

SEALS OF (DIS)APPROVAL: TELEVISION WEATHERCASTERS DEBATE THE VALUE OF VOLUNTARY CREDENTIALS

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Abstract

Television weathercasters may be the most prominent science communicators in our modern society, yet we know little about them from the traditional scholarly literature. This study analyzes one of the most contentious subjects among TV weathercasters: the perceived value of the two seal of approval programs.

Results from this study reveal that TV weathercasters believe the seals measure on-air skill more than forecasting ability. The data also uncover a distinct split about the perceived value of the seals as well as alternate training for on-air weathercasters that some may not consider to be rigorous enough.

1. Introduction

Television weathercasters play a prominent role in our society. When a large tornado outbreak occurred in Oklahoma City in May 1999, TV weathercasters were credited with saving many lives (Henson 2002). The same was true in May 2003 when another violent system tore through the Kansas City metropolitan area. TV weathercasters were able to warn their audiences to seek cover well before the storm's fury struck and may well have saved lives (Barnhart 2003).

Despite this tremendous potential impact, TV weathercasters have received little attention in the traditional scholarly literature. Only four academic studies related to TV weathercasting have been published in the past 50 years. Perhaps some of this neglect is rooted in the history of TV weather. One of the first television weathercasts utilized a cartoon character for the presentation. That may be one reason why scholars have not taken this profession seriously and why weathercasters take their own work so seriously. Perhaps in no other area of journalism does such a large disconnect exist between academia and the profession. While consultant research abounds, most of it is proprietary and often not shared with the weathercasters themselves.

Television weathercasting is an idiosyncratic profession. Being a good scientist is only part of the task and few non-TV meteorologists understand the demands of the broadcast business. Being only an entertainer, as previous episodes in TV weathercasting allowed and encouraged, is no longer enough to do the job well. This study investigates one of the most contentious themes in TV

weather; the desire for credibility through seal of approval programs. These seal programs have their roots in a turbulent history that not only includes puppets as on-air forecasters, but also dry military meteorologists, women clad scantily in swimsuits, and flashy, expensive graphic packages.

2. TV Weather History

TV weather has vacillated between silly and serious at several points in the history of broadcasting. At first, TV weather was often treated as a light diversion from the seriousness of the news (Henson 1990). WNBT-TV, an experimental station (later WNBC) serving at best a few thousand viewers in New York City, is often cited as having the first American television weathercast (Monmonier 2000). On that broadcast a cartoon character named Woolly Lamb sang the forecast. Botany's "wrinkle-proof ties" sponsored this first weathercast, and perhaps, provided the first Rubicon for subsequent battles over how weather should be presented on television.

After that light-hearted start, scientists began to dominate the profession. World War II had trained thousands of enlisted men in meteorology and dozens of those veterans showed up on local news programs in the late 1940s. Weather news was treated seriously with one news director remarking, "the first training a new man (sic) in our newsroom receives is learning to write the weather story" (Charnley 1948). These first shows bore little resemblance to the flashy, graphic-filled weathercasts of today, as most were "no-frills, dry, and pedantic" (Henson 1990).

The 1950s were television weather's wildest, most uninhibited period. Since most data and forecasts were taken directly from the U.S. Weather Bureau, a variety of puppets, costumes, animals, and gimmicks were used to present forecasts in a more "entertaining" manner.

It was in this time period that women first made forays into this exclusively male bastion. By 1955 women represented the majority of on-air TV weathercasters (Binkley 1999), but many women bore a special burden during television weather's gimmicky phase — many of them were forced to play sex objects. A recent national online poll by Playboy Magazine to choose the "sexiest" weathercaster indicates such trends may still continue for some women weathercasters today.

The 1960s and 70s brought about rapid changes in TV weathercasting, most related to advances in technology leading to the use of satellite and radar images. At the

same time “happy talk news” developed, encouraging more interaction and joviality among the news anchors. This was especially true for weathercasters who were once again expected to deliver a more light-hearted balance to the hard news of the day. Today’s TV weathercasters may embody all of that history and more, as the job now demands expertise in graphics production.

