Black and Black (2007)

Aircraft Noise Exposure and Resident’s Stress and Hypertension: A Public Health Perspective for Airport Environmental Management.

**Background and aim:** Previous research has shown that exposure to high levels of aircraft noise has a significant negative effect on general health status. This study aimed to develop a better understanding of the impacts of aircraft noise on community health and wellbeing by asking two key questions:

1. Is health related quality of life worse in a community chronically exposed to aircraft noise than in a community not exposed?
2. Is long-term aircraft noise exposure associated with elevated blood pressure in adults via noise stress as a mediating factor?

Furthermore it also considered implications of future public policy and suggestions were made in relation to stress management techniques for those suffering from health-related issues relating to long-term exposure to aircraft noise.

**Method:** This study begins with a literary review of research. A pilot study of a small suburb south of Sydney Airport, Australia was initially conducted followed by a wider-ranging study that involved the selection of a highly exposed, noise-affected area and a control study area with similar demographic and socioeconomic characteristics. This is a cross-sectional study with a matched control group; data was collected via a questionnaire. Kurnell, a small residential suburb south of Sydney Airport, acted as a case study for the pilot test with a sample size of 100. The analysis of the findings showed the values of the noise stress scale and the noise sensitivity scale to be too high and therefore the exclusion of some noise stress items and noise sensitivity items was recommended for the final study.

Subjective health outcomes were measured by a questionnaire that was designed from validated, internationally recognised instruments. Seven measures were taken: health related quality of life (HRQoL), hypertension condition, noise stress, noise sensitivity, noise annoyance (from 0-10), demographic characteristics, and confounding factors (e.g. employment, smoking and exercise). For each health measure, a summary score between 0-100 was given. **Closed questions** were also asked for assessing hypertension. Highly exposed aircraft noise areas around Sydney Airport were selected and were matched on the socio-economic status of the exposure areas with a control group area: a suburb (South Penrith) located in the western suburbs of Sydney (55km from the Airport).

**Questionnaires** were sent to households in the area (but not to those close to railways, industrial areas and major highways). A cover letter explained that the study was one of
environmental noise. It did not mention aircraft noise in an attempt to prevent a biased sample of those especially annoyed by aircraft noise.

Measurements of environmental noise were taken according to Australian standards. Noise data were collected at 26 stations around Sydney Airport and at 3 stations in the control area from 7.00 am to 6.00pm on various days from October 2003 to November 2004. Twenty-minute samples per hour were measured using a Bruel and Kjaer sound level meter Type 2236. Noise measurements during night-time hours had to be avoided due to possible safety concerns for the researcher.

To analyse the background environmental noise level, all the aircraft noise and unusual noises such as dogs barking were not included. A ‘high’ noise group included those noise stations located on roads that are connected to roads with high traffic volume. The ‘medium’ noise group is defined as those noise stations located on roads that are linked to roads with medium traffic volume. The ‘low’ noise station group were those locations where the impact of traffic noise from other roads was either very low or negligible.

**Results:** In total 704 respondents completed the questionnaire with an age range of 15-87 years. This was slightly lower than the expected response rate of 50%, with responses in the control group area being a little lower than in the noise exposure area. The control group was made up of 66.1% females, 11% higher than in the noise exposure group; they were also 4 years older on average. The noise exposure group seemed to have a higher education level and better employment status but were similar in terms of household income. The noise exposure group were more likely to be smokers than the control group; they also did more exercise and had lower levels of obesity. Only 3% of the participants in the control group insulated their house from noise compared to around 37% of the participants in the noise exposure group.

Most of the health measures in the noise exposure group were lower than the control group, but apart from the mental health score they were not statistically significant. Hypertension was more common in the control group, but this was not statistically significant. The proportion of hypertension in parents and high cholesterol level in the noise exposure group was higher, but again not significantly so. While the level of traffic noise annoyance was significantly higher in the noise exposure group than the control group, the level of noise sensitivity was not significantly different, but noise stress was significantly greater in the noise exposure group than in the matched control group.

The mean scores of physical functioning, general health, vitality, and mental health of aircraft noise exposure group were significantly lower than the matched control group. Therefore, the HRQoL of the aircraft noise exposure group was worse than the matched control group. Moreover, “Aircraft noise has indirect impacts to hypertension. It disturbs daily activities and creates chronic noise stress which becomes a mediating factor for hypertension in the future”. There was a significant positive relationship between noise exposure and chronic noise stress and there was a significant positive relationship between chronic noise stress and the prevalence of hypertension.

