



The European Commission's proposal to end Daylight Savings Time

A briefing report for the Road Safety Authority of Ireland

Dr Kiran Sarma
October 2018

17.10.2018





The European Commission's proposal to end Daylight Savings Time

A briefing report for the Road Safety Authority of Ireland

In 2018 the European Commission (EC) proposed the ending of Daylight Savings Time (DST) across all member states. The proposal follows a union-wide consultation process during which more than 80% of respondents reported being in favour of ending DST, the majority of whom favoured moving to summertime year-round. Proponents of the proposal have argued that such a move would have a range of positive impacts on society, including enhancing road safety. The assertion relating to road safety assumes that shifting light from the morning, when road traffic collision (RTC) risk is lower, to the evening, when collision risk is higher, would result in a net road safety gain. The objective of this briefing document is to explore this assumption with reference to the most relevant evidence on road safety collision risk, and in doing so support the RSA in adopting an evidenced-based position on the EC's proposal.

Dr Kiran Sarma

October 2018

17.10.2018





Table of Contents

Executive Summary	i
Introduction	i
The report	i
Summary findings	i
Recommendations/Conclusions	i
1. The proposed legislative change	1
1.1 Legislation and practice	1
1.2 Current time arrangements and likely changes by member states	1
1.3 Likely future Irish position	2
2 Potential impact of permanent summertime or wintertime on Road Safety	4
2.1 The light-shift hypothesis	4
2.2 What does the evidence say?	5
2.3 Considered position of the RSA to date	8
2.4 Considered position of the EC to date	8
2.5 Considered position of ROSPA	9
3 Recommendations	10
3.1 RSA position on permanent summertime	10
3.2 RSA position on permanent wintertime	10
3.3 RSA position on a move to CET, and then permanent summertime	10
3.4 Monitoring of RTC trends	11



Executive Summary

Introduction

In August 2018 the European Commission (EC) announced that it would propose legislative change that would end the practice of moving the clocks forward on the last Sunday in March (into ‘summertime’) and back again on the last Sunday in October (into ‘wintertime’). The period of the clock change is commonly referred to as Daylight Savings Time (DST). If enacted such a change would force EU member states to remain permanently on summertime *or* wintertime year-round, with the change due to take effect following the end of DST in 2019.¹ The change is being proposed following a consultative process, during which 84 percent of 4.6 million EU citizens from the 28 member states supported the ending of DST.

Those arguing in favour of moving to permanent summertime have argued that it would have positive effects for health and wellbeing, industry and commerce, energy usage and crime rates. They also argue that it would lead to improvements in road safety. This, it is argued, arises because moving to permanent summertime would displace light from the morning, when collision risk is lower, to the evening, when collision risk is higher, resulting in a road safety benefit – the light-shift hypothesis.

The report

This briefing report has been commissioned to set out key concerns for the RSA regarding the ECs proposal. Specifically, it considers the extent to which evidence exists that supports the assertion that moving to permanent summertime would result in a road-safety benefit and that the RSA could support such a move (i.e. taking up an evidenced-based position). In doing so it summarises a number of bodies of evidence that have explored different forms of light-shifting on road safety, and in particular evidence from the period 1969-1971 during which the UK and Ireland maintained summertime year-round, as well as studies that have explored collision rates during and around the DST period.

Summary findings

There is no conclusive evidence that shifting light from the morning to the evening has a consistently positive impact on road safety. Rather, the evidence from the British Summertime Experiment lacks predictive validity, due to the fact that the data is based on collision data from a) almost 50 years ago and b) a different jurisdiction. More recent analyses of the link between DST and collision risk is similarly inconclusive, with effects being either positive, negative or suggesting no change. Moreover, any trends emerging in this evidence base may be attributable to factors other than light, including changes in weather and traffic flow during the DST period.

Recommendations/Conclusions

Both the RSA and the EC have adopted the publicly stated position that the evidence does not conclusively support the assertion that shifting light from the morning to the evening leads to an improvement in road safety. This is based on comprehensive reviews of the empirical literature. For the RSA to support a move to permanent summertime on road

¹ Member states are to notify the EC of their decision to move to summertime or wintertime by April 2019, and the EC wants the Parliament and Council to adopt the proposal by March 19th http://europa.eu/rapid/press-release_MEMO-18-5641_en.htm



safety grounds would be to diverge from the evidence base and its current position on moving to CET. It would also diverge from the stated position of the EC. On this basis, the RSA is best advised to adopt the following position:

Deliberations on a move to permanent summertime should be based on factors other than road safety because the evidence available is inconclusive and does not support the assertion that shifting light from the morning to the evening in Ireland would lead to a road safety benefit. Rather, the international evidence is inconsistent. The effects of such a change may be positive, negative or lead to no change. It may also lead to inflated risk for some road users. This position is in-line with that of the European Commission which has clearly stated that the 'evidence remains inconclusive with regard to the relationship between summertime arrangements and road traffic accidents'.