3. The “Proper” TV Weather Forecast

Professional organizations began extensive, and almost always controversial, programs to grant credibility to weathercasters who met their standards. The American Meteorological Society (AMS) began the first Seal of Approval program in 1957, and conferred it on those weathercasters who met the Society’s guidelines for “completeness, clarity and professionalism.” Speaking for the Society on the need for such credentials in a *TV Guide* column entitled “Weather is No Laughing Matter,” Francis Davis wrote:

If TV weathermen (sic) are going to pose as experts, we feel they should be experts. We think many TV weathermen (sic) make a caricature of what is essentially a serious and scientific occupation, and help foster the notion that forecasters merely grab forecasts out of a fishbowl.

The requirements for the first AMS seals (issued in 1959) were a written application and a film clip of one representative weathercast. Other AMS members were secretly recruited to observe weathercasts. The sample weathercasts were graded by an AMS committee and seals awarded to qualified applicants. As early as 1959, *TV Guide* observed that gimmicky weathercasting was on the wane. The following comment appeared in an editorial article (“An Improvement in TV Weather Forecasting”) which appeared in the July 18, 1959 edition:

Television weathercasts have matured from off-the-cuff reading of the official weather bureau reports by announcers or pretty girls to serious interpretations by station meteorologists with official weather training.

The AMS seal process remains in effect today, although it too has gone through much change over the past 40 years. This has even included lawsuits filed by weathercasters denied the coveted seal. Since 1959, the AMS has certified more than 1,300 television weathercasters as well as 150 in radio (American Meteorological Society 2004). This is an average of almost 30 seals per year, with increasing numbers in recent years.

In February 1982, the National Weather Association (NWA) created an alternate credential for weathercasters. The NWA began in 1975 as a more informal organization than the AMS. Initially, its seal required no meteorology degree or written exam, which allowed more weathercasters to receive the seal. Since 1982, the NWA

has awarded more than 822 seals (National Weather Association 2006), averaging more than 35 a year. Similar dramatic increases have occurred in recent years. Although the NWA seal does not have an educational requirement, it now requires passing a written exam, re-certification, and training to keep the seal – something the current AMS seal does not require.

However, the AMS is making sweeping changes to their seal program. Their new credential, “Certified Broadcast Meteorologist (CBM),” requires an exam and professional development credits over a five-year period to maintain it. Current AMS sealholders will be able to retain their credential while being encouraged to upgrade to the new CBM. These latest changes to the AMS seal program mean that the major requirements for both seals will be strikingly similar in approach and evaluation. Despite these similarities, data from this research reveal that many TV weathercasters express wildly divergent attitudes about the two credentials.

Acknowledging the need for a unique combination of skills to succeed as a modern TV weathercaster, alternative approaches to training are growing. This has served as another catalyst for debating the proper preparation for on-air TV weathercasters. These programs combine both the science of meteorology and communication skills for new degrees in broadcast meteorology.

The largest such program began at Mississippi State University (MSU) in 1987, and has more than 1500 graduates with an additional 300 students currently enrolled in the three-year program (Binkley 2003). This program utilizes lectures on DVD, interaction through the Internet for discussion and testing, as well as a seminar/workshop at the end of their program. This structure allows weathercasters to remain employed in their current job while continuing their training. News Management will often pay for this specialized schooling because it can lead to earning both seals of approval. Other programs exist such as those at Lyndon State College and New England School of Communication; however, this study concentrates on the oldest and most prominent program which is located at Mississippi State.

4. Research Goals and Methods

Because of this 50-year battle over how weather should be presented on TV, as well as new mixed degree options, this paper addresses four specific goals related to this intense internal debate:

1. Measure TV weathercaster’s perceived value of the AMS seal of approval.
2. Measure TV weathercaster’s perceived value of the NWA seal of approval.
3. Measure TV weathercaster’s perceived value of an alternative degree option for on air forecasters at Mississippi State University.
4. Identify differences in those perceptions and offer analyses on why such discrepancies occur.

