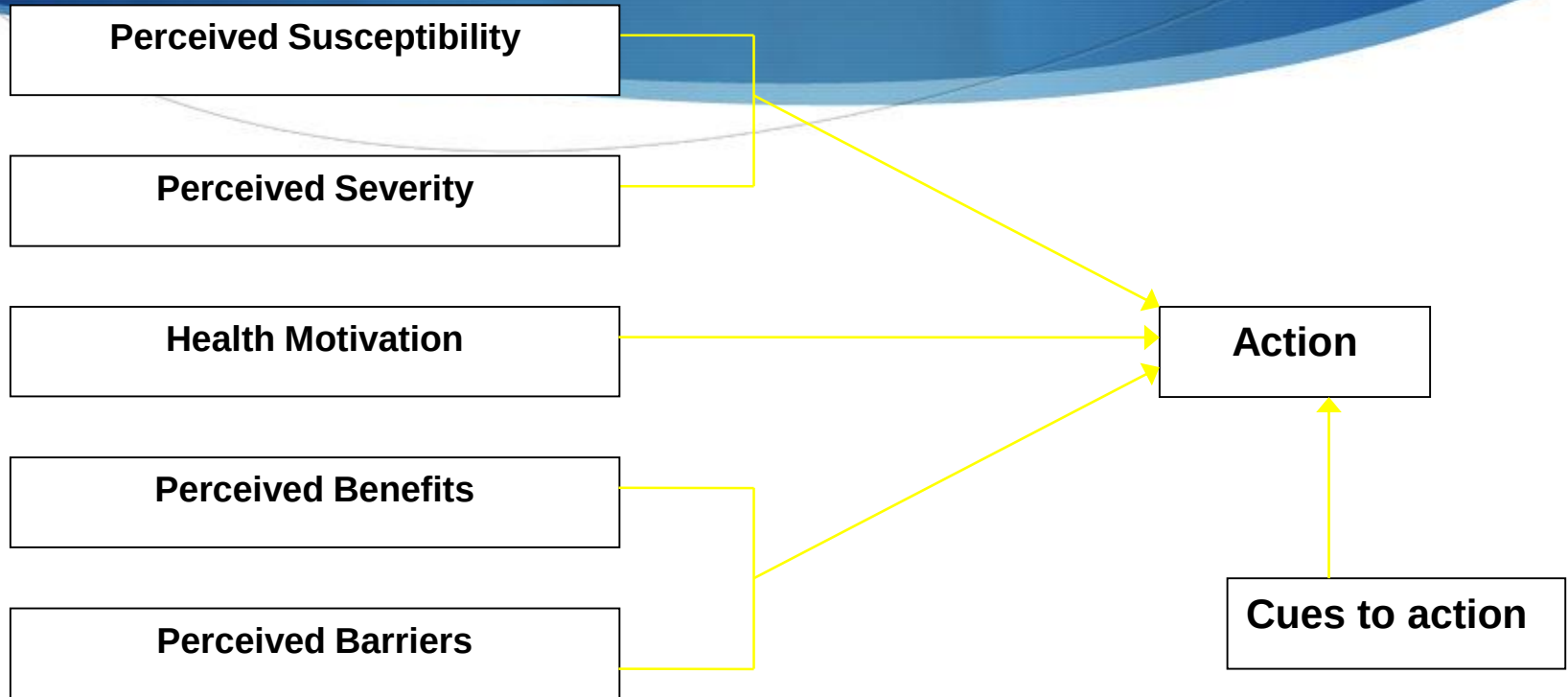
HEALTH BELIEF MODEL - Janz & Becker (1984)

- ◆ d) are convinced of the efficacy of their action and “treatment”
- ◆ e) see few difficulties in undertaking the action.
- ◆ *However, this model is largely social-psychological & oriented towards illness cure and prevention rather than health promotion.*
- ◆ *Therefore fails to account for other important factors. What about people who don't feel threatened?*
- ◆ *Cues to action??*
- ◆ *Practical implications – how can you get people 'to be aware'?*

Health Belief Model



Health Belief Model:



Practical application of HBM...