1. The proposed legislative change

1.1 Legislation and practice

In August 2018 the European Commission (EC) announced that it would propose legislative change that would end the practice of moving the clocks forward on the last Sunday in March (into ‘summertime’) and back again on the last Sunday in October (into ‘wintertime’). The period of the clock change is commonly referred to as Daylight Savings Time (DST). If enacted such a change would force EU member states to remain permanently on summertime *or* wintertime year-round, with the change due to take effect following the end of DST in 2019.² The change is being proposed following a consultative process, during which 84 percent of 4.6 million EU citizens from the 28 member states supported the ending of DST.

The practice of changing the clocks twice-yearly has been in place to maximise available daylight and save energy, and stemming from two world-wars and an oil supply crisis in the early 1970s. In effect, it seeks to align daylight with daily activities including those related to education, work and recreation. It was legislated for in Directive 2000/84/EC, requiring all EU states to adhere to DST. Today the debate on the value of DST has spread beyond energy, to include potential benefits for transport, communications and commerce, agriculture, leisure, sports, tourism, health and public safety (including crime).³ In addition, it has been claimed that maintaining DST year-round (i.e. moving to summertime year-round) would lead to a reduction in road traffic injuries and fatalities.

This claim is based on the hypothesis that predicts that shifting light from the morning, when road traffic collision (RTC) risk is lower, to the evening, when collision risk is higher, would lead to a net road safety gain (called here *the light shift-RTC hypothesis*). This briefing report has been commissioned to set out key concerns for the RSA regarding the ECs proposal. Specifically, it considers the extent to which evidence exists that supports the assertion that moving to permanent summertime would result in a road-safety benefit and that the RSA could support such a move (i.e. taking up an evidenced-based position). In doing so it summarises a number of bodies of evidence that have explored different forms of light-shifting on road safety, and in particular evidence from the period 1969-1971 during which the UK and Ireland maintained summertime year-round, as well as studies that have explored collision rates during and around the DST period.

1.2 Current time arrangements and likely changes by member states

As it currently stands, the EU is divided into three time zones, with eight states maintaining Eastern European Time (GMT +2), 17 states using Central European Time (CET) (GMT+1) and three states using GMT (Ireland, Portugal and the UK). If the EC proposal goes ahead, then each Member State can act autonomously to decide to maintain either wintertime or summertime year-round. Where countries that currently share a time zone diverge in their preference, with some moving to permanent wintertime and others permanent

² Member states are to notify the EC of their decision to move to summertime or wintertime by April 2019, and the EC wants the Parliament and Council to adopt the proposal by March 19th http://europa.eu/rapid/press-release_MEMO-18-5641_en.htm

³ [http://www.europarl.europa.eu/RegData/etudes/STUD/2017/611006/EPRS_STU\(2017\)611006_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2017/611006/EPRS_STU(2017)611006_EN.pdf)



summertime, this would in effect result in time zone changes for these once time-harmonised countries. The EC is keen that this 'fragmentation' would not occur.⁴

Member states have not yet provided definitive statements as to whether they will move to permanent summertime or wintertime if the proposal is ratified by Parliament and the Council. However, Germany and a number of other influential member states are likely to move to permanent summertime. It is likely that the other member states currently in CET will follow-suit. Spain, which has maintained CET since 1942, may align itself (in terms of time zone) with Portugal and Ireland.⁵

An added complexity for Ireland is that the UK, which intends to leave the EU, has expressed no intention to abandon GMT and DST arrangements in the short-to-medium term. Thus should the proposal be approved by member states, and the UK maintains its current time arrangement, Ireland will find itself in a position where, for at least some part of the year, it is not time-linked to our nearest neighbour and Northern Ireland.⁶ This diverges from the Irish Government's position on time arrangements in the past, where any such change would only be considered as part of a coordinated move with the UK.⁷

1.3 Likely future Irish position

For practical reasons, Ireland is likely to only consider a move to permanent summertime. If Ireland moved to **permanent wintertime** we will be 1 hour behind the UK/NI for the DST period (7 months) (and be aligned during wintertime). Assuming that Germany and other countries currently using CET move to permanent summertime, we will be 2 hours behind these countries year-round. We will also be 1 hour behind Portugal which will almost certainly move to permanent summertime (and possibly Spain). As such, Ireland would end up in a time arrangement not shared with any other country.