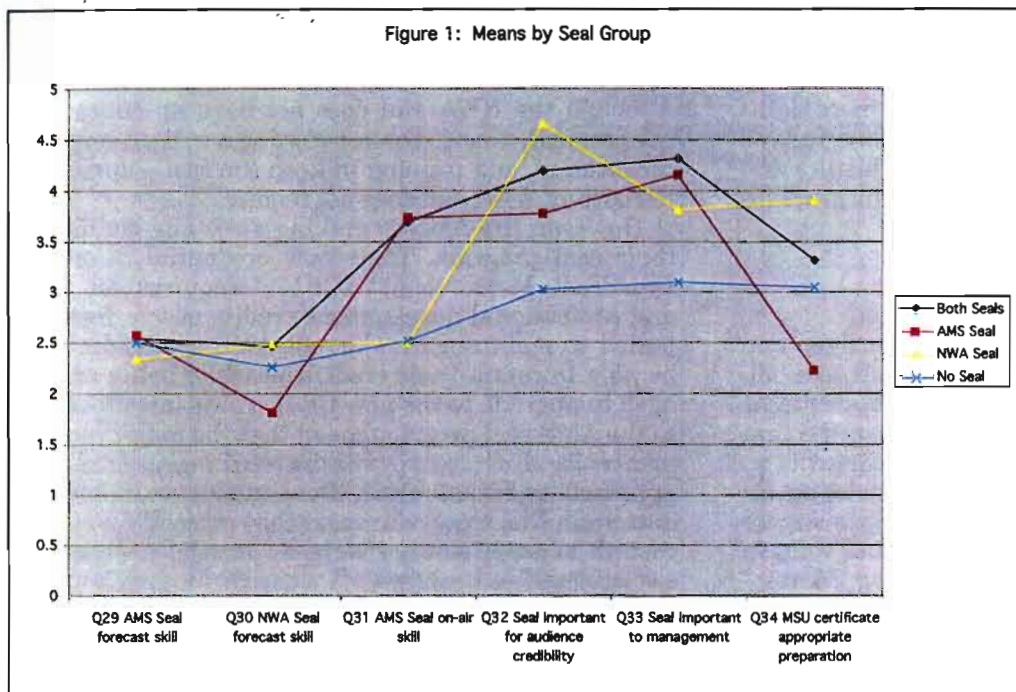


Fig. 1. Visual overview of the overall patterns of the subgroups of TV weathercasters to the six Likert-scale questions.

First described by Bloom (1964), this research approach focuses on the affective domain. That is, it measures attitudes and values TV weathercasters hold about this highly charged subject. The affective domain of knowledge is less tangible and more difficult to interpret and assess, but must be considered (Marsden 1976), especially with a controversial subject matter where the most illustrative results may surface.

This study was based on a survey mailed to 445 randomly selected, local television weathercasters. The Broadcasting and Cable Yearbook was used to identify all network affiliates and independent stations in the United States providing local newscasts. Then a rotating system of primetime/main anchor, morning/noon anchor, and weekend weather anchor was used to identify one person at each station to receive the survey. Once the position was selected, a personal phone call was made to the station to get the correct name and spelling of the person currently in that position. Then a survey specifically addressed to that person was mailed along with a cover letter identifying the investigator and the reasons for the inquiry.

A total of 217 TV weathercasters responded to the survey for a response rate of 48.8%. This is considered a good response rate given that the survey was a one-time mailing and no postcard reminders were mailed out. No code numbers were used on the surveys to insure confidentiality and anonymity. The goal of a probability sample such as this one is a systematic selection procedure to represent the universe with a minimum of sampling error. Overall, this sample of weathercasters represents 127 markets in the U.S. and 47 of the U.S. 50 states (no responses from Wyoming, Alaska, or New Hampshire).

5. Results and Discussion

Given the internal debate about credentials, one of the most important variables used in this analysis was whether weathercasters had one, both, or neither of the two seals of approval. One hundred and eight of the 217 TV weathercasters said they had the AMS Seal of Approval – one hundred and nine did not, providing a nearly perfect 50/50 split. Fifty-seven TV weathercasters said they had the NWA Seal of Approval, 26 reported having both seals, and 77 said they had neither. The nearly 2:1 ratio of AMS sealholders to NWA sealholders in this sample (1.89) is nearly identical to the ratio of the total number of AMS sealholders to NWA sealholders (1.73).

Other important variables used in these analyses included gender, market size, news-

cast position, educational training and background, and experience. Market size was broken into four categories commonly used in broadcast news research: 22% of the sample was from the top 25 markets; 16% from markets 26-50; 32% from markets 51-100; and 30% from the smaller markets 101 and above. The smaller percentage of responses in markets 26-50 occurred because it was assumed that at least four stations in those sized markets were doing local news (as with the top 25). That did not turn out to be the case in many markets which resulted in a lower number of survey responses. Just over half of the sample (51%) said they were the main/prime time weather anchors; 25% were self-identified as primarily a weekend anchor; and 20% were responsible for the morning and noon weathercasts. The remaining four percent were identified as part-time weather anchors largely performing other reporting tasks in the newsroom.