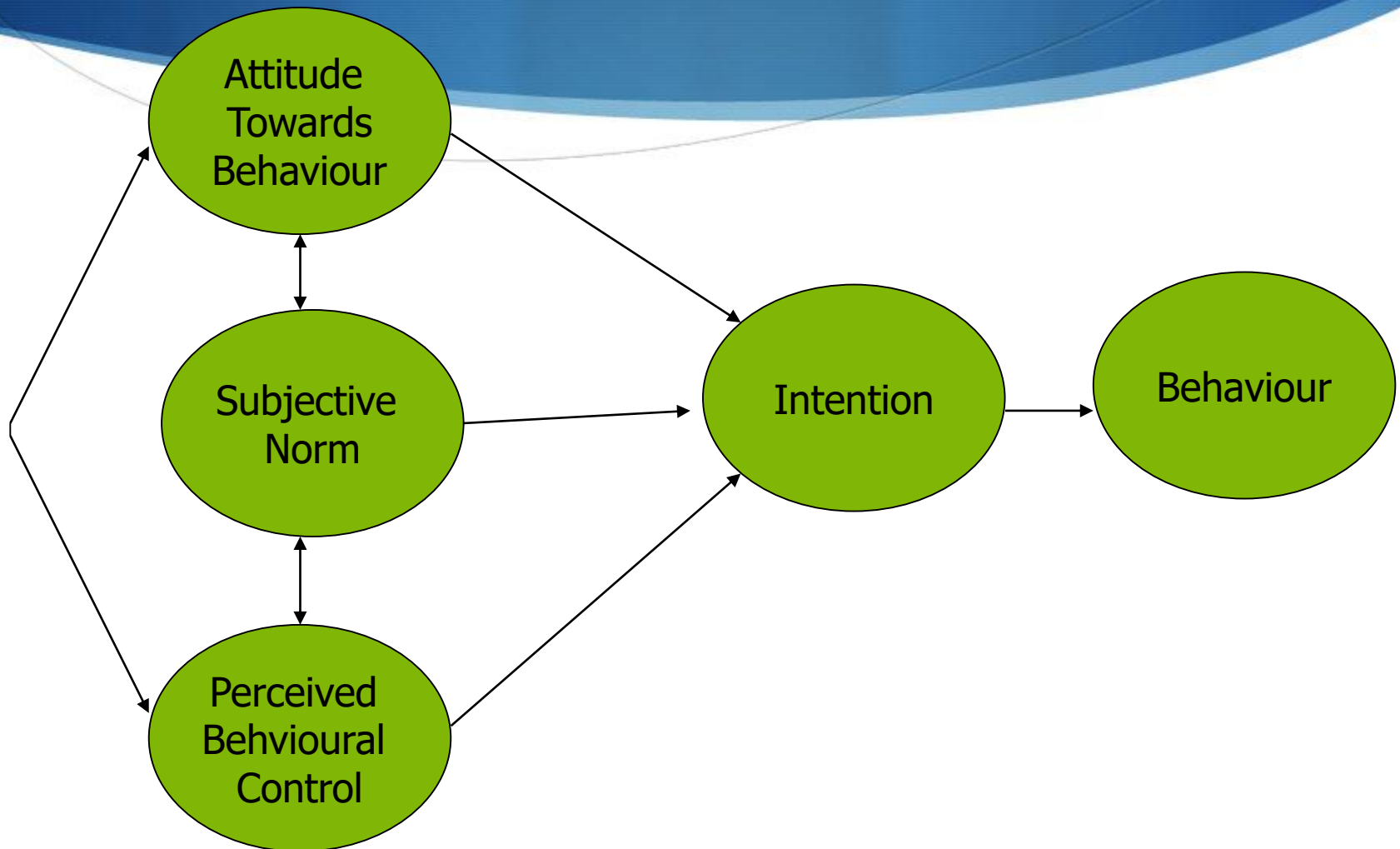
Discuss two hypothetical examples in relation to exercise / smoking / excessive alcohol intake / poor diet

Theory of Planned Behaviour

- 💧 Proposes that - Behavioural intentions lead to health behaviour...
- 💧 Made up of 3 components:
 - 💧 Attitudes towards the behaviour
 - 💧 Subjective norms
 - 💧 Perceived behavioural control

Discuss two hypothetical examples in relation to
exercise / smoking or excessive drinking (alcohol)
/ diet

Theory of Planned Behaviour Ajzen (1991)



What does the research say about TPB?

- ◆ Perceived behavioural control?
- ◆ Subjective norms and behavioural intentions?
- ◆ Attitudes and beliefs?
 - ◆ Studies we have already looked at...

What about the dynamic nature of the above?

Application of theory to practice...

- ◆ Summarise the TPB research paper provided on Moodle.
- ◆ Does this support the theories predictions?
- ◆ What are the practical implications that can be taken from this study? (p.10)
- ◆ How do the findings for this population group differ to others examined? (p.8)
- ◆ Problems with using theories...

Stage models...

STAGES OF CHANGE MODEL -

Prochaska & DiClemente (1983) Prochaska, DiClemente & Norcross (1992)

- ◆ Developed as a framework to describe the different phases involved in the acquisition and maintenance of behaviour.
- ◆ They suggest that individuals engaging in a new behaviour move in a progressive manner through the stages of pre-contemplation to maintenance

STAGES OF CHANGE MODEL

- 💧 **Important points to consider :**
- 💧 The model's strength is its focus on the dynamic nature of health behaviour change.
- 💧 Exercise is not a linear behaviour, it's a lifestyle behaviour
- 💧 Behaviour change is not an all-or-nothing phenomenon
- 💧 Individuals who stop performing a behaviour may intend to start again