Ireland will have the option of moving time zones after October 2019, and **align itself with Germany and other central European countries**. However, again for practical reasons this is unlikely to be seriously considered by the Irish Government. A move to CET, and subsequent alignment with central European Countries on permanent summertime after October 2019, would represent a 2-hour adjustment from current practice for much of the year. On some days in December and January it would be c. 10.30 am before sunrise under such an adjustment (e.g. if we shared the same time arrangement as Germany after October 2019, on January 1st 2020 the sun would rise at 9.04 in Munich but at 10.40 in Dublin).⁸ This would also leave us with a 2-hour time difference with Northern Ireland and the rest of the UK (assuming the UK does not participate in the new time arrangements).

If required to make changes to time arrangements after October 2019, Ireland will almost certainly move to **permanent summertime**. This prediction concords with a statement by

⁴ http://europa.eu/rapid/press-release_MEMO-18-5641_en.htm

⁵ Spain maintained the same time arrangements as UK, Ireland and Portugal until 1942. For a discussion on the implications for Spain of maintaining CET, and the recommendation of a Spanish parliamentary commission to move to GMT, see <https://www.theguardian.com/world/2013/sep/26/spain-working-hours-ending-siesta>.

⁶ See for example, <https://www.irishtimes.com/news/world/europe/clocks-in-dublin-and-belfast-could-be-on-different-times-after-brexit-1.3613875>

⁷ See Parliamentary Question 12940/17 – Deputy P. Broughan asked the Minister for Justice and Equality if further consideration had been given to extending summertime arrangements.

⁸ Civil Twilight, the point at which it may not always be necessary to use artificial light for outdoor activities. On January 1st, civil twilight begins approximately 40 minutes before sunrise and ends 40 minutes after sunset.

then Minister for Justice and Equality and Tánaiste, Frances Fitzgerald, in 2017 during which she stated that a Joint Committee on Justice, Defence and Equality had recommended that extending summertime ‘for a longer portion of the year... be put forward in any future review of European legislation’, and that any trial should be ‘coordinated as a joint venture with the United Kingdom’. However, with the UK not intending to change their arrangements, should Ireland move to permanent summertime, we will be +1 hour ahead of UK/NI for the period November-March (c. 5 months) (and be aligned during summertime), be harmonised with Portugal and possibly Spain, and be an hour behind Germany and other countries that align with permanent summertime in the current CET zone.

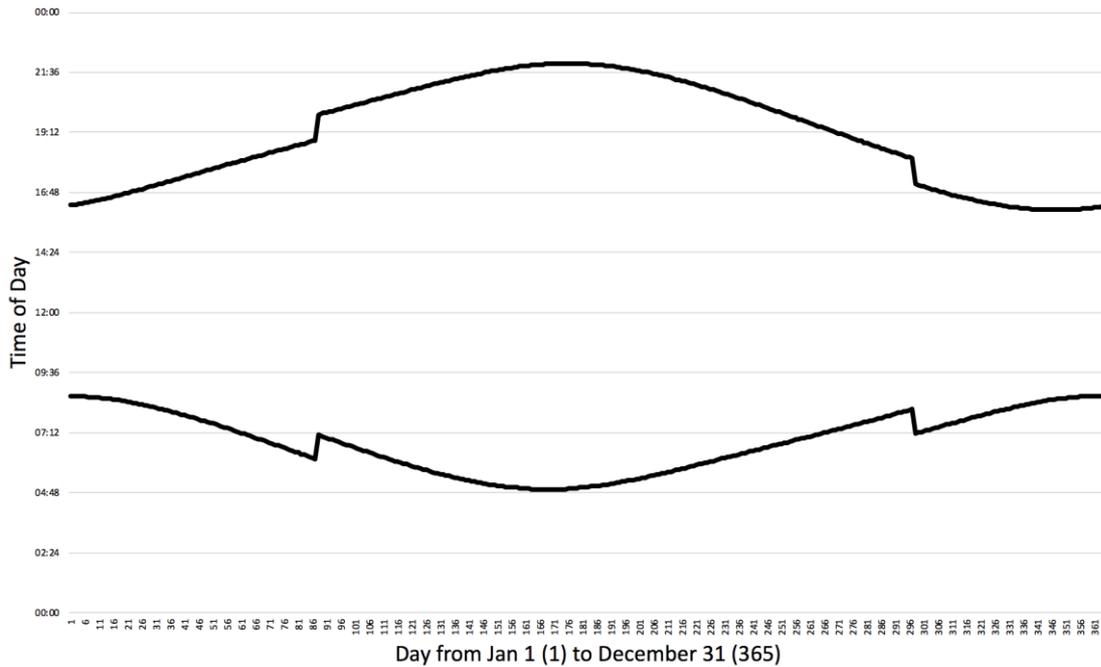


Figure 1: Sunrise and sunset in Ireland under current arrangements.