Finally, individuals who have been chronically exposed to high aircraft noise level have the odds of 2.61 of having chronic noise stress, while individuals who suffer chronic
noise stress have the odds of 2.74 of having hypertension compared to those without chronic noise stress.

**Conclusions:** Individuals who are exposed long-term to high levels of aircraft noise are more likely to report stress and hypertension compared to those who are not. Long-term exposure to aircraft noise is significantly associated with well-being; it is significantly related to chronic noise stress. **Chronic noise stress** is significantly related to hypertension; those who live in high exposure areas are more annoyed by aircraft noise and health-related quality of life is worse due to aircraft noise.

Black and Black suggest the following implications from the study: Close down Sydney Airport, reduce aircraft noise level by employing different runway usage and flight paths, and extend curfew hours to give extra relief from aircraft operations. However, currently it is highly unlikely these suggestion will be actioned. Furthermore, extend the building insulation scheme and provide an interest-free loan system for insulation treatments to residences affected by aircraft noise. Review the 1996 Airport Act to include strategies to mitigate the adverse impacts of noise on public health so airport managements are responsible for including a health impact assessment as part of their environmental management plans.

**Evaluation**

**Usefulness of research:** Black and Black found that aircraft noise has a detrimental effect on the health-related quality of life for residents who are exposed to the noise. They suggested a number of potentially useful ways in which public policy could change in order to improve the situation. However, the lack of alternative airport sites and airlines being unwilling to reduce the flight hours are typical of why this research may in fact be useless.

**Validity:** The questionnaire included a variety of measures through a series of different questions; confounding variables were controlled for by questions about demographics and lifestyle; and matched noise control groups were included. The cover letter did not state that the study was specifically about aircraft noise, therefore not attracting a biased sample. All of these factors are likely to increase the internal validity of study.

**Individual/situational explanations:** This study concludes that situational factors (aircraft noise) have a significantly negative effect on health and wellbeing. This was found to be the case when individual factors such as lifestyle were controlled for.

**Exam Style Questions**

Using the research by Black and Black (2007), explain environmental stressors and their impact on our biological responses. (10)

Explain how the research by Black and Black (2007) could be used to manage environmental stress. (10)
Czeisler et al. (1982)

Rotating Shift Work Schedules That Disrupt Sleep Are Improved by Applying Circadian Principles.

Background and aim: 26.8% of Americans work shifts, rotating between night, evening, and daytime. Previous research has shown that rotating shift workers are often dissatisfied with the features of their schedules that violate circadian principles. Prior to this study, three major strategies had been used to address the problems of adaptation to shift work: 1. Schedule workers on straight shifts without rotation; 2. Rapidly rotate from one shift to the next; 3. Take advantage of individual differences in biological rhythms and put those with the greatest tolerance on abnormal schedules. However, there are problems with each of the strategies. Czeisler et al.’s aim was to demonstrate that when schedules that consider properties of the human circadian system are introduced there will be a positive effect on workers – work schedule satisfaction and health will improve, staff turnover decreases and worker productivity will increase.

The researchers aimed to take advantage of those properties of the circadian system that individuals share in common: the longer than 24-hour endogenous period and the limited range of entrainment, by comparing 33 workers who continued to change shifts each week and others who rotated shifts by phase delay once every 21 days, on measures of job satisfaction, health indices, personnel turnover and productivity. Czeisler et al. suggest that work schedules that rotate should do so by successive phase delays and that the interval between phase shifts should be as great as is practical.

Method: The participants in this study were 85 male shift workers, aged between 19 and 68 who worked on rotating shifts. There was also a control group of 68 male non-rotating day and swing shift workers with comparable jobs; they were aged between 19 and 56. All participants worked at The Great Salt Lake Minerals and Chemicals Corporation in Ogden, Utah. Questionnaires were given out to measure workers’ satisfaction, health, personnel turnover, and productivity. This was measured before and after the introduction of new shift work schedules. As the researchers manipulated the shift work schedules of workers (IV), this study was also an experiment. 84% of workers completed the questionnaire. All staff attended a presentation on the circadian sleep-wake cycle that gave suggestions for adjusting their sleep time to their schedule. An educational booklet was also provided.