Stage Theories: The Transtheoretical model

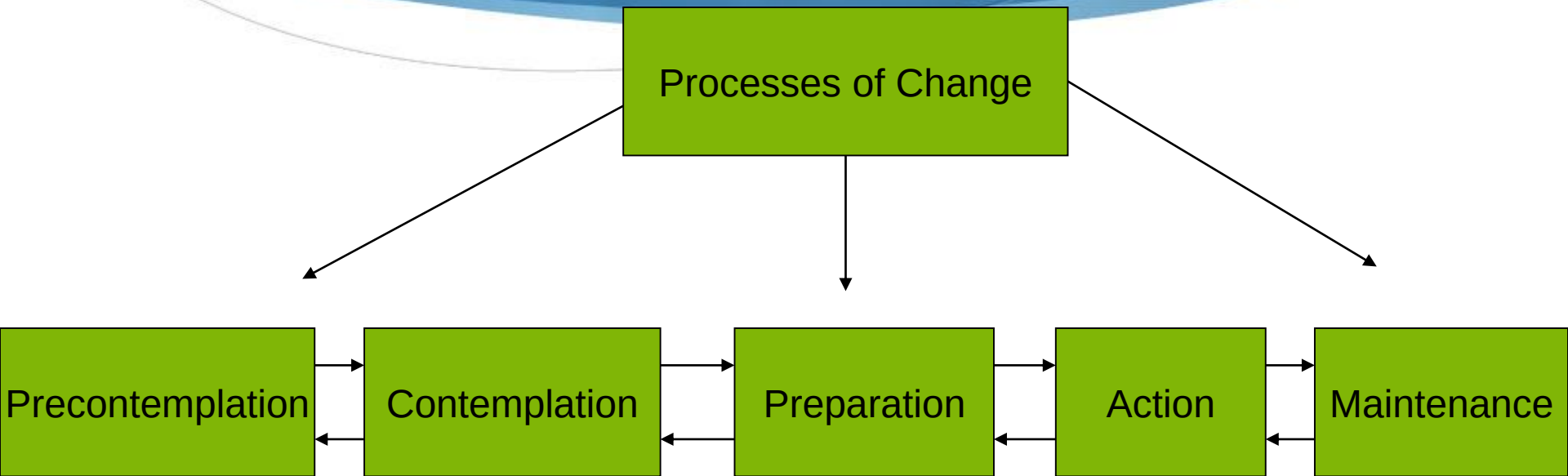


Figure 1: Stages of change

STAGES OF CHANGE MODEL - Prochaska & DiClemente

- ◆ Stages of Change is the most frequently employed model in health promotion, it can be applied to exercise, smoking or shopping equally
- ◆ But, the success of a campaign is based on matching clients to stages
- ◆ Different stages of the exercise process require different motivators.
- ◆ The amount of progress people make as a result of intervention is a function of the stage they are in at the start of treatment.

STAGES OF CHANGE MODEL - Prochaska & DiClemente

- ◆ Rate of progression varies between individuals
- ◆ Some people get “stuck” at a stage , others “slide back” to earlier stages
- ◆ People will drop into, and out of, exercise programmes.
- ◆ Devise & prepare a good relapse strategy within exercise programmes

Pre-contemplation

- ◆ Individuals do not intend to change high risk behaviours – 6 months
- ◆ Smokers (Prochaska & Marcus, 1994) precontemplation – 2 years
 - ◆ As a group, precontemplators view pro's of their risk behaviour as greater than the con's.
- ◆ Individuals may be at this stage due to:
 - ◆ Uninformed of long term consequences
 - ◆ Demoralised about ability to change
 - ◆ Defensive due to social pressure

Contemplation

- 💧 Seriously intend to change in next 6 months
- 💧 2 years – stable
- 💧 Chronic contemplators
- 💧 Pro's and con's are about equal – hence ambivalence

Preparation

- 💧 Intention to take action in near future – usually the next month.
- 💧 Have plan of action – some activity and behaviour modification in past year.
- 💧 Not reaching criterion levels
- 💧 Intentional and behavioural criteria
- 💧 Downside of risk behaviour seen as greater than the pro's
- 💧 Not a stable stage

Action

- 💧 Overt behavioural changes have occurred in the last 6 months
- 💧 Busiest stage – most processes of change being used
- 💧 Least stable stage – relapse
- 💧 Smoking example – 50 or 75% / low tar
- 💧 Action criterion = stopping smoking
- 💧 Stages of change model originated from changing smoking behaviour (Marcus & Owen, 1992)

Maintenance – 6 months onwards

- ◆ 6 months after the criterion has been met until risk of reverting has terminated.
- ◆ Period of continued change although fewer processes needed to prevent relapse.
- ◆ 5 years!
- ◆ Smoking – 12 months enough time?
- ◆ U.S. Department of Health & Human Services (1990) found even after 12 months – 37% will return to smoking. After 5 yrs = 7%

Termination

- ◆ No temptation to engage in old behaviour – 100% self efficacy in all previously tempting situations.
- ◆ Smokers & Drinkers – 15% and 17% had terminated the problem.
- ◆ Can formerly sedentary individuals reach termination? Are they at risk of relapse?
- ◆ Does the termination stage exist for exercise? (Fallon & Hausenblas, 2001)
- ◆ Partial support for termination stage for exercise behaviour. N = 115 – significantly more self efficacy to overcome barriers to exercise than the maintenance group

Intervention issues

- ◆ Majority of behaviour change research and behaviour change interventions are designed for individuals prepared for action
- ◆ Small percentage at risk are at the action stage
- ◆ Smoking (Abrams et al. 1988) 10-20% at risk prepared to take action, 30-40% at contemplation stage. Majority – precontemplation
- ◆ Match intervention to stage of change

What could you put in place for someone at each of the following stages of change...