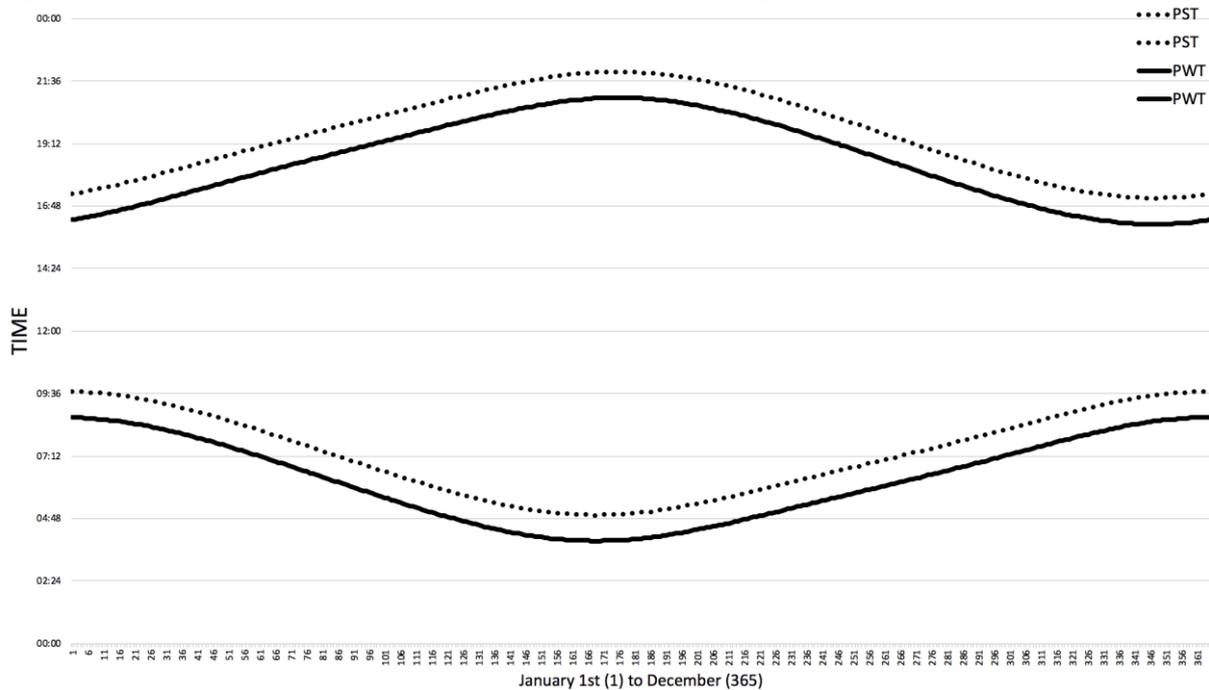


Figure 2: Sunrise and sunset for permanent summertime (PST) and permanent wintertime (PWT).

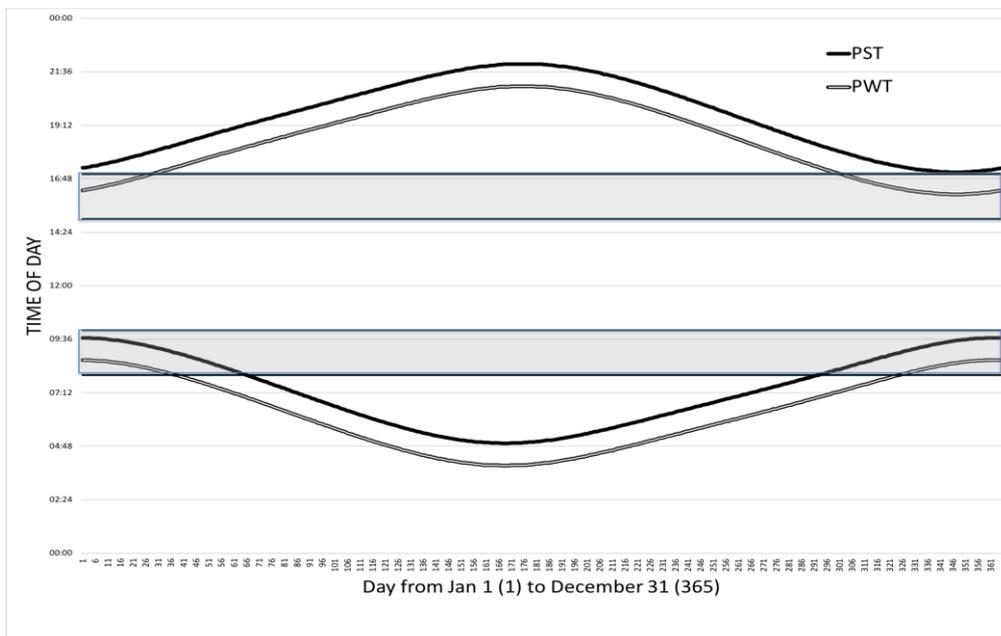
2 Potential impact of permanent summertime or wintertime on Road Safety

2.1 The light-shift hypothesis

During the debate on the potential value of abandoning DST, and moving to permanent summertime, it has been argued that such a change would have a road safety benefit. This assertion follows the same logic that underpins recent calls in the UK and Republic of Ireland to abandon GMT/Irish Standard Time (IST) and adopt CET, and which is rooted in the relationship between light and collision risk.