Just over half of the weathercasters (54%) said they had earned their highest degree in Meteorology/Atmospheric Sciences, while 10% chose other sciences. This figure is nearly identical to a smaller survey of weathercasters conducted by Lazalier (1982), in which 52% were self-identified as meteorologists. Nearly a quarter of this sample (23%) reported Journalism/Mass Communications as their highest degree and 5% indicated a combination of journalism and science.

A series of statistical analyses were used and are reported in the following tables to interpret the data. Some results are quickly intuitive, although never previously documented, while others reveal strong and perhaps surprising patterns among the various stakeholders.

Figure 1 shows the means to all six Likert-scale questions using seal of approval as an independent variable. The full questions are listed at the top of each of the

Table 1. Actual means for each of the six questions—the higher the mean the stronger the agreement with the statement.

	Q29 AMS Seal/ Forecast Skill	Q30 NWA Seal/ Forecast Skill	Q31 AMS Seal/ On-Air Skill	Q32 Seal Important for Audience Credibility	Q33 Seal Important to Management	Q34 MSU Certificate Appropriate Preparation
Both Seals	2.54	2.46	3.69	4.19	4.31	3.31
AMS Seal Only	2.57	1.80	3.72	3.75	4.20	2.20
NWA Seal Only	2.33	2.43	2.50	4.67	3.80	3.90
No Seal	2.46	2.20	2.46	3.06	3.16	3.09

Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

Table 2. Intercorrelations between the six terms, measuring association among the variables.

Correlations	AMS Seal/ Forecast Skill	NWA Seal/ Forecast Skill	AMS Seal/ On-Air Skill	Seal Important for Audience Credibility	Seal Important to Management	MSU Certificate Appropriate Preparation
AMS Seal/ Forecast Skill	1					
NWA Seal/ Forecast Skill	.604*	1				
AMS Seal/ On-Air Skill	.178*	0.02	1			
Seal Important for Audience Credibility	0.029	0.021	0.402	1		
Seal Important to Management	0.061	-0.022	0.33**	0.421*	1	
MSU Certificate Appropriate Preparation	0.123	.421*	-0.166	-0.133	-0.06	1

*** Correlation is significant at the 0.01 level (2-tailed)*
** Correlation is significant at the 0.05 level (2-tailed)*

Tables 3 through 8 asked weathercasters to respond on a five-point scale from strongly agree (5.0) to strongly disagree (1.0). Figure 1 provides a visual overview of the overall patterns of the subgroups of TV weathercasters to the six Likert-scale questions. Table 1 shows the actual means for each of the six questions – the higher the mean the stronger the agreement with the statement. Figure 1 and Table 1 show that overall TV weathercasters in this sample agreed most strongly that the seal of approval is most important to station management and to the audience. Those without either seal were less convinced of the seals' credibility to those constituents. As with all the other groups, the means for those two questions were still the highest among all six tested. In general, weathercasters also tended to agree more strongly that a seal of approval more accurately measures on-air

skill rather than forecast ability. Those with just the AMS seal demonstrate dramatic differences from the other cohorts in several cases, and are explained in greater detail in subsequent tables.

Table 2 shows the inter-correlations between the six items and measures association among the variables. Many of the correlations were significant. For instance, in Q29, those weathercasters who agreed that the AMS seal is an accurate measurement of forecast skill were also more likely to agree that the AMS seal is an accurate measurement of on-air skill ($r = .178, f < .01$). Those who agree that the AMS seal is an accurate measurement of on-air skill (Q31) also correlate with those who believe that the seal is important to station management ($r = .329, f < .01$). Statistical significance with a negative value also occurs in this category, providing the

Table 3. Mean scores for all four groups of sealholders in response to Q29. The AMS Seal of Approval is an accurate measurement of a TV weathercaster's forecasting skill.