Prior to the study, weekly shifts at the factory were rotated with each crew working a given eight-hour shift for seven days before rotating to the preceding eight-hour shift. So the scheduled work time rotated in a phase advancing direction from midnight to 8 a.m., to swing (4 p.m. to midnight), to day (8 a.m. to 4 p.m). A rotating work schedule...
was introduced: the design was based on circadian principles and focused on the direction of rotation and the interval between phase shifts. Shift workers on phase advance schedules were divided into two groups and placed on phase delay schedules: 33 workers continued to change shifts each week and 52 others rotated shifts by phase delay once every 21 days. This procedure stopped after a month; after this time an eight-hour phase delay was undertaken on every 21st day. 3 months after the introduction of the new schedules further questionnaires were completed and staff turnover was analysed; 6 months later plant productivity was analysed.

**Results:** Before the introduction of the new shift schedules, those on rotating shifts reported significantly more problems with insomnia than those who didn't rotate. 29% of rotators reported falling asleep at work at least once during the previous three months; 81% reported that it took two to four days or more for their sleep schedule to adjust after each phase advance; and 26% stated they were unable to adjust at all. A major complaint was that the schedule changed too often. After the introduction of the new shift schedules - the workers clearly preferred the phase delay direction of rotation - complaints about the schedule dropped from 90% to 20% among workers on the 21-day phase delay rotation schedule. There was a large increase on the schedule satisfaction index, improvements in the health index and reduction in personnel turnover. Furthermore, productivity in the plant increased over a period of time.

**Conclusions:** Shift work that implements phase delay with extended intervals between rotations is most compatible with the properties of the human circadian timing system. Such schedules can minimise negative consequences of circadian disruption. As a result of using these schedules, both workers' job satisfaction and health improves, while staff turnover decreases and productivity increases.

**Evaluation**

**Usefulness:** Czeisler’s research has been very useful as it has improved our understanding of the impact of shift work on biological rhythms. The negative effects on individuals’ health, well-being and productivity are reduced through the principles of phase delay and therefore similar strategies should be implemented by other employers.

**Validity:** There are a number of methodological problems with this study which could make the findings less valid. Data was collected using the self-report method, whereby workers had to answer question on their health and job satisfaction. A possible problem here is social desirability bias: participants may not have answered honestly to make themselves look better. For example, they may have reported higher levels of satisfaction after the shift schedule changed as they thought this is what should have happened. However, measures of productivity and staff turnover were objective and unbiased and therefore more valid.

**Sampling bias:** The findings from a sample of all male shift workers from one factory in America lacks population validity and cannot be generalised to other groups. The study
is also over 25 years old and our lifestyles have changed hugely since then, so the results may not be relevant today.

**Exam Style Question**
Using the research by Czeisler et al. (1982), explain the impact of the disruption of biological rhythms on our behaviour. (10)

Explain how the research by Czeisler et al. (1982) could be used to reduce the effects of jetlag or shiftwork. (10)
Drews and Doig (2014)

Evaluation of a Configural Vital Sign Display for Intensive Care Unit Nurses.

Background and aim: Patient monitoring in the Intensive Care Units (ICU) is carried out by nurses, where alarms have been used to support nurses’ cognitive work. Current display technology in ICUs are not optimised for fast recognition and identification of physiological changes in patients. Drews and Doig suggest that to support nurses more effectively, graphical or Configural Vital Signs (CVS) displays need to be developed. The aim of the study was therefore to develop and evaluate a CVS display, which was designed to support rapid detection and identification of physiological deterioration by presenting patient vital signs through graphical data.

Method: This was a laboratory experiment in an artificial environment and not in the workplace, for which a CVS display was developed. The IV was whether the nurse was asked to interpret data presented in a traditional numerical format or using the CVS display. The DV was the response time and accuracy in clinical data interpretation. 42 nurses with at least 1 year’s ICU experience took part, 21 interpreted data on a CVS display and 21 did so in the traditional format. Some scenarios were developed to test the hypothesis. They were developed and validated by an ICU physician and an ICU nurse who were not involved in the display design. Three clinical scenarios examined if the CVS display supported nurses’ decision making better than the traditional display – one relating to early sepsis, one to septic shock and one to pulmonary embolus. In all three scenarios, the information required to make a correct assessment was available on both displays. A fourth scenario represented a stable patient and was included to determine whether the CVS display facilitates more rapid recognition of a “normal” patient. All participants took part in each scenario and were either given the traditional or the CVS display. They were randomly assigned to one of two conditions and counterbalancing of the order of the scenarios was used. Standardised training was provided that included procedural instructions and explained elements and functionality of the CVS and the control display. Each study lasted around 90 mins.