The basis of the hypothesis is that road traffic collision risk is at its highest in the late afternoon and evening hours (15:00 to 19:00 hours) and that, on some level, this arises due to the interaction between deteriorating light conditions and other risk factors, including driver fatigue. To the extent that evening collision risk derives from poor light, shifting an hour of daylight from the morning, when collision risk is lower, to the evening, when collision risk is higher, should lead to an overall net reduction in road traffic collisions (see Figure 3). This should be particularly marked during the autumn and winter months when the evenings are darker and weather conditions are less favourable for road users.⁹

Abandoning DST and moving to permanent summertime in effect creates an additional one hour of light in the evening from October to March (the winter months), when the clocks would normally have returned to wintertime. Thus, those arguing that abandoning DST would lead to an improvement in road safety are hypothesising a **light shift-RTC hypothesis** that shifting light from the morning to the evening will confer a road safety benefit.



⁹ Sarma, K & Carey, R. (2015). The potential impact of the implementation of the Brighter Evenings Bill on road safety in the Republic of Ireland.

<http://www.rsa.ie/Documents/Press%20Office/The%20potential%20impact%20of%20the%20implementation%20of%20the%20Brighter%20Evenings%20Bill%20on%20road%20safety%20in%20the%20Republic%20of%20Ireland.pdf>

Figure 3 – Peak RTC hours and sunrise and sunset under permanent summertime and wintertime

2.2 What does the evidence say?

There are three relevant sources of evidence that can help explore the light-shift hypothesis – a) studies of the British Summertime Experiment (1968-1971) when Britain maintained summertime year-round, b) studies from abroad into the impact of DST on collision risk and c) studies on the impact of DST on collision risk in Ireland.

2.2.1. British Summertime Experiment

The first source of evidence relevant to the EC proposal derives from the data on collision risk in the UK from the period 1968-1971. Between 1968 and 1971 the UK (and Ireland) maintained summertime year-round – that is, clocks went forward in March 1968 and were not returned to GMT again until October 1971. The period is commonly referred to as the British Summertime Experiment.

A small number of papers that have examined traffic collisions before, during and after the British Summertime Experiment, and have concluded that the period led to an increase in collision risk in the mornings, decrease in the evenings, and an overall net road safety gain.¹⁰ The most authoritative study is Broughton and Stone’s analyses of collisions around that period. They concluded that a move to CET would have ‘potential savings’ for pedestrians and vehicle occupants, with an overall reduction in fatalities of 2.6-3.4% and reduction in serious injuries of 0.7%.

However, these findings are of questionable validity in informing deliberations on the EC’s proposition. In particular, there have been changes, many dramatic, in driver behaviour, vehicle engineering, traffic volumes, and infrastructure over the last 50 years. As succinctly put by Broughton and Stedman, ‘conditions have changed since the end of the experiment and the results cannot be applied directly to current conditions’.¹¹

Even if the findings of these studies are valid in terms of predicting collision risk in the UK under permanent summertime, it is unclear to what extent they are valid for Ireland. Ireland is west of ‘mainland Britain’, and thus under shared time arrangements, the sun rises later and sets later here. On January 1st 1970, for example, sunrise in London occurred at 09.06 and sunset at 17.01. In Dublin sunrise was at 09.40 (sunset was 17.16) and in Galway it was at 9.51 (and sunset was at 17.28). It is unclear what effect these later sunrises may have on the light-shift hypothesis. It is at least possible, for example, that it leads to a disproportionate increase in collision risk in the morning period (e.g. for vulnerable road users, farmers etc.), and which outweighs reductions in evening collisions.¹²

The British Summertime Experiment ended in 1971, following a decision by the House of Commons (on 2nd December 1970). This decision was based, in part at least, on the lack of clear evidence that the period conveyed either advantages or disadvantages for UK citizens.

¹⁰ Broughton, J., & Stone, M. (1998). *A new assessment of the likely effects on road accidents of adopting SDST*. TRL Report 368; Broughton, J., & Stedman. (1989). *The potential effects on road casualties of Double British Summer Time*. TRL Report RR228; TRL. (1970). *British Standard Time and road casualties* (1970). TRL Leaflet.