💧 Pre-contemplation

1. Attempting to exercise regularly

💧 Contemplation

2. Give up smoking

💧 Preparation

3. Alter their diet

💧 Action

💧 Maintenance

Self-Efficacy Theory

(Bandura 1977, 1986)

- Based on the evidence that:
- “confidence in one’s ability to perform a given behaviour is strongly related to one’s actual ability to perform that behaviour”
- Self efficacy is defined by Bandura (1986) as
- “judgment or perception of one’s capability to organise and execute courses of action required to attain designated types of performances”

Self-Efficacy Theory

(Bandura 1977, 1986)

Self efficacy is believed to affect a person's

- ♦ initiation of behaviour
- ♦ persistence of behaviour
- ♦ choice of activity
- ♦ amount of effort expended (despite obstacles & frustrations)
- ♦ If someone has the skills and the will (motivation) then the major determinant of their performance is self efficacy.

Self-Efficacy Theory (Bandura 1977, 1986)

- ◆ People who believe in themselves will tend to persevere, especially under adverse conditions..... and those low in self efficacy will tend to drop out or give up.
- ◆ Self efficacy is more than the possession of knowledge and skills it also includes the perception that one is capable of performing effectively.

Self-Efficacy Theory (Bandura 1977, 1986)

- Self efficacy is closely related to stages of change for exercise behaviour

Pre contemplative	3.05
Contemplative	4.63
Preparation	5.14
Action	6.39
Maintenance	7.84

Practical implications of this?

Summary

- 💧 Models to predict health related behaviour have been discussed.
- 💧 The model / theory used depends on several factors including the population and the environment.

Motivation

- 💧 What is motivation?

- 💧 What does it look like?

- 💧 Characteristics of an individual motivated to exercise?
- 💧 (discuss in groups)

Self Determination Theory

💧 Useful resource!

<http://www.psych.rochester.edu/SDT/>

Self Determination Theory



Self Determination Theory (SDT):

Meta theory consisting of 5 mini theories

SDT (Deci & Ryan, 2002) has been linked with the intention to be physically active (Hagger et al., 2003; Ntoumanis, 2001).

Each theory addresses one facet of motivation or personality functioning.

- ◆ ***Cognitive Evaluation Theory (CET)***
- ◆ ***Causality Orientations Theory (COT)***
- ◆ ***Basic Psychological Needs Theory (BPNT)***
 - ◆ ***Goal Contents Theory (GCT)***
- ◆ ***Organismic Integration Theory (OIT)***



Cognitive Evaluation Theory

- ◆ Deci & Ryan (1985) from De Charms (1968)
- ◆ Individuals have an innate need to feel personally competent and self deterministic
- ◆ People want to control their lives, make their own choices and will engage in behaviour that enhances perception of their own ability

Self-Determination

“To be self-determined is to endorse one's actions at the highest level of reflection. When self-determined, people experience a sense of freedom to do what is interesting, personally important, and vitalizing.”

Deci & Ryan (2001)

Self-Determination:

- Based on 'Locus of causality'

Internal locus of causality

Perception that actions are initiated by the self (**I decide**)

External locus of causality

Perception that actions are initiated or forced upon them by others (**Exercise provider decides**)

Organismic Integration Theory (OIT) – Amotivation & Intrinsic Motivation

Amotivation



Extrinsic Motivation (4 types)



Intrinsic Motivation

Intrinsic motivation or integrated regulation (Deci & Ryan, 2002) is positively associated with exercise adherence