Participants were instructed to verbally evaluate the patient’s physiologic status, interpret the data, and recommend appropriate interventions as quickly and accurately as possible. Scenario-specific patient information was then provided, followed by clinical information. 5 minutes were given to complete each scenario and the vital signs displays were presented on a 15-inch Desktop computer screen. A 7 point Likert-type scale questionnaire was then filled out relating to clinical desirability of the CVS display and the realism of the scenarios.
Results: There was a significant difference in response time between the two conditions. Those in the CVS display condition identified the patient’s state 30% more quickly than the control group, with some variability between scenarios (within 48% improvement in the septic shock scenario and 38% with the pulmonary embolism). Nurses using the CVS display correctly identified the patient’s condition more frequently, with statistically significant differences in the septic shock scenario and pulmonary embolism scenarios. In the control condition, in each scenario only one nurse accessed the trend information. The CVS was significantly less mental demanding, with a mean score of 3.95, compared to 4.71 in the control group. Nurses rated the realism of the scenarios highly, with a median of 6 out of 7 in both conditions.

Conclusions: Providing patient information in a CVS display with readily visible trends and data variability can improve the speed and accuracy of data interpretation by ICU nurses. A display that integrates vital signs information and displays trending data can improve nurses’ assessment of a patient’s condition. Nurses using a CVS display can perform faster monitoring and status change detection and may be able to detect earlier more subtle changes in vital signs trends, avoiding potential patient harm. Presenting trend information on a primary ICU display screen can facilitate quicker trend detection. CVS displays improve nurses’ performance.

Evaluation

Usefulness: These findings are extremely encouraging, in that if workplace design is improved by using CVS displays, then nurses’ performance and patient care will improve. Although these displays are currently rarely used, the implications from this study are very useful.

Validity: Despite significant results being found to support the effectiveness of CVS displays, the study was laboratory based, using scenarios, rather than in a real hospital which is a complex environment; therefore, findings lack ecological validity. Furthermore, a relatively small sample was used and the effectiveness of each design factor was not measured. This makes the findings somewhat unclear.

Individual/situational explanations: This study suggests that if the support is in place for nurses with an improved workplace environment then response times and accuracy in identifying patients’ states will improve. However, there were only significant results for two of the scenarios; therefore, the use of CVS displays does not guarantee increased performance by nurses.

Exam Style Questions

Using the research by Drews and Doig (2014), explain cognitive overload and/or the impact of observation in the workplace environment. (10)

Explain how the research by Drews and Doig (2014) could be used to improve workplace design. (10)
Lord (1994)


**Background and aim:** This study examines the relative efficacy of:
(i) Two different message approaches - **positively and negatively framed** advocacy appeals constitute the message approaches
(ii) Three **source strategies** in enhancing citizen beliefs about, attitude towards, and behavioural compliance with community recycling programmes. Message sources examined are: (a) advertising appeals, (b) publicity-generated news items, (c) personal influence appeals.

This study aimed to show that exposure to each of the above **message and source strategies** yields more favourable attitudes towards recycling and a higher level of participation in recycling programmes than no message exposure. The researchers anticipated that a **positively framed** message would have a better opportunity of affecting beliefs than a **negative appeal**, an influence that may be expected to extend to a more favourable attitude towards recycling (because individuals will respond to the feelings of satisfaction and other benefits gained from recycling).

The study therefore has the following **hypotheses**:
- **Attitude** toward recycling is improved for households receiving an advocacy message relative to unexposed (control) households (H1).
- Delivery of an advocacy **message** yields an increase in observed recycling, with households receiving no message (control) showing no significant change in curb side (pavement) collection amounts (H2).
- Consumer **beliefs** about positively balanced benefits of recycling are more readily formed upon exposure to an advocacy message than are beliefs about negatively framed **consequences** of failure to recycle (H3).
- Positively framed messages result in more favourable **attitudes** toward recycling than negatively framed messages (H4).
- Consumer belief in negatively framed arguments about the consequences of **failure to recycle** is greatest when those arguments are conveyed in the form of a publicity-generated news story and least when they appear as part of an advertising message (H5).
Among consumers exposed to negatively framed messages, favourable attitude toward recycling is greatest when the message is conveyed in the form of a publicity-generated news story (H6).