¹¹ Broughton, J., & Stedman. (1989). *The potential effects on road casualties of Double British Summer Time*. TRL Report RR228

¹² Similar points in relation to the British Summer Time Experiment were made to the Commission in COM/2000/0302, retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52000PC0302>.



However, it also reflected the concerns of citizens from northern areas of England and Scotland that it led to unacceptable risks during the morning period for farmers and children (e.g. school children walking or cycling to school).

In summary, **evidence that the British Summertime Experiment led to a net reduction in road traffic injuries and fatalities in the UK cannot be used to support a move to permanent summertime.** This evidence is of questionable validity today. This is because there have been changes to road infrastructure, driver behaviour, vehicle safety, traffic density and climate etc. since that time. In addition, it is not clear to what extent findings from one jurisdiction would transfer to another jurisdiction.

2.2.2 International research on DST

A second source of evidence relevant to the EC proposal are a large number of studies from different jurisdictions that have explored the impact of DST on road traffic collisions, injuries and fatalities. The results from these studies were synthesised recently in a report commissioned by the Road Safety Authority, with the review considering both the short-term and long-term effects of DST.¹³ In that review, Sarma and Carey identified 24 studies that involved a quantitative analysis of primary data on collisions around DST transitions. Seventy-one percent (k=17) of these studies were based on US data and 8 percent (k=2) were based on UK data.

The long-term effects of DST were explored in 12 studies (i.e. up to 13 weeks pre and post the transition). All, with the exception of analysis of collisions in the Republic of Ireland (reviewed below), reported that collision risk reduced during DST, and the extent of this reduction tended to be statistically small. However, the review noted that these changes cannot be conclusively attributed to DST, and may, in whole or part, be attributable to other factors that change during this time, and in particular improvements in weather during late spring and summer, as well as changes in traffic density. The review also noted that 11 of the 12 studies were based on US collision data, and questioned the predictive validity of this body of evidence when applied to other jurisdictions.

Short-term effects (approximately up to 2 weeks after the transition) are often considered the 'purest' test of the effects of light on collision risk. This is because contributory factors for collision risk change less over short-periods of time, thus allowing for analyses to be more sensitive to DST effects. Here researchers often hypothesise that the Spring Transition will lead to an increase in collision risk, and resulting from the negative impact of this transition on sleep - during the spring transition, a 23-hour day occurs, creating a 'missing' hour and leading to a reduction in sleep time and quality and which has been shown to have enduring effects for up to two weeks after the transition. However, in Sarma and Carey's review results were mixed, with six studies reporting an increase in collision risk, three reporting a reduction, and seven reporting no change.

Sleep disturbance is less of a risk during the Autumn transition, however, and theoretically the shifting of light from the evening back to the morning should lead to an increase in collision risk. However, again findings were inconsistent across studies, with five studies reporting a decrease in collisions, five reporting an increase, and five reporting no change.

¹³ Sarma, K & Carey, R. (2015). The potential impact of the implementation of the Brighter Evenings Bill on road safety in the Republic of Ireland. Also, Carey, R.N and Sarma, K.S (2017). Impact of daylight saving time on road traffic collision risk: A systematic review. *BMJ Open*, 7(6), e014319.

The review also considered the potential for DST to impact on different road users in different ways. For example, in the US, Coate and Markowitz have estimated that year-round DST would reduce pedestrian fatalities in the evening by one-quarter but increase those in the morning by one-third. Overall, they conclude that, since pedestrian activity is higher in the evening compared to the morning, year-round DST would reduce overall pedestrian fatalities by 13%.¹⁴

The difficulty with Coate and Markowitz's conclusion, however, is that the same logic would suggest that some road users may be at increased risk under permanent summertime. For example, taking a situation where primary school children are particularly active during the 8.00-9.00 (school commute), 13.30-16.00 (school commute) and after 18.00 (sporting activities) periods, then a shift to permanent summertime would mean that in Dublin on January 1st 2020, the morning commute would be darker (sun rise at 9.40 rather than 8.40), the afternoon commute would remain pre-sunset (sunset at 17.16 rather than 16.16) and evening activities would still occur after sunset. Theoretically, then, a move to permanent summertime could lead to a net increase in risk for this population, while decreasing risk for other populations. As such, there are difficulties with both the theoretical proposition around the light shift-RTC hypothesis as well as the evidence that has tested it.