	Subset 1
NWA Seal Only (30)	2.33
Neither Seal (69)	2.46
Both Seals (26)	2.54
AMS Seal Only (75)	2.57

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

Table 4. Mean scores to Q30. The NWA Seal of Approval is an accurate measurement of a TV weathercaster's forecasting skill.

	Subset 1	Subset 2
AMS Seal Only (75)	1.80	
Neither Seal (69)	2.20	2.20
NWA Seal Only (30)		2.43
Both Seals (26)		2.46

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

Table 5. Findings to Q31. The AMS Seal of Approval is an accurate measurement of a TV weathercaster's on-air skill.

	Subset 1	Subset 2
Neither Seal (69)	2.46	
NWA Seal Only (30)	2.50	
Both Seals (26)		3.69
AMS Seal Only (75)		3.72

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

first hint that many AMS seal holders have a unique and disapproving perception of alternate training for TV weathercasters – in this case, the value of the Mississippi State broadcast meteorology certificate ($r = -1.66, f < .05$). Those weathercasters who believe that the NWA seal of approval is an accurate measurement of forecast skill (Q30) show a positive correlation to the question, “the MSU certificate is appropriate preparation for a television weathercaster” ($r = .421, f < .01$). Overall, those weathercasts who believe a seal is important for audience credibility (Q32) also correlate with those who believe the seal is important for management credibility ($r = .225, f < .05$).

The next level of analyses involved multivariate and univariate models. All post-hoc comparisons were completed using Tukey's Honestly Significantly Different

Test (HSD). Each of the six questions will be considered individually in this portion of the analysis and summary findings reported in the conclusions.

Table 3 reports the mean scores for all four groups of sealholders in response to Q29. No statistical significance occurs among any of the sealholder groups (this is the only question in which that occurs) suggesting some uniformity among TV weathercasters regarding this issue. In general, weathercasters tend to disagree slightly from neutral that “The AMS seal of approval is an accurate measurement of a TV weathercaster's forecasting skill,” (Q29). It should be noted that it was left up to the weathercasters themselves to define “forecasting” and “on-air” skill, which are subjective measurements as part of the affective domain. While NWA sealholders and those without either seal are less impressed with the AMS seal as a barometer of forecasting abilities, statistical significance is not exhibited by either. Even those holding both seals, or the AMS seal only, are still on the disagree side of neutral to this particular question.

Table 4 reports the mean scores to Q30 which asked the same question about the NWA seal of approval. Responses to this question begin demonstrating distinct differences among TV weathercasters. The overall mean drops from 2.51 to 2.15, indicating that as a group, these weathercasters disagree more strongly that the NWA seal accurately evaluates forecasting skill. Those with only the AMS seal disagree most strongly (1.80). This association is significant with both NWA sealholders only as well as those weathercasters with both seals. This finding documents what is often iterated at AMS meetings by some sealholders who feel that their seal has more value than other options. Those weathercasters with both seals, however, rated the NWA seal on forecasting skill nearly identical to those with the NWA seal alone. Interestingly, those with just the NWA seal rated both the AMS and NWA seal comparably as measures of forecasting skill (2.33 vs. 2.43).

Table 5 reports the findings to Q31 which asked respondents to evaluate the AMS seal as a measurement of on-air skill (vs. forecast skill in Q29). The overall mean rises above neutral, indicating that more weathercasters agree that the AMS seal measures on-air skill more than forecasting skill. But among weathercasters, the perception of this evaluation is sharply divided. Those with only the AMS seal and those with both seals agree most strongly with this statement and are statistically significant compared to the other two subgroups. Those weathercasters with only the NWA seal and those without either seal disagree that the AMS seal accurately measures on-air skill. Both means are only slightly higher than their respective scores about the AMS measuring forecast skill (Q29), while those with both seals and those with just the AMS seal agree much more strongly that their own seal more accurately measures on-air ability rather than forecasting acumen. Because of space and time constraints, a similar follow-up question about the NWA seal measuring on-air skill was dropped from the survey. Future research may provide further illumination on this aspect of the NWA seal, although subsequent responses to this survey already illustrate a pattern.