Messages conveyed via social influence (i.e. from a personal acquaintance) result in a more favourable attitude toward recycling in a positively framed than in a negatively framed condition (H7).

An advocacy message from a personal acquaintance elicits a greater increase in recycling behaviour than a comparable message from an advertising or news (publicity) source, with strongest behavioural change arising in the personal influence–negatively framed message condition (H8).

**Method:** Lord states in the original article that this was a quasi-experimental field study. Data were gained from 140 households in a north-eastern metropolitan community in the USA, who were served by a curb side recycling programme: 7 groups of 20 participants received the following different messages: 1. advertisement with a positive message; 2. advertisement with a negative message; 3. newspaper article with a positive message; 4. newspaper article with a negative message; 5. a personal letter from acquaintance with a positive message; 6. a personal letter to an acquaintance with a negative message; 7. received no message at all. Of those who responded to the questionnaire, 57% were female and 43% were male. The mean age was 34.9 years ranging from 19 to 65. Educational background ranged from some high school to graduate degrees and household income ranged from $10,000 to $130,000. Overall, demographics were not significantly different between conditions. The following factors were manipulated: Negative messages described the risks of failing to recycle and some of the possible measures failure could lead to. Positive appeals focused on environmental benefits, savings to the community and personal and social satisfactions arising from full participation in the recycling programme. Both messages reminded recipients of the items that were recyclable. In the advertisement condition, a message had the appearance of an advert from a fictitious company who distributed environmentally friendly products in the region. In the news article condition, it was described as having recently appeared in a local news publication. In the personal influence condition, it appeared in the form of a letter, signed by a student assistant and addressed to a personal acquaintance.

Data was collected in the following stages: On collection day of the first week, the contents of the test household’s recycling bin were discreetly recorded. On the following day, the stimulus message appropriate to the condition they were in was left at their front door (the control group received no message). This was repeated the following week, in order to assess behavioural impact of the test message. The day after the second observation, a questionnaire was given to the adult most responsible for recycling and they were asked to complete it confidentially.

The observation form measured the quantity of items placed in recycling bins by each household and were categorised, e.g. cardboard or glass. The questionnaires assessed how much they believed statements raised by the messages they were given. The
truthfulness of statements were rated between ‘definitely false’ and ‘definitely true’. Also, four 7-point semantic differential items measured attitude toward recycling, e.g. harmful-beneficial. Demographic information and attitude toward the message using eight 7-point semantic-differential items, e.g. persuasive-unpersuasive, good-bad, were also recorded.

Results:

- **H1** – Overall, this hypothesis was **supported**. Participants in the experimental groups demonstrated a more favourable attitude toward recycling than control group households.

- **H2** - The combined treatment (experimental) groups showed a **significant increase** in both the number of recycling categories (mean difference score from the first to the second) and the total number of items put out for recycling. The control group showed **no significant change**.

- **H3** - The data **supports this hypothesis**. Those exposed to the positively framed message showed a significantly higher level of belief in statements that constituted that message’s rationale for participation in recycling programme than did individuals in the control group and those exposed to the negatively framed message.

- **H4** – There were **significant results**. The positively framed message led to a more favourable attitude toward recycling than did a negative appeal.

- **H5** - Findings did **not support** this hypothesis. No significant differences between the influence of publicity-generated news story and an advertising message were identified.

- **H6** – **This hypothesis was partially supported**. Although attitude toward recycling in the negative appeal publicity condition was significantly greater than that obtained for the same message conveyed by a personal acquaintance, it did not differ significantly from that generated by the advertising source.

- **H7** – Favourable attitude toward recycling was **significantly higher** among households receiving the positively framed message than among those in the negative-appeal condition.

- **H8** - The personal negative condition showed the **greatest increase** in recycling behaviour

Conclusions: Consumers prefer **positively framed messages** rather than those that focus on the unpleasantness of the adverse consequences of failure to recycle. We are more likely to believe arguments raised in positive recycling appeals than those raised in negative appeal. Positively framed messages have a more favourable impact on attitude toward recycling than negative appeals. However, a negatively framed message from a personal acquaintance exacerbates its negative attitudinal consequences and is the most effective way to increase recycling behaviour
Evaluation

Usefulness: These findings have important real life implications, which can be used to increase conservation behaviours, as well as having implications in terms of how to frame messages in order to influence behaviour in a wider context. The importance of recycling cannot be overstated; this study shows that the strategies used in the experimental conditions are all effective to some extent and therefore a combination of positive and negatively framed messages (including a negative message from an acquaintance) would be very useful in changing attitudes to recycling.