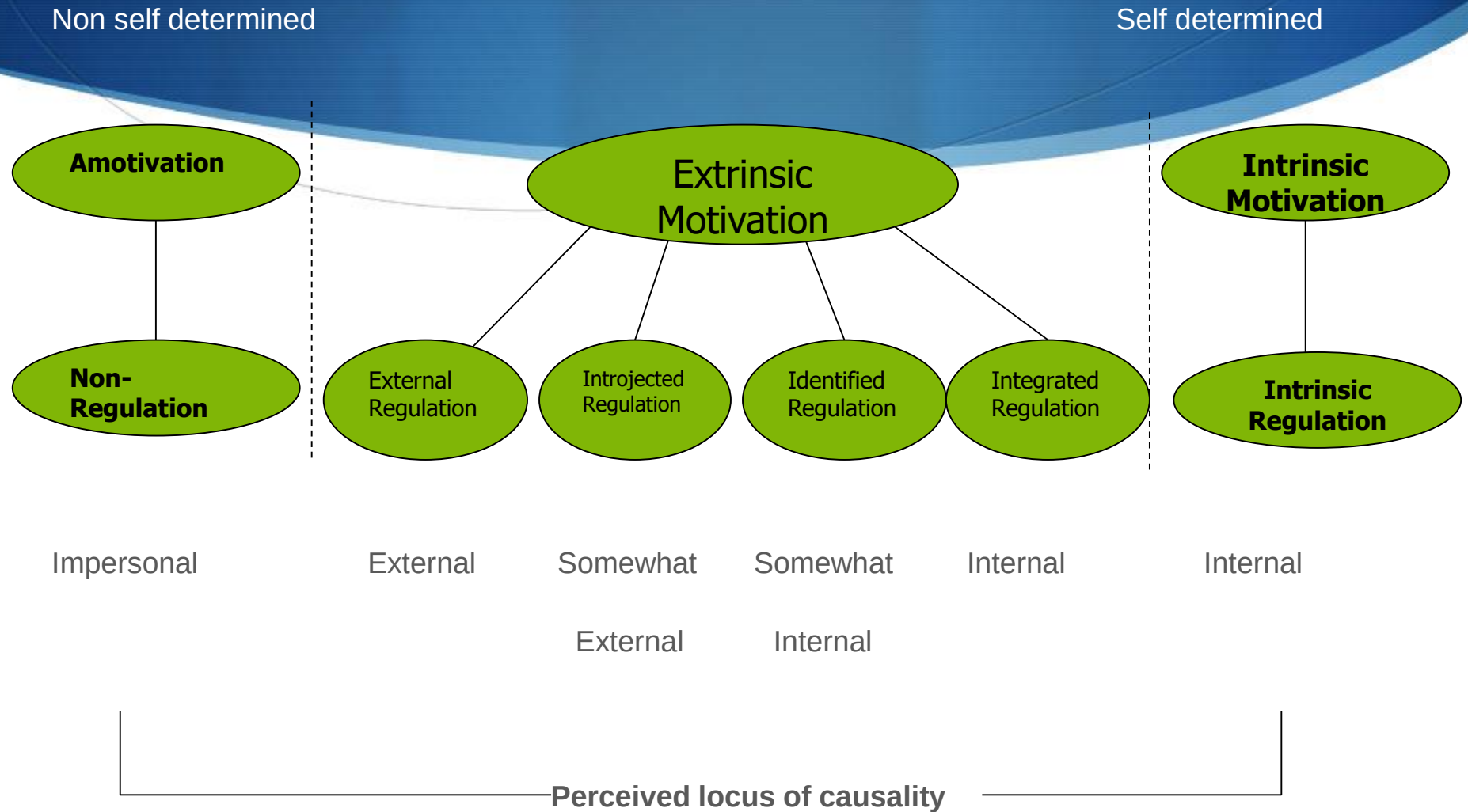
Organismic Integration Theory – Multidimensional Extrinsic Motivation

Four different types

- 💧 **External regulation** (traditional EM)
 - 💧 Behaviour is regulated through external means (e.g., rewards or threats)
- 💧 **Introjected regulation**
 - 💧 Behaviour engaged in to alleviate self-imposed pressure (e.g., guilt, anxiety, embarrassment or to gain pride)
- 💧 **Identified regulation**
 - 💧 Behaviour valued & judged important (some free choice) (e.g., exercising to stay fit)
- 💧 **Integrated regulation**
 - 💧 Engage out of choice, but choices of behaviour made as a function of coherence with other aspects of self (i.e., this symbolises who I am)



Organismic Integration Theory – Taxonomy of Motivational Types



BREQ-2

- ◆ Complete and score the questionnaire...

Motivation Defined

- ◆ Motivation psychology - concerned with the question of "the origin, the direction and the persistence of behaviour" (Orlebeke, 1981)
 - ◆ Defined:
 - ◆ " the direction and intensity of effort "
- (Sage, 1977; Gill, 1986)

Later definitions of motivation

- ◆ Roberts (1992)

“motivation refers to those personality factors, social variables, and/or cognitions that come into play when a person undertakes a task at which he or she is evaluated, enters into competition with others, or attempts to attain some standard of excellence.”

- ◆ Kingston, Harwood and Spray (2006)

“...it’s the desire, that inner fire that compels one to act and persist”

What do we know about motivation?

- ◆ These are developed from different 'sources'
- ◆ There are different types
- ◆ They predict different behaviours
 - ◆ Adaptive or otherwise

Motives - categories

- ◆ Intrinsic motives

- ◆ These motives are internal
- ◆ The motivation comes from the pleasure one gets from engaging in the task itself or satisfaction in completing or learning about a task