Table 6 shows that the overall mean jumps dramatically to this question which indicates a strong agreement among weathercasters regarding the importance of the seal to their audience. Weathercasters tend to believe that a seal enhances their credibility to the audience. This is especially true for those with just the NWA seal. That relationship is statistically significant with all other groups, including those with just the AMS seal. This is the first instance in which NWA sealholders move to the agree side of neutral in response to a survey question. In this case, they believe most strongly that the seal adds credibility for the audience. The mean for those with just an AMS seal is nearly a full point lower on a five-point scale. Not surprisingly, those without either seal are least convinced in their attitude that a seal matters to the audience. This group's relationship is also statistically significant with all other groups.

Table 7 reports the findings to the follow-up question regarding the seals' perceived value to station management. Overall, weathercasters agree most strongly to this question ($x = 3.74$), indicating their belief that possessing a seal matters most to news management. As suggested in some of the advertisements for weathercasters, some news directors indeed express a proclivity for a seal (especially the AMS seal for reasons that are as yet unknown). It is interesting to note the nearly full-point drop of NWA sealholders from this question on importance of the seal to management (3.8) versus the audience (4.67). Perhaps these weathercasters are reflecting news directors' preference for the AMS seal noted in many advertisements for weathercasters, or the longer history of the AMS seal making it more familiar to many news managers. However, the nearly 20% drop in agreement suggests that many weathercasters with only the NWA seal feel their management regards their seal less highly than does the audience. Understanding why news managers seek out the AMS seal from their weathercasters would help complement this data and would be a logical next step. Those without either seal tend to be less convinced of the importance of such a credential to their management. Their mean is statistically significant to all other subgroups. Even so, their mean for this question is their highest of all six measured in this survey. Weathercasters clearly believe the seal matters to news management. Finding out exactly what news manager's value about the seals will help clarify the importance of these on-air credentials.

Finally, Table 8 reports weathercaster responses to Q 34, "A broadcast meteorology certificate from a program such as Mississippi State University is appropriate preparation for a TV weathercaster." The mean value drops into the "disagree" side of neutral once again. Those with only the AMS seal most strongly disagree that such a program is adequate preparation for TV weathercasters. That group is statistically significant to all other groups. This follows the pattern first reported in Table 2 with the only negative correlation found in the data. This may reflect the old guard in the AMS who earned their seal in the traditional manner – with a meteorology degree from one of the respected university programs earned under older, more restrictive guidelines. For these traditionalists among AMS sealholders, the data show a consistent pattern which reveals that for them, possess-

Table 6. Findings to Q32. A Seal of Approval is important for audience credibility.

	Subset 1	Subset 2	Subset 3
Neither Seal (69)	3.06		
AMS Seal Only (75)		3.75	
Both Seals (26)		4.19	
NWA Seal Only (30)			4.67

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

Table 7. Findings to Q33. A Seal of Approval is important to my station management.

	Subset 1	Subset 2
Neither Seal (69)	3.16	
NWA Seal Only (30)		3.80
AMS Seal Only (75)		4.20
Both Seals (26)		4.31

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

Table 8. Findings to Q34. A broadcast meteorology certificate from a program such as Mississippi State University is appropriate preparation for a TV weathercaster.

	Subset 1	Subset 2	Subset 3
AMS Seal Only (75)	2.20		
Neither Seal (69)		3.09	
Both Seals (26)		3.31	3.31
NWA Seal Only (30)			3.90

Means for groups in homogeneous subsets are displayed.
Legend: 1.0 = Strongly Disagree 3.0 = Neutral 5.0 = Strongly Agree

ing that seal is the only true measure of a TV weathercaster's abilities, and that "alternative" programs are not rigorous enough. Those with only the NWA seal have the highest agreement to Q34. Similarly, this group is statistically significant with all other groups. This finding may not be a surprise given that for many MSU graduates, the NWA seal was their only option for many years, and that the NWA helped launch the Mississippi State program in 1987. Currently, the AMS seal process also accepts the program from the MSU program for its seal.

These data may finally quantify what many TV weathercasters have noted anecdotally for years. What is striking is the polarized opinions of those with just the NWA seal and those with just the AMS seal. Those with both seals, although the smallest group in number, tend to reflect a more moderate position. As the

number of TV weathercasters with both seals continues to increase, this would be another interesting avenue for longitudinal study.

6. Conclusions and Recommendations

TV weather is the primary reason viewers choose a local news product, yet we know surprisingly little about TV weathercasters from the traditional scholarly literature. Proprietary consultant research is abundant, but much of that is not shared with individual weathercasters themselves, let alone disseminated to the larger community.