Validity: Although variables were manipulated, the study was investigating a curb side recycling programme in a neighbourhood in the USA. Therefore, the study had mundane realism, as day to day behaviour was being investigated and there were also high levels of ecological validity, no experimenter effects or demand characteristics, and high internal validity.

Individual/Situational Explanations: The findings clearly support the situational explanation side of the debate. The type and source of message significantly improved recycling attitudes and behaviours, compared to the control group who were not subjected to these influences. Therefore, individual attitudes towards recycling can be changed in a range of different situations.

Exam Style Questions
Using the research by Lord (1994), explain the factors which influence the tendency to conserve or recycle. (10)

Explain how the research by Lord (1994) could be used to increase recycling or other conservation behaviour. (10)
Ulrich (1994)
*View Through a Window May Influence Recovery from Surgery.*

**Background and aim:** The aim of the study was to investigate the restorative effect of natural views on surgical patients. Records of patients in rooms on the second and third floors of a three-storey wing of the hospital were examined to see whether assignment to a room with a window view of a natural setting improves recovery from surgery.

**Method:** The sample consisted of 46 patients who had undergone cholecystectomy (a gall bladder operation) in a suburban Pennsylvania hospital in May and October between 1972 and 1981. This time of year was deliberately used due to the leaves on the trees present during those months. Participants were between the ages of 20 and 69. Half of the participants had been assigned to rooms with windows looking out over a natural scene and the other half were in similar rooms, but with a view of a brick wall. Both groups were made up of 15 females and 11 males and were also *matched* on age, weight, previous hospitalisation, floor level, room size and colour. Rooms and windows were of the same size and the only difference was what could be seen out of the window.

Patients’ records were obtained and five key pieces of information were taken: 1. Number of days in hospital from surgery to discharge; 2. Number and strength of analgesics each day; 3. Number and strength of doses for anxiety; 4. Any minor complications, such as nausea which required medication; 5. Nurses’ notes relating to a patient’s condition or course of recovery.

**Results:** Patients’ records showed that those with window views spent *significantly* less time in the hospital than those with views of the brick wall: an average of 7.69 days compared with 8.70 days per patient. Nurses’ notes about the patient’s condition during the postsurgical period were analysed. Significantly more negative notes (such as ‘upset and crying’) were made on patients with the brick wall view: 3.96 per patient compared with 1.13 per patient with the tree view. Furthermore, more positive comments (such as ‘in good spirits’) were recorded for the tree-view patients, although these results were not statistically significant. Between days 2 and 5 after surgery, there were statistically significant results: patients with the tree view took fewer moderate and strong pain doses than did the wall group, but more doses in the weak category such as aspirin. But there was no significant variation between the groups in the anti-anxiety drugs administered. Furthermore, the tree-view patients had fewer post-operative complications, but this was not a significant result.

**Conclusions:** Ulrich concluded that natural scenes have positive therapeutic influences. Patients who can see a natural view from their hospital window have shorter post-operative hospital
stays than those with a view of a brick wall. Those with a natural view also display more positive behaviours, take fewer moderate and strong analgesics and tend to experience fewer minor postoperative complications than patients who have a featureless view.

Evaluation

Usefulness of research: This study is very useful, as it suggests that individuals’ recovery from surgery can be improved by their view from a window. This has important implications for hospitals, as we can improve patient’s health and wellbeing, as well as saving substantial money and resources if stays in hospital are shorter; therefore, the locations of hospitals and their designs should consider this useful finding.

Validity: Ulrich’s research has a number of methodological strengths. Many extraneous variables were controlled for to increase the internal validity of the study. The gender ratio in each condition, as well as age, weight, prior hospitalisation, floor level and room size and colour were all controlled for a match for each condition. This enabled causal conclusions to be made: the view from a window does impact recovery from surgery.

Individual/situational explanations: This study offers strong support for the situational explanation, as environmental factors do significantly influence recovery from surgery. This study is also on the side of nurture, determinism, and reductionism sides of the debates.

Exam Style Questions

Using the research by Ulrich (1994), explain the psychological effects of built environment. (10)

Explain how the research by Ulrich (1994) could be used to improve the health and/or wellbeing through environmental design. (10)
Wells (2000)

Office Clutter or Meaningful Personal Displays: The Role of Office Personalisation in Employee and Organisational Well-being.