Sarma and Carey note the limitations of the DST evidence, and in particular the lack of statistical control of factors such as traffic flow in the reported analyses. **They conclude that, taken as a whole, the body of evidence did not support the assertion that shifting light from morning to evening leads to an improvement in road safety in spring (when mornings become darker and evenings brighter), or deterioration in road safety in autumn (when evenings become darker, and mornings brighter).**

2.2.3 Ireland

One specific concern about the DST literature is evidence that effects from one jurisdiction may not have predictive utility for another jurisdiction. For this reason, the Road Safety Authority of Ireland commissioned a review of the road collision data in this jurisdiction around the DST transitions.¹⁵ The analyses first examined the frequency of RTCs around the transition to DST in spring. Again, this should lead to a reduction in RTCs due to the extended daylight hours during the evenings. Short-term effects were probed by comparing collisions and casualties occurring two weeks before the transition with the same time period after the transition. There was no change in collision incidence. There was increase in casualty numbers, however, both for during the morning period (05:00-09:00) and for the morning and evening periods (15.00-19.00) combined. Pedestrian casualties also increased during the morning periods in the short-term analyses. In the longer-term there were increases in collisions and casualties in the 7 weeks after the Spring transition, compared to the 7 weeks prior to the transition. These findings were contrary to expectations, and may be attributable to factors other than DST such as, for example, monthly and weekly fluctuations or trends in

¹⁴ Coate, D., & Markowitz, S. (2004). The effects of daylight and daylight saving time on US pedestrian fatalities and motor vehicle occupant fatalities. *Accident Analysis and Prevention*, 36(3), 351-357. doi: 10.1016/s0001-4575(03)00015-0

¹⁵ Sarma, K & Carey, R. (2015). The potential impact of the implementation of the Brighter Evenings Bill on road safety in the Republic of Ireland. <http://www.rsa.ie/Documents/Press%20Office/The%20potential%20impact%20of%20the%20implementation%20of%20the%20Brighter%20Evenings%20Bill%20on%20road%20safety%20in%20the%20Republic%20of%20Ireland.pdf>

traffic volume. ***In summary, analyses of the transition into DST do not support the road safety benefits of DST and do not support the light shift-RTC hypothesis.***

The analyses next examined the transition back to Standard Time (ST) in autumn. This change results in improved lighting conditions in the morning, but a reduction in light in the evening, and should lead to a decrease in incidents in the morning, an increase in the evening and an increase overall (both peak periods combined). In the short-term analyses, there were significant reductions in collisions and casualties in the morning period. However, there were no significant changes in evening collisions or casualties and no effects overall. Longer-term comparisons (± 7 weeks) suggested an increase in the incidence of collisions for morning and evening periods combined. However, changes for morning or evening periods were not, on their own, significant.¹⁶ For casualties, there was a significant increase for both the morning peak and the morning and evening peaks combined. Crucially, changes for the evening period, where the most marked increase in RTCs were anticipated, were not significant.

Overall neither the short-term nor long-term analyses around the transition to ST in autumn supported the light shift-RTC hypothesis.

2.3 Considered position of the RSA to date

While the RSA has not yet reached a position on the potential effects of a move to permanent summertime or permanent wintertime, it has a stated position on a permanent move to CET. Here the agency has concluded that 'there is no conclusive evidence that a year-round move to CET would have a beneficial impact on road safety in Ireland... [and therefore] the RSA cannot support, on road safety grounds a move to CET'.¹⁷ This logic applies to all three possible time-arrangements that could be considered by the Republic of Ireland, a move to CET (and then permanent summertime), permanent summertime or permanent wintertime. That is, the evidence is insufficient to support the assertion that any shifting of light has a consistent predictable impact on collision risk.

2.4 Considered position of the EC to date

This position is in-line with that of the EC. In 2018 the Commission, in inviting observations in relation to the ending of DST, advised that

*Evidence remains inconclusive with regard to the relationship between summertime arrangements and road traffic accidents. In principle, sleep deprivation from advancing the clock in spring could increase the risk of accidents. At the same time, extended daylight hours during summer evenings are considered to have a positive effect on road safety. However, it is generally difficult to attribute directly the effect of summertime arrangements on accident rates compared to other factors.*¹⁸

This finding echoes earlier positions held by the Commission. In 2007 it concluded that the

Evidence did not support the assertion that there was a definite causal link between adopting summertime and accident risk. As regards road safety, the question is whether darker mornings, in particular in spring and autumn, and lighter evenings have an impact on the number of traffic accidents. The lack of sufficient data and the interaction of other factors such as weather conditions do

¹⁶ That the overall effect was significant, while individual peak periods were not, is due to the fact that it is easier to reach statistical significance with larger samples/case numbers.

¹⁷ <https://www.independent.ie/life/motoring/car-news/revealed-why-changing-time-zones-would-not-boost-road-safety-37261727.html>

¹⁸ https://ec.europa.eu/info/consultations/2018-summertime-arrangements_en

not enable a definite causal link between summertime and the number of accidents to be established (p. 4)¹⁹.