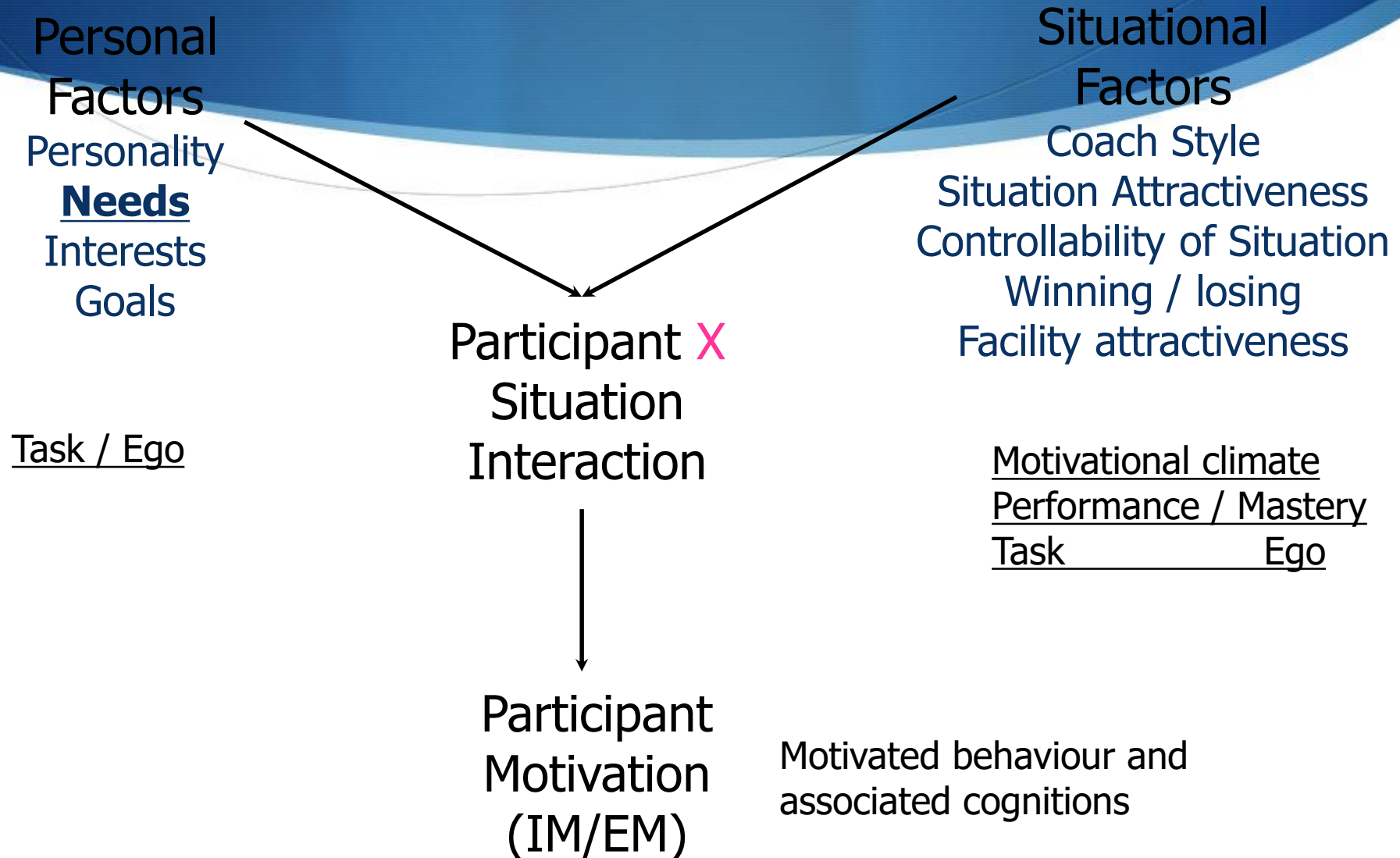
- ◆ Extrinsic motives

- ◆ motivating factors are external, or outside – they can range from rewards such as money or grades to socially driven motives such as guilt or pride

How do we develop intrinsic motivation....?

- 💧 What strategies are used to motivate individuals and groups to exercise regularly?
- 💧 Where should we target interventions to promote 'good' motives?

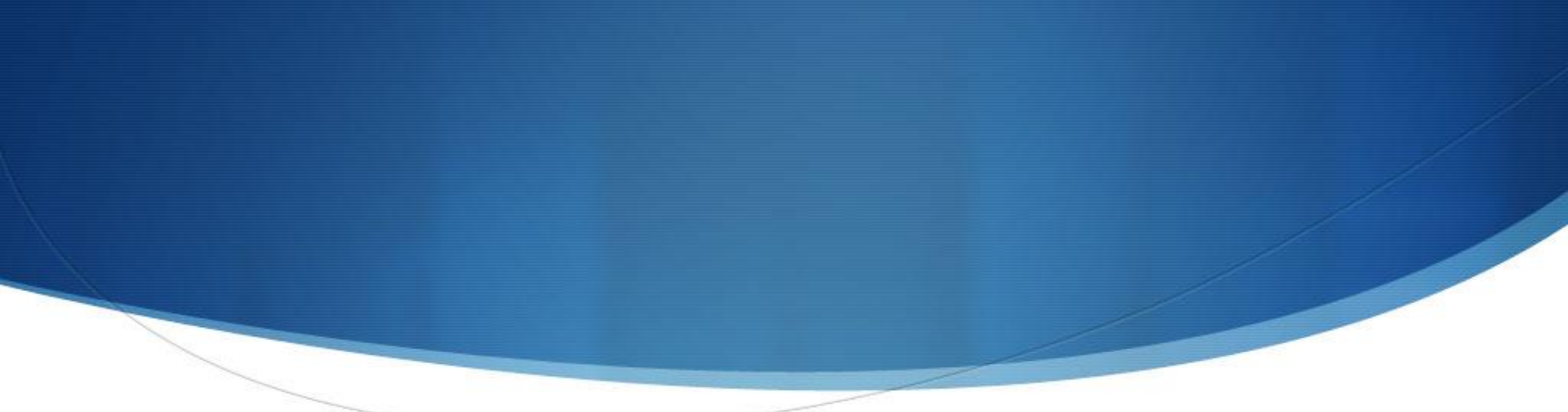
Interactional model



◆ Motivational Climate

- ◆ Motivational Climate describes the extent to which the environment leads us to evaluate our ability in one of two ways – it is influenced by leaders, teachers, peers. The environment can be classified in two ways:
- ◆ Performance (ego) climate:
 - ◆ An emphasis is placed on interpersonal competition, feedback that promotes social comparison, public evaluation
- ◆ Mastery (task) climate:
 - ◆ The environment encourages personal goals, effort, learning, mastery of the task and participation in an individual; the focus is on self-referenced effort and improvement

What have we discussed previously about the exercise environment?