Background and aim: Wells was interested in employees’ personalisation of their workspaces and proposed four research questions and hypotheses:

1. Q: Do men and women personalise their workspaces differently?
   a. H: Men and women will personalise their offices differently.

2. Q: Is personalisation associated with enhanced employee well-being?
   a. H: Personalisation will be positively associated with satisfaction with the physical work environment, which will be positively associated with job satisfaction, which will be positively associated with employee well-being.

3. Q: Is personalisation more important to women’s well-being than that of men?
   a. H: Workspace personalisation will be more integral to the well-being of women than men.

4. Q: Is a company’s personalisation policy associated with organisational well-being?
   a. H: Companies that have more lenient personalisation policies will report higher levels of organisational well-being than companies having stricter personalisation policies.

Method: A self-report method was used, which included an employee survey and a coordinator survey; some participants were also interviewed. Moreover, observations and photographs were taken of workstations. Office workers from 20 companies in Orange County, California, partook. All were classed as small business and had volunteered to take part and included a home medical equipment company, two real estate agencies, and three distributors. 661 surveys were distributed and 338 were returned. 23 of these employees were chosen as individual case studies.

Results: H1 – Personalisation of a workspace was reported for the following reasons:
56% - to express their identity and individuality; 30% - to improve the feel of the workplace; 16% - to express their emotions; 15% - to show that the workspace belonged to them; 6% - to show their status within the organisation; 5% - to control their interactions with co-workers; and 3% - because everyone else did. Significantly more females did so to express their identities and their individuality, to express their emotions, and to improve the feel of the workplace while men did so to show their status within the company.

Women personalised their workspaces significantly more than men, with an average number of items displayed being 11.2 for women and 7.68 for men. Females’ personal displays contained significantly more symbols of personal relationships and more plants and trinkets, while men’s items were more sports-related. Both survey and observational data support the hypothesis.
H2 – Results showed as predicted that personalisation is significantly associated with satisfaction. This was in terms of the number of personal items on display, the association between how much the employee would like to personalise and how much they are allowed to, and finally the extent to which the employee arranged their workspace. There were no significant findings relating to team workspaces. A significant positive correlation was found between satisfaction with the physical environment and job satisfaction, which was positively associated with employee well-being.

H3 – Survey results did not support the hypothesis. Personalisation was no more important to the women’s well-being than to men’s. However, in the interviews women were more likely to say that personalisation did improve their well-being and many more stated they would feel restricted and controlled if workspace personalisation was prohibited, compared to men.

H4 - Results showed that companies that allow more personalisation had significantly more positive organisational climate, social climate, higher levels of staff morale and reduced turnover of staff. Furthermore, the extent of workspace personalisation was positively correlated with the amount of personalisation allowed. Organisational well-being was positively correlated with employee wellbeing. Those who personalise are more likely to be older, married and be managers.

Conclusions: Wells concluded that men and women personalise their workspaces in different ways and women do so more than men, and women place more importance on this. Well-being of employees is improved if personalisation is allowed and they are more satisfied with their physical work environment. Companies with lenient personalisation policies have higher levels of organisational well-being, positive organisational and social climates and lower staff turnover than companies with strict personalisation policies.

Evaluation

Usefulness of research: Wells’ research is extremely useful for employers, managers, human resources workers and those responsible for the design of offices. By allowing staff the opportunity to personalise their workspaces, there will be a happier and more productive workforce and time and money will be saved on having to recruit new members of staff.

Reductionism/holism: Wells found a clear link between lenient personalisation policies and staff well-being, productivity and work climate. However, it may be reductionist to suggest the cause of such positive findings is only due to these policies. There may be many positive strategies and flexible, holistic approaches that make a business successful and staff happy.

Sampling bias: Although Wells conducted her research on a large sample and obtained a large amount of data from a range of different types of organisations, the companies investigated were all small business in California. Therefore such strategies in relation
to individuals’ workspaces may not be effective for medium and larger business and for workers from different cultures. Therefore, although results can be generalised to the many American businesses, there are questions as to whether findings can be applied beyond such organisations.

**Exam Style Questions**

Using the research by Wells (2000), explain territory and personal space in the workplace. (10)

Explain how the research by Wells (2000) could be used when implementing an office design strategy. (10)