This study sheds light on the often intense internal debate among TV weathercasters over voluntary credentials. This dispute often manifests itself at professional meetings, spilling out into industry forums such as the online publication, *Shoptalk*. TV weathercasters, who perform the delicate dance between science and journalism more visibly than any other group in our society, are strongly opinionated and sharply divided about how they should be identified and acknowledged for their expertise.

Overall, these data show that TV weathercasters believe seals recognize on-air skill more than forecasting ability. The data also reveal that most TV weathercasters believe strongly that seals matter most first to news management, and then to the audience. Those without either seal of approval are less impressed in nearly every case, but show the same kind of pattern – believing seals measure on-air ability over forecast skill and matter most to management and the audience. But the data also reveal surprisingly strong attitudes about the seals, especially by those who hold either the AMS seal or the NWA seal, often in diametric opposition to each other.

An obvious next step is to independently measure news directors' beliefs and understandings about the seals, as well as audience responses to the seals. While many news directors request seals of approval in advertisements for vacancies, do they perceive differences between the two seals, and if so, is it in the same ways that weathercasters do? Do news directors and weathercasters agree regarding value the seal more as a measurement of on-air skill, or do news directors believe it is more a stamp of approval for forecasting ability? According to the director of the Mississippi State program, only 10% of news directors would be able to distinguish between the two current seals (Binkley 2003), an assessment shared by the Executive Director of the AMS (Ron McPherson 2004 personal communication). Measuring news director attitudes may provide useful insights.

Correspondingly, does a seal, displayed for only seconds on the screen during a newscast amidst so much other video clutter, clue the audience that a particular weathercaster has been approved, and is, therefore, more credible? Does the audience choose a local weathercaster because of a seal of approval? It's been more than thirty years since the last scholarly study measured the impact of seals on ratings (Beebe 1970; Booker 1962). So many aspects of broadcasting and science have changed in that time that follow-up investigations may refute or substantiate such a finding today. Both of these proposed studies are part of a

larger research agenda this author plans to complete in the near future that will help triangulate our understanding of the importance of these on-air credentials.

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LETTERS TO THE EDITOR: AUTHOR'S RESPONSE

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First, thanks for the opportunity to respond to the two articles appearing in this issue of *National Weather Digest* that are following up on my study appearing here in Dec. 2006—"Seals of (Dis)approval: Television Weathercasters Debate the Value of Voluntary Credentials."

I'm glad to see new research being conducted on the important role television weathercasters play in our society. As my paper concluded, good places to begin to find about more about attitudes towards the AMS and NWA seals are with news directors and the audience. I'm not surprised to see the findings of these 104 news directors who say they prefer the AMS seal as that as what I've often seen in ads and heard in conversations, or that a seal is not "the most important criterion for hiring." What's especially illuminating as new data in this paper ("Comments on Seals of Approval") is how strongly news directors agree that they would "hire experienced (weathercasters) without the ability to earn the seals."

I think this study is a good place to start in exploring the range of attitudes news directors have about the seals, but as the authors note this study has a very low response rate (13%) and it is dangerous to extrapolate to the larger universe, but still an ambitious beginning. The data referenced from a 1992 M.S. thesis about audience reactions to the seals also suffers from a low response rate (16%), but I appreciate the new citation and will add it to my summer reading and reference

it for future research. I think so much has changed in both the media and meteorology landscapes that a new study that builds on that 16 year old data would be an excellent contribution to the sparse literature we have on how audiences respond to TV weather. With so much emphasis being placed on the revamped seal programs today it would be interesting to see if the audience notices those credentials any more than they did back in this 1992 study.

My only comment to the second paper clarifying the degrees and certificates offered by Mississippi State University is that the section in my paper describing the program there was the verbatim text provided to me by a reviewer of my paper and since that person was affiliated with the MSU program I did not make any changes to that description. I apologize for any confusion that may have created and appreciate the clarification on the MSU programs for reference in future research too.

Finally, I would add that I'm working on a new national survey of TV weathercasters and their reporting on science to build upon another recent study that appeared in the January 2008 issue of *Public Understanding of Science* ("Television Weathercasters as Potentially Prominent Science Communicators"). If a survey crosses your email in box, I hope you will take a few minutes to respond so we can continue to grow the literature in this important field.