2.5 Considered position of ROSPA

In the UK, the Royal Society for the Prevention of Accidents (ROSPA) have long argued in favour of the light-shift hypothesis in lobbying for a permanent move from GMT to CET. Most recently, ROSPA proposed that

*‘One of the consequences of the UK’s system is that more people are killed and injured on the roads because of darker evenings in the autumn and winter than would be if we adopted Single/Double British Summertime (SDST)... SDST would mean... lighter evenings all year round and result in fewer people being killed and injured in road accidents’.*²⁰

In support of this position, ROSPA draws attention to the studies on the British Summertime Experiment, discussed earlier, and which the authors acknowledge are ‘quite old’. The report also cites a number of UK studies on accident rates around DST transitions that purport to show increases in collision risk following the autumn transition, but none of which authoritatively demonstrate that this arises due to DST rather than factors that also change during this period (e.g. weather).

ROSPA acknowledge concerns about displacing light from mornings to evenings, including concerns that this may lead to an increase in child casualties in the morning, have different impacts on different parts of the UK, or have negative impacts on workers who start work early (e.g. farmers). They recommend a 2-3 year ‘experiment’ to provide up-to-date evidence about the effects of SDST.

¹⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52007DC0739&from=EN>

²⁰ <https://www.rospa.com/rospaweb/docs/advice-services/road-safety/british-summertime-factsheet.pdf>



3 Recommendations

The RSA should adopt the position that the evidence is inconclusive on the effects of light-shifting on road safety and that deliberations on the ECs proposal should be based on factors other than road safety.

3.1 RSA position on permanent summertime

Proponents of moving to permanent summertime year-round make a number of assertions in relation to the benefit of abandoning DST, one of which is that it will result in a net road safety benefit, or a reduction in injuries and fatalities resulting from road traffic collisions. It is likely that the RSA will be asked to comment on this assertion, and contribute to Government deliberations on the EC's proposal.

Both the RSA and the EC have adopted the publicly stated position that the evidence does not conclusively support the assertion that shifting light from the morning to the evening leads to an improvement in road safety. This is based on comprehensive reviews of the empirical literature. For the RSA to support a move to permanent summertime on road safety grounds would be to diverge from the evidence base and its current position on moving to CET. It would also diverge from the stated position of the EC. On this basis, the RSA is best advised to adopt the following position:

Deliberations on a move to permanent summertime should be based on factors other than road safety because the evidence available is inconclusive and does not support the assertion that shifting light from the morning to the evening in Ireland would lead to a road safety benefit. Rather, the international evidence is inconsistent. The effects of such a change may be positive, negative or lead to no change. It may also lead to inflated risk for some road users. This position is in-line with that of the European Commission which has clearly stated that the 'evidence remains inconclusive with regard to the relationship between summertime arrangements and road traffic accidents'.

3.2 RSA position on permanent wintertime

Ireland is unlikely to seriously consider moving to permanent wintertime. Such a move would put Ireland 2 hours behind countries currently on CET, which would have a negative impact on international collaboration and commerce. As Portugal is likely to move to permanent summertime, and the UK is likely to maintain GMT with DST (at least for the medium term), permanent wintertime in Ireland would also leave us in a time arrangement not shared with any other country.

This said, the logic underpinning the recommended position on permanent wintertime cannot be separated from the logic set out above in relation to permanent summertime. Again, the evidence is inconclusive, and there is no evidence that clearly demonstrates that a move to permanent wintertime would have consistent effects on road safety in Ireland. Such decision should be based on factors other than road safety.

3.3 RSA position on a move to CET, and then permanent summertime

Ireland is unlikely to seriously consider aligning itself with Central Europe (i.e. countries currently maintaining CET) after October 2019. Such a realignment would go further than envisioned in the *Brighter Evenings Bill*. Under such an arrangement, Ireland would move to CET and then permanent summertime year-round. On some dates in December and January it would be after 10.30 am in the morning before the sun would rise in Dublin and after 10.50

am before sunrise in Galway. In the event that the RSA was asked to take a position on such a re-alignment, it would have to refer to the logic above, but could also express concern about the unknowable effects of this change on those who use the roads in the mornings (e.g. primary school children).

3.4 Monitoring of RTC trends

While maintaining that deliberations on the ECs proposal should be based on factors other than road safety, the RSA should acknowledge that the effects of any change to time arrangements here on road safety will need to be carefully monitored. Where evidence emerges that any change is detrimentally impacting on road safety, then road safety strategies will need to be implemented to mitigate against this risk. This may include, for example, strategies to address any potential impact of darker mornings on risks for vulnerable road users including pedestrians and cyclists.