- 
- 💧 Motivated behaviour – Goal setting styles
 - 💧 Outcome / performance / process
 - 💧 Basic psychological needs – Autonomy / Competence / Relatedness
 - 💧 Links to intrinsic motivation....

According to SDT

Basic psychological needs

- 💧 Competence
- 💧 Autonomy
- 💧 Relatedness

- 💧 All lead to

Intrinsic
motivation

◆ Basic Psychological Needs

- ◆ There are three fundamental 'basic' psychological needs which are keys to growth, development and well-being.
- ◆ When needs are satisfied, outcomes are positive because intrinsic motivation is enhanced. The three needs can be described as:
- ◆ Competence
 - ◆ Describes how confident the individual feels to meeting challenges and master tasks
- ◆ Autonomy
 - ◆ Refers to the degree to which the individual feels in control of their behaviours that lead to certain outcomes.
- ◆ Relatedness
 - ◆ refers to the degree to which one feels connected with significant others

Achievement Goal Theory

(AGT; Nicholls, 1989)

- ◆ Goal is to demonstrate competence / ability in achievement settings (Nicholls, 1989)
- ◆ Individuals use different goal perspectives to evaluate an experience as a success or failure
- ◆ Two principal goal perspectives
 - ◆ task involvement / perceptions of demonstrated success are self referenced
 - ◆ ego involvement / perceptions of demonstrated success are other referenced (Duda, 1992 p. 58)

Achievement Goal Theory

- ◆ Goal orientation = dispositional tendency to be task or ego involved in achievement situations
- ◆ Task orientation positively related to:
 - ◆ effort
 - ◆ persistence (Duda, 1988)
 - ◆ intrinsic motivation (Duda et al., 1995)
 - ◆ perceived competence (Seifriz et al., 1992)
- ◆ Holding an ego-orientation is associated with:
 - ◆ work avoidance and use of deception
 - ◆ belief in the legitimacy of injurious acts
 - ◆ chance & social approval are contributors of success

(Duda et al., 1992; Newton & Duda, 1992)

Achievement Goal Theory

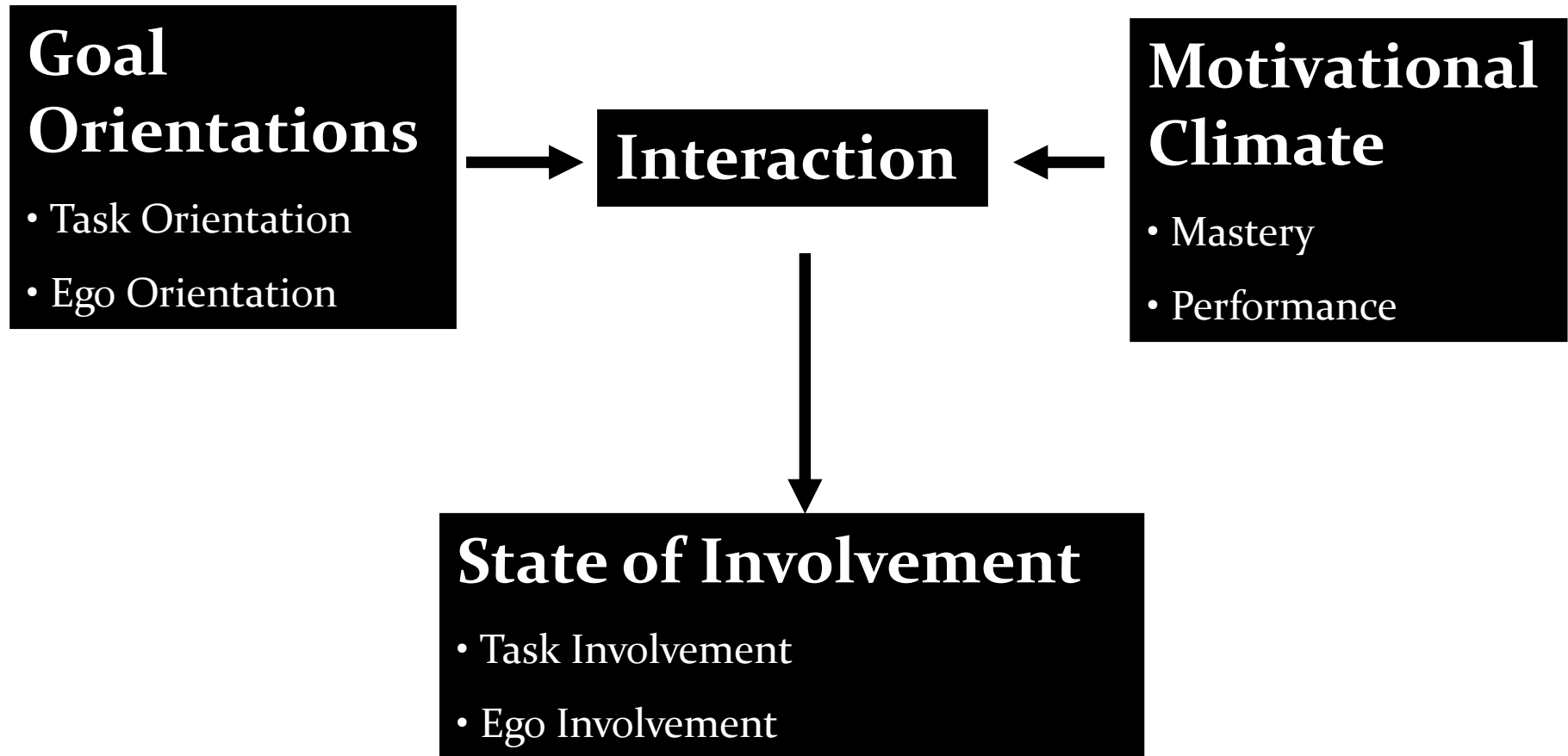
Outcome/Ego and Task Orientations:

(E) Focus is on comparing oneself *to and on **defeating others***

(T) Focus is on **improving performance** relative to past performances. *Not in comparison with others.*



AGT: Interactionist Approach



Link to goal setting styles

Self Determination Theory

(Deci & Ryan, 1985)

- ◆ **Intrinsic motivation** involves people freely engaging in activities they find interesting and that provide novelty and optimal challenge

(Deci & Ryan, 2000; Ryan & Deci, 2000)

- ◆ **Basic Needs & Cognitive Evaluation Theory**
 - ◆ sub-theories of SDT which considers the effects of events (rewards, feedback, goals) on intrinsic motivation
 - ◆ Situational 'events' influence IM through basic need satisfaction

The Purpose of Goal Setting?

The purpose of goals is to focus the attention.

**Vision expands to horizons; the greater the vision,
the greater the goal that will be achieved...**

What does Goal Setting do?

Locke *et al.*, (1981); Weldon & Weingart (1993).

- ✦ Focuses attention
- ✦ Directs effort
- ✦ Mobilises effort
- ✦ Increases persistence
- ✦ Motivates strategy development
- ✦ Extra role behaviour
- ✦ Morale building communication

Types of Goals...

◆ Goal setting styles

Our ‘style’ of goal setting refers to the specific ‘focus of our intentions (state goals).

There are three established types of goals that individuals use:

◆ Outcome Goals

- ◆ These goals focus on the outcome of an event in terms of social comparison (e.g., “winning a fun run / 10km race”). Any goal where the achievement is based on performance relative to others, or recognition by others is an outcome goal

◆ Performance Goals

- ◆ Performance goals are self-referenced (normally) numeric targets (e.g., “complete the run / race within a certain time”). They refer to and are based on levels or standards of performance

◆ Process Goals

- ◆ These focus on behaviours that an individual engages in to execute or perform a skill effectively (e.g., put kit on and leave the house / high knee lift running). They can be strategic, technical or behavioural; they are self-referenced and their execution is under the individual’s control.

Process Goals

- *Process*: goals which refer to the methods and strategies designed to help achieve skill mastery (e.g. elbow down and wrist firm during backhand in tennis).
- ⑩ The “doing of performance”.
- ⑩ These can be achieved even if an outcome or performance goal is not achieved.
- ⑩ Fully under control of the person.
- ⑩ ***What process goals could you focus on?***

Performance Goals

- *Performance*: also under control of performer.
- ⑩ These goals refer to reaching a relative standard (e.g. a personal best, completing a certain time, distance, speed).
- ⑩ These can be achieved even if an outcome goal is not achieved.

Outcome Goals

- *Outcome*: Desired result of an event. Performance is compared to an absolute standard (e.g. win/loss, position, top 10).
- ⑩ Often focus on interpersonal comparison
- ⑩ Not under control of individual.

Goal Setting Principles

Locke, Shaw, Saari, & Latham (1981)

- ◆ **Specific**
 - ◆ **Measurable**
 - ◆ **Adjustable**
 - ◆ **Realistic**
 - ◆ **Time-based**
 - ◆ **Exciting**
 - ◆ **Recordable**
-
- ◆ You will see several slight variations on the SMARTER principle.
 - ◆ For the goals you outlined previously for the athletes...Identify how they meet the criteria above.
 - ◆ If they do not...change them!

Questions from the research...

- ◆ Why do high levels of Task orientation, relate to the use of process goals?
- ◆ Why do high levels of ego orientation relate to the use of outcome goals?
- ◆ Can we explain why other aspects within these concepts don't relate (e.g. why doesn't a high level of ego orientation relate to the use of performance goals)?

Practical Implications

- ◆ increase task involvement (effective use of goals) via:
 - ◆ altering goal orientations
 - ◆ via motivational climate (mastery/task based)
- ◆ fostering intrinsic motivation
 - ◆ Increasing task orientation/involvement
 - ◆ Ensure the environment promotes learning, personal goals, cooperation and effort/persistence
 - ◆ increase perceptions of competence, autonomy and relatedness
 - ◆ Use of controllable goals that promote personal success
- ◆ perceptions are crucial to motivation